

SAMSUNG

SAMSUNG ELECTRONICS Co., Ltd.

2023 Half-year Business Report

For the quarter ended June 30, 2023

Certain statements in the document, other than purely historical information, including estimates, projections, statements relating to our business plans, objectives and expected operating results, and the assumptions upon which those statements are based, are “forward-looking statements.” Forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties which may cause actual results to differ materially from the forward-looking statements. A detailed discussion of risks and uncertainties that could cause actual results and events to differ materially from such forward-looking statements is included in our financial reports available on our website.

See, also, 『Note on Forward-Looking Statements』 in preamble of 『II. Business Overview』.

Table of Contents

Certification	3
I. Corporate Overview	4
II. Businesses Overview.....	14
III. Financial Affairs.....	42
IV. Management Discussion and Analysis.....	170
V. Auditor's Report	171
VI. Corporate Governance	177
VII. Information on Shareholders	197
VIII. Executives and Employees	205
IX. Affiliates and Subsidiaries	217
X. Transactions with affiliates and subsidiaries	237
XI. Other Information.....	240
XII. Appendix.....	252

Certification

Letter of Certification

We, Jong-hee Han and Hark-kyu Park, as a CEO and the executive in charge of reporting, respectively, certify that we have thoroughly reviewed the half-year business report of Samsung Electronics Co., Ltd. for the six-month period ended June 30, 2023.

Based on our knowledge, this report does not contain any untrue statements of material facts or omit any material facts; and it does not contain any statements that are intentionally misleading for the users of the information in the report.

We confirm that Samsung Electronics operates the Internal Controls over Financial Reporting, as defined in Article 8 of the Act on External Audit of Stock Companies.

Date: August 14, 2023

Jong-hee Han



Vice Chairman and CEO
Samsung Electronics Co., Ltd.

Executive responsible for reporting: Hark-kyu Park



President and CFO
Samsung Electronics Co., Ltd.

I. Corporate Overview

1. Overview

A. Legal, Commercial name:

- Samsung Electronics Co., Ltd.

B. Date of establishment:

- Samsung Electronics Co., Ltd. (“SEC” or “the Company”) was established as Samsung Electronics Industry Co., Ltd. on January 13, 1969, and held an initial public offering on June 11, 1975.
- SEC changed its name from Samsung Electronics Industry Co., Ltd. to Samsung Electronics Co., Ltd. following a resolution passed at the Annual General Meeting (AGM) of shareholders on February 28, 1984.

C. Address, phone number, and English language website of the corporate headquarters

- Address: 129, Samsung-ro, Yeongtong-gu, Suwon, Gyeonggi-do, Korea
- Phone Number: +82-31-200-1114
- Website: <https://www.samsung.com/sec>

D. Core businesses

- The Company (defined below) is comprised of two business divisions—DX (Device eXperience) and DS (Device Solutions)—SDC (Samsung Display and its subsidiaries), which runs display panel business, and Harman (Harman International Industries, Inc. and its subsidiaries), which operates businesses related to automotive electronics components, etc.

SEC is a global electronics firm consisting of its headquarters in Korea and 233 subsidiaries (collectively, “Samsung Electronics”, the “Company”, or “we”) across the world, including 9 regional headquarters for the DX Division, 5 regional headquarters, as well as production and sales subsidiaries, for the DS Division, and subsidiaries SDC and Harman.

Key products by each organization are set forth below:

Organization	Key products
DX Division	TVs, monitors, refrigerators, washing machines, air conditioners, hand held products (HHPs), telecommunications network systems, computers, etc.
DS Division	DRAM, NAND flash, mobile APs, etc.
SDC	OLED panels for smartphones, etc.
Harman	Digital cockpits, telematics, speakers, etc.

In December 2021, the Company merged the CE and IM Divisions to create the DX Division; and it separated SDC and the DS Division to align with the corporate organizational structure.

[DX Division]

The DX Division manufactures TVs, monitors, refrigerators, washing machines, air conditioners, smartphones, tablets, and wearables. It is leading the global digital market with its differentiated technology, designs, and products, including premium TVs based on leading technologies such as Neo QLED; Lifestyle TVs that align with the lifestyles of customers who value experiences; and Bespoke products, which are customized to satisfy various needs of our customers. The Company has maintained its position as the leader in the TV market for 17 straight years. Moreover, for smartphones, a core product of the Division, we have developed a broad lineup ranging from low-end right through to premium models with the Galaxy series. Samsung will continue to innovate in the premium and Lifestyle TV markets while strengthening global sales of Bespoke products. Through the Galaxy Ecosystem, we will deliver top-notch Multi-Device experiences, allowing convenient and seamless use of not just mobile products, but also TV and home appliance products. At the same time, we will keep fortifying our status and market dominance as a global brand by continually releasing new products that reflect the needs of consumers and current trends; and we will lead the global 5G market based on our end-to-end solutions, which encompass handsets, chipsets, as well as our experience in commercializing initial 5G markets.

[DS Division]

The Memory Business, System LSI Business, Foundry Business, and Display Panel (“DP”) Business make up the DS Division. The Memory Business manufactures and sells DRAM and NAND products; the System LSI Business designs and sells mobile application processors (“mobile APs” or “APs”) and camera sensor chips; and the Foundry Business is in charge of consignment production of semiconductors.

The Memory Business continues to maintain its position at the top of the global memory market by focusing on qualitative growth, including by applying advanced process technology in DRAM and NAND Flash products; differentiating our products via centering our business portfolio on high-value solutions; and enhancing cost competitiveness.

The System LSI Business has not been complacent, extending its focus from mobile to include automotive chips, and it is expanding its market power through actions such as satisfying demand with differentiated products—such as APs and CISs—based on its advanced manufacturing process technology, and by diversifying foundry suppliers.

The Foundry Business continues to expand its presence by securing technological competitiveness through the introduction of core elemental technologies and new structures in advanced manufacturing processes; by securing stable supply capabilities despite weak global demand for semiconductors; and actively responding to strong demand for legacy processes.

[SDC]

In SDC, the mobile panel business’s differentiated technology is a key factor behind the increased adoption of OLED panels, while our release of products in new applications—such as foldable devices, rollable devices, and automotives—has expanded the overall market. Meanwhile, the large panel business is focusing on premium products such as high-definition, ultra-large, Quantum Dot TVs and is enhancing its competitiveness through continuous improvements in technology and productivity.

[Harman]

Harman consists of the automotive component business, which designs and develops connected products and solutions for automakers; and the lifestyle audio business, which provides consumer audio products and professional audio solutions. Harman, as a leader in the automotive component market, supplies car manufacturers with products that apply innovative technologies. And in the audio market, it has been firmly establishing the brand reputation among consumers and audiophiles. Harman has established an internationally renowned brand and it offers diverse product lines, using internal development and strategic acquisitions to strengthen competitiveness in each business area.

☞ See 『II. Businesses Overview』 for more details about each Division.

E. Subsidiaries subject to consolidated accounting (summary)

As of June 30, 2023, and in accordance with Korean International Financial Reporting Standards (K-IFRS) 1110, *Consolidated Financial Statements*, Samsung Electronics, the controlling company, had 232 consolidated subsidiaries, with the addition of 4 subsidiaries and reduction of 3 subsidiary when compared to totals as of December 31, 2022.

Classification	Number of subsidiaries subject to consolidated accounting				Number of major subsidiaries
	As of January 1, 2023	Added	Removed	As of June 30, 2023	
Listed	-	-	-	-	-
Unlisted	232	4	3	233	141
Total	232	4	3	233	141

See 『Appendix-1. Subsidiaries subject to consolidated accounting (detailed)』 for details.

[1H23: Changes in subsidiaries subject to consolidated accounting]

Classification	Subsidiary	Reason
Newly consolidated	SVIC #62 Venture Capital Union	Establishment
	Samsung Federal Inc. (SFI)	Establishment
	Emerald Intermediate, Inc.	Establishment
	Emerald Merger Sub, Inc.	Establishment
No longer consolidated	Dacor Holdings, Inc.	Merger
	Dacor, Inc.	Merger
	Red Bend Software Ltd.	Liquidation

F. Whether the Company is an SME

The Company is not subject to Article 2 of the Framework Act on Small and Medium Enterprises.

Small and medium enterprise	No
Venture company	No
Medium-sized enterprise	No

G. Credit rating

SEC's credit rating is assessed by two external credit ratings agencies. As of June 30, 2023, SEC's credit ratings were Aa2 with a stable investment outlook as rated by Moody's (US); and AA- with a stable investment outlook as rated by S&P (US).

Securities	Date	Ratings	Credit rating agency	Note
Corporate bond (USD denominated; issued in 1997 and expire in 2027)	Jul 2021	AA-	S&P	Regular review
	Aug 2021	Aa3	Moody's	
	Aug 2022	AA-	S&P	
	Sep 2022	Aa2	Moody's	

Credit ratings were AA- from S&P as of July 2023 and Aa2 from Moody's as of August 2023.

[Credit ratings definitions]

	Moody's	Definition	S&P	Definition
Investment grade	Aaa	Superior ability to repay debt obligations; lowest level of credit risk	AAA	Extremely strong ability to meet financial commitments; highest rating
	Aa1/Aa2/Aa3	High ability to repay debt obligations; very low credit risk	AA+/AA/AA-	Very strong capacity to meet financial commitments
	A1/A2/A3	Upper-medium ability to repay debt obligations; low credit risk	A+/A/A-	Strong capacity to meet financial commitments; susceptible to adverse effects of changes in economic conditions
	Baa1/Baa2/Baa3	Medium ability to repay debt obligations; moderate credit risk, speculative factors	BBB+/BBB/BBB-	Adequate capacity to meet financial commitments; relatively more susceptible to adverse economic conditions
Speculative grade	Ba1/Ba2/Ba3	Speculative; substantial credit risk	BB+/BB/BB-	Major ongoing uncertainties; exposure to adverse business, financial, or economic conditions can impair ability to meet financial commitments
	B1/B2/B3	Speculative; high credit risk	B+/B/B-	More vulnerable to nonpayment than those rated BB; has capacity to meet financial commitments but adverse financial or economic conditions are likely to impair ability to continue doing so
	Caa	Speculative; very high credit risk	CCC	Vulnerable to nonpayment; dependent upon favorable business, financial, and economic conditions
	Ca	Highly speculative; likelihood of being in or near default; some prospect for recovery of principal and interest	CC	Highly vulnerable to nonpayment; default has not yet occurred but expected to be a virtual certainty
	C	Typically in default; little prospect for recovery of principal or interest	C	Highly vulnerable to nonpayment; obligation is expected to have lower ultimate recovery vis-à-vis higher rated obligations
			D	In default or in breach of imputed promises, upon the filing of a bankruptcy petition or the taking of a similar action

Please refer to 『III. Financial Affairs-7. Matters about financing through the issuance of securities』 for credit ratings on corporate bonds and commercial paper issued by the Company's subsidiaries.

H. Whether the Company is listed (or registered or designated) and matters related to special listed companies

The Company listed on the Korea Stock Exchange on June 11, 1975.

Listed (or registered or designated)	Date listed (or registered or designated)	Special listed company	Subject to regulations for special exception companies
Stock market (KOSPI)	June 11, 1975	No	No

2. Company history

A. Company history

Jan 13, 1969	Samsung Electronics Manufacturing Incorporated
Jun 11, 1975	Listed on the Korea Stock Exchange
Feb 28, 1984	Renamed as Samsung Electronics
Nov 1, 1988	Merged with Samsung Semiconductor and Communications
Apr 1, 2012	Spun off the LCD division (established Samsung Display)
Mar 10, 2017	SEA acquired shares of Harman International Industries, Inc. (100%)
Jul 4, 2017	Started operations at semiconductor production fab in Pyeongtaek, the largest such facility in the world
Apr 3, 2019	Launched Galaxy S10 5G, a 5G smartphone
Jun 4, 2019	Released Bespoke, a refrigerator customized to customers' lifestyles
Sep 4, 2019	Unveiled Exynos 980, 5G mobile processor
Sep 6, 2019	Unveiled Galaxy Fold, a foldable phone with a new form factor
Jan 29, 2020	Launched AI-technology-based Grande AI washer/dryer
Feb 4, 2020	Launched world's first ultra-high speed DRAM for AI and next-generation super computers
Feb 11, 2020	Unveiled Galaxy Z Flip, a foldable model with a new form factor
Aug 30, 2020	Started operation of Pyeongtaek Line 2, the world's largest semiconductor line
Jan 7, 2021	Unveiled Neo QLED TV
May 11, 2021	Announced expansion to the global market for Bespoke Home
Jun 3, 2021	Received certification for reducing carbon emissions, water use, and waste discharge for all of our semiconductor worksites, a first in the global semiconductor industry
Aug 11, 2021	Unveiled Galaxy Z Fold 3 and Galaxy Z Flip 3
Oct 12, 2021	Started mass producing highly advanced 14-nano EUV DDR5 DRAM
Nov 9, 2021	Developed industry's first LPDDR5X DRAM
Nov 24, 2021	Announced investment in a new foundry production site in Taylor, Texas, USA
Feb 10, 2022	Unveiled the Galaxy S22 series
Feb 17, 2022	Unveiled the Bespoke Infinite Line
Jun 30, 2022	Began mass production of the world's first 3-nano GAA chips
Aug 10, 2022	Unpacked Galaxy Z Fold 4 and Flip 4
Aug 19, 2022	Held a groundbreaking ceremony for the next-generation semiconductor R&D complex
Sep 15, 2022	Announced a new environmental strategy
Nov 7, 2022	Mass produced 1Tb 8th-generation V-NAND
Dec 21, 2022	Developed highly advanced 12nm-class 16Gb DDR5 DRAM
Jan 17, 2023	Launched 200MP image sensor ISOCELL HP2 with ultra-high resolution technologies
Feb 1, 2023	Unveiled the Galaxy S23 series
May 12, 2023	Developed industry's first CXL 2.0 DRAM
May 18, 2023	Started mass producing the industry's most advanced 12nm-class DRAM
Jun 29, 2023	Opened an immersive flagship store Samsung Gangnam

B. Company location and changes

The Company's head office is located at 129, Samsung-ro, Yeongtong-gu, Suwon, Gyeonggi-do. There were no changes in the Company's head office location over the past five fiscal years.

C. Important changes in management executives

As of June 30, 2023, SEC's Board consisted of five Executive Directors (Jong-hee Han, Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park and Jung-bae Lee) and six Independent Directors (Han-jo Kim, Sun-uk Kim, Jeong Kim and Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo).

Date of change	Type of shareholder meeting	Appointed		Terms expired or dismissed
		Newly appointed	Reappointed	
Mar 20, 2019	AGM	Independent Director Han-jo Kim Independent Director Curie Ahn	Independent Director Jae-wan Bahk	Independent Director In-ho Lee Independent Director Kwang-soo Song
Oct 26, 2019	-	-	-	Executive Director Jae-yong Lee
Feb 14, 2020	-	-	-	Executive Director Sang-hoon Lee (resigned)
Mar 18, 2020	AGM	Executive Director Jong-hee Han Executive Director Yoon-ho Choi	-	-
Mar 17, 2021	AGM	-	Executive Director Ki-nam Kim Executive Director Hyun-suk Kim Executive Director Dong-jin Koh Independent Director Byung-gook Park Independent Director Jeong Kim Independent Director Sun-uk Kim	-
Mar 17, 2021	-	-	CEO Ki-nam Kim CEO Hyun-suk Kim CEO Dong-jin Koh	-
Dec 31, 2021	-	-	-	Executive Director Yoon-ho Choi (resigned)
Feb 15, 2022	-	CEO Jong-hee Han	-	CEO Ki-nam Kim (resigned) CEO Hyun-suk Kim (resigned) CEO Dong-jin Koh (resigned)
Mar 16, 2022	AGM	Executive Director Kye-hyun Kyung Executive Director Tae-moon Roh Executive Director Hark-kyu Park Executive Director Jung-bae Lee Independent Director Wha-jin Han Independent Director Jun-sung Kim	Independent Director Han-jo Kim	-
Mar 16, 2022	-	-	-	Executive Director Ki-nam Kim (resigned) Executive Director Hyun-suk Kim (resigned) Executive Director Dong-jin Koh (resigned)
Mar 16, 2022	-	CEO Kye-hyun Kyung	-	-
Mar 19, 2022	-	-	-	Independent Director Jae-wan Bahk Independent Director Curie Ahn
Apr 20, 2022	-	-	-	Independent Director Wha-jin Han (resigned)
May 17, 2022	-	-	-	Independent Director Byung-gook Park (position vacated)
Nov 3, 2022	EGM	Independent Director Eun-nyeong Heo Independent Director Myung-Hee Yoo	-	-
Mar 15, 2023	AGM	-	Executive Director Jong-hee Han	-
Mar 15, 2023	-	-	CEO Jong-hee Han	-

Mar 17, 2021: Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh were appointed as CEO at the Board meeting.

Dec 31, 2021: Yoon-ho Choi resigned from his position as Executive Director.

Feb 15, 2022: Executive Directors Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh resigned from their positions as CEO; and Executive Director Jong-hee Han was appointed as CEO at the Board meeting held on the same date.

Mar 16, 2022: Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, and Jung-bae Lee were newly appointed as Executive Directors; Wha-jin Han and

Jun-sung Kim as Independent Directors; and Han-jo Kim was reappointed as Independent Director at the Annual General Meeting of the shareholders.
 Mar 16, 2022: Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh resigned from their position as Executive Director.
 Mar 16, 2022: Executive Director Kye-hyun Kyung was appointed as CEO at the Board meeting.
 Mar 19, 2022: Jae-wan Bahk and Curie Ahn's terms as Independent Directors expired.
 Apr 20, 2022: Wha-jin Han resigned from her position as Independent Director.
 May 17, 2022: Independent Director Byung-gook Park passed away.
 Nov 3, 2022: Eun-nyeong Heo and Myung-hee Yoo were newly appointed as Independent Directors at the Extraordinary General Meeting of the shareholders.
 Mar 15, 2023: Executive Director Jong-hee Han was reappointed as CEO at the Board meeting.

D. Changes in the major shareholder

The major shareholder changed to Samsung Life Insurance as the shares of the previous major shareholder were inherited by beneficiaries on April 29, 2021.

[As of June 30, 2023]

Date of Change	Name of major shareholder	Number of shares owned	Share ratio	Reason for change	Note
Apr 29, 2021	Samsung Life Insurance	1,263,050,053	21.16%	Shares of the previous major shareholder were inherited by beneficiaries	-

Number of shares owned and share ratio are the sum of those of major shareholder and its related parties, and the number of shares is based on shares with voting rights (including those with limited voting rights in accordance with relevant laws).

☞ Please refer to 『VII. Information on Shareholders』 for details on the major shareholder.

E. Company name changes

In 2019, Samsung Electronics Greece S.A. (SEGR) changed its name to Samsung Electronics Greece S.M.S.A. (SEGR).

In 2021, Samsung Electronics Portuguesa S.A. (SEP) changed its name to Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP).

☞ Details are for SEC and major subsidiaries of SEC. See 『1. Subsidiaries subject to consolidated accounting (detailed)』 in 『XII. Appendix』 for details.

F. Mergers and acquisitions

In 2019, Samsung Electronics Benelux B.V. (SEBN) acquired shares of Corephotonics Ltd. In the same year, SEC acquired a PLP business from affiliate Samsung Electro-Mechanics. In addition, Harman Becker Automotive Systems Manufacturing Kft merged with Duran Audio B.V.; and Samsung (China) Investment Co., Ltd. (SCIC) merged with Samsung Electronics (Beijing) Service Company Limited (SBSC).

In 2021, Samsung Research America, Inc. (SRA) merged with Viv Labs, Inc. Furthermore, Samsung Electronics America, Inc. (SEA) merged with Prismview, LLC.

☞ Details are for SEC and major subsidiaries of SEC. See 『1. Subsidiaries subject to consolidated accounting (detailed)』 in 『XII. Appendix』 for details.

G. Important changes in the Company's business

There were no changes over the past five fiscal years.

H. Other important matters related to the Company's business

In December 2021, the Company merged its CE and IM Divisions to form the DX Division and changed the Mobile Communications Business to the MX Division.

Also, the Company separated SDC and the DS Division in alignment with the corporate organizational structure.

[As of December 2021]

	Before	After
Business organization	CE Division (Visual Display, Digital Appliances, Medical Devices)	DX Division (Visual Display, Digital Appliances, Medical Devices, Mobile eXperience, Network)
	IM Division (Mobile, Network)	
	DS Division (Memory, System LSI, Foundry, DP)	DS Division (Memory, System LSI, Foundry)
		SDC (DP)
Harman Division	Harman	
Regional headquarters	Korea, North America, Latin America, Europe, CIS, Southwest Asia, Southeast Asia, China, Middle East, Africa	Korea, North America, Latin America, Europe, CIS, Southwest Asia, Southeast Asia, China, Middle East, Africa
	Americas (DS), Europe (DS), China (DS), Southeast Asia (DS), Japan (DS)	

3. Changes in paid-in capital

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Changes in paid-in capital section, reported in the full-year business report, is not included in the Half-year reports.

4. Stock information

A. Total number of shares

As of June 30, 2023, SEC's issued shares on a cumulative basis totaled 7,780,466,850 registered common shares and 1,194,671,350 registered, non-voting preferred shares; and the Company had canceled 1,810,684,300 common shares and 371,784,650 preferred shares in accordance with resolutions of the Board of Directors (the Board). As of the same date, issued shares and shares outstanding totaled 5,969,782,550 for common shares and 822,886,700 for preferred shares.

[As of June 30, 2023]

(Shares)

Classification	Type of stocks			Note
	Common	Preferred	Total	
I. Authorized shares	20,000,000,000	5,000,000,000	25,000,000,000	-
II. Issued shares (cumulative)	7,780,466,850	1,194,671,350	8,975,138,200	-
III. Decrease in number of shares (cumulative)	1,810,684,300	371,784,650	2,182,468,950	-
1. Capital reduction	-	-	-	-
2. Cancellation	1,810,684,300	371,784,650	2,182,468,950	Treasury shares
3. Redemption	-	-	-	-
4. Other	-	-	-	-
IV. Issued shares (II-III)	5,969,782,550	822,886,700	6,792,669,250	-
V. Treasury shares	-	-	-	-
VI. Outstanding shares	5,969,782,550	822,886,700	6,792,669,250	-

Post-split basis; SEC conducted a 50:1 stock split effective from May 3, 2018, lowering par value of every common and preferred share from KRW 5,000 to KRW 100.

5. Changes to Articles of Incorporation

The most recent changes to the Articles of Incorporation took place on March 23, 2018. There were no other changes in the Articles of Incorporation in the past three fiscal years or in 2023 as of the disclosure date of the Korean version of this report.

[Business purpose]

No.	Business Purpose	Status
1	Manufacture, sale, collection service, lease and maintenance service of electronic and electrical machines and appliances, other related equipments and their components	Operating
2	Manufacture, sale, collection service, lease and maintenance service of communication machines & appliance, other related equipments and their components	Operating
3	Manufacture and sale of medical equipments	Operating
4	Manufacture, sale and maintenance service of luminous disk, luminous source-applied machines and appliances and their components	Operating
5	Manufacture, sale, lease and maintenance service of optical fiber, cable and other related equipments	Operating
6	Manufacture, sale, collection service, lease and maintenance service of electronic computer system and other related products	Operating
7	Manufacture, sale and lease of copyright works and computer programs, etc.	Operating
8	Sale and lease of know-how and technology	Operating
9	Construction, operation and engineering service of information communication systems	Operating
10	Manufacture, sale, lease and maintenance service of automatic control systems and applied equipments	Operating
11	Manufacture, sale, lease and maintenance service of machine tools and their components	Operating
12	Manufacture and sale of semiconductors and other related products	Operating
13	Manufacture and sale of manufacturing facilities for semiconductors	Operating
14	Manufacture and sale of raw and accompanying materials for semiconductor manufacturing	Operating
15	Manufacture and sale of other machines and appliances	Operating
16	Manufacture, processing and sale of synthetic resins	Operating
17	Refining, processing and sale of metals other than gold	Operating
18	Export, import and its agency business	Operating
19	Cultivation and sale of cash crop	Not operating

No.	Business Purpose	Status
20	Real estate business	Operating
21	Offer business	Operating
22	Manufacture, sale and test of gauge and measuring instruments, etc.	Operating
23	Technology service for the above items, construction of information communication and construction of electric connection system	Operating
24	Lease and sale of residential lots	Operating
25	Sports, games and other related businesses	Operating
26	Manufacture of electric motor, power generator and electric converter apparatus	Operating
27	Manufacture of electricity supply and control devices	Operating
28	Educational service and other services related to business	Operating
29	Business and investment incidental to any of the foregoing	Operating

II. Businesses Overview

Note on forward-looking statements

This report includes forward-looking statements that relate to future events and can be generally identified by phrases containing words such as “believes,” “expects,” “anticipates,” “foresees,” “forecasts,” “estimates” or other words or phrases of similar meaning. These forward-looking statements are not guarantees of future performance and may involve known and unknown risks, uncertainties and other factors that may affect our actual results, performance, achievements or financial position, making them materially different from the actual future results, performance, achievements or financial position expressed or implied by these forward-looking statements. Unless otherwise specified, all data presented in this report is from our consolidated financial statements.

Uncertain events that could positively or negatively affect the Company’s management condition and financial performance include, but are not limited to:

- Trends of financial markets domestically and abroad, including changes in exchange rates and interest rates
- The Company’s strategic decision making, including disposals and purchases of businesses
- Unexpected sudden changes in core businesses such as CE, IM, Semiconductor, DP and Harman
- Other changes domestically and abroad that can affect management condition and financial performance

The Company assumes no obligation to revise or update this report to reflect risks or uncertainties that arise after the reporting period.

(Responsibility statement)

In accordance with article 3(2) c) of the Transparency Law (Luxembourg), Jong-hee Han and Hark-kyu Park, as a CEO and the executive in charge of reporting confirm that, to the best of their knowledge, the consolidated financial statements and the statutory non-consolidated financial statements prepared in accordance with the applicable set of accounting standards give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the undertakings included in the consolidation taken as a whole and that the management report includes a fair review of the development and performance of the business and the position of the Company and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.

1. Overview

In addition to our headquarters in Korea, Samsung Electronics consists of 233 subsidiaries across the world responsible for sales and production, which include 9 regional headquarters for the Device eXperience (DX) Division, 5 regional headquarters for the Device Solutions (DS) Division, and subsidiaries of Samsung Display (SDC) and Harman.

The Company’s business divisions are organized in a two-pronged framework consisting of finished products and component businesses. The finished product business consists of the DX Division, which is responsible for the production and sales of TVs, monitors, refrigerators, washing machines, air conditioners, HHPs, which includes smartphones, as well as network systems, and computers. The component business consists of the DS Division, which manufactures and sells DRAM, NAND flash, and mobile APs, and SDC, which manufactures and sells display panels (DPs), including mobile OLED panels. Harman (acquired in 2017) manufactures and sells products such as Digital cockpits, telematics, and speakers.

In December 2021, the Company merged and restructured the CE and IM Divisions to form the DX Division and renamed the Mobile Communications Business to the Mobile eXperience (MX) Business. Also, SDC and the DS Division have been separated to align with the corporate organizational structure.

☞ See C. Current status of each division and D. Financial summary by organization in 『7. Other information』 for more details about each Division.

The Company's corporate headquarters—which oversees the DX and DS Divisions—as well as 34 consolidated subsidiaries are located in Korea. The Company's corporate headquarters is divided along Divisions and/or Businesses, which are located in Suwon, Gumi, Gwangju, Giheung, Hwaseong, Pyeongtaek, etc. The Company's unlisted domestic subsidiaries include Samsung Display for display panel production, Samsung Electronics Sales for domestic retail sales, Samsung Electronics Service for after-sales services, and Samsung Electronics Logitech for logistics.

We have 199 unlisted overseas subsidiaries for product manufacturing, sales, and R&D, with locations in the US, Europe/CIS, Middle East/Africa, and Asia, etc.

We have 46 subsidiaries in Americas, including SEA (New Jersey; responsible for the sales of finished products including TV and HHPs), SII (California; manufacturing of TVs), SSI (California; sales of semiconductors and DPs), SAS (Texas; manufacturing of semiconductor products), SEDA (Brazil; manufacturing of multiple finished products) and Harman (Connecticut; automotive components) in the US.

In Europe and CIS, we operate 71 subsidiaries. These include SEUK (UK), SEG (Germany), SEF (France), SEI (Italy), SERC (Russia) for sales of finished products; SEH (Hungary) and SERK (Russia) for manufacturing TVs, and SEPM (Poland) for manufacturing home appliances.

We have 20 subsidiaries in Middle East and Africa, including SGE (UAE) and SSA (South Africa) for sales of finished products and SEEG (Egypt) and SSAP (South Africa) for manufacturing TVs.

We have 32 subsidiaries in Asia (ex China), including SESP (Singapore), SEAU (Australia), SEPCO (Philippines), and SME (Malaysia), which are responsible for regional sales. In addition, we operate numerous production sites including SEV and SEVT (Vietnam) for HHPs, SEHC (Vietnam) for TVs, SDV (Vietnam) for DPs, and SIEL (India) for multiple products.

We operate 30 subsidiaries in China, including SCIC (Beijing) and SEHK (Hong Kong) for the sales of finished products in those regions; and SSS (Shanghai) and SSCX (Xian) for semiconductors and DPs sales. Production sites for finished products include SSEC (Suzhou) and semiconductor production facilities are located in SCS (Xian) among others.

In 1H23, the Company recorded total revenue of KRW 123,750.9 billion, a decrease of 20.2% year-on-year. Major customers (listed in alphabetical order) included Apple, Best Buy, Deutsche Telekom, Qualcomm, and Verizon.

2. Key products and services

A. Revenue

SEC is involved in the production and sales of finished products, including TVs, refrigerators, washers, air conditioners, HHPs and components such as semiconductors (DRAM, NAND Flash, mobile APs) and display panels. Through Harman, the Company also produces and sells products such as digital cockpits and telematics.

In 1H23, reported revenue was KRW 86,428.7 billion (69.8% of total net sales) for DX; KRW 28,463.7 billion (23.0%) for DS; KRW 13,097.2 billion (10.6%) for SDC; and KRW 6,661.6 billion (5.4%) for Harman.

(KRW 100 mil)

Organization	Major products	Revenue	Portion
DX Division	TVs, monitors, refrigerators, washing machines, air conditioners, HHPs, network systems, computers, etc.	864,287	69.8%
DS Division	DRAM, NAND flash, mobile APs, etc.	284,637	23.0%
SDC	OLED smartphone panels, etc.	130,972	10.6%
Harman	Digital cockpit, telematics, speakers, etc.	66,616	5.4%
Others	Overlapping internal transactions between Divisions	-109,003	-8.8%
Total		1,237,509	100.0%

Includes inter-divisional transactions.

☞ See 「4. Revenue and long-term contracts」 for information by each product.

B. Average selling price changes

In 1H23, TV Average Selling Price(“ASP”) for televisions decreased approximately 2% and HHP ASP increased approximately 12% year-on-year. Memory-product ASP fell approximately 50% year-on-year, and display panel (OLED panels for smartphones) ASP increased approximately 1%. The ASP of digital cockpits stayed similar year-on-year.

3. Production materials and production facilities

A. Key production materials

For the DX Division, key materials include mobile AP solutions and camera modules, which are supplied by Qualcomm, Semco, etc., and display panels for TVs and monitors, which are supplied by CSOT, etc. For the DS Division, key materials include chemicals and wafers, supplied by Soulbrain, SK Siltron, etc., and for SDC, key materials include FPCAs and windows, with suppliers such as BH, Apple, etc. For Harman, key materials include SoC (system-on-chip) products, which are supplied by Nvidia.

(KRW 100 mil)

Organization	Type of purchase	Item	Specific usage	Purchase price	Portion ¹⁾	Main supplier(s)
DX Division ²⁾	Production materials	Mobile AP solutions	CPU	57,457	17.7%	Qualcomm, MediaTek, etc.
	Production materials	Camera module	Camera for HHP	27,460	8.5%	Semco, Powerlogics, etc.
	Production materials	Display panel	Color picture signaler for TV, monitor	19,521	6.0%	CSOT, AUO, BOE, etc.
	Production materials	Others	-	220,408	67.8%	
	Sub total			324,846	100.0%	
DS Division	Production materials	Chemical	Disk processing	13,656	16.3%	Soulbrain, DongWoo Fine-Chem, etc.
	Production materials	Wafer	Semiconductor disk	12,324	14.7%	SK Siltron, Siltronic, etc.
	Production materials	Others	-	57,658	69.0%	
	Sub total			83,638	100.0%	
SDC	Production materials	FPCA	Circuit	9,295	20.7%	BH, YP Electronics, etc.

Organization	Type of purchase	Item	Specific usage	Purchase price	Portion ¹⁾	Main supplier(s)
	Production materials	Window	Tempered glass	6,680	14.9%	Apple, Biel, etc.
	Production materials	Others	-	28,926	64.4%	
	Sub total			44,901	100.0%	
Harman	Production materials	SoC	Chips for vehicles	3,903	15.8%	Nvidia, Intel, etc.
	Production materials	Others	-	20,844	84.2%	
	Sub total			24,747	100.0%	
Others	Production materials	-	-	194	-	
Total				478,326	-	

Purchase price does not include sales between Divisions.

Semco is a subsidiary.

1) Portion of purchase price of each item compared to total purchase price for each Division's raw materials.

2) From 1H23 the price of Mobile AP Solutions (e.g., AP and AP-exclusive IC type materials) replaces the price of Mobile Aps, given the high correlation between APs and the surrounding components.

(KRW 100 mil)

Purchase Price	1H23	2022	2021
Mobile AP Solution	31,450	113,790	76,295

B. Production material price trends

On a year-on-year basis, the prices of mobile APs and camera modules, which are major production materials for the DX Division, increased approximately 30% and around 14%, respectively. The price of TV and monitor display panels decreased in the region of 4%. The prices of wafers for semiconductor disks increased by about 1%, and FPCAs for SDC declined by approximately 5%. The price of tempered glass windows also decreased, falling approximately 9%. For Harman, the price of SoCs increased by about 10% and memory for vehicles increased by approximately 7%.

From 1H23 the price of Mobile AP Solutions (e.g., AP and AP-exclusive IC type materials) replaces the price of Mobile Aps, given the high correlation between APs and the surrounding components.

Price trends	1H23	2022	2021
Mobile AP Solution	Increased 37% Y-Y	Increased 46% Y-Y	Similar Y-Y

C. Production capacity, output, utilization rate

(Capacity)

(1,000 units)

Organization	Item	Capacity		
		1H23	2022	2021
DX Division	Image devices	26,816	55,747	54,235
	HHP	147,750	332,170	319,550
DS Division	Memory	940,540,300	1,905,731,836	1,756,009,941
SDC	Display panel	1,142	2,700	3,604
Harman	Digital cockpit	5,649	11,257	9,066

Production capacity for major product categories on a consolidated basis.

The DX Divisions' production capacity, by major product, is calculated as follows:

- the average number of lines (x) the average output per hour (x) the average operation hours per day (x) standard days of operation

Memory production capacity for the DS Division is calculated as follows:

- converted output (after packaging, 1Gb equivalent) ÷ the utilization rate

SDC's production capacity is calculated as follows:

- the total producible panel surface area ÷ the dimensions of eighth generation glass (2,200x2,500mm)

Harman's production capacity for Digital cockpit is calculated as follows:

- the number of production (assembly and test) cells for each customer/product (x) the production capacity per hour by production cell (x) the standard operation hours per day (x) standard days of operation

(Output)

In 1H23, the DX Division's image device output was 19,268 thousand units (major production sites: Mexico, Vietnam, Brazil, and Hungary), and HHP output was 95,354 thousand units (major production sites: Korea [Gumi], Vietnam, India, and Brazil). The DS Division's memory output (1Gb equivalent) was 940,540 million (major production sites: Korea [Hwaseong, Pyeongtaek, etc.] and China). SDC's output of display panels was 639 thousand units (major production sites: Korea [Cheonan, Asan]). Harman's Digital cockpit output was 4,108 thousand units.

(1,000 units)

Organization	Item	Output		
		1H23	2022	2021
DX Division	Image devices	19,268	41,802	44,133
	HHP	95,354	229,180	260,501
DS Division	Memory	940,540,300	1,905,731,836	1,756,009,941
SDC	Display panel	639	2,008	2,849
Harman	Digital cockpit	4,108	8,334	6,928

Output for major product categories on a consolidated basis.

(Utilization rate)

DX utilization rates in 1H23 were calculated as actual output relative to production capacity. The utilization rates were 71.9% for image devices and 64.5% for HHPs.

(1,000 units)

Organization	Item	1H23		
		Production capacity	Output	Utilization rate
DX Division	Image devices	26,816	19,268	71.9%
	HHP	147,750	95,354	64.5%

The DS Division and SDC respectively operate memory and display panel production in three shifts (covering 24 hours a day). Cumulative operating days including holidays were 181 days in 1H23. The utilization rate was calculated as the actual production time relative to the potential production capacity [operating days (x) number of production lines (x) 24 hours].

(Hours)

Organization	Item	1H23		
		Potential production time	Actual production time	Utilization rate
DS Division	Memory	43,440	43,440	100%
SDC	Display panel	21,720	21,720	100%

In 1H23, Harman's utilization rate was 72.7% and was calculated as actual output relative to production capacity.

(1,000 units)

Organization	Item	1H23		
		Production capacity	Output	Utilization rate
Harman	Digital cockpit	5,649	4,108	72.7%

D. Production facilities and investment

(Key facilities for production and operation)

The Company's operational activities include production, development, marketing, and sales. In Korea, operations are located in Suwon, Gumi, Gwangju, Hwaseong, Pyeongtaek, and Asan. Overseas operations in North America, Europe, and China include a total of nine regional headquarters under the DX Division, five regional headquarters under the DS Division, and subsidiaries of SDC and Harman.

[Operations]

Region	Operations	Location
Korea (DX Division, DS Division, SDC – 12 work sites)	Suwon	Suwon
	Secho	Seoul
	Woomyeon	Seoul
	Giheung	Yongin
	Hwaseong	Hwaseong
	Pyeongtaek	Pyeongtaek
	Cheonan	Cheonan
	Onyang	Onyang
	Asan	Asan
	Gumi1	Gumi
	Gumi2	Gumi
	Gwangju	Gwangju
Overseas (DX Division - 9 regional headquarters)	North America	New Jersey, US
	Europe	Surrey, UK
	China	Beijing, China
	Southeast Asia	Singapore, Singapore
	Southwest Asia	Haryana, India
	CIS	Moscow, Russia
	Middle East	Dubai, UAE
	Africa	Johannesburg, South Africa
	Latin America	Sao Paulo, Brazil
Overseas (DS Division - 5 regional headquarters)	Americas	San Jose, US
	Europe	Eschborn, Germany
	China	Shanghai, China
	Southeast Asia	Singapore, Singapore
	Japan	Tokyo, Japan
Harman	North America HQ	Connecticut, US

Harman's automotive business is mainly based in the US (Novi, MI) and in Germany (Garching), and its Lifestyle business is located in the US (Northridge, CA)

The Company's property, plant and equipment include land, buildings and structures, machinery and equipment, and construction in progress. As of June 30, 2023, the total book value was KRW 177,869.9 billion, which is an increase of KRW 9,824.5 billion from year-end 2022.

(KRW 100 mil)

Classification		Land	Buildings and structures	Machinery and equipment	Under construction	Other tangible assets	Total
Dec 31, 2022	Book value	98,922	407,069	797,146	336,076	41,241	1,680,454
	- Acquisition cost	100,246	677,138	3,030,006	336,076	132,485	4,275,951
	- Accumulated depreciation (including impairment loss)	-1,324	-270,069	-2,232,860	-	-91,244	-2,595,497
Change	General acquisition and capital expenditure	1,491	15,478	97,754	141,789	6,481	262,993
	Depreciation ¹⁾	-247	-18,757	-148,591	-	-8,091	-175,686
	Disposal/discard/impairment	-77	-1,592	-271	-	-159	-2,099
	Others ²⁾	192	5,556	1,724	5,038	527	13,037
Mar 31, 2023	Book value	100,281	407,754	747,762	482,903	39,999	1,778,699
	- Acquisition cost	101,759	695,590	3,109,764	482,903	136,694	4,526,710
	- Accumulated depreciation (including impairment loss)	-1,478	-287,836	-2,362,002	-	-96,695	-2,748,011

Market value of major tangible assets is omitted as objective assessment is difficult.

1) Land-depreciation is depreciation expense of right-of-use asset as per K-IFRS 1116 (Lease).

2) Includes effects of FX rates and government subsidies.

(Capex)

The Company's capex in 1H23 was KRW 25.3 trillion, with investments concentrating on capacity expansions and migration to advanced nodes; and also on infrastructure for the DS Division and SDC. Amid deteriorated global market conditions, the Company in 2023 is pushing to continue investments to bolster future competitiveness and to ensure readiness for mid- to long-term demand. At the same time, the Company aims to boost investment efficiency to stabilize results.

[Capex, by organization]

(KRW 100 mil)

Organization	Purpose	Period	Assets	Investment
DS division	Establishment, addition, upgrade	January–June 2023	Buildings, facilities, etc.	232,473
SDC	Establishment, addition, upgrade	January– June 2023	Buildings, facilities, etc.	8,882
Other	Establishment, addition, upgrade	January– June 2023	Buildings, facilities, etc.	11,238
Total				252,593

4. Revenue and long-term contracts

A. Revenue

In 1H23, the Company recorded total revenue of KRW 123,750.9 billion, a decrease of 20.2% year-on-year. By organization, when compared to the same period last year, revenue of the DX Division, DS Division, and SDC decreased by 6.6%, 48.6%, and 16.5%, respectively, and revenue of Harman increased 17.9%.

(KRW 100 mil)

Organization	Revenue types	Product categories	1H23	2022	2021
DX Division	Goods, products, services, other	TVs, monitors, refrigerators, washing machines, air conditioners, HHPs, Network systems, computers, etc.	864,287	1,824,897	1,662,594
DS Division	Goods, products, services, other	DRAM, NAND flash, mobile APs, etc.	284,637	984,553	953,872
SDC	Goods, products, services, other	OLED panels for smartphones, etc.	130,972	343,826	317,125
Harman	Goods, products, services, other	Digital cockpit, telematics, speakers, etc.	66,616	132,137	100,399
Others	Overlapping internal transactions between Divisions		-109,003	-263,099	-237,942
Total			1,237,509	3,022,314	2,796,048

Includes inter-divisional transactions.

Figures for 2021 were adjusted to reflect the organizational changes in December 2021.

(1) Sales, by major product (on a consolidated basis)

(KRW 100 mil)

Classification	1H23	2022	2021
Image devices	146,807	332,795	314,974
Mobile devices	553,532	1,154,254	1,046,806
Memory	178,844	685,349	726,022
Display panels	130,972	343,826	317,125

Includes inter-divisional transactions.

(2) Revenue, by type

(KRW 100 mil)

Classification	1H23	2022	2021
Products	1,161,192	2,903,461	2,658,785
Services and other revenue	76,317	118,853	137,263
Total	1,237,509	3,022,314	2,796,048

Other revenue consists of royalty income, etc.

(3) Revenue, by region (on a separate basis)

(KRW 100 mil)

Classification	1H23	2022	2021
Domestic	106,840	221,799	221,497
Export	Americas	254,781	583,805
	Europe	114,392	258,227
	Asia and Africa	164,885	336,671
	China	178,080	597,247
Total	818,978	2,118,675	1,997,447

Domestic consumption and exports on a separate basis.

B. Sales channels

(1) Domestic

Seller	Sales channel	Consumer
Manufacturer and buyer	Exclusive agencies	Consumer
	Distributor (general merchandise stores, discount stores, department stores, home-shopping, online, etc.)	
	Telecommunication service provider (SKT Co., Ltd., KT Corp., LG Uplus Corp.)	
	Direct Sales (B2B and online channels)	

(2) Overseas

Seller	Sales channel				Consumer
Production subsidiaries	Regional sales office	Retailer			Consumer
		Dealer		Retailer	
		Distributor	Dealer	Retailer	
		Telecommunication service provider, automotive OEM			
		Direct sales (B2B and online channels)			
	Regional distribution office	Regional sales office	Retailer		
			Dealer	Retailer	
			Distributor	Dealer	

(3) Sales ratio (global), by channel

Channel	Wholesale	Retail	Special/direct sales	Others
Ratio	20%	31%	43%	6%

C. Sales methods and conditions

(1) Domestic

Classification	Channel	Collection	Incidental expense sharing
Exclusive	Retailer	Credit specific	Case specific cost sharing as determined by mutual agreement
Distributor	General merchandise store, discount store, department store, home shopping, online, etc.	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
Telecommunication service provider	SKT Co., Ltd., KT Corp. LG Uplus Corp.	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement (joint marketing)
B2B and online channels	Corporate clients, etc.	Case specific and contract specific	N/A

(2) Overseas

Classification	Channel	Collection	Incidental expense sharing
Retailer	Retail store	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
Dealer	General merchandise store, discount store, department store	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
Distributor	Direct sales to local distributors	Case specific and contract specific	Case specific cost sharing as determined by mutual agreement
B2B and online channels	Corporate clients, etc.	Case specific and contract specific	N/A

D. Sales strategy

- Expand market leadership based on premium products
- Provide differentiated value to customers through brand, products, and services
- Strengthen marketing activities to boost demand from customer/market

E. Major customers

In 1H23, major customers (listed alphabetically) included Apple, Best Buy, Deutsche Telekom, Qualcomm, and Verizon. Sales to the five major customers accounted for approximately 14% of total sales.

F. Long-term contracts

As of June 30, 2023, there were no long-term contracts that have a significant impact on the Company's financial statement.

5. Risk management and derivative trading

A. Financial risk management policy

The Company's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Company closely monitors each risk factor and operates corresponding financial risk management policies and program. The Company's use of derivative instruments for hedging risks are included in this program.

The finance team mainly carries out the Company's financial risk management. After implementing the global financial risk management policies, the finance team periodically measures, evaluates, and hedges financial risks.

Meanwhile, the Company manages exchange rate risk via monitoring exchange rates and conducting transactions through local finance centers in each major region (United States, United Kingdom, Singapore, China, Brazil, and Russia). Liquidity risk is managed by managing capital as a whole by each region.

The Company's assets that are under financial risk management consist of cash and cash equivalents, short-term financial instruments, financial assets at amortized cost, trade receivables and others. The Company's liabilities under financial risk management consist of trade payables, borrowings, and others.

B. Major financial risks

(1) Market risk

(Foreign exchange risk)

The Company operates internationally and is exposed to foreign exchange risks as it conducts transactions in currencies other than the functional currency. Major currencies that are exposed to foreign exchange risk include USD, EUR, INR, and others.

The Company focuses on minimizing the impact of foreign exchange fluctuation by maintaining the equal amount of assets and liabilities denominated in each foreign currency, irrespective of foreign exchange fluctuation considerations. To prevent exchange position, the Company's foreign exchange management policy requires normal business transactions, including import and export, as well as financing transactions such as depositing and borrowing, to be in local currency or for the cash-in currency to be matched up with the cash-out currency.

In order to effectively manage foreign exchange risk, the Company periodically monitors and evaluates exchange rate risk and strictly prohibits speculative foreign exchange transactions.

(Interest rate risk)

Risk of changes in interest rates for floating interest rate financial instruments is defined as the risk that the fair value of components of the consolidated statement of financial position, and future cash flows of interest income (expenses) of a financial instrument, will fluctuate because of changes in market interest rates. The Company's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Company implemented policies and operates to minimize uncertainty arising from changes in interest rates and financial expenses.

(Price risk)

The Company's investment portfolio consists of direct and indirect investments in equity securities classified as financial assets at fair value through other comprehensive income and financial assets at fair value through profit or loss, which is in line with the Company's strategy.

As of June 30, 2023, a price fluctuation of marketable equity securities (listed stocks) of 1% changes ‘other comprehensive income’ (before income tax) by KRW 81,526 million and ‘profit before tax’ by KRW 4,309 million. The figures as of the same date in 2022 were KRW 90,393 million and KRW 3,413 million, respectively.

(2) Credit risk

Credit risk arises during the normal course of transactions and investing activities where clients or other parties fail to discharge an obligation. The Company sets and manages the client’s and counterparty’s credit limit, and evaluates their financial credit rating on a periodic basis based on the client’s and counterparty’s financial conditions, default history and other important factors. Adequate insurance coverage is maintained for trade receivables related to trading partners situated in higher risk countries.

Credit risk can arise from transactions with financial institutions, which include financial instrument transactions such as cash and cash equivalents, savings, and derivative instruments. To minimize such risk, the Company transacts only with banks which have strong international credit rating (S&P A and above), and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Company’s finance team and the local finance center. The Company generally enters into a financial agreement with no restrictions, such as debt ratio covenants, provision of collateral, and loans or borrowings repayment. The Company requires separate approval for contracts with restrictions.

The Company estimates that its maximum exposure to credit risk is the carrying amount of its financial assets, net of impairment losses.

(3) Liquidity risk

Due to the nature of the Company’s business that requires making large investments, maintaining adequate level of liquidity risk is crucial. The Company maintains and manages adequate level of liquidity by periodically forecasting its capital balances, estimating required cash, managing income and expenses, and others.

The Company effectively manages its liquidity risk by periodically forecasting projected cash flows and by utilizing regional cash pooling, which allows for the use of internal funds when an entity in a region lacks liquidity. The cash-pooling program allows sharing of surplus funds among entities and contributes to minimizing liquidity risk and strengthening the Company’s competitive position by reducing capital operation expenses and financial expenses.

In addition, the Company’s headquarters provides payment guarantees to overseas subsidiaries to secure credit limit to brace for potential large-scale liquidity needs.

(4) Capital risk

The purpose of capital management is to protect our capability of continuously providing profit to our shareholders and stakeholders and to maintain a sound capital structure. To this end, the Company monitors capital on the basis of credit rating and the ratio of total liabilities to total equity.

As of June 30, 2023, the Company has an AA- and Aa2 credit rating from S&P and Moody’s, respectively, and the figures for total liabilities and total equity are as follows:

(KRW mil)

	June 30, 2023	Dec 31, 2022
Total liabilities	89,024,926	93,674,903
Total equity	358,975,626	354,749,604
Total liabilities to equity ratio	24.8%	26.4%

C. Derivative instruments and put options

The Company hedges foreign currency positions by trading currency forward contracts of currencies other than won for the purpose of managing foreign exchange risk. Currency forwards are bought through a bank in the purpose of trade and hedging.

As of June 30, 2023, the Company had 2,662 currency forward contracts involving 36 foreign currencies, including USD, EUR, JPY and the book value of assets and liabilities as well as valuation gain and loss were as follows:

	Assets	Liabilities	Valuation gain	Valuation loss
Currency forwards	108,161	100,053	397,730	597,822

(KRW mil)

According to the shareholders' agreement signed with Rainbow Robotics, its major shareholder, etc., the Company has the right, within a specific time period, to demand that the major shareholder, etc., sell all or part of their Rainbow Robotics shares to the Company or the third party designated by the Company. Moreover, the major shareholder, etc. of Rainbow Robotics has the right to demand that the Company sell all or part of the Company's Rainbow Robotics shares back to the major shareholder, etc., under certain conditions. Fair value of the above call option as of June 30, 2023, was evaluated by Deloitte Anjin LLC.

Furthermore, Samsung Display (a subsidiary of the Company) may exercise its put option to sell part of its shares of Corning Incorporated back to Corning, according to the stock trade contract with Corning on April 8, 2021.

Samsung Display may exercise its put option to sell all or part of its shares of TCL China Star Optoelectronics Technology Co. Ltd. (CSOT) to TCL Technology Group Corporation (TCL), if CSOT remains unlisted within the listing period, according to the shareholders' agreement executed with TCL and CSOT on April 1, 2021. Fair value of the above put option as of June 30, 2023, was evaluated by Earnest & Young Global Limited.

6. Major contracts and research and development activities

A. Major contracts

Account	Contract information	Contents
Cisco	Type	Patent cross-license agreement
	Date	Jan 23, 2014
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
Google	Type	Patent cross-license agreement
	Date	Jan 25, 2014 / indefinite term
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
	Other	Permanent license contract (including patent applications in the next 10 years)
GlobalFoundries Inc.	Type	Process technology license agreement
	Date	Feb 28, 2014
	Purpose and contents	Expand customer base of 14nm process
InterDigital	Type	Patent license agreement
	Date	Jun 3, 2014
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through patent licensing
Qualcomm	Type	Patent cross-license agreement
	Date	July 6, 2022
	Purpose and contents	Secure business flexibility through mutual patent licensing and signing of covenant not to sue
Apple	Type	Withdrawal of lawsuit agreement
	Date	Jun 26, 2018
	Purpose and contents	Withdraw from all lawsuits in the United States
Nokia	Type	Patent license agreement
	Date	Jan 19, 2023
	Purpose and contents	Secure business flexibility through patent licensing
Microsoft	Type	Patent cross-license agreement
	Date	Feb 11, 2019
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing

Account	Contract information	Contents
Google	Type	EMADA
	Date	Jan 1, 2023–Dec 31, 2023 (extended)
	Purpose and contents	Licensing agreement for using Google apps (Play Store, YouTube, etc.) in 31 European countries (EEA)
Huawei	Type	Patent cross-license agreement
	Date	Jul 13, 2022
	Purpose and contents	Secure business flexibility by securing mutual patent licensing
AMD	Type	Technology licensing agreement
	Date	May 30, 2019
	Purpose and contents	Secure mobile graphics design for mobile products and other applications
Sharp	Type	Patent cross-license agreement
	Date	July 30, 2019
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing
Ericsson	Type	Patent cross-license agreement
	Date	May 7, 2021
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through mutual patent licensing

Information that may be referenced or used in other IP disputes, including contract amount, is excluded.

B. Summary of R&D activities and expenditures

The Company is leading the global market by continuously developing creative and innovative products and the future technology through shifting its way of thinking and understanding customer demand. The Company is doing its utmost to cement its position in the global IT industry and become a worldwide leader in industrial technology by creating and securing next-generation technology.

As of June 30, 2023, the Company's R&D expenses were KRW 13,777.9 billion year-to-date. Among this, KRW 13,777.3 billion was recognized as expenditures, excluding government subsidies and capitalized expenses.

(R&D expenses)

		(KRW mil)		
		1H23	2022	2021
Total R&D expenditures		13,777,881	24,929,171	22,596,487
(Government subsidies)		-592	-9,973	-1,053
R&D expenditures		13,777,289	24,919,198	22,595,434
Accounting	Capitalization of development expenses (intangible asset)	-	-	-193,708
	R&D costs (expenses)	13,777,289	24,919,198	22,401,726
R&D expenses/revenue ratio ¹⁾		11.1%	8.2%	8.1%

On a consolidated basis.

1) Calculated using total R&D expenditures, which includes government subsidies.

C. R&D organization and operations

(Domestic)

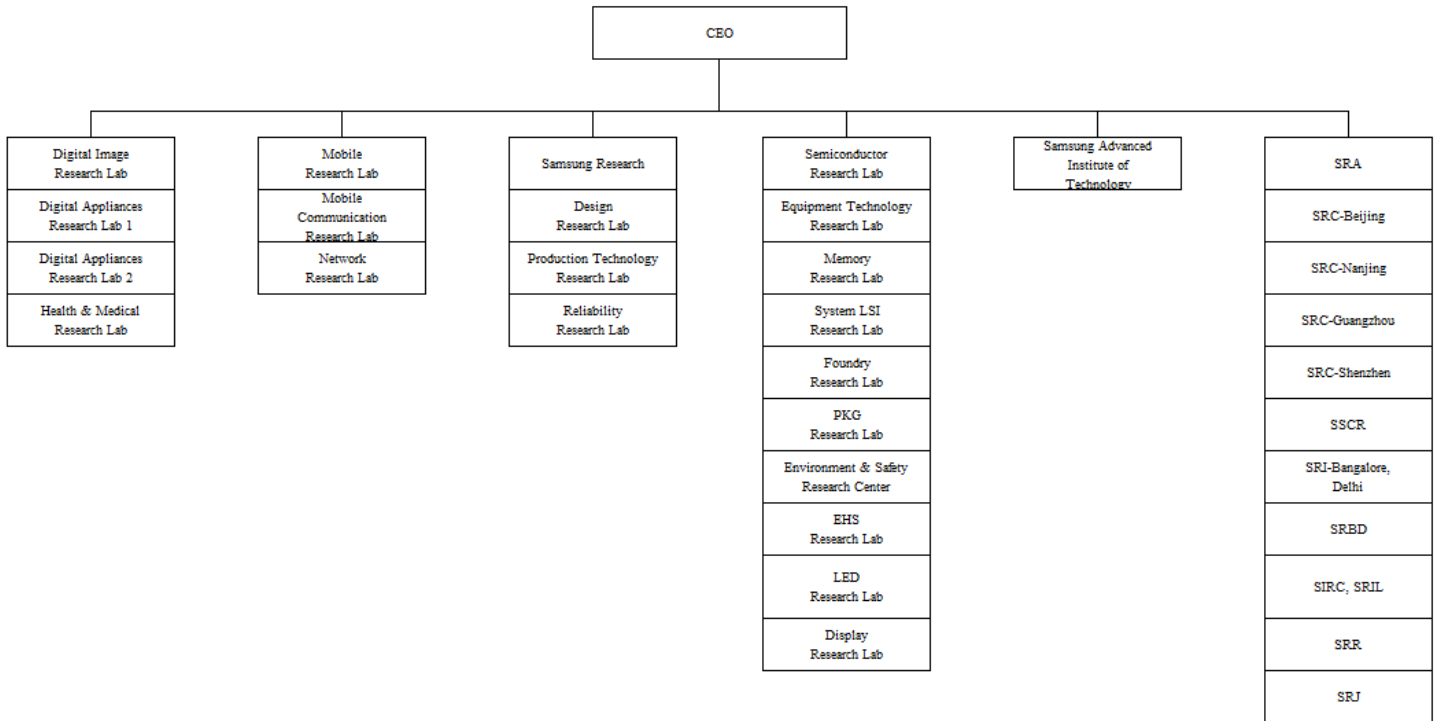
The Company operates three levels of R&D organizations: R&D teams of business units under each Division that develop market-ready technologies with a 1–2 year outlook; research institutes of each Division that develop mid- to long-term technology with a 3–5 year outlook; and the Samsung Advanced Institute of Technology, which develops core technology as seeds for future growth engines.

Samsung Advanced Institute of Technology is the central research institute of Samsung Electronics that has been established to lead the Company into the future and serve as an incubator of cutting-edge technology. It has a creative R&D system and provides R&D direction for promising growth sectors at the Company level, exploring future growth engines and strengthening technological competitiveness of core businesses.

(Overseas)

The Company operates R&D organizations in the US (SRA), China (SSCR, SRC-Beijing, SRC-Nanjing, SRC-Guangzhou, SRC-Shenzen), India (SRI-Bangalore and SRI-Delhi), Bangladesh (SRBD), Israel (SRIL and SIRC), Russia (SRR), and Japan (SRJ), to carry out research activities for product development and basic technological research.

The Company has established AI centers in Cambridge (United Kingdom), Moscow (Russia), Toronto (Canada), Montreal (Canada), and New York (United States), so our global team of researchers can collaborate with international experts to strengthen capabilities in AI technology.



As of June 30, 2023.

See 『1. Subsidiaries subject to consolidated financial statements (detailed)』 in 『XII. Appendix』 for more details about the current status of the overseas R&D (companies).

D. R&D results

The Company's key R&D results by organization in 1H23 are as follows:

DX Division	
Research project	Details
Vacuum cleaner	• Release of BESPOKE Jet AI 280W, a cordless stick vacuum with top-notch performance (suction power, run time, etc.)
Galaxy S23	• Launch of Galaxy S23 · S23+ · S23 Ultra
Galaxy A	• Rollout of A54 5G • Release of A34 5G • Release of A24 LTE • Launch of A14 LTE · 5G
Galaxy Book	• Rollout of Galaxy Book3 Ultra • Rollout of Galaxy Book3 Pro 360 • Release of Galaxy Book3 Pro • Launch of Galaxy Book3 360
Cell solution	• Development of Strand Small Cell (small cell solution designed to be installed on cables) for the first commercial use
DS Division	
Research project	Details
DRAM for server	• Mass production of the industry's most advanced 12nm-class DRAM
SSD	• Mass production of PM9C1a, a high-performance PC SSD equipped with a 5nm controller
Exynos	• Standardization of 5G non-terrestrial networks (NTN) modem technology for smartphone-satellite communication • Release of Exynos Connect U100, a chipset for short-range wireless communication
Image sensor	• Rollout of ultra-high resolution 200MP image sensor (HP2, 0.6um/200Mp)

SDC	
Research project	Details
OLED	<ul style="list-style-type: none"> • Development of ultra-high resolution OLED displays for VR • Development of 14"/16" OLED displays for laptops

Please refer to 『Appendix-4. R&D results (detailed)』 for more details.

7. Other information

A. Intellectual property

Intellectual property activities are an integral part of our R&D strategies—SEC registered its first US patent in 1984 and currently holds 234,156 patents around the world. The Company holds the highest number of its patents in the US and aims to address conflicts in the US more effectively.

(Number of patents registered in each country)

[As of June 30, 2023]

(Unit: No. of patents)

	Korea	US	Europe	China	Japan	Others	Total
Number	55,039	90,482	43,139	21,730	8,931	14,835	234,156

In 1H23, the Company invested KRW 13.8 trillion in R&D and registered 4,357 domestic and 4,276 US patents.

(Number of patent registrations per year)

(Unit: No. of patents)

	1H23	2022	2021
Korea	4,357	9,136	8,437
US	4,276	8,490	8,565

These patents are mostly related to smartphones, smart TVs, memory, and system LSI products for the Company's strategic business products or for future use. These patents not only protect the Company's business but also play a role in keeping similar technology and patents, as well as competitors, in check. Additionally, the Company is focusing on securing early patents in new technologies ahead of others, in order to protect opportunities and have the freedom to operate when entering new businesses.

The Company has licensing agreements with Cisco (signed in January 2014), Google (January 2014), Qualcomm (July 2022), Nokia (January 2023), Microsoft (February 2019), Sharp (July 2019), and Ericsson (May 2021) through which the Company has secured an extensive patent protection in mainstay businesses as well as in the fields of new business.

The Company has also been focusing on securing design patents to protect its original design applied to smartphones and smart TVs. In 1H23, the Company acquired 211 US design patents, in part for the aforementioned purposes.

B. Environmental regulations

The Company strictly abides by environmental regulations on products and in the workplace, as prescribed by law. In addition, in accordance with “the low carbon green growth policy” of the Korean government, the Company reports “the amount of greenhouse gas emission and energy use” to the government and provides related information to stakeholders by providing various reports, including the Samsung Sustainability Report.

(Environmental regulation of products)

Environmental regulation of products are becoming stricter, reflecting the concerns of governments and regulators about potential direct and indirect impact of products to consumers' health and safety as consumers. Accordingly, the Company is working to minimize the environmental impact throughout the entire life cycle of products from the development stage of components and products to manufacturing, distribution, use, and disposal. The Company offers "Eco-Partner Certification" to suppliers for components free of harmful substances, and runs an "eco-design evaluation" system to reflect eco-friendly elements on products (reduced use of resources, energy and harmful substances, and the use of eco-friendly materials) at the development stage, and operates a "waste electronics collection recycle system" in Europe, North America, Korea, and India for collecting and recycling waste electronics. These activities are in line with domestic and foreign environmental laws on electronics and are a differentiation factor for the Company and its products.

Relevant laws are as follows:

1. law on collection and recycle of waste electronics (e.g., EU WEEE Directive)
2. limit on the use of harmful substances (e.g., EU RoHS Directive, REACH Regulation)
3. regulation on energy efficiency (e.g., EU ErP Directive)

(Environmental regulations in the workplace)

The Company operates environmental pollution prevention facilities to reduce air pollution, water pollution, and waste disposal, and to minimize the discharge of pollutants, thereby minimizing impact on the surrounding environment.

Environmental management of workplace is supervised by the relevant government authorities. All production facilities, domestic and overseas, have acquired the International Occupational Health and Safety Management System Certification (ISO 14001, ISO 45001) to strengthen compliance.

Major Relevant Domestic and International Laws are as follows:

1. Regulations related to emission of pollutants: Water Quality and Ecosystem Conservation Act, Clean Air Conservation Act, Wastes Control Act, Noise and Vibration Control Act, Environmental Impact Assessment Act
2. Management of greenhouse gas emission: Act on Allocation and Trading of Greenhouse Gas Emission, Framework Act on Low Carbon, Green Growth
3. Others: Toxic Chemicals Control Act, Act on the Registration and Evaluation, etc. of Chemical Substances, Odor Control Law, Soil Environment Conservation Act

(Greenhouse gas emission and energy consumption management)

The Company is a “controlled entity” according to Article 42 (Coping with Climate Change and Management of Targets for Energy) Paragraph 6 of Korea’s “Framework Act on Low Carbon, Green Growth”. Thus, the Company has been reporting the amount of greenhouse gas emission and energy consumption, verified by a third-party, to the authorities and disclosing it to stakeholders according to Article 44 (Reporting on Quantity of Greenhouse Gases Emitted and Quantity of Energy Consumed) of the same Act since May 2011.

The reported amount of greenhouse gas emission and energy use are provided below:

(Unit: tCO₂-eq, TJ)

	2022	2021	2020
Greenhouse gas (tCO ₂ -eq)	19,289,286	19,267,835	17,234,522
Energy (TJ)	290,011	274,298	255,990

On a consolidated basis.

Domestic manufacturing facilities, office buildings, buildings owned by the Company, leased buildings, etc.

Reported Greenhouse gas emission excludes ozone depletion substances (ODS).

Amounts may differ based on results of governmental evaluations on emissions.

From 2015, in accordance with the Article 8 (Designation of Business Entities Eligible for Allocation) of the Act on the Allocation and Trading of Greenhouse-Gas Emission Permits, the Company is an eligible business entity under the Act.

C. Current status of each division

[DX Division]

□ Industry overview

1) TV Industry

TVs are key products of the DX Division, and the TV industry went through continual technological developments. The black-and-white TV was first developed in 1926, and in 1954, RCA started mass production and sales of 21" color TVs. Such developments have led to the creation of products such as the Trinitron CRT (1967) and flat CRT (1996). As the penetration rate in major countries reached over 90%, the growth of the CRT TV industry stagnated. The industry regained strong growth momentum following the launch of flat panel TVs (“FPTVs”) like LCDs and PDPs, especially with the expansion of digital broadcasting. FPTVs replaced CRT sets on the back of their enhanced design, picture quality, etc., combined with releases of competitively priced products.

The year 2010 saw the launch of 3D TVs, and the rise of internet video services along with increased consumer interest in smart devices from 2011 to 2012 led to the birth of the smart TV market. The evolution continued with the launches of Quantum Dot QLED TVs in 2017, boasting significantly enhanced resolution and picture quality, and with commercialization of 8K and Micro LED TVs.

2) Mobile phone industry

The mobile phone industry started with first generation analogue devices in the early 1980s that only supported voice communication and evolved to second generation digital ones, using technology such as CDMA and GSM, where users could send voice and text messages. Third generation mobile communication standards such as WCDMA allowed users to send photos and videos. Today, fourth generation LTE mobile communication technology with ultra-high-speed data transmission is becoming commonplace and was used in 83% of phones sold in 2022 (*TechInsights*, June 2023).

Fifth generation mobile communication services, which will lead innovation alongside the fourth industrial revolution, was

successfully launched in Korea and the US, and is now commercialized globally. As a result, 5G smartphones are accelerating the development of an ecosystem of mashup services and related industries, with the sales increasing sharply to 680 million units in 2022 from 270 million units in 2020 (*TechInsights*, June 2023).

The smartphone industry has grown significantly since 2007. In 2022, the smartphone portion of total HHP sales volume was approximately 82%, and the feature phone portion of the total was approximately 18%, with the latter related to demand in emerging markets (*TechInsights*, June 2023). For 2023, the penetration rate of smartphones is expected to have reached 53%, rising slightly from 52% in 2022 (*TechInsights*, July 2023).

Also, as the smartphone market shows high saturation, the importance of competitiveness of the overall experience based on software for applications, UX, games, media, digital wallets, AI, security, etc., is rising alongside that of competitive hardware, which includes high-performance APs, large screen AMOLED displays, foldable form factors, multiple cameras, sensors, waterproof & dustproof features, biometric recognition, and more.

□ Market condition

1) TV Industry

In 2022, TV demand declined compared to the previous year, falling to 203.28 million units sold due to the impacts of a decline in real household income triggered by the Russia-Ukraine war, increased supply instability of raw materials and energy, and expanded global inflation. However, in 2023, we project the market to grow slightly to 205.00 million units centering on emerging markets, such as Asia, Middle East, and Africa (*Omdia*, June 2023).

< Market share of TV >

Product	1H23	2022	2021
TV	31.1%	29.7%	29.5%

Global market share in revenue; from Omdia. (Data for 1H23 is an estimate from the Company.)

2) Mobile phone industry

The smartphone market is expected to slightly decline from 1.20 billion units in 2022 to 1.16 billion units in 2023 due to uncertainties such as continued geopolitical instability and inflation (*TechInsights*, June 2023). The tablet market, which continued to trend downward due to weak replacement demand, grew to 180 million units in 2021 thanks to an increase in contactless demand triggered by COVID-19. In 2022, it dropped to 160 million units, and in 2023, it is projected to decline to 150 million units (*TechInsights*, June 2023).

< Market share of Smartphone >

Product	1H23	2022	2021
Smartphone	21.2%	21.7%	20.0%

Global market share in quantity; data from research firm *TechInsights*. (Figure for 1H23 is estimate from *Strategy Analytics*.)
TechInsights acquired Strategy Analytics

□ Business condition

1) TV Industry

We have maintained the top position in the overall TV market for seventeen straight years since claiming the number one spot in 2006.

In 2018, we released world's first 8K TV in the global market, once again leading the premium segment in the TV industry. Our QLED lineup includes sizes ranging from mid-sized to ultra-large screens, giving customers a variety of choices. In addition, the significantly improved picture quality was well received by consumers and experts alike. We achieved solid results by introducing ultra-large screens in the UHD lineup as well as in the QLED lineup.

In 2020, we enhanced our leadership and dominance in the market with 4K and 8K QLED TVs and new Lifestyle TVs such as The Terrace, The Premiere and The Sero despite a global economic crisis due to COVID-19.

In 2021, we expanded our premium product lineup by launching Neo QLED TVs featuring significantly upgraded contrast and picture quality. Moreover, the sales portion of Lifestyle products and sound bars has increased, and a rising number of companies have participated in various smart ecosystems, including TV plus, home training, and games. Since 2021, we have been particularly strengthening our efforts toward becoming a more eco-friendly business, from raw materials to packaging, and we are enhancing accessibility to help the visually impaired and hard of hearing to conveniently use our products.

In 2022, we increased our market share in the premium, ultra-large, over 75" TV market centering on innovative Neo QLED 8K technologies and further reinforced our Lifestyle TV lineups by introducing The Freestyle.

In 2023, we will increase our market share by focusing on premium, flagship products, such as Neo QLED and Super Big TVs; and for Lifestyle TVs, we will expand our lineups and improve product performance to continue to provide our customers with products tailored to their needs. Furthermore, in line with the Company's new environmental strategy, we will increase adoption of recycled plastic materials in our eco-friendly remote controls and roll out TV products that apply ultra-low power technologies.

2) Mobile phone industry

SEC has always been at forefront of the HHP market, and for smartphones in particular, we have maintained leadership in the global market for eleven consecutive years.

To solidify our status in the overall mobile market, we continue to bolster the competitiveness of our products—including tablets, wearables, and accessories—as well as content and service businesses such as digital health and digital wallet.

For smartphones, we are establishing optimal portfolios for each region, accounting for varying market conditions and the competitive environment, offering a wide smartphone lineup ranging from mass-market to premium devices. We have been providing premium smartphones and delivering differentiated user experiences that can meet customer needs via our cutting-edge technology, which includes Dynamic AMOLED 2X (120Hz) displays, digital key and content sharing using UWB (ultra wideband), water- and dust-proofing, high-speed cable and wireless charging, ultrasonic fingerprint-on-display (FoD), high-resolution and optical zoom/night mode camera with AI technology, 8K video recording, on top of large-screen Infinity Displays.

In 2019, we secured early leadership in the 5G market with the release of the world's first 5G smartphone while also creating a new market with Galaxy Fold, enabled by foldable displays. In 2020, we continued to lead the foldable market with the launch of Galaxy Z Flip, a new form factor that folds from top down, and a further evolved edition Galaxy Z Fold 2. In 2021, we released the third generation Galaxy Z Series with significantly enhanced durability based on unrivaled craftsmanship, leading the foldable market.

In 2022, the market embraced the releases of Galaxy Z Fold 4 and Galaxy Z Flip 4, which featured further enhancements to the completeness of their respective core experiences—multi-tasking and Flex Mode. We continue to target achieving higher sales of foldable products relative to previous releases of Note models, with our mainstreaming of the new foldable series.

Moreover, for the Galaxy S23 Series (released in 2023), we strived to solidify our technology leadership by improving the product experiences that our consumers feel in their daily lives. In particular, S23 Ultra was well-received by the market as it offers a further enhanced night mode camera and zoom function leveraging 200MP image sensors; and increased adoption of high-density memory and eco-friendly materials.

Furthermore, to respond to an ever-changing market as well as customer needs, we are strengthening product competitiveness by introducing innovative features such as 5G, quad cameras, large infinity displays, and high-capacity batteries even to mid-range-and-below products.

In addition, we provide richer experiences for our smartphone users with our Galaxy Eco products, including tablets that help boost productivity via virtual meetings, multitasking, and note-taking with large-screen display and S Pen; and wearables such as smart watches that provide sophisticated fitness and wellness functions—thanks to the adoption of innovative biosensor technologies—and wireless earphones that provide rich, clear sound.

Not content to dwell on our achievements in hardware, we have been focusing on delivering new and helpful services like Samsung Pay, Samsung Health, and SmartThings. To deliver a consistent and high-quality Multi-Device Experience, we are adding Bixby features to a suite of products in addition to smartphones, including TVs, refrigerators, air conditioners, etc.

Moreover, we are strengthening strategic partnerships to expand our ecosystem, and we are securing new and innovative technologies by sustaining investments in fields with growth potential, including digital health and digital wallets, by utilizing SmartThings, Bixby, and Cloud, and by reinforcing our Service Business.

Furthermore, we continue to innovate eco-friendly technologies, including ones to expand adoption of recycled materials in our products. A prime example is the adoption of materials repurposed from discarded fishing nets in our key products, including Galaxy S22 and S23 series and Galaxy Z Fold 4.

We will continue to leverage our superior R&D capabilities to be fully prepared to keep delivering new value to customers.

[DS Division]

□ Industry overview

In general, our Semiconductor business is divided into Memory (storage) and System LSI (logical processing). Memory semiconductor is divided into RAM products (random access memory, ones that can be both written on and read) and ROM products (read only memory).

RAM is called volatile memory as the information is deleted when the power is turned off. It is used for temporary loading and storage of application programs. ROM is nonvolatile and holds memory even when power is removed; it is used in input/output system, IC cards, and more.

For System LSI products, there are many categories for various applications. SoCs for mobile devices that are equipped with CPUs, GPUs, ISPs (image signal processors), and modems are our major products. The Company manufactures mobile SoCs for smartphones and tablets, image sensors, and DDIs (display driver ICs) for OLED.

The Foundry Business makes customized semiconductors for other companies based on customer designs. The business resembles OEMs in the traditional manufacturing industry in the sense that companies consign the manufacturing of their products to fabrication plants, also called foundries or fabs. Due to increasing difficulty in semiconductor process and growing investment cost, the number of fabless semiconductor companies is growing, and the Foundry Business is in charge of consignment semiconductor production for such fabless companies.

□ Market condition

For Memory, despite continued inventory adjustments by server customers, demand for high-density/high-performance DRAM was strong as major hyperscalers increased their investments in AI applications. However, demand for storage was relatively weak as capex at server customers stayed similar but concentrated on investments related to AI. We actively addressed demand for DDR5 and HBM DRAM for AI and focused on addressing demand for high density and new interface applications; and we continued to strengthen our price competitiveness in NAND by expanding our advanced node portion.

In Foundry, market demand remained weak as effects of the global economic slowdown from 2H22 have delayed a recovery of the set market. However, we expect demand to recover gradually from 3Q23 thanks to a boost in smartphone demand combined with normalization of the supply chain; and also driven by high performance computing related to AI in the wake of the expansion of AI applications. We expect mid- to long-term growth to stay on track thanks to continued growth in mobile demand and heightened demand for high performance automotive-use SoCs for autonomous driving.

< Market share of DRAM >

Product	1H23	2022	2021
DRAM	41.9%	43.1%	43.0%

Global market share in revenue; data from research firm *DRAMeXchange*. (Data for 1H23 is an estimate from the Company.)

□ Business condition

For the Memory Business in 2H23, purchase demand is projected to recover gradually as inventory adjustments at customers wind down. Conditions are expected to improve half-on-half thanks to the launches of new smartphone models and PC promotions. Moreover, the adoption of DDR5 for server is likely to increase, driven by growth in AI demand and a greater shift toward high-core CPUs. Accordingly, while actively addressing rising DRAM demand led by the shift towards high-core CPUs, we plan to accelerate our portfolio enhancements with cutting-edge products, including DDR5, LPDDR5x and HBM3, to solidify our leadership in high-end server/mobile segments. For NAND, we will promptly meet customer needs for products like UFS4.0 while also strengthening cost competitiveness by expanding our portion of cutting-edge nodes, such as V7 and V8.

For System LSI, amid projections that major customers are likely to intensify inventory adjustments due to the continued global economic downturn and the stagnant mobile market in China, we will overcome challenges by strengthening cooperation with our customers, through timely development of new, next-generation products, and by bolstering our cost competitiveness. For SoCs, we are expanding our lineups via custom SoCs for mobile and SoCs for automotives in addition to developing products that apply mobile 5G SoCs and products from advanced nodes. Moreover, we are bolstering development of next-generation technologies, such as mobile satellite communications services, through cooperation with customers.

In Foundry, we are preparing throughout the business to overcome the still depressed market conditions and to ensure readiness for a market shift toward a growth phase. Yields of the 1st generation 3-nano GAA process are remaining stable, and the development of the 2nd generation process is on track, backed by our experience with the 1st generation process. We have also secured stable yields for 2nd generation 4-nano products; and we expect to reach our target yield for mass production of the 3rd generation process in 4Q. By concentrating on boosting the technological competitiveness of our advanced nodes, we will secure growth. Meanwhile, we are striving to address customer demand via timely capacity expansions by establishing new fabs, including in Pyeongtaek and Taylor, and by improving our ramp-up and supply capabilities. For mature nodes, we are endeavoring to overcome market conditions by winning new customers, increasing sales to our current customers, and strengthening our process portfolio. At the same time, we are improving our business structure, which is heavily focused on specific customers. In addition, we continue to enhance our cost competitiveness by refining process technology and increasing our portion of high-value-added products; and we are working to diversify our portfolio via expanding into and within various applications such as high-performance computing, automotive semiconductors, 5G and IoT.

[SDC]

□ Industry overview

Display refers to screens in electronic devices. Active matrix technology is most commonly used in displays, including OLED (organic light emitting diode), QD-OLED (quantum dot organic light emitting diode), and TFT-LCD (thin film transistor liquid crystal display).

OLED panels use organic materials, which offer sharp contrast and color, high color gamut, and fast response rates. Such differentiating features provide advantages for use in smartphones where display features (multimedia contents, online experience, etc.) are important, and as a result, OLED adoption in the smartphone market is growing rapidly.

The market had raised concerns over the production of high-resolution, durable panels, but we overcame various technological challenges and advanced the business. OLED panels make up for the shortcomings of LCD panels, and they can be increasingly adopted into other applications in foldables, rollables, automotives, etc. The OLED market is forecasted to keep growing. QD-OLED, a self-emissive display with quantum dots (semiconductor particles a few nanometers in size) in the panel to maximize color gamut and viewing angle, is capturing attention under expectations that it will lead the premium TV and monitor markets.

□ Market condition

The market for smartphone display panels is expected to slightly increase to 1.40 billion units in 2023 from 1.38 billion units in 2022. However, for smartphone-use OLED panels, the market is expected to grow to 0.59 billion units in 2023 from 0.57 billion units in 2022, and the OLED portion of smartphone panels in 2023 is anticipated to remain similar year-on-year at 42% (*Omdia*, July 2023).

The market size for large display panels was 0.90 billion units in 2022, and the size is projected to slightly decrease to 0.87 in 2023 (*Omdia*, June 2023).

< Market share of smartphone panel >

Product	1H23	2022	2021
Smartphone panels	48.8%	56.7%	51.4%

Global market share in revenue; figure for 1H23 is estimate from research firm *Omdia*.

□ Business condition

The Company has continued to stay atop the mobile OLED market in terms of market share since it successfully commercialized OLED products in 2007, marking a world's first. We diversified our product group to include displays for foldable products, tablets, watches, laptops, and automotive applications, solidifying our position as the top player in the OLED display market.

With both flexible and rigid OLED, our optimal smartphone product portfolio ranges from mass-market to premium devices as we proactively address customers' specific needs; and we are recognized as having best-in-class technology through our introduction of foldable and OLED IT products with differentiated technologies and designs.

In 2023, a demand recovery is likely to take longer than expected due to the global economic downturn. We will endeavor to upgrade the performance of our foldable products to bring them into the mainstream; expand the application of new technologies, such as high-luminance and low-power, in line with the needs of our customers; and enhance cost competitiveness to continue to increase adoption of OLED panels in smartphone products.

Furthermore, we are diversifying our mobile panel business—which is concentrated on smartphones—by ramping up our investment in 8.6G IT OLED lines in order to expand into IT, gaming, and automotive products and further solidify our business leadership.

In the large panel business, we will continue to increase our market share in the premium market by expanding the lineup of QD-OLED products and diversifying distributors.

[Harman]

□ Industry overview

Harman competes in the automotive and lifestyle audio industries. The automotive component business takes up the largest portion of Harman's business, and it operates business in areas such as digital cockpits, telematics, and car audio.

As consumers want cutting-edge technologies for connectivity and entertainment, car makers leverage Harman's automotive component solutions (involving digital cockpits, telematics, car audio, etc.) to satisfy consumer demand. In particular, recent innovations in car sharing and autonomous driving technologies continue to shape the requirements from car makers. As a result, competition is particularly fierce in the connectivity and entertainment solution markets between dominant players (e.g., Alpine, Aptiv, Continental, Mitsubishi, and Panasonic). Harman provides not only system solutions but also audio components (including speakers and amplifiers), and it is another segment where fierce competition between several major players (e.g., Bose, Pioneer, and Panasonic) is expected to drive technological advances as each firm introduces unique sound-management solutions. Competition is expected to remain intense.

Lifestyle audio business has two segments: consumer audio and professional audio solutions. Consumer audio (portable speakers, headphones, connected audio solutions, etc.) is fragmented and a handful of companies (Amazon, Beats, Bose, Ultimate Ears, etc.) are showing early signs of dominance. We expect competition to remain intense as new players try to make inroads, given the saturated market for connected homes and smart speakers. In particular, for True Wireless headphones, for which smartphone manufacturers dominate market share, is expected to grow explosively.

The professional audio solution industry (commercial audio, audio for large venues, etc., special lighting, video control solutions, etc.), led by QSC and Yamaha, is segmented by product and has seen the entrance of numerous companies offering a wide range of products and applications.

□ Market condition

Amid prolonged geopolitical risks stemming from the repercussions of the Russia-Ukraine war, macroeconomic uncertainties are anticipated to continue, including ones concerning supply chain disruptions in semiconductors and raw materials as well as those over additional monetary tightening policies from central banks around the world to curb inflation.

Considering such factors, global automobile production in 2023 is forecast to grow 4% year-on-year (*S&P Global Light Vehicle Production Forecast*, June 2023).

< Market share of digital cockpit >

Product	1H23	2022	2021
Digital cockpits	21.2%	24.7%	25.3%

Digital cockpits refer to the digital automotive component which enables safe driving environment via infotainment system, etc.
Company estimates based on I.H.S and LMC data (by unit).

□ Business condition

Harman is positioned to stay at the forefront of the automotive market. We will maintain the quality that is synonymous with Harman brands, and we will leverage the wide range of brands that extend from mass-market through to luxury models. Additionally, Harman's relentless pursuit of innovation in both hardware and software solutions will allow consumers to extend their digitized lives from outside vehicles to inside of them, thereby strengthening the in-vehicle experiences.

The same factors that Harman relies on within the automotive market will also be used in the consumer audio and professional audio solution market. Having won three Grammy Awards and two Academy Awards, Harman's brands have earned a strong reputation amongst everyday consumers and audiophiles alike. New offerings in up-and-coming segments such as connected wireless and smart audio continue to help bring in new consumers and further enhance brand reputation.

Harman also continues to develop its Digital Transformation Solutions (DTS) business, which aims to support car manufacturers to provide a service in which UX, cloud computing, big data, mobility, and IoT are integrated into one.

Harman will cooperate with its partners to minimize any risk amid the challenging business environment marked by deteriorated macroeconomic conditions and global geopolitical instability.

D. Financial summary, by organization

In 1H23 by organization, DX accounted for 69.8% of revenue with reported revenue of KRW 86,428.7 billion; DS contributed approximately 23.0% with revenue of KRW 28,463.7 billion; SDC was responsible for 10.6% with revenue of KRW 13,097.2 billion; and Harman contributed 5.4% with revenue of KRW 6,661.6 billion.

In 1H23, DX accounted for an operating profit of KRW 8,038.1 billion; DS with KRW -8,943.7 billion; SDC with a total operating profit of KRW 1,619.1 billion; and Harman with an operating profit of KRW 380.3 billion.

(KRW 100 mil)

Organization	Classification	1H23		2022		2021	
		Amount	Portion of corresponding total	Amount	Portion of corresponding total	Amount	Portion of corresponding total
DX Division	Revenue	864,287	69.8%	1,824,897	60.4%	1,662,594	59.5%
	Operating profit	80,381	614.2%	127,461	29.4%	173,866	33.7%
	Total assets	2,323,385	38.2%	2,279,669	38.6%	2,479,832	42.0%
DS Division	Revenue	284,637	23.0%	984,553	32.6%	953,872	34.1%
	Operating profit	-89,437	-683.4%	238,158	54.9%	291,920	56.5%
	Total assets	2,745,329	45.1%	2,620,558	44.3%	2,258,223	38.3%
SDC	Revenue	130,972	10.6%	343,826	11.4%	317,125	11.3%
	Operating profit	16,191	123.7%	59,530	13.7%	44,574	8.6%
	Total assets	734,446	12.1%	737,798	12.5%	668,836	11.3%
Harman	Revenue	66,616	5.4%	132,137	4.4%	100,399	3.6%
	Operating profit	3,803	29.1%	8,805	2.0%	5,991	1.2%
	Total assets	176,281	2.9%	171,023	2.9%	158,874	2.7%

Includes inter-divisional transactions.

Figures for 2021 were adjusted to reflect the organizational changes in December 2021.

□ Reasonable allocation of common SG&A (selling general & administrative) expenses and assets

(1) For common SG&A expenses, specific expenses that are allocable to a specific product/model are allocated to Divisions that are responsible for such product/model. However, common expenses that cannot be attributed to a specific product/model category are reasonably allocated throughout the Company based on an allocation standard (expense-to-revenue ratio, number of personnel, etc.).

(2) For common assets, assets that can be directly allocated (inventory assets, fixed assets, investment assets, etc.) are allocated to the corresponding organizational unit. Assets that are commonly managed and cannot be directly allocated are allocated to each Division based on an allocation standard (expense-to-revenue ratio, pre-tax profit, etc.)

III. Financial Affairs

1. Financial statements

A. Consolidated financial statements

(KRW mil)

Classification	First half of 55 th	54 th	53 rd
	June 30, 2023	December 31, 2022	December 31, 2021
Current assets	203,975,373	218,470,581	218,163,185
- Cash and cash equivalents	79,919,775	49,680,710	39,031,415
- Short-term financial instruments	17,180,130	65,102,886	81,708,986
- Other current financial assets	-	414,610	3,409,791
- Trade receivables	36,104,142	35,721,563	40,713,415
- Inventories	55,504,798	52,187,866	41,384,404
- Others	15,266,528	15,362,946	11,915,174
Non-current assets	244,025,179	229,953,926	208,457,973
- Other non-current financial assets	11,881,582	12,802,480	15,491,183
- Investment in associates and joint ventures	11,334,699	10,893,869	8,932,251
- Property, plant, and equipment	177,869,942	168,045,388	149,928,539
- Intangible assets	23,430,234	20,217,754	20,236,244
- Others	19,508,722	17,994,435	13,869,756
Total assets	448,000,552	448,424,507	426,621,158
Current liabilities	70,780,638	78,344,852	88,117,133
Non-current liabilities	18,244,288	15,330,051	33,604,094
Total liabilities	89,024,926	93,674,903	121,721,227
Equity attributable to owners of the parent company	349,042,413	345,186,142	296,237,697
- Capital stock	897,514	897,514	897,514
- Share premium	4,403,893	4,403,893	4,403,893
- Retained earnings	338,310,655	337,946,407	293,064,763
- Others	5,430,351	1,938,328	-2,128,473
Non-controlling interests	9,933,213	9,563,462	8,662,234
Total Equity	358,975,626	354,749,604	304,899,931
	Jan–Jun 2023	Jan–Dec 2022	Jan–Dec 2021
Revenue	123,750,904	302,231,360	279,604,799
Operating profit	1,308,725	43,376,630	51,633,856
Profit for the period	3,298,171	55,654,077	39,907,450
- Owners of the parent company	2,948,270	54,730,018	39,243,791
- Non-controlling interests	349,901	924,059	663,659
Basic earnings per share (KRW)	434	8,057	5,777
Diluted earnings per share (KRW)	434	8,057	5,777
Number of companies subject to consolidation accounting	233	232	229

Data shown in conformity with K-IFRS.

Please refer to the footnotes of the 52nd–54th Consolidated Audit Report for the calculation of basic earnings per share (ordinary shares).

B. Separate financial statements

(KRW mil)

Classification	First half of 55th	54th	53rd
	June 30, 2023	December 31, 2022	December 31, 2021
Current assets	73,472,493	59,062,658	73,553,416
- Cash and cash equivalents	12,892,470	3,921,593	3,918,872
- Short-term financial instruments	1,403	137	15,000,576
- Trade receivables	22,140,988	20,503,223	33,088,247
- Inventories	32,589,559	27,990,007	15,973,053
- Others	5,848,073	6,647,698	5,572,668
Non-current assets	212,555,100	201,021,092	177,558,768
- Other non-current financial assets	1,731,047	1,364,608	1,664,667
- Subsidiary, associate, and joint venture investments	57,359,028	57,397,249	56,225,599
- Property, plant and equipment	132,603,414	123,266,986	103,667,025
- Intangible assets	11,168,723	8,561,424	8,657,456
- Others	9,692,888	10,430,825	7,344,021
Total assets	286,027,593	260,083,750	251,112,184
Current liabilities	38,302,556	46,086,047	53,067,303
Non-current liabilities	29,536,245	4,581,512	4,851,149
Total liabilities	67,838,801	50,667,559	57,918,452
- Capital stock	897,514	897,514	897,514
- Share premium	4,403,893	4,403,893	4,403,893
- Retained earnings	213,225,614	204,388,016	188,774,335
- Others	-338,229	-273,232	-882,010
Total Equity	218,188,792	209,416,191	193,193,732
Evaluation method of subsidiary, associate, and joint venture investment securities	Cost methods	Cost methods	Cost methods
	Jan–Jun 2023	Jan–Dec 2022	Jan–Dec 2021
Revenue	81,897,767	211,867,483	199,744,705
Operating profit	-7,606,864	25,319,329	31,993,162
Profit for the period	13,742,728	25,418,778	30,970,954
Basic earnings per share (KRW)	2,023	3,742	4,559
Diluted earnings per share (KRW)	2,023	3,742	4,559

Data shown in conformity with K-IFRS.

Please refer to the footnotes of the 52nd–54th Consolidated Audit Report for the calculation of basic earnings per share (ordinary shares).

2. Consolidated financial statements

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2023 KRW	December 31, 2022 KRW	June 30, 2023 USD	December 31, 2022 USD
Assets					
Current assets					
Cash and cash equivalents	3, 25	79,919,775	49,680,710	61,700,345	38,354,925
Short-term financial instruments	3, 25	17,180,130	65,102,886	13,263,550	50,261,284
Short-term financial assets at amortized cost	3, 25	-	414,610	-	320,091
Short-term financial assets at fair value through profit or loss	3, 4, 25	25,310	29,080	19,540	22,451
Trade receivables	3, 25	36,104,142	35,721,563	27,873,427	27,578,065
Non-trade receivables	3, 25	5,822,772	6,149,209	4,495,346	4,747,365
Prepaid expenses		3,214,408	2,867,823	2,481,615	2,214,041
Inventories	5	55,504,798	52,187,866	42,851,287	40,290,521
Other current assets	3, 25	6,204,038	6,316,834	4,789,694	4,876,776
		203,975,373	218,470,581	157,474,804	168,665,519
Non-current assets					
Financial assets at fair value through other comprehensive income	3, 4, 25	10,308,125	11,397,012	7,958,166	8,798,818
Financial assets at fair value through profit or loss	3, 4, 25	1,573,457	1,405,468	1,214,754	1,085,061
Investments in associates and joint ventures	6	11,334,699	10,893,869	8,750,711	8,410,377
Property, plant and equipment	7	177,869,942	168,045,388	137,320,667	129,735,831
Intangible assets	8	23,430,234	20,217,754	18,088,809	15,608,683
Net defined benefit assets	11	5,143,048	5,851,972	3,970,580	4,517,889
Deferred income tax assets		5,527,377	5,101,318	4,267,293	3,938,363
Other non-current assets	3, 25	8,838,297	7,041,145	6,823,417	5,435,965
		244,025,179	229,953,926	188,394,397	177,530,987
Total assets		448,000,552	448,424,507	345,869,201	346,196,506

The above interim consolidated statements of financial position should be read in conjunction with the accompanying notes

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

Notes	June 30, 2023 KRW	December 31, 2022 KRW	June 30, 2023 USD	December 31, 2022 USD	
Liabilities and Equity					
Current liabilities					
Trade payables	3, 25	11,744,005	10,644,686	9,066,707	8,218,001
Short-term borrowings	3, 9, 25	3,557,360	5,147,315	2,746,383	3,973,874
Other payables	3, 25	15,020,336	17,592,366	11,596,128	13,581,808
Advances received	14	1,165,583	1,314,934	899,863	1,015,167
Withholdings	3, 25	756,934	1,298,244	584,375	1,002,281
Accrued expenses	3, 14, 25	25,402,072	29,211,487	19,611,124	22,552,101
Current income tax liabilities		2,601,584	4,250,397	2,008,497	3,281,428
Current portion of long-term liabilities	3, 9, 10, 25	1,263,841	1,089,162	975,721	840,864
Provisions	12	6,861,551	5,844,907	5,297,313	4,512,435
Other current liabilities	3, 14, 25	2,407,372	1,951,354	1,858,560	1,506,501
		70,780,638	78,344,852	54,644,671	60,484,460
Non-current liabilities					
Debentures	3, 10, 25	554,625	536,093	428,186	413,879
Long-term borrowings	3, 9, 25	3,763,250	3,560,672	2,905,336	2,748,940
Long-term other payables	3, 25	5,358,916	2,753,305	4,137,236	2,125,630
Net defined benefit liabilities	11	429,242	268,370	331,387	207,189
Deferred income tax liabilities		3,485,352	5,111,332	2,690,791	3,946,094
Long-term provisions	12	2,271,470	1,928,518	1,753,640	1,488,871
Other non-current liabilities	3, 14, 25	2,381,433	1,171,761	1,838,534	904,633
		18,244,288	15,330,051	14,085,110	11,835,236
Total liabilities		89,024,926	93,674,903	68,729,781	72,319,696

The above interim consolidated statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2023 KRW	December 31, 2022 KRW	June 30, 2023 USD	December 31, 2022 USD
Equity attributable to owners of the parent company					
Preference shares	15	119,467	119,467	92,232	92,232
Ordinary shares	15	778,047	778,047	600,674	600,674
Share premium		4,403,893	4,403,893	3,399,931	3,399,931
Retained earnings	16	338,310,655	337,946,407	261,185,471	260,904,262
Other components of equity	17	5,430,351	1,938,328	4,192,387	1,496,444
		349,042,413	345,186,142	269,470,695	266,493,543
Non-controlling interests		9,933,213	9,563,462	7,668,725	7,383,267
Total equity		358,975,626	354,749,604	277,139,420	273,876,810
Total liabilities and equity		448,000,552	448,424,507	345,869,201	346,196,506

The above interim consolidated statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF PROFIT OR LOSS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the three-month periods ended June 30,				For the six-month periods ended June 30,			
		2023	2022	2023	2022	2023	2022	2023	2022
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Revenue	26	60,005,533	77,203,607	46,325,982	59,603,386	123,750,904	154,985,105	95,539,226	119,652,920
Cost of sales	18	41,647,190	46,269,748	32,152,818	35,721,565	87,654,283	93,341,805	67,671,606	72,062,535
Gross profit		18,358,343	30,933,859	14,173,164	23,881,821	36,096,621	61,643,300	27,867,620	47,590,385
Selling and administrative expenses	18, 19	17,689,796	16,836,814	13,657,027	12,998,500	34,787,896	33,424,846	26,857,248	25,804,934
Operating profit	26	668,547	14,097,045	516,137	10,883,321	1,308,725	28,218,454	1,010,372	21,785,451
Other non-operating income	20	201,176	463,971	155,314	358,199	705,471	1,164,164	544,644	898,768
Other non-operating expense	20	169,057	600,393	130,517	463,521	373,039	1,053,503	287,997	813,334
Share of net profit of associates and joint ventures	6	199,941	259,229	154,360	200,132	413,782	491,706	319,452	379,611
Financial income	21	4,056,928	5,371,885	3,132,064	4,147,248	8,684,977	8,874,074	6,705,050	6,851,038
Financial expense	21	3,244,540	5,130,979	2,504,877	3,961,262	7,200,541	8,164,297	5,559,023	6,303,070
Profit before income tax		1,712,995	14,460,758	1,322,481	11,164,117	3,539,375	29,530,598	2,732,498	22,798,464
Income tax expense (income)	22	(10,576)	3,361,953	(8,165)	2,595,523	241,204	7,107,165	186,216	5,486,934
Profit for the period		1,723,571	11,098,805	1,330,646	8,568,594	3,298,171	22,423,433	2,546,282	17,311,530
Profit attributable to:									
Owners of the parent company		1,547,018	10,954,515	1,194,342	8,457,198	2,948,270	22,083,609	2,276,148	17,049,176
Non-controlling interests		176,553	144,290	136,304	111,396	349,901	339,824	270,134	262,354
Earnings per share (in Korean won, in US dollars)	23								
- Basic		228	1,613	0.18	1.25	434	3,251	0.34	2.51
- Diluted		228	1,613	0.18	1.25	434	3,251	0.34	2.51

The above interim consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the three-month periods ended June 30,				For the six-month periods ended June 30,			
		2023	2022	2023	2022	2023	2022	2023	2022
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Profit for the period		1,723,571	11,098,805	1,330,646	8,568,594	3,298,171	22,423,433	2,546,282	17,311,530
Other comprehensive income (loss)									
Items that will not be reclassified subsequently to profit or loss:									
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	475,009	(1,195,764)	366,720	(923,164)	1,471,490	(1,799,944)	1,136,032	(1,389,608)
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	(7,191)	(15,627)	(5,552)	(12,064)	22,697	(11,875)	17,523	(9,168)
Remeasurement of net defined benefit assets, net of tax	17	(102,927)	(34,481)	(79,463)	(26,620)	(350,551)	(97,369)	(270,635)	(75,171)
Items that may be reclassified subsequently to profit or loss:									
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	(50,332)	295,429	(38,858)	228,080	85,428	34,846	65,953	26,902
Foreign currency translation, net of tax	17	(403,003)	4,919,214	(311,130)	3,797,773	4,653,884	7,356,247	3,592,931	5,679,232
Gain on valuation of cash flow hedge derivatives	17	4,700	1,567	3,630	1,209	12,808	7,909	9,888	6,106
Other comprehensive income (loss) for the period, net of tax		(83,744)	3,970,338	(64,653)	3,065,214	5,895,756	5,489,814	4,551,692	4,238,293
Total comprehensive income for the period		1,639,827	15,069,143	1,265,993	11,633,808	9,193,927	27,913,247	7,097,974	21,549,823
Comprehensive income attributable to:									
Owners of the parent company		1,474,638	14,890,896	1,138,463	11,496,196	8,761,401	27,498,046	6,764,052	21,229,276
Non-controlling interests		165,189	178,247	127,530	137,612	432,526	415,201	333,922	320,547

The above interim consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In millions of Korean won)

For the six-month period ended June 30, 2022	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non- controlling interests	Total
Balance as of January 1, 2022		119,467	778,047	4,403,893	293,064,763	(2,128,473)	296,237,697	8,662,234	304,899,931
Profit for the period		-	-	-	22,083,609	-	22,083,609	339,824	22,423,433
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	(26,456)	(1,756,494)	(1,782,950)	(16,994)	(1,799,944)
Share of other comprehensive income of associates and joint ventures, net of tax	17	-	-	-	-	22,729	22,729	242	22,971
Foreign currency translation, net of tax		-	-	-	-	7,264,141	7,264,141	92,106	7,356,247
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(97,392)	(97,392)	23	(97,369)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	7,909	7,909	-	7,909
Total comprehensive income for the period		-	-	-	22,057,153	5,440,893	27,498,046	415,201	27,913,247
Dividends declared		-	-	-	(4,905,131)	-	(4,905,131)	(1,457)	(4,906,588)
Capital transactions under common control		-	-	-	-	-	-	(404)	(404)
Others		-	-	-	-	-	-	478	478
Total transactions with owners		-	-	-	(4,905,131)	-	(4,905,131)	(1,383)	(4,906,514)
Balance as of June 30, 2022		119,467	778,047	4,403,893	310,216,785	3,312,420	318,830,612	9,076,052	327,906,664

The above interim consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In thousands of US dollars (Note 2.3))

For the six-month period ended June 30, 2022	Note s	Preference shares	Ordinary shares	Share premium	Retained earnings	Other component s of equity	Equity attributable to owners of the parent company	Non- controlling interests	Total
Balance as of January 1, 2022		92,232	600,674	3,399,931	226,254,353	(1,643,242)	228,703,948	6,687,492	235,391,440
Profit for the period		-	-	-	17,049,176	-	17,049,176	262,354	17,311,530
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	(20,425)	(1,356,063)	(1,376,488)	(13,120)	(1,389,608)
Share of other comprehensive income of associates and joint ventures, net of tax	17	-	-	-	-	17,547	17,547	187	17,734
Foreign currency translation, net of tax		-	-	-	-	5,608,124	5,608,124	71,108	5,679,232
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(75,189)	(75,189)	18	(75,171)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	6,106	6,106	-	6,106
Total comprehensive income for the period		-	-	-	17,028,751	4,200,525	21,229,276	320,547	21,549,823
Dividends declared		-	-	-	(3,786,901)	-	(3,786,901)	(1,125)	(3,788,026)
Capital transactions under common control		-	-	-	-	-	-	(312)	(312)
Others		-	-	-	-	-	-	369	369
Total transactions with owners		-	-	-	(3,786,901)	-	(3,786,901)	(1,068)	(3,787,969)
Balance as of June 30, 2022		92,232	600,674	3,399,931	239,496,203	2,557,283	246,146,323	7,006,971	253,153,294

The above interim consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In millions of Korean won)

For the six-month period ended June 30, 2023	Note s	Preference shares	Ordinary shares	Share premium	Retained earnings	Other component s of equity	Equity attributable to owners of the parent company	Non- controlling interests	Total
Balance as of January 1, 2023		119,467	778,047	4,403,893	337,946,407	1,938,328	345,186,142	9,563,462	354,749,604
Profit for the period		-	-	-	2,948,270	-	2,948,270	349,901	3,298,171
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	2,321,108	(897,106)	1,424,002	47,488	1,471,490
Share of other comprehensive income of associates and joint ventures, net of tax	17	-	-	-	-	104,471	104,471	3,654	108,125
Foreign currency translation, net of tax		-	-	-	-	4,622,266	4,622,266	31,618	4,653,884
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(350,415)	(350,415)	(136)	(350,551)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	12,807	12,807	1	12,808
Total comprehensive income for the period		-	-	-	5,269,378	3,492,023	8,761,401	432,526	9,193,927
Dividends declared		-	-	-	(4,905,130)	-	(4,905,130)	(61,116)	(4,966,246)
Capital transactions under common control		-	-	-	-	-	-	(825)	(825)
Others		-	-	-	-	-	-	(834)	(834)
Total transactions with owners		-	-	-	(4,905,130)	-	(4,905,130)	(62,775)	(4,967,905)
Balance as of June 30, 2023		119,467	778,047	4,403,893	338,310,655	5,430,351	349,042,413	9,933,213	358,975,626

The above interim consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(In thousands of US dollars (Note 2.3))

For the six-month period ended June 30, 2023	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2023		92,232	600,674	3,399,931	260,904,262	1,496,444	266,493,543	7,383,267	273,876,810
Profit for the period		-	-	-	2,276,148	-	2,276,148	270,134	2,546,282
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	1,791,961	(692,590)	1,099,371	36,661	1,136,032
Share of other comprehensive income of associates and joint ventures, net of tax	17	-	-	-	-	80,655	80,655	2,821	83,476
Foreign currency translation, net of tax		-	-	-	-	3,568,521	3,568,521	24,410	3,592,931
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(270,530)	(270,530)	(105)	(270,635)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	9,887	9,887	1	9,888
Total comprehensive income for the period		-	-	-	4,068,109	2,695,943	6,764,052	333,922	7,097,974
Dividends declared		-	-	-	(3,786,900)	-	(3,786,900)	(47,183)	(3,834,083)
Capital transactions under common control		-	-	-	-	-	-	(637)	(637)
Others		-	-	-	-	-	-	(644)	(644)
Total transactions with owners		-	-	-	(3,786,900)	-	(3,786,900)	(48,464)	(3,835,364)
Balance as of June 30, 2023		92,232	600,674	3,399,931	261,185,471	4,192,387	269,470,695	7,668,725	277,139,420

The above interim consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the six-month period ended June 30,			
		2023 KRW	2022 KRW	2023 USD	2022 USD
Operating activities					
Profit for the period		3,298,171	22,423,433	2,546,282	17,311,530
Adjustments	24	21,958,025	28,057,798	16,952,221	21,661,420
Changes in assets and liabilities arising from operating activities	24	(8,273,365)	(19,427,200)	(6,387,273)	(14,998,353)
Cash generated from operations		16,982,831	31,054,031	13,111,230	23,974,597
Interest received		2,429,443	706,755	1,875,599	545,635
Interest paid		(441,850)	(264,834)	(341,121)	(204,459)
Dividends received		52,618	229,806	40,623	177,417
Income tax paid		(4,561,353)	(7,136,623)	(3,521,495)	(5,509,678)
Net cash from operating activities		14,461,689	24,589,135	11,164,836	18,983,512
Investing activities					
Net decrease (increase) in short-term financial instruments		43,879,546	(906,942)	33,876,261	(700,185)
Net decrease in short-term financial assets at amortized cost		416,095	2,198,246	321,237	1,697,109
Net decrease (increase) in short-term financial assets at fair value through profit or loss		3,770	(14,748)	2,911	(11,386)
Disposal of long-term financial instruments		4,491,705	5,343,921	3,467,724	4,125,659
Acquisition of long-term financial instruments		(534)	(4,326,888)	(412)	(3,340,481)
Disposal of financial assets at fair value through other comprehensive income		3,750,752	484,094	2,895,687	373,734
Acquisition of financial assets at fair value through other comprehensive income		(20,013)	(15,385)	(15,451)	(11,878)
Disposal of financial assets at fair value through profit or loss		38,818	157,878	29,969	121,886
Acquisition of financial assets at fair value through profit or loss		(69,368)	(76,726)	(53,554)	(59,235)
Disposal of investments in associates and joint ventures		17,839	6,933	13,772	5,352
Acquisition of investments in associates and joint ventures		(65,182)	(903,758)	(50,322)	(697,727)
Disposal of property, plant and equipment		67,844	105,839	52,378	81,711
Acquisition of property, plant and equipment		(29,373,990)	(20,157,775)	(22,677,558)	(15,562,377)
Disposal of intangible assets		11,253	19,036	8,688	14,696
Acquisition of intangible assets		(1,620,300)	(1,576,361)	(1,250,918)	(1,216,996)
Cash outflow from business combinations		-	(31,383)	-	(24,229)
Cash outflow from other investing activities		(505,671)	(235,248)	(390,392)	(181,618)
Net cash from (used in) investing activities		21,022,564	(19,929,267)	16,230,020	(15,385,965)

Samsung Electronics Co., Ltd. and its subsidiaries

INTERIM CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the six-month period ended June 30,			
		2023	2022	2023	2022
		KRW	KRW	USD	USD
Financing activities					
Net decrease in short-term borrowings		(1,503,980)	(668,224)	(1,161,115)	(515,888)
Increase in long-term borrowings		193,279	73,224	149,217	56,531
Repayment of debentures and long-term borrowings		(543,400)	(955,802)	(419,520)	(737,906)
Dividends paid		(4,905,792)	(4,906,518)	(3,787,411)	(3,787,972)
Net decrease in non-controlling interests		(827)	(323)	(640)	(250)
Net cash used in financing activities		(6,760,720)	(6,457,643)	(5,219,469)	(4,985,485)
Effect of foreign exchange rate changes		1,515,532	2,349,501	1,170,033	1,813,887
Net increase in cash and cash equivalents		30,239,065	551,726	23,345,420	425,949
Cash and cash equivalents					
Beginning of the period		49,680,710	39,031,415	38,354,925	30,133,365
End of the period		79,919,775	39,583,141	61,700,345	30,559,314

The above interim consolidated statements of cash flows should be read in conjunction with the accompanying notes.

3. Notes to consolidated financial statements

1. General Information

1.1 Company Overview

Samsung Electronics Co., Ltd. (“SEC”) was incorporated under the laws of the Republic of Korea in 1969 and listed its shares on the Korea Stock Exchange in 1975. SEC and its subsidiaries (collectively referred to as the “Company”) operate four business divisions: DX, DS, SDC and Harman. DX (Device eXperience) division comprises businesses for digital TVs, refrigerators, mobile phones and communication systems. DS (Device Solutions) division comprises businesses for memory, foundry, and system LSI. SDC includes display panels products. Harman division includes connected car systems, audio and visual products, enterprise automation solutions and connected services. SEC is domiciled in the Republic of Korea and is located in Suwon, the Republic of Korea.

These consolidated financial statements have been prepared in accordance with Korean International Financial Reporting Standards (“Korean IFRS”) 1110, *Consolidated Financial Statements*. SEC, as the controlling company, consolidates its 233 subsidiaries, including Samsung Display and Samsung Electronics America. The Company also applies the equity method of accounting for its 38 associates and joint ventures, including Samsung Electro-Mechanics Co., Ltd.

1.2 Consolidated Subsidiaries

The consolidated subsidiaries as of June 30, 2023 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	Samsung Electronics America, Inc. (SEA)	Sale of electronic devices	100.0
	Samsung International, Inc. (SII)	Manufacture of electronic devices	100.0
	Samsung Mexicana S.A. de C.V (SAMEX)	Manufacture of electronic devices	100.0
	Samsung Electronics Home Appliances America, LLC (SEHA)	Manufacture of home appliances	100.0
	Samsung Research America, Inc. (SRA)	R&D	100.0
	Samsung Next LLC (SNX)	Management of overseas subsidiaries	100.0
	Samsung Next Fund LLC (SNXF)	Technology business, venture capital investments	100.0
	NeuroLogica Corp.	Manufacture and sale of medical equipment	100.0
	Samsung HVAC America, LLC	Sale of air conditioning products	100.0
	Joyent, Inc.	Cloud services	100.0
America	SmartThings, Inc.	Sale of smart home electronics	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	100.0
	Samsung Federal, Inc. (SFI)	R&D	100.0
	Samsung Austin Semiconductor LLC. (SAS)	Manufacture of semiconductors	100.0
	Samsung Oak Holdings, Inc. (SHI)	Management of overseas subsidiaries	100.0
	SEMES America, Inc.	Semiconductor equipment	100.0
	Emerald Intermediate, Inc.	Management of overseas subsidiaries	100.0
	Emerald Merger Sub, Inc.	Management of overseas subsidiaries	100.0
	Samsung Electronics Canada, Inc. (SECA)	Sale of electronic devices	100.0
	AdGear Technologies Inc.	Digital advertising platforms	100.0

^(*) Ownership represents the Company’s ownership of the voting rights in each entity, including subsidiaries’ ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	Samsung Electronica da Amazonia Ltda. (SEDA)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Mexico S.A. de C.V. (SEM)	Sale of electronic devices	100.0
	Samsung Electronics Digital Appliance Mexico, S.A. de C.V. (SEDAM)	Manufacture of home appliances	100.0
	Samsung Electronics Latinoamerica (Zona Libre), S. A. (SELA)	Sale of electronic devices	100.0
	Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	Sale of electronic devices	100.0
	Samsung Electronica Colombia S.A. (SAMCOL)	Sale of electronic devices	100.0
	Samsung Electronics Argentina S.A. (SEASA)	Marketing and services	100.0
	Samsung Electronics Chile Limitada (SECH)	Sale of electronic devices	100.0
	Samsung Electronics Peru S.A.C. (SEPR)	Sale of electronic devices	100.0
	Samsung Electronics Venezuela, C.A. (SEVEN)	Marketing and services	100.0
	Samsung Electronics Panama. S.A. (SEPA)	Consulting	100.0
	Harman International Industries, Inc.	Management of overseas subsidiaries	100.0
America	Harman Becker Automotive Systems, Inc.	Manufacture and sale of audio products, R&D	100.0
	Harman Connected Services, Inc.	Connected service provider	100.0
	Harman Connected Services Engineering Corp.	Connected service provider	100.0
	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Manufacture and sale of audio products	100.0
	Harman de Mexico, S. de R.L. de C.V.	Manufacture of audio products	100.0
	Harman do Brasil Industria Eletronica e Participacoes Ltda.	Sale of audio products, R&D	100.0
	Harman Financial Group LLC	Management company	100.0
	Harman International Industries Canada Ltd.	Sale of audio products	100.0
	Harman International Mexico, S. de R.L. de C.V.	Sale of audio products	100.0
	Harman KG Holding, LLC	Management of overseas subsidiaries	100.0
	Harman Professional, Inc.	Sale of audio products, R&D	100.0
	Beijing Integrated Circuit Industry International Fund, L.P	Venture capital investments	61.4
	China Materialia New Materials 2016 Limited Partnership	Venture capital investments	99.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	Samsung Electronics (UK) Ltd. (SEUK)	Sale of electronic devices	100.0
	Samsung Electronics Ltd. (SEL)	Management of overseas subsidiaries	100.0
	Samsung Semiconductor Europe Limited (SSEL)	Sale of semiconductor and display panels	100.0
	Samsung Electronics GmbH (SEG)	Sale of electronic devices	100.0
	Samsung Electronics Holding GmbH (SEHG)	Management of overseas subsidiaries	100.0
	Samsung Semiconductor Europe GmbH (SSEG)	Sale of semiconductor and display panels	100.0
	Samsung Electronics France S.A.S (SEF)	Sale of electronic devices	100.0
	Samsung Electronics Italia S.P.A. (SEI)	Sale of electronic devices	100.0
	Samsung Electronics Iberia, S.A. (SESA)	Sale of electronic devices	100.0
	Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP)	Sale of electronic devices	100.0
	Samsung Electronics Hungarian Private Co., Ltd. (SEH)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Europe Logistics B.V. (SELS)	Logistics	100.0
	Samsung Electronics Benelux B.V. (SEBN)	Sale of electronic devices	100.0
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	Management of overseas subsidiaries	100.0
	Samsung Electronics Nordic Aktiebolag (SENA)	Sale of electronic devices	100.0
	Samsung Electronics Slovakia s.r.o (SESK)	Manufacture of TV and monitors	100.0
	Samsung Display Slovakia, s.r.o., v likvidácii (SDSK)	Toll processing of display panels	100.0
	Samsung Electronics Polska, SP.Zo.o (SEPOL)	Sale of electronic devices	100.0
	Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	Manufacture of home appliances	100.0
Europe/CIS	Samsung Electronics Romania LLC (SEROM)	Sale of electronic devices	100.0
	Samsung Electronics Austria GmbH (SEAG)	Sale of electronic devices	100.0
	Samsung Electronics Switzerland GmbH (SESG)	Sale of electronic devices	100.0
	Samsung Electronics Czech and Slovak s.r.o. (SECZ)	Sale of electronic devices	100.0
	Samsung Electronics Baltics SIA (SEB)	Sale of electronic devices	100.0
	Samsung Electronics Greece S.M.S.A (SEGR)	Sale of electronic devices	100.0
	Samsung Electronics Air Conditioner Europe B.V. (SEACE)	Sale of air conditioning products	100.0
	Samsung Nanoradio Design Center (SNDC)	R&D	100.0
	Samsung Denmark Research Center ApS (SDRC)	R&D	100.0
	Samsung Cambridge Solution Centre Limited (SCSC)	R&D	100.0
	SAMSUNG Zhilabs, S.L.	Development and sale of network solutions	100.0
	FOODIENT LTD.	R&D	100.0
	Samsung Electronics Rus Company LLC (SERC)	Sale of electronic devices	100.0
	Samsung Electronics Rus Kaluga LLC (SERK)	Manufacture of TV	100.0
	Samsung Electronics Ukraine Company LLC (SEUC)	Sale of electronic devices	100.0
	Samsung R&D Institute Ukraine (SRUKR)	R&D	100.0
	Samsung Electronics Central Eurasia LLP (SECE)	Sale of electronic devices	100.0
	Samsung Electronics Overseas B.V. (SEO)	Sale of electronic devices	100.0
	Samsung R&D Institute Rus LLC (SRR)	R&D	100.0
	Samsung Electronics Caucasus Co., Ltd. (SECC)	Marketing	100.0
	Samsung Electronics Uzbekistan Ltd. (SEUZ)	Sale of electronic devices	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	AKG Acoustics GmbH	Manufacture and sale of audio products	100.0
	Apostera UA, LLC	Connected Service Provider	100.0
	Harman Audio Iberia Espana Sociedad Limitada	Sale of audio products	100.0
	Harman Automotive UK Limited	Manufacture of audio products	100.0
	Harman Becker Automotive Systems GmbH	Manufacture and sale of audio products, R&D	100.0
	Harman Becker Automotive Systems Italy S.R.L.	Sale of audio products	100.0
	Harman Becker Automotive Systems Manufacturing Kft	Manufacture of audio products, R&D	100.0
	Harman Belgium SA	Sale of audio products	100.0
	Harman Connected Services AB.	Connected service provider	100.0
	Harman Finland Oy	Connected service provider	100.0
	Harman Connected Services GmbH	Connected service provider	100.0
	Harman Connected Services Poland Sp.zoo	Connected service provider	100.0
	Harman Connected Services UK Ltd.	Connected service provider	100.0
	Harman Consumer Nederland B.V.	Sale of audio products	100.0
	Harman Deutschland GmbH	Sale of audio products	100.0
Europe/CIS	Harman Finance International GP S.a.r.l	Management of overseas subsidiaries	100.0
	Harman France SNC	Sale of audio products	100.0
	Harman Holding GmbH & Co. KG	Management company	100.0
	Harman Hungary Financing Ltd.	Financing company	100.0
	Harman Inc. & Co. KG	Management of overseas subsidiaries	100.0
	Harman International Estonia OU	R&D	100.0
	Harman International Industries Limited	Sale of audio products, R&D	100.0
	Harman International Romania SRL	R&D	100.0
	Harman Finance International, SCA	Financing company	100.0
	Harman Management GmbH	Management of overseas subsidiaries	100.0
	Harman Professional Kft	Manufacture of audio products, R&D	100.0
	Harman Professional Denmark ApS	Sale of audio products, R&D	100.0
	Red Bend Software S.A.S	Software design	100.0
	Studer Professional Audio GmbH	Sale of audio products, R&D	100.0
	Harman Connected Services OOO	Connected service provider	100.0
	Harman RUS CIS LLC	Sale of audio products	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
Middle East & Africa	Samsung Gulf Electronics Co., Ltd. (SGE)	Sale of electronic devices	100.0
	Samsung Electronics Turkiye (SETK)	Sale of electronic devices	100.0
	Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Manufacture of electronic devices	100.0
	Samsung Electronics Levant Co.,Ltd. (SELV)	Sale of electronic devices	100.0
	Samsung Electronics Maghreb Arab (SEMAG)	Sale of electronic devices	100.0
	Samsung Electronics Egypt S.A.E (SEEG)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Israel Ltd. (SEIL)	Marketing	100.0
	Samsung Electronics Tunisia S.A.R.L (SETN)	Marketing	100.0
	Samsung Electronics Pakistan(Private) Ltd. (SEPAK)	Marketing	100.0
	Samsung Electronics Saudi Arabia Ltd. (SESAR)	Sale of electronic devices	100.0
	Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	R&D	100.0
	Corephotonics Ltd.	R&D	100.0
	Samsung Electronics South Africa(Pty) Ltd. (SSA)	Sale of electronic devices	100.0
	Samsung Electronics South Africa Production (Pty) Ltd. (SSAP)	Manufacture of TV and monitors	100.0
	Samsung Electronics West Africa Ltd. (SEWA)	Marketing	100.0
	Samsung Electronics East Africa Ltd. (SEEA)	Marketing	100.0
	Global Symphony Technology Group Private Ltd.	Management of overseas subsidiaries	100.0
	Harman Connected Services Morocco	Connected service provider	100.0
	Harman Industries Holdings Mauritius Ltd.	Management of overseas subsidiaries	100.0
	Red Bend Ltd.	Manufacture of audio products	100.0
Asia (Excluding China)	Samsung Asia Pte. Ltd. (SAPL)	Management of overseas subsidiaries	100.0
	Samsung Electronics Singapore Pte. Ltd. (SESP)	Sale of electronic devices	100.0
	Samsung Malaysia Electronics (SME) Sdn. Bhd. (SME)	Sale of electronic devices	100.0
	Samsung Electronics Display (M) Sdn. Bhd. (SDMA)	Manufacture of electronic devices	100.0
	Samsung Electronics (M) Sdn. Bhd. (SEMA)	Manufacture of home appliances	100.0
	Samsung Vina Electronics Co., Ltd. (SAVINA)	Sale of electronic devices	100.0
	Samsung Electronics Vietnam Co., Ltd. (SEV)	Manufacture of electronic devices	100.0
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Manufacture of communication equipment	100.0
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Manufacture and sale of electronic devices	100.0
	Samsung Display Vietnam Co., Ltd. (SDV)	Manufacture of display panels	100.0
	DOWOINSYS VINA COMPANY LIMITED	Manufacture of display components	100.0
	PT Samsung Electronics Indonesia (SEIN)	Manufacture and sale of electronic devices	100.0
	PT Samsung Telecommunications Indonesia (STIN)	Sale of electronic devices and services	100.0
	Thai Samsung Electronics Co., Ltd. (TSE)	Manufacture and sale of electronic devices	91.8
	Laos Samsung Electronics Sole Co., Ltd (LSE)	Marketing	100.0
	Samsung Electronics Philippines Corporation (SEPCO)	Sale of electronic devices	100.0
	Samsung Electronics Australia Pty. Ltd. (SEAU)	Sale of electronic devices	100.0
	Samsung Electronics New Zealand Limited (SENZ)	Sale of electronic devices	100.0
	Samsung India Electronics Private Ltd. (SIEL)	Manufacture and sale of electronic devices	100.0
	Red Brick Lane Marketing Solutions Pvt. Ltd.	Marketing	100.0
	Samsung Display Noida Private Limited (SDN)	Manufacture of display panels	100.0
	Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	R&D	100.0
	Samsung R&D Institute BanglaDesh Limited (SRBD)	R&D	100.0
	Samsung Nepal Services Pvt, Ltd (SNSL)	Service	100.0
	Samsung Japan Corporation (SJC)	Sale of semiconductor and display panels	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
Asia (Excluding China)	Samsung R&D Institute Japan Co. Ltd. (SRJ)	R&D	100.0
	Samsung Electronics Japan Co., Ltd. (SEJ)	Sale of electronic devices	100.0
	Harman Connected Services Corp. India Pvt. Ltd.	Connected service provider	100.0
	Harman International (India) Private Limited	Sale of audio products, R&D	100.0
	Harman International Industries PTY Ltd.	Management of overseas subsidiaries	100.0
	Harman International Japan Co., Ltd.	Sale of audio products, R&D	100.0
	Harman Singapore Pte. Ltd.	Sale of audio products	100.0
China	Samsung (CHINA) Investment Co., Ltd. (SCIC)	Sale of electronic devices	100.0
	Samsung Electronics Hong Kong Co., Ltd. (SEHK)	Sale of electronic devices	100.0
	Samsung Electronics Taiwan Co., Ltd. (SET)	Sale of electronic devices	100.0
	Tianjin Samsung Electronics Co., Ltd. (TSEC)	Manufacture of TV and monitors	91.2
	Suzhou Samsung Electronics Co., Ltd. (SSEC)	Manufacture of home appliances	88.3
	Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	Manufacture of home appliances	100.0
	Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	R&D	100.0
	Tianjin Samsung Telecom Technology Co., Ltd. (TSTC)	Manufacture of communication equipment	90.0
	Beijing Samsung Telecom R&D Center (SRC-Beijing)	R&D	100.0
	Samsung Electronics China R&D Center (SRC-Nanjing)	R&D	100.0
	Samsung Mobile R&D Center China-Guangzhou (SRC-Guangzhou)	R&D	100.0
	Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	R&D	100.0
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Sale of semiconductor and display panels	100.0
	Samsung (China) Semiconductor Co., Ltd. (SCS)	Manufacture of semiconductors	100.0
	Samsung SemiConductor Xian Co., Ltd. (SSCX)	Sale of semiconductor and display panels	100.0
	Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	Toll processing of semiconductors	100.0
	Tianjin Samsung LED Co., Ltd. (TSLED)	Manufacture of LED	100.0
	Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	R&D	100.0
	Samsung Display Dongguan Co., Ltd. (SDD)	Manufacture of display panels	100.0
	Samsung Display Tianjin Co., Ltd. (SDT)	Manufacture of display panels	95.0
	SEMES (XIAN) Co., Ltd.	Semiconductor equipment services	100.0
	Samsung Semiconductor Investment L.P. I	Technology business, Venture capital investments	99.0
	Harman (China) Technologies Co., Ltd.	Manufacture of audio products	100.0
	Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	Sale of audio products	100.0
	Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	Manufacture of audio products, R&D	100.0
	Harman Commercial (Shanghai) Co., Ltd.	Sale of audio products	100.0
	Harman Connected Services Solutions (Chengdu) Co., Ltd.	Connected service provider	100.0
Harman Holding Limited	Sale of audio products	100.0	
Harman International (China) Holdings Co., Ltd.	Sale of audio products, R&D	100.0	
Harman Technology (Shenzhen) Co., Ltd.	Sale of audio products, R&D	100.0	

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)	
	Samsung Display Co., Ltd.	Manufacture and sale of display panels	84.8	
	SU Materials	Manufacture of display components	50.0	
	STECO Co., Ltd.	Manufacture of semiconductor components	70.0	
	SEMES Co., Ltd.	Manufacture and sale of semiconductor/FPD	91.5	
	Samsung Electronics Service Co., Ltd.	Repair services for electronic devices	99.3	
	Samsung Electronics Service Customer Satisfaction Co., Ltd.	Call center for repair services for electronic devices	100.0	
	Samsung Electronics Sales Co., Ltd.	Sale of electronic devices	100.0	
	Samsung Electronics Logitech Co., Ltd.	General logistics agency	100.0	
	Samsung Medison Co., Ltd.	Manufacture and sale of medical equipment	68.5	
	Stella Forest of Hope	Manufacture of food	100.0	
	Mirero System Co., Ltd.	Development and supply of semiconductor process defect and quality control software	99.9	
	Dowooinsys Co., Ltd.	Manufacture of display components	69.0	
	Gf-System Co., Ltd.	Manufacture of display components	100.0	
	Harman International Korea	Software development and supply	100.0	
Domestic	Samsung Venture Capital Union #21	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #22	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #26	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #28	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #29	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #32	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #33	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #37	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #40	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #42	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #43	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #45	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #48	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #52	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #55	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #56	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #57	Technology business, Venture capital investments	99.0	
	Samsung Venture Capital Union #62	Technology business, Venture capital investments	99.0	
		Growth type private equity trust specialized in semiconductors	Investment on semiconductor industry	66.7
		System LSI Mutual benefit private equity trust	Investment on semiconductor industry	62.5

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

1.3 Summary of Financial Data of Major Consolidated Subsidiaries

Summary of financial data of major consolidated subsidiaries is as follows:

(1) 2023

<i>(In millions of Korean won)</i>	June 30, 2023					
	As of June 30, 2023		For the three-month period ended		For the six-month period ended	
Major subsidiaries^(*)	Assets	Liabilities	Sales	Profit (loss)	Sales	Profit (loss)
Samsung Display Co., Ltd.	59,206,888	6,470,299	5,444,771	871,621	11,035,413	2,404,779
Samsung Electronics America, Inc. (SEA)	38,938,571	12,063,696	9,157,280	79,508	19,977,552	294,772
Samsung Asia Pte. Ltd. (SAPL)	23,579,581	1,186,112	-	333,661	-	6,966,849
Harman and its subsidiaries ^(*)	17,628,070	6,154,046	3,488,999	205,076	6,651,475	285,899
Samsung (China) Semiconductor Co., Ltd. (SCS)	15,957,741	1,346,950	2,440,992	203,913	5,011,167	530,735
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	14,327,372	2,734,691	6,729,383	870,408	15,346,957	1,166,442
Samsung Semiconductor, Inc. (SSI)	11,686,283	5,001,617	5,113,436	55,475	10,076,971	182,461
Samsung Austin Semiconductor LLC. (SAS)	11,545,027	2,512,400	1,136,235	148,327	2,091,445	252,445
Samsung (CHINA) Investment Co., Ltd. (SCIC)	9,821,955	8,407,678	702,653	12,754	1,574,264	177,969
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	9,693,632	4,624,422	-	23,610	-	32,085
Samsung Electronics Vietnam Co., Ltd. (SEV)	9,526,085	1,890,857	4,337,615	447,372	10,033,911	910,213
Samsung India Electronics Private Ltd. (SIEL)	7,396,505	3,478,642	3,499,445	235,083	7,313,363	568,363
Samsung Display Vietnam Co., Ltd. (SDV)	7,237,305	1,889,058	5,025,494	120,439	10,213,581	570,535
Samsung Eletronica da Amazonia Ltda. (SEDA)	5,290,815	1,439,082	1,738,745	32,413	3,654,447	164,645
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	4,029,275	821,791	1,598,461	153,715	3,095,852	352,241
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	3,785,339	3,202,972	3,669,230	50,856	6,589,203	114,934
Samsung International, Inc. (SII)	2,981,785	830,750	1,912,341	403,181	3,668,330	768,771
Thai Samsung Electronics Co., Ltd. (TSE)	2,918,991	534,692	1,183,524	96,887	2,402,275	185,939
Samsung Electronics (UK) Ltd. (SEUK)	2,552,143	1,722,261	1,323,540	14	2,850,876	72,364
Samsung Electronics Europe Logistics B.V. (SELS)	2,438,051	2,019,758	3,802,880	42,336	8,045,329	226,763
Samsung Electronics Mexico S.A. De C.V. (SEM)	2,251,383	1,193,458	909,620	23,765	1,752,163	83,052
SEMES Co., Ltd.	2,147,494	603,152	683,383	58,675	1,409,736	82,958
Samsung Display Dongguan Co., Ltd. (SDD)	2,117,019	191,384	348,339	33,691	757,767	62,505
Samsung Electronics GmbH (SEG)	2,013,641	1,891,158	1,407,255	(5,306)	3,049,199	54,982
Samsung Electronics Benelux B.V. (SEBN)	1,782,683	635,257	630,333	26,455	1,462,038	132,672

^(*) Summary of financial information is based on separate financial statements of each subsidiary.

^(*) Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

(2) 2022

June 30, 2022

(In millions of Korean won)	As of December 31, 2022		For the three-month period ended		For the six-month period ended	
			Sales	Profit (loss)	Sales	Profit (loss)
Major subsidiaries^(*)	Assets	Liabilities				
Samsung Display Co., Ltd.	57,302,567	7,282,718	6,845,875	791,204	13,946,851	1,817,837
Samsung Electronics America, Inc. (SEA)	37,883,156	12,258,315	12,333,476	316,721	23,673,944	271,086
Samsung Asia Pte. Ltd. (SAPL)	26,894,611	2,678,285	-	2,505,351	-	2,516,913
Harman and its subsidiaries ^(*)	17,102,324	6,380,456	2,986,052	36,184	5,648,793	126,028
Samsung (China) Semiconductor Co., Ltd. (SCS)	17,095,000	2,970,835	2,453,729	165,104	4,869,323	321,642
Samsung Electronics Vietnam THANGUYEN Co., Ltd. (SEVT)	15,718,299	2,358,140	9,983,377	971,650	20,552,811	1,934,576
Samsung (CHINA) Investment Co., Ltd. (SCIC)	13,830,988	9,764,636	528,784	(43,273)	1,361,932	63,608
Samsung Semiconductor, Inc. (SSI)	12,199,102	5,930,369	12,742,094	33,503	23,653,098	75,744
Samsung Electronics Vietnam Co., Ltd. (SEV)	10,931,037	1,408,387	5,919,010	499,274	11,739,681	928,374
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	10,841,515	6,272,800	-	21,517	-	28,482
Samsung Austin Semiconductor LLC. (SAS)	9,301,017	828,494	836,674	(12,167)	1,625,295	(14,589)
Samsung Display Vietnam Co., Ltd. (SDV)	7,471,680	1,608,448	5,142,739	56,185	10,814,792	187,691
Samsung India Electronics Private Ltd. (SIEL)	6,772,537	3,571,863	3,488,909	114,899	7,688,929	317,183
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	5,067,891	2,858,382	6,504,147	62,530	13,054,783	138,258
Samsung Eletronica da Amazonia Ltda. (SEDA)	4,600,508	1,342,517	1,971,171	(45,838)	3,890,800	68,690
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	3,732,057	980,448	1,602,862	125,102	3,554,895	327,308
Thai Samsung Electronics Co., Ltd. (TSE)	3,263,473	486,820	1,297,116	22,286	2,711,163	5,686
Samsung Electronics (UK) Ltd. (SEUK)	2,819,792	1,708,064	1,349,597	(24,169)	2,881,511	(5,105)
Samsung Electronics Benelux B.V. (SEBN)	2,377,730	597,044	612,857	(13,563)	1,420,327	(6,661)
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	2,374,317	452,628	881,554	42,573	2,205,901	123,503
Samsung Electronics Europe Logistics B.V. (SELS)	2,194,975	2,021,491	3,663,321	60,139	8,262,182	300,226
Samsung Display Dongguan Co., Ltd. (SDD)	2,135,132	265,835	788,603	33,918	1,595,752	83,548
SEMES Co., Ltd.	2,065,558	602,323	740,885	54,932	1,466,317	128,901
Samsung Electronics GmbH (SEG)	1,968,273	1,907,132	1,485,197	(75,712)	3,186,298	(133,174)
Samsung Electronics Mexico S.A. De C.V. (SEM)	1,816,895	996,002	880,155	17,403	1,556,318	52,569

(*) Summary of financial information is based on separate financial statements of each subsidiary.

(*) Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

1.4 Changes in Consolidation Scope

Changes in consolidation scope during the six-month period ended June 30, 2023 are as follows:

Change	Area	Subsidiary	Description
Included	Domestic	Samsung Venture Capital Union #62	Establishment
		Samsung Federal, Inc. (SFI)	Establishment
	America	Emerald Intermediate, Inc.	Establishment
		Emerald Merger Sub, Inc.	Establishment
Excluded	America	Dacor Holdings, Inc.	Merger
		Dacor, Inc.	Merger
	Europe / CIS	Red Bend Software Ltd.	Liquidation

2. Significant Accounting Policies

2.1 Basis of Presentation

The Company maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (“Korean IFRS”). The accompanying interim consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

The interim consolidated financial statements for the six-month period ended June 30, 2023 have been prepared in accordance with Korean IFRS 1034, *Interim Financial Reporting*. These interim consolidated financial statements have been prepared in accordance with the Korean IFRS which is effective as of June 30, 2023.

(A) New and amended standards adopted by the Company

The Company applied the following amended standards for the first time for the annual reporting period commencing January 1, 2023:

Amendments to Korean IFRS 1001, *Presentation of Financial Statements*

The amendments require companies to define and disclose their 'material' accounting policy information instead of its 'significant' accounting policies. The amendments explain how an entity can identify material accounting policy information. The application of amendments does not have a significant impact on the Company's interim consolidated financial statements.

Amendments to Korean IFRS 1008, *Accounting Policies, Changes in Accounting Estimates and Errors*

The amendments clarify the definition of a change in accounting estimates and specify how to distinguish it from a change in accounting policies. The application of amendments does not have a significant impact on the Company's interim consolidated financial statements.

Amendments to Korean IFRS 1012, *Income Taxes*

The amendments add to the initial recognition exemption that the initial recognition exemption does not apply to transactions in which equal amounts of deductible and taxable temporary differences arise on initial recognition. The application of amendments does not have a significant impact on the Company's interim consolidated financial statements.

(B) New and amended standards not yet adopted by the Company

The amended accounting standard issued that is not yet effective for the annual reporting period commencing January 1, 2023 and has not been early adopted by the Company is as follows:

Amendments to Korean IFRS 1001, *Presentation of Financial Statements*

The amendments to Korean-IFRS 1001 clarify that the classification of liabilities as current or non-current should be based on rights that are in existence at the end of the reporting period and that the classification is unaffected by management's intentions or expectations about whether an entity will exercise its right to defer settlement of a liability. The amendments also introduce a definition of settlement to make clear that settlement includes the transfer to the counterparty of the entity's own equity instruments, however, it would be excluded if an option to settle the liability by the transfer of the entity's own equity instruments is recognized separately from the liability as an equity component of a compound financial instrument. The amendments are applied retrospectively for annual periods beginning on or after January, 1 2024, with early application permitted.

2.2 Accounting Policies

Material accounting policies and method of computation used in the preparation of the interim consolidated financial statements are consistent with those of the annual financial statements for the year ended December 31, 2022, except for the changes due to the application of amendments of standards described in Note 2.1 and as described below.

Income tax expense

Income tax expense for the interim period is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual effective income tax rate is applied to the pre-tax income of the interim period.

2.3 Convenience Translation into United States Dollar Amounts

The US dollar amounts provided in the consolidated financial statements represent supplementary information solely for the convenience of the reader. All Korean won amounts are expressed in US dollars at the rate of ₩ 1,295.3 to \$1, the average exchange rate for the six-month period ended June 30, 2023. Such presentation is not in accordance with generally accepted accounting principles and should not be construed as a representation that the Korean won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

2.4 Material Accounting Estimates and Assumptions

In preparing the interim consolidated financial statements, the management of the Company makes judgements, estimates and assumptions on matters which affect the application of policies and reported amounts of assets, liabilities, income and expenses. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates, by definition, seldom equal the related actual results

Material accounting estimates and assumptions made in the preparation of the interim consolidated financial statements are consistent with those applied in the preparation of the annual consolidated financial statements for the year ended December 31, 2022, except for the estimates used to determine the income tax expense.

3. Financial Instruments by Category

(A) Categorizations of financial assets and liabilities as of June 30, 2023 and December 31, 2022 are as follows:

(1) As of June 30, 2023

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Other financial assets^(*)	Total
Financial assets					
Cash and cash equivalents	79,919,775	-	-	-	79,919,775
Short-term financial instruments	17,180,130	-	-	-	17,180,130
Short-term financial assets at amortized cost	-	-	-	-	-
Short-term financial assets at fair value through profit or loss	-	-	25,310	-	25,310
Trade receivables	36,104,142	-	-	-	36,104,142
Financial assets at fair value through other comprehensive income	-	10,308,125	-	-	10,308,125
Financial assets at fair value through profit or loss	-	-	1,573,457	-	1,573,457
Other	10,472,509	-	448,027	76,182	10,996,718
Total	143,676,556	10,308,125	2,046,794	76,182	156,107,657

(*) Other financial assets include derivatives designated as hedging instruments which are not subject to categorizations.

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Financial liabilities measured at fair value through profit or loss	Other financial liabilities^(*)	Total
Financial liabilities				
Trade payables	11,744,005	-	-	11,744,005
Short-term borrowings	473,326	-	3,084,034	3,557,360
Other payables	13,443,741	-	-	13,443,741
Current portion of long-term liabilities	299,158	-	964,683	1,263,841
Debentures	554,625	-	-	554,625
Long-term borrowings	33,756	-	3,729,494	3,763,250
Long-term other payables	4,890,945	-	-	4,890,945
Other	10,421,841	297,833	24,105	10,743,779
Total	41,861,397	297,833	7,802,316	49,961,546

(*) Other financial liabilities include collateralized borrowings, lease liabilities and derivatives designated as hedging instruments, which are not subject to categorizations.

(2) As of December 31, 2022

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Other financial assets^(*)	Total
Financial assets					
Cash and cash equivalents	49,680,710	-	-	-	49,680,710
Short-term financial instruments	65,102,886	-	-	-	65,102,886
Short-term financial assets at amortized cost	414,610	-	-	-	414,610
Short-term financial assets at fair value through profit or loss	-	-	29,080	-	29,080
Trade receivables	35,721,563	-	-	-	35,721,563
Financial assets at fair value through other comprehensive income	-	11,397,012	-	-	11,397,012
Financial assets at fair value through profit or loss	-	-	1,405,468	-	1,405,468
Other	9,945,209	-	334,263	61,404	10,340,876
Total	160,864,978	11,397,012	1,768,811	61,404	174,092,205

^(*) Other financial assets include derivatives designated as hedging instruments which are not subject to categorizations.

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Financial liabilities measured at fair value through profit or loss	Other financial liabilities^(*)	Total
Financial liabilities				
Trade payables	10,644,686	-	-	10,644,686
Short-term borrowings	1,577,958	-	3,569,357	5,147,315
Other payables	16,328,237	-	-	16,328,237
Current portion of long-term liabilities	215,143	-	874,019	1,089,162
Debentures	536,093	-	-	536,093
Long-term borrowings	33,846	-	3,526,826	3,560,672
Long-term other payables	2,289,236	-	-	2,289,236
Other	12,047,761	334,415	27,353	12,409,529
Total	43,672,960	334,415	7,997,555	52,004,930

^(*) Other financial liabilities include collateralized borrowings, lease liabilities and derivatives designated as hedging instruments, which are not subject to categorizations.

4. Financial Assets at Fair Value

(A) Details of financial assets at fair value as of June 30, 2023 and December 31, 2022 are as follows:

(1) Financial assets at fair value through other comprehensive income

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Non-current		
Equity instruments	10,308,125	11,397,012

(2) Financial assets at fair value through profit or loss

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Current		
Debt instruments	25,310	29,080
Non-current		
Equity instruments	904,192	773,063
Debt instruments	669,265	632,405
Subtotal	1,573,457	1,405,468
Total	1,598,767	1,434,548

(B) Details of listed equity securities of financial assets at fair value as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won, number of shares and percentage)</i>	June 30, 2023			December 31, 2022	
	Number of shares owned	Percentage of ownership^(*) (%)	Acquisition cost	Carrying amount (Market value)	Carrying amount (Market value)
Samsung Heavy Industries.Co, Ltd.	134,027,281	15.2	932,158	893,962	684,879
Hotel Shilla Co., Ltd.	2,004,717	5.1	13,957	147,146	166,592
iMarketKorea Inc.	647,320	1.9	324	6,402	6,538
SFA Engineering Corporation	2,100,000	5.8	22,050	75,600	132,642
Wonik Holdings, Co., Ltd.	3,518,342	4.6	30,821	13,352	11,945
Wonik IPS Co., Ltd.	3,701,872	7.5	32,428	121,421	91,621
ASML Holding N.V	2,750,072	0.7	158,517	2,601,025	4,287,121
Wacom Co., Ltd.	8,398,400	5.3	62,013	44,789	46,750
Corning Incorporated	80,000,000	9.4	3,980,636	3,680,041	3,238,205
Other			594,391	999,767	855,452
Total			5,827,295	8,583,505	9,521,745

^(*) Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

5. Inventories

Inventories as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023			December 31, 2022		
	Gross amount	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	16,909,611	(1,823,192)	15,086,419	17,526,178	(1,493,952)	16,032,226
Work in process	27,960,258	(3,784,518)	24,175,740	21,612,965	(1,535,446)	20,077,519
Raw materials and supplies	16,304,014	(1,324,533)	14,979,481	16,268,974	(1,289,694)	14,979,280
Materials in transit	1,263,158	-	1,263,158	1,098,841	-	1,098,841
Total	62,437,041	(6,932,243)	55,504,798	56,506,958	(4,319,092)	52,187,866

6. Investments in Associates and Joint Ventures

(A) Changes in investments in associates and joint ventures for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	10,893,869	8,932,251
Acquisition	65,182	1,002,798
Disposal	(18,357)	(6,913)
Share of profit	413,782	491,706
Other ^(*)	(19,777)	(36,904)
Balance as of June 30	11,334,699	10,382,938

^(*) Other consists of dividends, impairment, and reclassification.

(B) Major investments in associates and joint ventures as of June 30, 2023 are as follows:

(i) Investments in associates

Investee	Nature of relationship	Percentage of ownership ^(*) (%)	Principal business location	Fiscal period-end
Samsung Electro-Mechanics Co., Ltd.	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
Samsung SDS Co., Ltd.	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
Samsung Biologics Co., Ltd.	Investment in new business	31.2	Korea	December
Samsung SDI Co., Ltd. ^(*)	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide, Inc.	Advertising agency	25.2	Korea	December

^(*) Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

^(*) The Company's ownership of ordinary shares outstanding is 20.6%.

(2) Investments in joint ventures

Investee	Nature of relationship with joint venture	Percentage of ownership (%) ^(*)	Principal business location	Fiscal period-end
Samsung Corning Advanced Glass LLC	Manufacture and supply industrial glass devices	50.0	Korea	December

^(*) Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

(C) Details of investments in associates and joint ventures as of June 30, 2023 and December 31, 2022 are as follows:

(1) Investments in associates

(In millions of Korean won)

Investee	Acquisition cost	June 30, 2023	
		Net asset value of equity shares ^(*)	Carrying amount
Samsung Electro-Mechanics Co., Ltd.	359,237	1,789,744	1,789,544
Samsung SDS Co., Ltd.	147,963	1,905,359	1,918,426
Samsung Biologics Co., Ltd.	1,424,358	2,906,481	2,911,314
Samsung SDI Co., Ltd.	1,242,605	3,540,877	2,816,234
Cheil Worldwide, Inc.	506,162	349,678	650,157
Other	693,839	795,017	1,042,491
Total	4,374,164	11,287,156	11,128,166

^(*) The Company's portion of net asset value of associates is based on the Company's percentage of ownership.

(In millions of Korean won)

Investee	Acquisition cost	December 31, 2022	
		Net asset value of equity shares ^(*)	Carrying amount
Samsung Electro-Mechanics Co., Ltd.	359,237	1,765,507	1,764,249
Samsung SDS Co., Ltd.	147,963	1,857,481	1,870,338
Samsung Biologics Co., Ltd.	1,424,358	2,804,547	2,808,673
Samsung SDI Co., Ltd.	1,242,605	3,318,875	2,691,223
Cheil Worldwide, Inc.	506,162	347,510	649,161
Other	645,255	718,801	907,333
Total	4,325,580	10,812,721	10,690,977

^(*) The Company's portion of net asset value of associates is based on the Company's percentage of ownership.

(2) Investments in joint ventures

(In millions of Korean won)

June 30, 2023

Investee	Acquisition cost	Net asset value of equity shares ^(*)	Carrying amount
Samsung Corning Advanced Glass LLC	215,000	136,279	136,297
Other	259,994	71,044	70,236
Total	474,994	207,323	206,533

(*) The Company's portion of net asset value of joint ventures is based on the Company's percentage of ownership.

(In millions of Korean won)

December 31, 2022

Investee	Acquisition cost	Net asset value of equity shares ^(*)	Carrying amount
Samsung Corning Advanced Glass LLC	215,000	137,727	137,745
Other	259,994	67,632	65,147
Total	474,994	205,359	202,892

(*) The Company's portion of net asset value of joint ventures is based on the Company's percentage of ownership.

(D) Details of the changes in the book value of investments in associates and joint ventures using the equity method are as follows:

(1) For the six-month period ended June 30, 2023

(In millions of Korean won)	Balance as of January 1	Share of profit (loss)	Share of other comprehensive income (loss)	Other ^(*)	Balance as of June 30
Samsung Electro-Mechanics Co., Ltd.	1,764,249	56,192	6,258	(37,155)	1,789,544
Samsung SDS Co., Ltd.	1,870,338	84,939	19,059	(55,910)	1,918,426
Samsung Biologics Co., Ltd.	2,808,673	102,673	(32)	-	2,911,314
Samsung SDI Co., Ltd.	2,691,223	101,539	37,340	(13,868)	2,816,234
Cheil Worldwide, Inc.	649,161	29,823	4,567	(33,394)	650,157
Samsung Corning Advanced Glass LLC	137,745	(1,448)	-	-	136,297
Other	972,480	40,064	40,933	59,250	1,112,727
Total	10,893,869	413,782	108,125	(81,077)	11,334,699

(*) Other consists of acquisitions, disposals, dividends, impairment, and reclassification.

(2) For the six-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	Balance as of January 1	Share of profit	Share of other comprehensive income (loss)	Other ^(*)	Balance as of June 30
Samsung Electro-Mechanics Co., Ltd.	1,556,386	143,913	24,503	(37,156)	1,687,646
Samsung SDS Co., Ltd.	1,652,155	100,037	26,499	(41,933)	1,736,758
Samsung Biologics Co., Ltd.	1,577,664	93,678	(1,888)	981,164	2,650,618
Samsung SDI Co., Ltd.	2,529,650	91,076	20,729	(13,462)	2,627,993
Cheil Worldwide, Inc.	621,292	30,141	7,828	(28,747)	630,514
Samsung Corning Advanced Glass LLC	135,580	3,277	-	-	138,857
Other	859,524	29,584	(54,700)	76,144	910,552
Total	8,932,251	491,706	22,971	936,010	10,382,938

^(*) Other consists of acquisitions, disposals, dividends, impairment, and reclassification.

(E) Summary of the financial information of major associates and joint ventures

(1) Summary of financial information of major associates and dividends received from associates as of June 30, 2023 and December 31, 2022, and for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023				
	Samsung Electro- Mechanics Co., Ltd.	Samsung SDS Co., Ltd.	Samsung Biologics Co., Ltd.	Samsung SDI Co., Ltd.	Cheil Worldwide, Inc.
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	4,989,963	7,873,234	5,222,084	10,437,387	1,979,357
Non-current assets	6,196,663	4,078,928	10,479,717	22,465,431	564,032
Current liabilities	2,643,685	2,210,196	3,590,808	9,489,196	1,110,927
Non-current liabilities	736,124	996,079	2,799,969	4,961,003	201,884
Non-controlling interests	164,835	310,735	-	864,153	10,974
Condensed statements of comprehensive income:					
Revenue	4,242,517	6,691,688	1,587,107	11,195,427	1,913,000
Profit from continuing operations, net of tax ^(*)	237,527	375,102	326,641	899,767	104,081
Other comprehensive income (loss) ^(*)	36,158	84,377	(91)	271,927	19,952
Total comprehensive income ^(*)	273,685	459,479	326,550	1,171,694	124,033
2. Dividends from associates					
Dividends	37,155	55,911	-	13,867	33,394

^(*) Profit (loss) attributable to owners of the investee

2022

(In millions of Korean won)

	Samsung Electro- Mechanics Co., Ltd.	Samsung SDS Co., Ltd.	Samsung Biologics Co., Ltd.	Samsung SDI Co., Ltd.	Cheil Worldwide, Inc.
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	4,888,319	8,005,764	6,457,657	9,651,702	2,193,979
Non-current assets	6,108,852	3,946,660	10,124,394	20,605,823	557,466
Current liabilities	2,525,123	2,493,323	4,181,542	8,006,939	1,335,643
Non-current liabilities	778,563	992,132	3,416,034	5,033,084	194,373
Non-controlling interests	154,991	243,777	-	731,779	9,388
Condensed statements of comprehensive income:					
Revenue	5,089,065	8,786,676	1,162,727	8,790,200	1,922,981
Profit from continuing operations, net of tax ^(*)	604,625	464,770	298,983	747,915	105,224
Other comprehensive income ^(*)	106,251	110,958	1,476	148,171	28,644
Total comprehensive income ^(*)	710,876	575,728	300,459	896,086	133,868
2. Dividends from associates					
Dividends	37,155	41,933	-	13,463	28,748

^(*) Profit attributable to owners of the investee.

- (2) Summary of financial information of major joint ventures and dividends received from joint ventures as of June 30, 2023 and December 31, 2022, and for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	Samsung Corning Advanced Glass, LLC	
	2023	2022
Condensed financial information		
Condensed statements of financial position:		
Current assets	108,663	170,103
Non-current assets	186,867	125,507
Current liabilities	21,507	19,794
Non-current liabilities	1,466	363
Condensed statements of comprehensive income:		
Revenue	50,320	75,043
Profit (Loss) from continuing operations, net of tax	(2,896)	6,553
Other comprehensive income	-	-
Total comprehensive income	(2,896)	6,553
Dividends from joint ventures		
Dividends	-	-

- (3) Profit (loss) attributable to owners of the parent company from associates and joint ventures which are not individually material for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	Associates	Joint ventures	Associates	Joint ventures
Profit from continuing operations	38,861	1,203	28,633	951
Other comprehensive income (loss)	40,789	144	(51,498)	(3,202)
Total comprehensive income (loss)	79,650	1,347	(22,865)	(2,251)

- (F) Details of marketable investments in associates as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won and number of shares)</i>	June 30, 2023		December 31, 2022
	Number of shares held	Market value	Market value
Samsung Electro-Mechanics Co., Ltd.	17,693,084	2,556,651	2,308,947
Samsung SDS Co., Ltd.	17,472,110	2,147,322	2,149,070
Samsung Biologics Co., Ltd.	22,217,309	16,529,678	18,240,411
Samsung SDI Co., Ltd.	13,462,673	9,006,528	7,956,440
Cheil Worldwide, Inc.	29,038,075	526,460	669,328

(G) Other matters

On July 12, 2018, the Korea Securities and Futures Commission determined an initial measure following an investigation relating to Samsung Biologics Co., Ltd., an associate of the Company, and its accounting for its investment in Samsung Bioepis Co., Ltd, a joint venture between Biogen Therapeutics Inc. and Samsung Biologics Co., Ltd. This measure included a recommendation to dismiss the director in charge, prosecution charges, and external auditor designation by the regulator, on the basis that the Joint Venture Agreement was not disclosed in the notes to the financial statements. On November 14, 2018, the Korea Securities and Futures Commission determined a second measure which included a penalty of ₩ 8,000 million, a recommendation to dismiss the CEO, a requirement to restate its financial statements, and further prosecution charges.

To prove justification of its accounting treatment, Samsung Biologics Co., Ltd. filed a suit for cancellation of the aforementioned measures to the Seoul Administrative Court, which is currently in progress. On September 24, 2020, the Seoul Administrative Court announced a decision to cancel the first measure charged by the Korea Securities and Futures Commission and suspended its execution until the final rulings of appeal. On October 16, 2020, the Korea Securities and Futures Commission appealed the decision and the litigation is in progress at Seoul High Court. Samsung Biologics Co., Ltd. also filed for suspending the execution of the initial and second measures. On January 22, 2019 and February 19, 2019, the Seoul Administrative Court pronounced decisions to suspend the second and initial measures, respectively, until the final rulings. The Korea Securities and Futures Commission immediately appealed against the decisions but the appeals were dismissed by the Seoul High Court on May 13, 2019 and May 24, 2019, in relation to the second and first measures, respectively. On May 23, 2019 and June 10, 2019, the Korea Securities and Futures Commission re-appealed against the dismissals relating to the second and first measures, respectively. On September 6, 2019 and October 11, 2019, the Supreme Court of Korea dismissed the Korea Securities and Futures Commission's re-appeal relating to the second and first measures, respectively, and confirmed the decision to suspend the execution of these measures.

Although the future outcome of the administrative litigation cannot be estimated, should Samsung Biologics Co., Ltd. be required to restate its financial statements to amend its historical accounting treatment relating to its investment in Samsung Bioepis Co., Ltd., the Company's share of profit or loss relating to its equity method investment, the amount of investment in associates, and retained earnings, for the years ended December 31, 2015 and onwards, and the profit on disposal of investment for the year ended December 31, 2016, may be impacted. Given the timing of completion and the final result of the administrative litigation between Samsung Biologics Co., Ltd. and the Korea Securities and Futures Commission is uncertain and cannot currently be estimated, it is not possible for the Company to recognize the effects of these proceedings in the current period consolidated financial statements.

7. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	168,045,388	149,928,539
Acquisition and capital expenditures	26,299,312	20,754,405
Depreciation	(17,568,639)	(18,077,845)
Disposals/scrap/impairment	(209,921)	(164,773)
Other ^(*)	1,303,802	1,814,250
Balance as of June 30	177,869,942	154,254,576

^(*) Other includes effects of changes in foreign currency exchange rates and effects of the offset of government grants.

(B) Details of depreciation of property, plant and equipment for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	15,643,321	16,292,066
Selling and administrative expenses and other	1,925,318	1,785,779
Total	17,568,639	18,077,845

(C) Right-of-use assets as of June 30, 2023 amount to ₩ 5,479,379 million (December 31, 2022: ₩ 4,917,609 million). During the six-month periods ended June 30, 2023 and 2022, newly recognized right-of-use assets amount to ₩ 1,040,012 million and ₩ 502,506 million, respectively, with relevant depreciation of ₩ 589,402 million and ₩ 469,474 million, respectively.

8. Intangible Assets

(A) Changes in intangible assets for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	20,217,754	20,236,244
External acquisitions	4,324,670	859,818
Amortization	(1,576,451)	(1,543,029)
Disposals/scrap/impairment	(25,652)	(27,801)
Other ^(*)	489,913	571,694
Balance as of June 30	23,430,234	20,096,926

^(*) Other includes the cumulative effect of changes in foreign currency exchange rates and business combinations.

(B) Details of amortization of intangible assets for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	1,109,423	1,070,464
Selling and administrative expenses and other	467,028	472,565
Total	1,576,451	1,543,029

9. Borrowings

Details of the carrying amounts of borrowings as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	Financial institutions	Interest rates (%) as of June 30, 2023	June 30, 2023	December 31, 2022
Short-term borrowings				
Collateralized borrowings ^(*)	Woori Bank and others	0.1~17.7	3,084,034	3,569,357
Non-collateralized borrowings	Citibank and others	0.1~62.2	473,326	1,577,958
Total			3,557,360	5,147,315
Current portion of long-term borrowings				
Bank borrowings	BNP and others	36.7~61.5	292,688	208,915
Lease liabilities ^(*)	CSSD and others	4.1	964,683	874,019
Total			1,257,371	1,082,934
Long-term borrowings				
Bank borrowings	Industrial Bank of Korea and others	2.5~6.7	33,756	33,846
Lease liabilities ^(*)	CSSD and others	4.1	3,729,494	3,526,826
Total			3,763,250	3,560,672

^(*) Collateralized borrowings are secured by trade receivables.

^(*) Interest expenses arising from the lease liabilities for the six-month periods ended June 30, 2023 and 2022 amounted to ₩94,075 million and ₩61,932 million, respectively, which were determined using the weighted average incremental borrowing rate. The right-of-use assets are pledged as collateral to the lessor in the event of default.

10. Debentures

Details of the carrying amounts of debentures as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	Issue date	Due date	Interest rates (%)	June 30, 2023	December 31, 2022
			as of June 30, 2023		
US dollar denominated straight bonds ^(*)	1997.10.2	2027.10.1	7.7	32,820 (US \$ 25 million)	31,683 (US \$ 25 million)
US dollar denominated debentures ^(*)	2015.5.11	2025.5.15	4.2	525,120 (US \$ 400 million)	506,920 (US \$ 400 million)
Less: Discounts				(467)	(543)
Add: Premium				3,622	4,261
Less: Current portion				(6,470)	(6,228)
Total				554,625	536,093

(*) US dollar denominated straight bonds are repaid annually for twenty years after a ten-year grace period from the date of issuance. Interest is paid semi-annually.

(*) Harman International Industries, Inc. issued US dollar denominated debentures. These debentures are repaid on the maturity and interest is paid semi-annually.

11. Net Defined Benefit Liabilities (Assets)

(A) Details of net defined benefit liabilities (assets) recognized in the statements of financial position as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Present value of funded defined benefit obligations	14,408,258	13,639,460
Present value of unfunded defined benefit obligations	277,253	370,848
Subtotal	14,685,511	14,010,308
Fair value of plan assets	(19,399,317)	(19,593,910)
Total	(4,713,806)	(5,583,602)

(B) The components of defined benefit costs recognized in profit or loss for the six-month periods ended June 30, 2023 and 2022 relating to defined benefit plans are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Current service cost	634,643	684,929
Net interest income	(176,734)	(49,382)
Past service cost	(581)	56
Other	15,865	3,417
Total	473,193	639,020

- (C) The expenses related to defined benefit plans recognized in the statements of profit or loss for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	189,349	273,388
Selling and administrative expenses and other	283,844	365,632
Total	473,193	639,020

12. Provisions

Changes in the provisions for the six-month period ended June 30, 2023 are as follows:

<i>(In millions of Korean won)</i>	Warranty (A)	Royalty expenses (B)	Long-term incentives (C)	Other (D, E)	Total
Balance as of January 1	2,309,726	1,546,606	783,263	3,133,830	7,773,425
Charged to profit or loss	1,237,011	344,251	140,071	1,464,674	3,186,007
Payment	(1,131,980)	(188,844)	(44,421)	(597,610)	(1,962,855)
Other ^(*)	66,854	39,497	5,490	24,603	136,444
Balance as of June 30	2,481,611	1,741,510	884,403	4,025,497	9,133,021

^(*) Other includes effects of changes in foreign currency exchange rates.

- (A) The Company accrues warranty reserves for estimated costs of quality assurance, exchanges, repairs, recalls, and future services based on historical experience and terms of warranty programs.
- (B) The Company recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing and amount of payment depend on the settlement of the negotiations.
- (C) The Company has a long-term incentive plan for its executives based on a three-year management performance criteria and recognizes a provision for the estimated incentive cost.
- (D) The Company records provisions for future expenses expected to be incurred for products that have been discontinued from manufacturing and sales.
- (E) The Company makes provisions for the emission in excess of the emission rights held by the Company for the applicable years. Details of emission rights and liabilities as of June 30, 2023 are as follows:
- (1) The amount of emission rights allocated free of charge in the current commitment period and the estimated volume of emission as of June 30, 2023 are as follows:

<i>(In ten thousand metric tons)</i>	June 30, 2023
Emission rights allocated free of charge	1,710
Estimated volume of emission	1,903

(2) Changes in the emission rights for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	19,567	46,074
Increase	1,272	1,871
Utilization	(225)	-
Balance as of June 30	20,614	47,945

(3) Changes in emissions liabilities for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	32,838	45,049
Charged to profit or loss	-	23,365
Utilization	(14)	-
Balance as of June 30	32,824	68,414

13. Commitments and Contingencies

(A) Litigation

As of June 30, 2023, the Company is involved in various claims, disputes, and investigations conducted by regulatory bodies that arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, the Company believes the outcome will not have a material impact on the financial position of the Company.

(B) Other commitments

As of June 30, 2023, the Company has commitments for the acquisition of tangible and intangible assets that have not yet been incurred of ₩ 17,119,756 million.

14. Contract Liabilities

The Company has recognized contract liabilities related to contracts with customers as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Contract liabilities ^(*)	12,787,097	13,255,682

^(*) Contract liabilities include advances received, accrued expenses, other current liabilities and others.

15. Share Capital

As of June 30, 2023, the Company's total number of authorized shares is 25,000,000,000 shares (₩ 100 per share). The Company has issued 5,969,782,550 shares of ordinary shares and 822,886,700 shares of preference shares as of June 30, 2023, excluding retired shares. As of June 30, 2023, the number of shares outstanding is the same as the number of shares issued above, and no changes were made to the number of shares outstanding during the six-month periods ended June 30, 2023 and 2022. Due to the retirement of shares, the total par value of the shares issued is ₩ 679,267 million (ordinary shares of ₩ 596,978 million and preference shares of ₩ 82,289 million), which does not agree with paid-in capital of ₩ 897,514 million.

16. Retained Earnings

(A) Retained earnings as of June 30, 2023 and December 31, 2022 consist of the following:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Discretionary reserve, etc.	208,019,306	192,294,496
Unappropriated retained earnings	130,291,349	145,651,911
Total	338,310,655	337,946,407

(B) Details of interim dividends are as follows:

Interim dividends (Record date: March 31 and June 30, 2023 and 2022)

<i>(In millions of Korean won and number of shares)</i>		2023	2022	
1 st Quarter	Number of shares eligible for dividends	Ordinary shares	5,969,782,550	5,969,782,550
		Preference shares	822,886,700	822,886,700
	Dividend rate (based on par value)	Ordinary/Preference	361%	361%
		Ordinary shares	2,155,092	2,155,092
	Dividend amount	Preference shares	297,062	297,062
		Total	2,452,154	2,452,154
2 nd Quarter	Number of shares eligible for dividends	Ordinary shares	5,969,782,550	5,969,782,550
		Preference shares	822,886,700	822,886,700
	Dividend rate (based on par value)	Ordinary/Preference	361%	361%
		Ordinary shares	2,155,092	2,155,092
	Dividend amount	Preference shares	297,062	297,062
		Total	2,452,154	2,452,154

17. Other Components of Equity

Other components of equity as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Gain on valuation of financial assets at fair value through other comprehensive income	1,852,003	2,749,109
Share of other comprehensive income of associates and joint ventures	219,458	114,987
Foreign currency translation, net of tax	5,661,463	1,039,197
Remeasurement of net defined benefit liabilities (assets)	(2,402,025)	(2,051,610)
Other	99,452	86,645
Total	5,430,351	1,938,328

18. Expenses by Nature

Expenses by nature for the three and six-month periods ended June 30, 2023 and 2022 consist of the following:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Changes in finished goods, work in process, and other	(935,654)	(3,152,414)	(4,439,969)	(6,998,972)
Raw materials used, merchandise purchased, and other	21,190,339	48,387,259	28,865,165	56,931,407
Wages and salaries	8,090,473	15,991,639	7,528,038	15,260,987
Post-employment benefit	273,221	551,510	341,528	692,424
Depreciation	8,767,744	17,568,639	9,068,814	18,077,845
Amortization	790,853	1,576,451	772,552	1,543,029
Welfare	1,740,173	3,281,449	1,738,929	3,140,865
Utilities	1,771,378	3,632,488	1,383,458	2,782,026
Outsourcing	1,729,937	3,410,856	1,652,475	3,135,008
Advertising	1,073,439	2,218,782	1,397,480	2,865,181
Sales promotion	1,568,835	3,241,787	1,536,956	3,360,354
Other	13,276,248	25,733,733	13,261,136	25,976,497
Total^(*)	59,336,986	122,442,179	63,106,562	126,766,651

^(*) Equal to the sum of cost of sales and selling and administrative expenses in the consolidated statements of profit or loss.

19. Selling and Administrative Expenses

Selling and administrative expenses for the three and six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Selling and administrative expenses				
Wages and salaries	2,102,067	4,174,476	1,884,465	3,879,818
Post-employment benefit	70,645	140,157	72,706	150,000
Commissions	2,070,654	4,174,578	1,806,907	3,537,298
Depreciation	419,353	822,999	382,702	761,443
Amortization	172,647	341,586	163,203	331,697
Advertising	1,073,439	2,218,782	1,397,480	2,865,181
Sales promotion	1,568,835	3,241,787	1,536,956	3,360,354
Transportation	420,198	834,603	984,085	1,841,718
Service charges	1,088,395	2,110,131	837,018	1,730,562
Other	1,505,008	2,951,508	1,516,418	2,789,669
Subtotal	10,491,241	21,010,607	10,581,940	21,247,740
Research and development expenses				
Research and development	7,198,555	13,777,289	6,254,874	12,177,106
Total	17,689,796	34,787,896	16,836,814	33,424,846

20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three and six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Other non-operating income				
Dividend income	48,894	96,788	62,400	330,909
Rental income	36,963	74,905	34,914	69,498
Gain on disposal of property, plant and equipment	20,598	55,047	63,780	114,200
Other	94,721	478,731	302,877	649,557
Total	201,176	705,471	463,971	1,164,164

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Other non-operating expenses				
Loss on disposal of property, plant and equipment	10,611	20,003	19,911	24,107
Donations	29,710	102,793	85,866	175,426
Other	128,736	250,243	494,616	853,970
Total	169,057	373,039	600,393	1,053,503

21. Financial Income and Expenses

Details of financial income and expenses for the three and six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Financial income				
Interest income:	1,152,273	2,212,719	487,194	856,226
Interest income from financial assets measured at amortized cost	1,152,212	2,212,592	487,130	856,097
Interest income from financial assets measured at fair value through profit or loss	61	127	64	129
Foreign exchange differences	2,758,603	5,878,615	4,490,804	7,099,407
Gains from derivatives	146,052	593,643	393,887	918,441
Total	4,056,928	8,684,977	5,371,885	8,874,074

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Financial expenses				
Interest expense:	286,893	578,570	123,064	272,295
Interest expense from financial liabilities measured at amortized cost	176,050	327,906	31,904	106,567
Other financial liabilities	110,843	250,664	91,160	165,728
Foreign exchange differences	2,556,359	5,932,237	4,675,575	7,136,257
Losses from derivatives	401,288	689,734	332,340	755,745
Total	3,244,540	7,200,541	5,130,979	8,164,297

The Company recognizes foreign exchange gains and losses arising from foreign currency transactions and translation as financial income and expenses.

22. Income Tax Expense

Income tax expense is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The average annual tax rate expected as of June 30, 2023 to be effective for the year ended December 31, 2023 is 6.8%.

23. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the three and six-month periods ended June 30, 2023 and 2022 are calculated as follows:

(1) Ordinary shares

<i>(In millions of Korean won, thousands of number of shares)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Profit for the period attributable to owners of the parent company	1,547,018	2,948,270	10,954,515	22,083,609
Profit for the period available for ordinary shares	1,359,607	2,591,107	9,627,448	19,408,327
Weighted-average number of ordinary shares outstanding	5,969,783	5,969,783	5,969,783	5,969,783
Basic earnings per ordinary share (in Korean won)	228	434	1,613	3,251

(2) Preference shares

<i>(In millions of Korean won, thousands of number of shares)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Profit for the period attributable to owners of the parent company	1,547,018	2,948,270	10,954,515	22,083,609
Profit for the period available for preference shares	187,411	357,163	1,327,067	2,675,282
Weighted-average number of preference shares outstanding	822,887	822,887	822,887	822,887
Basic earnings per preference share (in Korean won)	228	434	1,613	3,251

(B) Diluted earnings per share

The Company does not have dilutive potential ordinary shares and as a result, basic earnings per share and diluted earnings per share are the same for the six-month periods ended June 30, 2023 and 2022.

24. Statements of Cash Flows

The Company used the indirect method to present cash flows from operating activities. Adjustments and changes in assets and liabilities arising from operating activities for the six-month periods ended June 30, 2023 and 2022 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2023	2022
Adjustments:		
Income tax expense	241,205	7,107,165
Financial income	(3,619,551)	(3,033,105)
Financial expense	2,601,229	2,516,133
Post-employment benefits	551,510	692,424
Depreciation	17,568,639	18,077,845
Amortization	1,576,451	1,543,029
Bad debt expense	76,054	24,421
Dividend income	(96,788)	(330,909)
Share of profit of associates and joint ventures	(413,782)	(491,706)
Gain on disposal of property, plant and equipment	(55,047)	(114,200)
Loss on disposal of property, plant and equipment	20,003	24,107
Loss on valuation of inventories	3,569,456	1,934,530
Other	(61,354)	108,064
Total	21,958,025	28,057,798

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2023	2022
Changes in assets and liabilities:		
Decrease in trade receivables	727,124	383,614
Decrease (increase) in other receivables	990,666	(656,444)
Increase in prepaid expenses	(449,776)	(323,801)
Increase in inventories	(5,846,100)	(10,473,730)
Increase (decrease) in trade payables	635,101	(3,479,374)
Increase (decrease) in other payables	589,905	(2,076,950)
Increase (decrease) in advances received	(181,346)	13,502
Decrease in withholdings	(562,980)	(563,671)
Decrease in accrued expenses	(4,485,803)	(1,705,600)
Increase in provisions	1,223,152	326,635
Payment of post-employment benefits	(323,060)	(295,378)
Other	(590,248)	(576,003)
Total	(8,273,365)	(19,427,200)

For the six-month periods ended June 30, 2023 and 2022, cash outflows from principal portion of lease liabilities (financial activities) amount to ₩ 538,783 million and ₩ 485,458 million, respectively, and cash outflows due to interest expenses (operating activities) in relation to the lease liabilities amount to ₩ 94,075 million and ₩ 61,932 million, respectively.

25. Financial Risk Management

The Company's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Company implements and operates a financial risk policy and program that closely monitors and manages such risks. In addition, the Company uses derivatives to hedge certain risk exposure.

The finance team mainly carries out the Company's financial risk management. After implementing the global financial risk management policies, the finance team periodically measures, evaluates, and hedges financial risks.

The Company also manages foreign exchange risk by monitoring foreign exchange rate fluctuations through local financial centers in the major regions (United States, United Kingdom, Singapore, China, Brazil, and Russia), which act as an agent for the subsidiaries in each region to manage foreign exchange transactions. In addition, local finance centers in the major regions manage liquidity risk through a globally integrated financial structure.

The Company's financial assets that are under financial risk management are comprised of cash and cash equivalents, short-term financial instruments, financial assets at amortized cost, trade receivables and others. The Company's financial liabilities under financial risk management are comprised of trade payables, borrowings, and others.

(A) Market risk

(1) Foreign exchange risk

The Company is exposed to foreign exchange risk arising from its global operations performed in currencies other than its functional currency. The major currencies that the Company is exposed to foreign exchange risk are the US dollar, Euro, and Indian Rupee.

The Company focuses on minimizing the impact of foreign exchange fluctuation by maintaining matching levels of assets and liabilities denominated in each foreign currency. To minimize exchange position, the Company's foreign exchange management policy requires normal business transactions, including import and export, as well as financing transactions such as depositing and borrowing, to be in local currency or match as closely as possible cash inflows and outflows incurred in the respective foreign currencies. Moreover, the Company periodically evaluates and monitors the foreign exchange risk to efficiently mitigate such risk, and the speculative foreign exchange transactions are strictly prohibited.

(2) Interest rate risk

Risk of changes in interest rates for floating interest rate financial instruments is defined as the risk that the fair value of components of the statements of financial position, and future cash flows of interest income (expenses) of a financial instrument, will fluctuate because of changes in market interest rates. The Company's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Company has implemented policies and practices to minimize uncertainty arising from changes in interest rates and financial expenses.

(3) Price risk

The Company's investment portfolio consists of direct and indirect investments in equity instruments classified as financial assets at fair value through other comprehensive income and financial assets at fair value through profit or loss, which is in line with the Company's strategy.

As of June 30, 2023 and 2022, price fluctuation of marketable equity securities (listed stocks) by 1% would result in changes in other comprehensive income (before income tax) of ₩ 81,526 million and ₩ 90,393 million, respectively, and changes in profit before tax of ₩ 4,309 million and ₩ 3,413 million, respectively.

(B) Credit risk

Credit risk arises during the normal course of transactions and investing activities where clients or other parties fail to discharge an obligation. The Company monitors and sets the client's and counterparty's credit limit on a periodic basis based on the client's and counterparty's financial conditions, default history and other factors. Adequate insurance coverage is maintained for trade receivables related to trading partners situated in higher risk countries.

Credit risk can arise from transactions with financial institutions which include financial instrument transactions such as cash and cash equivalents, deposits, and derivative instruments. To minimize such risk, the Company transacts only with banks which have a strong international credit rating (S&P A and above), and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Company's finance team and the local finance centers. The Company generally enters into a financial agreement with no restrictions, such as debt ratio covenants, provision of collateral and/or repayment of loans/borrowings. The Company requires separate approvals for contracts with restrictions.

As of the reporting date, the Company estimates that its maximum exposure to credit risk is the carrying amount of its financial assets, net of impairment losses.

(C) Liquidity risk

Due to large investments made by the Company, maintaining adequate levels of liquidity is critical. The Company strives to achieve this goal by periodically forecasting its cash balance, estimating required cash levels, and managing cash inflows and outflows.

The Company manages its liquidity risk by periodically forecasting projected cash flows. The Company maintains a liquidity management process which provides additional financial support from the local finance center and the Company. The Cash Pooling program allows the sharing of surplus funds among entities and contributes to minimizing liquidity risk and strengthening the Company's competitive position by reducing financing burden and financial expenses.

The Company secures credit lines for its overseas subsidiaries by means of payment guarantees for the overseas subsidiaries' large-scale liquidity needs.

(D) Capital risk management

The purpose of capital management is to maintain a sound capital structure. The Company monitors capital on the basis of credit ratings and debt ratio. Debt ratio is calculated by dividing total liabilities by total equity in the financial statements.

The Company has maintained an AA- credit rating from S&P and Aa2 from Moody's as of June 30, 2023.

The total liabilities to equity ratios as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Total liabilities	89,024,926	93,674,903
Total equity	358,975,626	354,749,604
Debt ratio	24.8%	26.4%

(E) Fair value measurement

- (1) Carrying amounts and fair values of financial instruments by category as of June 30, 2023 and December 31, 2022 are as follows:

(In millions of Korean won)	June 30, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	79,919,775	(*)	49,680,710	(*)
Short-term financial instruments	17,180,130	(*)	65,102,886	(*)
Short-term financial assets at amortized cost	-	(*)	414,610	(*)
Short-term financial assets at fair value through profit or loss	25,310	25,310	29,080	29,080
Trade receivables	36,104,142	(*)	35,721,563	(*)
Financial assets at fair value through other comprehensive income	10,308,125	10,308,125	11,397,012	11,397,012
Financial assets at fair value through profit or loss	1,573,457	1,573,457	1,405,468	1,405,468
Other ^(*)2)	10,996,718	524,209	10,340,876	395,667
Total financial assets	156,107,657		174,092,205	
Financial liabilities				
Trade payables	11,744,005	(*)	10,644,686	(*)
Short-term borrowings	3,557,360	(*)	5,147,315	(*)
Other payables	13,443,741	(*)	16,328,237	(*)
Current portion of long-term liabilities	1,263,841	6,995	1,089,162	6,580
- Current portion of long-term borrowings	1,257,371	(*) ^(*)3)	1,082,934	(*) ^(*)3)
- Current portion of debentures	6,470	6,995	6,228	6,580
Debentures	554,625	537,772	536,093	521,129
Long-term borrowings	3,763,250	(*) ^(*)3)	3,560,672	(*) ^(*)3)
Long-term other payables	4,890,945	(*)	2,289,236	(*)
Other ^(*)2)	10,743,779	321,938	12,409,529	361,768
Total financial liabilities	49,961,546		52,004,930	

(*)1 Assets and liabilities whose carrying amount is a reasonable approximation of fair value are excluded from the fair value disclosures.

(*)2 Assets measured at the cost of ₩ 10,472,509 million (December 31, 2022: ₩ 9,945,209 million) and liabilities measured at the cost of ₩ 10,421,841 million (December 31, 2022: ₩ 12,047,761 million) are excluded as the carrying amount is a reasonable estimation of fair value.

(*)3 Lease liabilities, classified under the current portion of long-term liabilities and long-term borrowings, are excluded from the fair value disclosures in accordance with *Korean IFRS 1107*.

- (2) Fair value hierarchy classifications of the financial instruments that are measured or disclosed at fair value as of June 30, 2022 and December 31, 2021 are as follows:

June 30, 2023				
<i>(In millions of Korean won)</i>	Level 1	Level 2	Level 3	Total balance
1) Assets				
Short-term financial assets at fair value through profit or loss	-	25,310	-	25,310
Financial assets at fair value through other comprehensive income	8,152,616	-	2,155,509	10,308,125
Financial assets at fair value through profit or loss	430,889	-	1,142,568	1,573,457
Other	-	329,602	194,607	524,209
2) Liabilities				
Current portion of debentures	-	6,995	-	6,995
Debentures	-	537,772	-	537,772
Other	-	314,534	7,404	321,938

December 31, 2022				
<i>(In millions of Korean won)</i>	Level 1	Level 2	Level 3	Total balance
1) Assets				
Short-term financial assets at fair value through profit or loss	-	29,080	-	29,080
Financial assets at fair value through other comprehensive income	9,207,295	-	2,189,717	11,397,012
Financial assets at fair value through profit or loss	314,449	-	1,091,019	1,405,468
Other	-	373,176	22,491	395,667
2) Liabilities				
Current portion of debentures	-	6,580	-	6,580
Debentures	-	521,129	-	521,129
Other	-	354,364	7,404	361,768

The levels of the fair value hierarchy and its application to financial assets and liabilities are described below.

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly
- Level 3: Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs)

The fair value of financial instruments traded in active markets is based on quoted market prices at the reporting date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. These instruments are included in Level 1. The instruments included in Level 1 are listed equity investments, most of which are classified as financial assets at fair value through other comprehensive income.

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where available and rely as little as possible on entity-specific estimates. If all significant inputs required to measure the fair value of an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs are not based on observable market data, the instrument is included in Level 3.

The Company performs the fair value measurements required for financial reporting purposes, including Level 3 fair values and discusses valuation processes and results in line with the financial reporting timelines. The Company's policy is to recognize transfers between levels at the end of the reporting period, if corresponding events or changes in circumstances have occurred.

Specific valuation techniques used to value financial instruments include:

- Quoted market prices or dealer quotes for similar instruments
- The fair value of forward foreign exchange contracts is determined using forward exchange rates at the reporting date, with the resulting value discounted to present value

Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments. For trade and other receivables that are classified as current assets, the book value approximates a reasonable estimate of fair value.

(3) Valuation technique and the inputs

The Company utilizes a present value technique to discount future cash flows using respective proper interest rate for corporate bonds, government and public bonds, and bank debentures that are classified as Level 2 in the fair value hierarchy.

The following table presents the valuation technique and the inputs used for major financial instruments classified as Level 3 as of June 30, 2023.

(In millions of Korean won and percentage)

Classification	Fair value	Valuation technique	Level 3 inputs	Input range
Financial assets at fair value through other comprehensive income				
Samsung Venture Investment	32,236	Discounted cash flow	Permanent growth rate	1.0%
			Weighted average cost of capital	18.1%
MiCo Ceramics Co., Ltd.	30,714	Discounted cash flow and others	Permanent growth rate	0.0%
			Weighted average cost of capital	14.3%
TCL China Star Optoelectronics Technology Co., Ltd. (CSOT)	1,221,371	Discounted cash flow	Permanent growth rate	0.0%
			Weighted average cost of capital	11.3%
China Star Optoelectronics Semiconductor Display Technology Ltd. (CSOSDT)	204,245	Discounted cash flow	Permanent growth rate	0.0%
			Weighted average cost of capital	11.3%
Others				
Call option on equity instruments	169,957	Binomial model	Risk-free discount rate	3.7%
			Price volatility	55.0%
Put option on equity instruments	24,650	Binomial model	Risk-free discount rate	4.2%~5.4%, 2.2%
			Price volatility	25.1%, 28.8%

(4) Changes in Level 3 instruments for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Financial assets		
Balance as of January 1	3,303,227	3,430,214
Acquisitions	120,995	108,009
Disposals	(3,216,022)	(160,465)
Amount recognized in profit for the period	248,191	91,008
Amount recognized in other comprehensive income	3,124,848	183,532
Other	(88,555)	1,180
Balance as of June 30	3,492,684	3,653,478

<i>(In millions of Korean won)</i>	2023	2022
Financial liabilities		
Balance as of January 1	7,404	5,438
Other	-	-
Balance as of June 30	7,404	5,438

(5) Sensitivity analysis for recurring fair value measurements categorized within Level 3

Sensitivity analysis of financial instruments is performed to measure favorable and unfavorable changes in the fair value of financial instruments which are affected by the unobservable parameters, using a statistical technique. When the fair value is affected by more than two input parameters, the amounts represent the most favorable or unfavorable.

The results of the sensitivity analysis for effect on income or loss before tax from changes in inputs for major financial instruments which are categorized within Level 3 and subject to sensitivity analysis are as follows:

<i>(In millions of Korean won)</i>	Favorable changes		Unfavorable changes	
	Profit or loss	Equity	Profit or loss	Equity
Financial assets at fair value through other comprehensive income ^(*1)	-	113,344	-	(81,509)
Others ^(*2)	60,223	-	(51,595)	-

^(*1) For equity securities, changes in fair value are calculated with the correlation between the growth rate (-1%~1%) and the discount rate, which are significant unobservable inputs.

^(*2) Changes in fair value were calculated based on the correlation between underlying asset price (20%) and price volatility (5% or 10%), which are significant unobservable inputs.

26. Segment Information

(A) Operating segment information

The chief operating decision-maker has been identified as the Management Committee. The Company determines operating segments based on the units reported to the Management Committee. The Management Committee reviews the operating profits of each operating segment in order to assess performance and to make strategic decisions regarding the allocation of resources to each segment.

Sales revenue consists mostly of product sales. The operating segments are product-based and are identified based on the internal organization and revenue streams. As of the reporting date, the operating segments are comprised of DX, DS, SDC, Harman, and others.

The segment information including depreciation, amortization and operating profits is prepared after adjusting intercompany transactions. Total assets and liabilities of each operating segment are excluded from the disclosure as these have not been provided regularly to the Management Committee.

(1) For the three-month period ended June 30, 2023

<i>(In millions of Korean won)</i>	DX	DS	SDC	Harman	Intercompany reconciliations	Total^(*)
Revenue	40,206,174	14,729,264	6,483,066	3,495,745	(4,908,716)	60,005,533
Depreciation	640,513	7,188,749	804,766	83,040	-	8,767,744
Amortization	433,138	192,575	55,624	50,578	-	790,853
Operating profit	3,829,380	(4,361,844)	843,069	251,381	-	668,547

^(*) Other operating segments are not separately disclosed.

Revenue by major product for the three-month period ended June 30, 2023 are as follows:

<i>(In millions of Korean won)</i>	Image devices	Mobile devices	Memory	Display panels	Total^(*)
Revenue	7,245,758	24,608,693	8,967,359	6,483,066	60,005,533

^(*) Other operating segments are not separately disclosed.

(2) For the six-month period ended June 30, 2023

<i>(In millions of Korean won)</i>	DX	DS	SDC	Harman	Intercompany reconciliations	Total^(*)
Revenue	86,428,687	28,463,739	13,097,217	6,661,642	(10,900,381)	123,750,904
Depreciation	1,255,917	14,411,510	1,637,600	163,068	-	17,568,639
Amortization	850,496	399,184	110,647	99,681	-	1,576,451
Operating profit	8,038,140	(8,943,698)	1,619,085	380,330	-	1,308,725

^(*) Other operating segments are not separately disclosed.

Revenue by major product for the six-month period ended June 30, 2023 are as follows:

<i>(In millions of Korean won)</i>	Image devices	Mobile devices	Memory	Display panels	Total^(*)
Revenue	14,680,693	55,353,244	17,884,356	13,097,217	123,750,904

^(*) Other operating segments are not separately disclosed.

(3) For the three-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	DX	DS	SDC	Harman	Intercompany reconciliations	Total^(*)
Revenue	44,455,371	28,497,568	7,710,680	2,982,834	(6,442,846)	77,203,607
Depreciation	610,308	7,051,507	1,284,450	80,322	-	9,068,814
Amortization	403,013	204,895	59,793	50,151	-	772,552
Operating profit	3,021,697	9,981,053	1,057,643	101,642	-	14,097,045

^(*) Other operating segments are not separately disclosed.

Revenue by major product for the three-month period ended June 30, 2022 are as follows:

<i>(In millions of Korean won)</i>	Image devices	Mobile devices	Memory	Display panels	Total^(*)
Revenue	7,537,814	28,000,484	21,075,357	7,710,680	77,203,607

^(*) Other operating segments are not separately disclosed.

(4) For the six-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	DX	DS	SDC	Harman	Intercompany reconciliations	Total^(*)
Revenue	92,524,038	55,364,982	15,681,171	5,649,180	(14,234,266)	154,985,105
Depreciation	1,215,157	13,935,829	2,684,014	158,693	-	18,077,845
Amortization	796,775	412,182	119,181	107,677	-	1,543,029
Operating profit	7,577,158	18,431,184	2,150,507	203,202	-	28,218,454

^(*) Other operating segments are not separately disclosed.

Revenue by major product for the six-month period ended June 30, 2022 are as follows:

<i>(In millions of Korean won)</i>	Image devices	Mobile devices	Memory	Display panels	Total^(*)
Revenue	16,255,835	59,228,241	41,166,821	15,681,171	154,985,105

^(*) Other operating segments are not separately disclosed.

(B) Regional information

The regional information provided to the Management Committee for the reportable segments as of and for the six-month periods ended June 30, 2023 and 2022 are as follows:

(1) As of and for the three-month period ended June 30, 2023

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Segment revenue	10,269,812	21,321,961	11,064,655	11,012,989	6,336,116	-	60,005,533
Non-current assets ^(*)	156,560,136	16,470,864	6,132,379	9,199,292	13,857,391	(919,886)	201,300,176

^(*) Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

(2) As of and for the six-month period ended June 30, 2023

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Segment revenue	21,570,240	44,084,412	23,647,578	22,547,328	11,901,346	-	123,750,904
Non-current assets ^(*)	156,560,136	16,470,864	6,132,379	9,199,292	13,857,391	(919,886)	201,300,176

^(*) Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

(3) As of and for the three-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Segment revenue	11,262,111	32,479,799	11,100,501	12,010,024	10,351,172	-	77,203,607
Non-current assets ^(*)	130,507,765	11,857,401	5,873,791	9,396,020	17,570,719	(854,194)	174,351,502

^(*) Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

(4) As of and for the six-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Segment revenue	23,335,805	61,573,772	24,344,402	24,913,418	20,817,708	-	154,985,105
Non-current assets ^(*)	130,507,765	11,857,401	5,873,791	9,396,020	17,570,719	(854,194)	174,351,502

^(*) Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

27. Related Party Transactions

(A) Sale and purchase transactions

Sale and purchase transactions with related parties for the six-month periods ended June 30, 2023 and 2022 are as follows:

		2023			
(In millions of Korean won)	Name of company ^(*)	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS Co.,Ltd	101,310	-	970,023	152,478
	Samsung Electro-Mechanics Co., Ltd	51,439	-	610,203	60
	Samsung SDI Co., Ltd	69,556	-	363,305	16,983
	Cheil Worldwide Inc	36,039	-	440,390	76
	Other	466,197	-	6,373,995	51,275
	Total	724,541	-	8,757,916	220,872
Other related parties	Samsung C&T Co., Ltd	27,964	70	133,436	1,994,302
	Other	262,577	-	951,690	1,548,223
	Total	290,541	70	1,085,126	3,542,525
Other ^(*)	Samsung Engineering Co., Ltd	761	-	15,319	1,400,444
	S-1	5,381	-	261,314	23,155
	Other	96,497	-	387,511	196,225
	Total	102,639	-	664,144	1,619,824

^(*) Transactions with separate entities that are related parties of the Company.

^(*) Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

		2022			
(In millions of Korean won)	Name of company ^(*)	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS Co.,Ltd	129,044	-	889,262	185,302
	Samsung Electro-Mechanics Co., Ltd	48,221	-	769,412	-
	Samsung SDI Co., Ltd	43,494	-	392,753	7,252
	Cheil Worldwide Inc	30,204	-	456,042	-
	Other	685,854	-	7,752,693	55,766
	Total	936,817	-	10,260,162	248,320
Other related parties	Samsung C&T Co., Ltd	28,750	-	240,033	2,832,163
	Other	189,235	-	834,358	149,510
	Total	217,985	-	1,074,391	2,981,673
Other ^(*)	Samsung Engineering Co., Ltd	970	-	14,328	1,068,938
	S-1	4,871	-	246,721	14,330
	Other	83,692	-	133,566	145,829
	Total	89,533	-	394,615	1,229,097

^(*) Transactions with separate entities that are related parties of the Company.

^(*) Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(B) Balances of receivables and payables

Balances of receivables and payables arising from sales and purchases of goods and services as of June 30, 2023 and December 31, 2022 are as follows:

(In millions of Korean won)	Name of company ^(#1)	June 30, 2023	
		Receivables	Payables ^(#2)
Associates and joint ventures	Samsung SDS Co.,Ltd	24,819	522,578
	Samsung Electro-Mechanics Co., Ltd	2,740	130,774
	Samsung SDI Co., Ltd	134,584	77,919
	Cheil Worldwide Inc	664	313,162
	Other	231,369	1,095,322
	Total	394,176	2,139,755
Other related parties	Samsung C&T Co., Ltd	213,512	750,085
	Other	20,218	307,132
	Total	233,730	1,057,217
Other ^(#3)	Samsung Engineering Co., Ltd	385	897,538
	S-1	1,193	50,029
	Other	14,653	207,452
	Total	16,231	1,155,019

^(#1) Balances due from and to separate entities that are related parties of the Company.

^(#2) Payables and others include lease liabilities.

^(#3) Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(In millions of Korean won)	Name of company ^(#1)	December 31, 2022	
		Receivables	Payables ^(#2)
Associates and joint ventures	Samsung SDS Co.,Ltd	49,792	512,022
	Samsung Electro-Mechanics Co., Ltd	385	133,952
	Samsung SDI Co., Ltd	121,605	92,452
	Cheil Worldwide Inc	223	453,545
	Other	371,575	1,236,016
	Total	543,580	2,427,987
Other related parties	Samsung C&T Co., Ltd	217,818	2,783,240
	Other	20,830	250,103
	Total	238,648	3,033,343
Other ^(#3)	Samsung Engineering Co., Ltd	331	1,251,039
	S-1	3,839	73,102
	Other	15,647	545,684
	Total	19,817	1,869,825

^(#1) Balances due from and to separate entities that are related parties of the Company.

^(#2) Payables and others include lease liabilities.

^(#3) Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

- (C) For the six-month periods ended June 30, 2023 and 2022, the Company invested ₩ 65,182 million and ₩ 903,758 million, respectively, in associates and joint ventures. In addition, the Company recovered ₩ 17,839 million and ₩ 6,787 million, respectively, of investments in associates and joint ventures for the six-month periods ended June 30, 2023 and 2022.
- (D) For the six-month periods ended June 30, 2023 and 2022, the Company declared dividend of ₩ 825,850 million and ₩ 835,814 million, respectively, to related parties. In addition, for the six-month periods ended June 30, 2023 and 2022, the Company declared dividends of ₩ 64,116 million and ₩ 64,116 million, respectively, to the entities that are not related parties of the Company in accordance with Korean IFRS 1024, but belong to the same conglomerate according to the Monopoly Regulation and Fair Trade Act. As of June 30, 2023 and December 31, 2022, there were no dividend payable amounts outstanding.
- (E) For the six-month period ended June 30, 2023, the Company entered into new lease agreements with its related parties amounted to ₩ 1,762 million (none for the six-month period ended June 30, 2022), and the lease payments made to the related parties amounted to ₩ 10,259 million and ₩ 12,493 million, respectively.
- (F) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the six-month periods ended June 30, 2023 and 2022 consists of:

<i>(In millions of Korean won)</i>	2023	2022
Short-term employee benefits	5,154	4,694
Post-employment benefits	279	289
Other long-term employee benefits	3,917	3,873

4. Non-consolidated financial statements

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2023 KRW	December 31, 2022 KRW	June 30, 2023 USD	December 31, 2022 USD
Assets					
Current assets					
Cash and cash equivalents	3, 25	12,892,470	3,921,593	9,953,354	3,027,582
Short-term financial instruments	3, 25	1,403	137	1,083	106
Trade receivables	3, 25	22,140,988	20,503,223	17,093,474	15,829,073
Non-trade receivables	3, 25	2,041,832	2,925,006	1,576,353	2,258,188
Prepaid expenses		1,055,116	1,047,900	814,580	809,009
Inventories	5	32,589,559	27,990,007	25,160,069	21,609,083
Other current assets	3, 25	2,751,125	2,674,792	2,123,946	2,065,015
		73,472,493	59,062,658	56,722,859	45,598,056
Non-current assets					
Financial assets at fair value through other comprehensive income	3, 4, 25	1,730,986	1,364,325	1,336,371	1,053,298
Financial assets at fair value through profit or loss	3, 4, 25	61	283	47	218
Investments in subsidiaries, associates and joint ventures	6	57,359,028	57,397,249	44,282,805	44,312,313
Property, plant and equipment	7	132,603,414	123,266,986	102,373,616	95,165,628
Intangible assets	8	11,168,723	8,561,424	8,622,573	6,609,663
Net defined benefit assets	11	3,661,528	4,410,223	2,826,804	3,404,818
Deferred income tax assets		1,957,367	2,142,512	1,511,143	1,654,080
Other non-current assets	3, 25	4,073,993	3,878,090	3,145,239	2,993,996
		212,555,100	201,021,092	164,098,598	155,194,014
Total assets		286,027,593	260,083,750	220,821,457	200,792,070

The above interim separate statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30,	December 31,	June 30,	December 31,
		2023	2022	2023	2022
		KRW	KRW	USD	USD
Liabilities and Equity					
Current liabilities					
Trade payables	3, 25	9,474,012	8,729,315	7,314,207	6,739,280
Short-term borrowings	3, 9, 25	2,668,838	2,381,512	2,060,419	1,838,595
Other payables	3, 25	12,840,656	18,554,543	9,913,353	14,324,636
Advances received	14	238,297	320,689	183,972	247,581
Withholdings	3, 25	416,178	523,354	321,301	404,044
Accrued expenses	3, 14, 25	6,990,048	8,359,296	5,396,516	6,453,615
Current income tax liabilities		-	2,533,481	-	1,955,920
Current portion of long-term liabilities	3, 9, 10, 25	201,192	135,753	155,326	104,805
Provisions	12	4,850,096	4,059,491	3,744,412	3,134,043
Other current liabilities	14	623,239	488,613	481,159	377,223
		38,302,556	46,086,047	29,570,665	35,579,742
Non-current liabilities					
Debentures	3, 10, 25	25,883	24,912	19,982	19,233
Long-term borrowings	3, 9, 25	22,826,584	654,979	17,622,774	505,662
Long-term other payables	3, 25	4,772,353	2,439,232	3,684,393	1,883,157
Long-term provisions	12	1,857,914	1,423,165	1,434,363	1,098,724
Other non-current liabilities		53,511	39,224	41,312	30,282
		29,536,245	4,581,512	22,802,824	3,537,058
Total liabilities		67,838,801	50,667,559	52,373,489	39,116,800

The above interim separate statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF FINANCIAL POSITION

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	June 30, 2023 KRW	December 31, 2022 KRW	June 30, 2023 USD	December 31, 2022 USD
Equity					
Preference shares	15	119,467	119,467	92,232	92,232
Ordinary shares	15	778,047	778,047	600,674	600,674
Share premium		4,403,893	4,403,893	3,399,931	3,399,931
Retained earnings	16	213,225,614	204,388,016	164,616,253	157,793,376
Other components of equity	17	(338,229)	(273,232)	(261,122)	(210,943)
Total equity		218,188,792	209,416,191	168,447,968	161,675,270
Total liabilities and equity		286,027,593	260,083,750	220,821,457	200,792,070

The above interim separate statements of financial position should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF PROFIT OR LOSS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the three-month periods ended June 30,				For the six-month periods ended June 30,			
		2023	2022	2023	2022	2023	2022	2023	2022
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Revenue	26	39,729,088	58,641,288	30,671,989	45,272,746	81,897,767	115,365,546	63,227,411	89,065,491
Cost of sales	18	33,808,570	39,964,268	26,101,180	30,853,554	70,922,059	79,149,180	54,753,852	61,105,424
Gross profit		5,920,518	18,677,020	4,570,809	14,419,192	10,975,708	36,216,366	8,473,559	27,960,067
Selling and administrative expenses	18, 19	9,618,621	8,518,142	7,425,850	6,576,248	18,582,572	16,905,657	14,346,275	13,051,649
Operating profit (loss)	26	(3,698,103)	10,158,878	(2,855,041)	7,842,944	(7,606,864)	19,310,709	(5,872,716)	14,908,418
Other non-operating income	20	13,533,358	144,397	10,448,138	111,479	22,103,342	427,668	17,064,410	330,172
Other non-operating expense	20	39,191	99,176	30,257	76,567	131,431	153,785	101,468	118,726
Financial income	21	1,829,316	2,489,143	1,412,284	1,921,689	3,982,674	4,229,038	3,074,738	3,264,938
Financial expense	21	2,156,852	2,433,137	1,665,150	1,878,451	4,477,000	3,875,505	3,456,372	2,992,001
Profit before income tax		9,468,528	10,260,105	7,309,974	7,921,094	13,870,721	19,938,125	10,708,592	15,392,801
Income tax expense (income)	22	(116,105)	2,068,797	(89,636)	1,597,170	127,993	4,094,874	98,814	3,161,360
Profit for the period		9,584,633	8,191,308	7,399,610	6,323,924	13,742,728	15,843,251	10,609,778	12,231,441
Earnings per share (in Korean won, in US dollars)	23								
- Basic		1,411	1,206	1.09	0.93	2,023	2,332	1.56	1.80
- Diluted		1,411	1,206	1.09	0.93	2,023	2,332	1.56	1.80

The above interim separate statements of profit or loss should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF COMPREHENSIVE INCOME

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the three-month periods ended June 30,				For the six-month periods ended June 30,			
		2023	2022	2023	2022	2023	2022	2023	2022
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Profit for the period		9,584,633	8,191,308	7,399,610	6,323,924	13,742,728	15,843,251	10,609,778	12,231,441
Other comprehensive income (loss)									
Items that will not be reclassified subsequently to profit or loss:									
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	182,793	(61,732)	141,121	(47,659)	270,112	(115,633)	208,534	(89,272)
Remeasurement of net defined benefit assets, net of tax	17	(94,985)	(38,746)	(73,331)	(29,913)	(335,109)	(101,773)	(258,713)	(78,571)
Items that may be reclassified subsequently to profit or loss:		-	-	-	-	-	-	-	-
Other comprehensive income (loss) for the period, net of tax		87,808	(100,478)	67,790	(77,572)	(64,997)	(217,406)	(50,179)	(167,843)
Total comprehensive income for the period		9,672,441	8,090,830	7,467,400	6,246,352	13,677,731	15,625,845	10,559,599	12,063,598

The above interim separate statements of comprehensive income should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY

(In millions of Korean won)

For the six-month period ended June 30, 2022	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2022		119,467	778,047	4,403,893	188,774,335	(882,010)	193,193,732
Profit for the period		-	-	-	15,843,251	-	15,843,251
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	-	(115,633)	(115,633)
Remeasurement of net defined benefit assets, net of tax		-	-	-	-	(101,773)	(101,773)
Total comprehensive income for the period		-	-	-	15,843,251	(217,406)	15,625,845
Dividends declared		-	-	-	(4,905,130)	-	(4,905,130)
Total transactions with owners		-	-	-	(4,905,130)	-	(4,905,130)
Balance as of June 30, 2022		119,467	778,047	4,403,893	199,712,456	(1,099,416)	203,914,447

The above interim separate statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY

(In thousands of US dollars (Note 2.3))

For the six-month period Ended June 30, 2022	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2022		92,232	600,674	3,399,931	145,739,169	(680,937)	149,151,069
Profit for the period		-	-	-	12,231,441	-	12,231,441
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	-	(89,272)	(89,272)
Remeasurement of net defined benefit assets, net of tax		-	-	-	-	(78,571)	(78,571)
Total comprehensive income for the period		-	-	-	12,231,441	(167,843)	12,063,598
Dividends declared		-	-	-	(3,786,900)	-	(3,786,900)
Total transactions with owners		-	-	-	(3,786,900)	-	(3,786,900)
Balance as of June 30, 2022		92,232	600,674	3,399,931	154,183,710	(848,780)	157,427,767

The above interim separate statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY

(In millions of Korean won)

For the six-month period Ended June 30, 2023	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2023		119,467	778,047	4,403,893	204,388,016	(273,232)	209,416,191
Profit for the period		-	-	-	13,742,728	-	13,742,728
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	-	270,112	270,112
Remeasurement of net defined benefit assets, net of tax	17	-	-	-	-	(335,109)	(335,109)
Total comprehensive income for the period		-	-	-	13,742,728	(64,997)	13,677,731
Dividends declared		-	-	-	(4,905,130)	-	(4,905,130)
Total transactions with owners		-	-	-	(4,905,130)	-	(4,905,130)
Balance as of June 30, 2023		119,467	778,047	4,403,893	213,225,614	(338,229)	218,188,792

The above interim separate statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY

(In thousands of US dollars (Note 2.3))

For the six-month period Ended June 30, 2023	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2023		92,232	600,674	3,399,931	157,793,376	(210,943)	161,675,270
Profit for the period		-	-	-	10,609,778	-	10,609,778
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	-	208,534	208,534
Remeasurement of net defined benefit assets, net of tax	17	-	-	-	-	(258,713)	(258,713)
Total comprehensive income for the period		-	-	-	10,609,778	(50,179)	10,559,599
Dividends declared		-	-	-	(3,786,901)	-	(3,786,901)
Total transactions with owners		-	-	-	(3,786,901)	-	(3,786,901)
Balance as of June 30, 2023		92,232	600,674	3,399,931	164,616,253	(261,122)	168,447,968

The above interim separate statements of changes in equity should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF CASH FLOWS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Notes	For the six-month periods ended June 30,			
		2023	2022	2023	2022
		KRW	KRW	USD	USD
Operating activities					
Profit for the period		13,742,728	15,843,251	10,609,778	12,231,441
Adjustments	24	(3,908,556)	18,238,275	(3,017,517)	14,080,468
Changes in assets and liabilities arising from operating activities	24	(11,838,350)	(7,706,823)	(9,139,544)	(5,949,886)
Cash generated from operations		(2,004,178)	26,374,703	(1,547,283)	20,362,023
Interest received		124,568	161,320	96,170	124,544
Interest paid		(184,726)	(117,383)	(142,614)	(90,623)
Dividends received		22,160,138	137,839	17,108,258	106,416
Income tax paid		(2,453,014)	(5,334,590)	(1,893,797)	(4,118,456)
Net cash from operating activities		17,642,788	21,221,889	13,620,734	16,383,904
Investing activities					
Net decrease (increase) in short-term financial instruments		(1,266)	1,896,376	(977)	1,464,056
Acquisition of financial assets at fair value through other comprehensive income	22	-	-	17	-
Disposal of financial assets at fair value through profit or loss		222	150	171	116
Disposal of investments in subsidiaries, associates and joint ventures		107,710	75,028	83,155	57,924
Acquisition of investments in subsidiaries, associates and joint ventures		(69,514)	(940,489)	(53,667)	(726,084)
Disposal of property, plant and equipment		97,006	239,039	74,891	184,545
Acquisition of property, plant and equipment		(24,524,605)	(16,286,602)	(18,933,694)	(12,573,721)
Disposal of intangible assets		11,380	197	8,786	152
Acquisition of intangible assets		(1,499,642)	(1,335,396)	(1,157,766)	(1,030,964)
Cash outflow from other investing activities		(55,835)	(63,929)	(43,106)	(49,355)
Net cash used in investing activities		(25,934,522)	(16,415,626)	(20,022,190)	(12,673,331)

The above interim separate statements of cash flows should be read in conjunction with the accompanying notes.

Samsung Electronics Co., Ltd.

INTERIM SEPARATE STATEMENTS OF CASH FLOWS

(In millions of Korean won, in thousands of US dollars (Note 2.3))

	Not es	For the six-month periods ended June 30,			
		2023	2022	2023	2022
		KRW	KRW	USD	USD
Financing activities					
Net increase (decrease) in short-term borrowings		268,775	(669,755)	207,502	(517,070)
Increase in debentures and long-term borrowings		21,990,000	-	16,976,907	-
Repayment of debentures and long-term borrowings		(80,125)	(72,124)	(61,859)	(55,682)
Dividends paid		(4,905,792)	(4,905,061)	(3,787,411)	(3,786,847)
Net cash used in financing activities		17,272,858	(5,646,940)	13,335,139	(4,359,599)
Effect of foreign exchange rate changes		(10,247)	923	(7,911)	713
Net increase (decrease) in cash and cash equivalents		8,970,877	(839,754)	6,925,772	(648,313)
Cash and cash equivalents					
Beginning of the period		3,921,593	3,918,872	3,027,582	3,025,481
End of the period		12,892,470	3,079,118	9,953,354	2,377,168

The above interim separate statements of cash flows should be read in conjunction with the accompanying notes.

5. Non to non-consolidated financial statements

As of June 30, 2023 and December 31, 2022, and
for the six-month periods ended June 30, 2023 and 2022

1. General Information

Samsung Electronics Co., Ltd. (the “Company”) was incorporated under the laws of the Republic of Korea in 1969 and listed its shares on the Korea Stock Exchange in 1975. The Company operates two business divisions: Device eXperience (“DX”) and Device Solutions (“DS”). DX division comprises businesses for digital TVs, refrigerators, mobile phones, and communication systems. DS division comprises businesses for semiconductor products such as memory, foundry and system LSI. The Company is domiciled in the Republic of Korea and is located in Suwon, the Republic of Korea.

These financial statements have been prepared in accordance with Korean International Financial Reporting Standards (“Korean IFRS”) 1027, *Separate Financial Statements*.

2. Significant Accounting Policies

2.1 Basis of Presentation

The Company maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (“Korean IFRS”). The accompanying interim separate financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

The interim separate financial statements for the six-month periods ended June 30, 2023, have been prepared in accordance with *Korean IFRS 1034, Interim Financial Reporting*. These interim separate financial statements have been prepared in accordance with the Korean IFRS which is effective as of June 30, 2023.

(A) New and amended standards adopted by the Company

The Company applied the following amended standards for the first time for the annual reporting period commencing January 1, 2023:

Amendments to Korean IFRS 1001, *Presentation of Financial Statements*

The amendments require companies to define and disclose their 'material' accounting policy information instead of its 'significant' accounting policies. The amendments explain how an entity can identify material accounting policy information. The application of amendments does not have a significant impact on the Company’s interim financial statements.

Amendments to Korean IFRS 1008, *Accounting Policies, Changes in Accounting Estimates and Errors*

The amendments clarify the definition of a change in accounting estimates, and specify how to distinguish it from a change in accounting policies. The application of amendments does not have a significant impact on the Company’s interim separate financial statements.

Amendments to Korean IFRS 1012, *Income Taxes*

The amendments add to the initial recognition exemption that the initial recognition exemption does not apply to transactions in which equal amounts of deductible and taxable temporary differences arise on initial recognition. The application of amendments does not have a significant impact on the Company’s interim separate financial statements.

(B) New and amended standards not yet adopted by the Company

The amended accounting standard issued that is not yet effective for the annual reporting period commencing January 1, 2023 and has not been early adopted by the Company is as follows:

Amendments to Korean IFRS 1001, *Presentation of Financial Statements*

The amendments to Korean IFRS 1001 clarify that the classification of liabilities as current or non-current should be based on rights that are in existence at the end of the reporting period, and that the classification is unaffected by management's intentions or expectations about whether an entity will exercise its right to defer settlement of a liability. The amendments also introduce a definition of settlement to make clear that settlement includes the transfer to the counterparty of the entity's own equity instruments, however, it would be excluded if an option to settle the liability by the transfer of the entity's own equity instruments is recognized separately from the liability as an equity component of a compound financial instrument. The amendments are applied retrospectively for annual periods beginning on or after January 1, 2024, with early application permitted.

2.2 Accounting Policies

Significant accounting policies and method of computation used in the preparation of the interim financial statements are consistent with those of the annual financial statements for the year ended December 31, 2022, except for the changes due to the application of amendments of standards described in Note 2.1 and as described below.

Income tax expense

Income tax expense for the interim period is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The estimated average annual effective income tax rate is applied to the pre-tax income of the interim period.

2.3 Convenience Translation into United States Dollar Amounts

The US dollar amounts provided in the financial statements represent supplementary information solely for the convenience of the reader. All Korean won amounts are expressed in US dollars at the rate of ₩ 1,295.3 to \$1, the average exchange rate for the six-month periods ended June 30, 2023. Such presentation is not in accordance with generally accepted accounting principles, and should not be construed as a representation that the Korean won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

2.4 Material Accounting Estimates and Assumptions

In preparing the interim financial statements, the management of the Company makes judgements, estimates and assumptions on matters which affect the application of policies and reported amounts of assets, liabilities, income and expenses. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates, by definition, seldom equal the related actual results.

Material accounting estimates and assumptions made in the preparation of the interim financial statements are consistent with those applied in the preparation of the annual financial statements for the year ended December 31, 2022, except for the estimates used to determine the income tax expense.

3. Financial Instruments by Category

(A) Categorizations of financial assets and liabilities as of June 30, 2023 and December 31, 2022 are as follows:

(1) As of June 30, 2023

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Total
Financial assets				
Cash and cash equivalents	12,892,470	-	-	12,892,470
Short-term financial instruments	1,403	-	-	1,403
Trade receivables	22,140,988	-	-	22,140,988
Financial assets at fair value through other comprehensive income	-	1,730,986	-	1,730,986
Financial assets at fair value through profit or loss	-	-	61	61
Other	4,856,121	-	169,957	5,026,078
Total	39,890,982	1,730,986	170,018	41,791,986

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Other financial liabilities ^(*)	Total
Financial liabilities			
Trade payables	9,474,012	-	9,474,012
Short-term borrowings	-	2,668,838	2,668,838
Other payables	12,579,242	-	12,579,242
Current portion of long-term liabilities	6,470	194,722	201,192
Debentures	25,883	-	25,883
Long-term borrowings	21,990,000	836,584	22,826,584
Long-term other payables	4,414,940	-	4,414,940
Other	3,541,169	-	3,541,169
Total	52,031,716	3,700,144	55,731,860

(*) Other financial liabilities include collateralized borrowings and lease liabilities which are not subject to categorizations.

(2) As of December 31, 2022

<i>(In millions of Korean won)</i>	Financial assets measured at amortized cost	Financial assets measured at fair value through other comprehensive income	Financial assets measured at fair value through profit or loss	Total
Financial assets				
Cash and cash equivalents	3,921,593	-	-	3,921,593
Short-term financial instruments	137	-	-	137
Trade receivables	20,503,223	-	-	20,503,223
Financial assets at fair value through other comprehensive income	-	1,364,325	-	1,364,325
Financial assets at fair value through profit or loss	-	-	283	283
Other	5,470,355	-	-	5,470,355
Total	29,895,308	1,364,325	283	31,259,916

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Other financial liabilities^(*)	Total
Financial liabilities			
Trade payables	8,729,315	-	8,729,315
Short-term borrowings	-	2,381,512	2,381,512
Other payables	18,324,604	-	18,324,604
Current portion of long-term liabilities	6,228	129,525	135,753
Debentures	24,912	-	24,912
Long-term borrowings	-	654,979	654,979
Long-term other payables	2,083,790	-	2,083,790
Others	3,145,473	-	3,145,473
Total	32,314,322	3,166,016	35,480,338

(*) Other financial liabilities include collateralized borrowings and lease liabilities which are not subject to categorizations.

4. Financial Assets at Fair Value

(A) Details of financial assets at fair value as of June 30, 2023 and December 31, 2022 are as follows:

(1) Financial assets at fair value through other comprehensive income

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Equity instruments	1,730,986	1,364,325

(2) Financial assets at fair value through profit or loss

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Debt instruments	61	283

(B) Details of listed equity securities of financial assets at fair value as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won, number of shares and percentage)</i>	June 30, 2023			December 31, 2022	
	Number of shares owned	Percentage of ownership (%) ^(*)	Acquisition cost	Carrying amount (Market value)	Carrying amount (Market value)
Samsung Heavy Industries Co., Ltd.	134,027,281	15.2	932,158	893,962	684,879
Hotel Shilla Co., Ltd.	2,004,717	5.1	13,957	147,146	166,592
iMarket Korea Inc.	647,320	1.9	324	6,402	6,538
Kt Skyline Co., Ltd.	240,000	0.5	3,344	1,541	1,954
Yongpyong Resort Corporation	400,000	0.8	1,869	1,228	1,412
A-Tech Solution Co., Ltd.	1,592,000	15.9	26,348	19,454	12,879
Wonik Holdings Co., Ltd.	1,759,171	2.3	15,410	6,676	5,972
Wonik IPS CO., Ltd.	1,850,936	3.8	16,214	60,711	45,811
Dongjin Semichem Co., Ltd.	2,467,894	4.8	48,277	103,898	73,913
Soulbrain Holdings Co., Ltd.	461,741	2.2	30,752	12,859	10,989
Soulbrain Co., Ltd.	373,368	4.8	24,866	93,715	81,357
S&S Tech Corporation	1,716,116	8.0	65,933	95,073	45,220
YIK Corporation	9,601,617	11.7	47,336	42,727	26,933
Kctech Co., Ltd.	1,022,216	4.9	20,720	21,722	15,129
Lotvacuum Co., Ltd.	1,267,668	7.1	18,990	21,868	14,326
Newpower Plasma Co., Ltd.	2,140,939	4.9	12,739	13,402	7,579
Fine Semitech Corporation	1,522,975	7.0	43,009	33,201	23,758
DNF Co., Ltd.	810,030	7.0	20,964	14,840	10,692
Marvell	173,187	0.0	11,705	13,592	8,129
SoundHound AI, Inc.	1,702,957	0.9	13,719	10,172	3,820
Total			1,368,634	1,614,189	1,247,882

(*) Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

5. Inventories

Inventories as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023			December 31, 2022		
	Gross amount	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	9,340,283	(1,427,682)	7,912,601	8,589,879	(956,427)	7,633,452
Work in process	23,037,774	(3,336,610)	19,701,164	16,738,121	(1,216,059)	15,522,062
Raw materials and supplies	5,095,882	(611,681)	4,484,201	4,891,951	(492,006)	4,399,945
Materials in transit	491,593	-	491,593	434,548	-	434,548
Total	37,965,532	(5,375,973)	32,589,559	30,654,499	(2,664,492)	27,990,007

6. Investments in Subsidiaries, Associates and Joint Ventures

(A) Changes in investments in subsidiaries, associates and joint ventures for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	57,397,249	56,225,599
Acquisition	69,514	1,211,063
Disposal	(107,735)	(74,448)
Balance as of June 30	57,359,028	57,362,214

(B) Major investments in associates as of June 30, 2023 are as follows (refer to Note 27 for list of subsidiaries):

Investee	Nature of relationship	Percentage of ownership (%) ^(*)	Principal business location	Fiscal period-end
Samsung Electro-Mechanics Co., Ltd.	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
Samsung SDS Co., Ltd.	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
Samsung Biologics Co., Ltd.	Investment in new business	31.2	Korea	December
Samsung SDI Co., Ltd. ^(*)	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide, Inc.	Advertising agency	25.2	Korea	December

(*) Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

(*) The Company's ownership of ordinary shares outstanding is 20.6%.

(C) Fair value of marketable investments in associates as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won and number of shares)</i>	June 30, 2023		December 31, 2022		
	Number of shares held	Market value	Carrying amount	Market value	Carrying amount
Samsung Electro-Mechanics	17,693,084	2,556,651	445,244	2,308,947	445,244
Samsung SDS	17,472,110	2,147,322	560,827	2,149,070	560,827
Samsung Biologics	22,217,309	16,529,678	1,595,892	18,240,411	1,595,892
Samsung SDI	13,462,673	9,006,528	1,242,605	7,956,440	1,242,605
Cheil Worldwide	29,038,075	526,460	491,599	669,328	491,599

7. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	123,266,986	103,667,025
Acquisition and capital expenditures	21,892,460	16,792,529
Depreciation	(12,502,893)	(12,020,188)
Disposals/scrap/impairment	(51,823)	(157,453)
Other	(1,316)	100,063
Balance as of June 30	132,603,414	108,381,976

(B) Details of depreciation of property, plant and equipment for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	11,513,134	11,133,349
Selling and administrative expenses and other	989,759	886,839
Total	12,502,893	12,020,188

(C) Right-of-use assets as of June 30, 2023 amount to ₩ 1,774,639 million (December 31, 2022: ₩ 1,236,013 million). During the six-month periods ended June 30, 2023 and 2022, newly recognized right-of-use assets amount to ₩ 665,017 million and ₩ 31,866 million, respectively, with relevant depreciation of ₩ 107,382 million and ₩ 79,028 million, respectively.

8. Intangible Assets

(A) Changes in intangible assets for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	8,561,424	8,657,456
External acquisitions	3,930,568	800,515
Amortization	(1,317,524)	(1,265,858)
Disposals/scrap/impairment	(25,042)	(16,893)
Other	19,297	6,314
Balance as of June 30	11,168,723	8,181,534

(B) Details of amortization of intangible assets for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	1,018,232	967,462
Selling and administrative expenses and other	299,292	298,396
Total	1,317,524	1,265,858

9. Borrowings

Details of the carrying amounts of borrowings as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	Financial institutions	Due date	Interest rates (%) as of June 30, 2023	June 30, 2023	December 31, 2022
Short-term borrowings					
Collateralized borrowings ^(*)	Woori Bank and other		0.1~17.7	2,668,838	2,381,512
Total				2,668,838	2,381,512
Current portion of long-term borrowings					
Lease liabilities ^(*)	-		2.5	194,722	129,525
Total				194,722	129,525
Long-term borrowings					
Lease liabilities ^(*)	-		2.5	836,584	654,979
Non-collateralized borrowings ³	Samsung Display Co., Ltd.	2025.08.16	4.6	21,990,000	-
Total				22,826,584	654,979

^(*) Collateralized borrowings are secured by trade receivables.

^(*) Interest expenses arising from the lease liabilities for the six-month periods ended June 30, 2023 and 2022 amounted to ₩ 11,552 million and ₩ 4,571 million, respectively, which were determined using the weighted average incremental borrowing rate.

10. Debentures

Details of the carrying amounts of debentures as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	Issue date	Due date	Interest rate (%) as of June 30, 2023	June 30, 2023	December 31, 2022
US dollar denominated straight bonds ^(*)	October 2, 1997	October 1, 2027	7.7	32,820 (USD 25 million)	31,683 (USD 25 million)
Less: Discounts				(467)	(543)
Less: Current Portion				(6,470)	(6,228)
Total				25,883	24,912

^(*) US dollar denominated straight bonds are repaid annually for twenty years after a ten-year grace period from the date of issuance. Interest is paid semi-annually.

11. Net Defined Benefit Liabilities (Assets)

- (A) Details of net defined benefit liabilities (assets) recognized in the statements of financial position as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Present value of funded defined benefit obligations	11,318,275	10,729,126
Present value of unfunded defined benefit obligations	31,169	29,546
Subtotal	11,349,444	10,758,672
Fair value of plan assets	(15,010,972)	(15,168,895)
Total	(3,661,528)	(4,410,223)

- (B) The components of defined benefit costs recognized in profit or loss for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Current service cost	481,183	515,017
Net interest income	(137,623)	(45,950)
Total	343,560	469,067

- (C) The expenses related to defined benefit plans recognized in the statements of profit or loss for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Cost of sales	137,491	186,374
Selling and administrative expenses and other	206,069	282,693
Total	343,560	469,067

12. Provisions

Changes in the provisions for the six-month period ended June 30, 2023 are as follows:

<i>(In millions of Korean won)</i>	Warranty (A)	Royalty expenses (B)	Long-term incentives (C)	Other (D, E)	Total
Balance as of January 1	587,665	1,546,606	549,181	2,799,204	5,482,656
Charged to profit or loss	441,625	333,232	96,287	1,425,663	2,296,807
Payment	(352,272)	(188,844)	-	(591,191)	(1,132,307)
Other	-	39,496	-	21,358	60,854
Balance as of June 30	677,018	1,730,490	645,468	3,655,034	6,708,010

- (A) The Company accrues warranty reserves for estimated costs of quality assurance, exchanges, repairs, recalls, and future services based on historical experience and terms of warranty programs.
- (B) The Company recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing and amount of payment depend on the settlement of the negotiations.
- (C) The Company has a long-term incentive plan for its executives based on three-year management performance criteria and recognizes a provision for the estimated incentive cost.
- (D) The Company records provisions for future expenses expected to be incurred for products that have been discontinued from manufacturing and sales.
- (E) The Company makes provisions for the emission in excess of the emission rights held by the Company for the applicable years. Details of emission rights and liabilities as of June 30, 2022 are as follows:

- (1) The amount of emission rights allocated free of charge in the current commitment period and estimated volume of emission as of June 30, 2023 are as follows:

<i>(In ten thousand metric tons)</i>	June 30, 2023
Emission rights allocated free of charge	1,123
Estimated volume of emission	1,467

- (2) Changes in the emission rights for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	19,567	46,073
Acquisition	1,265	1,872
Utilization	(217)	-
Balance as of June 30	20,615	47,945

- (3) Changes in the emission liabilities for the six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	32,825	45,049
Charged to profit or loss	-	23,351
Utilization	-	-
Balance as of June 30	32,825	68,400

13. Commitments and Contingencies

(A) Guarantees

- (1) Debt guarantees provided by the Company for overseas subsidiaries as of June 30, 2023 are as follows:

(In millions of Korean won and thousands of US dollars)

Debtor	Creditor	Date of maturity	Actual indebtedness	Guaranteed amount
SETK	BNP and others	June 13, 2024	347,142	1,020,046
SETK-P	BNP and others	December 26, 2023	17,647	170,664
Other	Others	-	-	9,473,145
Total			364,789	10,663,855
			US\$ 277,890	US\$ 8,122,985

- (2) The ceiling amount of guarantees provided by the Company for the execution of contracts by overseas subsidiaries is ₩ 483,137 million as of June 30, 2023.
- (3) The Company has not been provided any collateral or guarantees from its related parties as of June 30, 2023.

(B) Litigation

As of June 30, 2023, the Company is involved in various claims, disputes, and investigations conducted by regulatory bodies that arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, the Company believes the outcome will not have a material impact on the financial position of the Company.

(C) Joint liabilities related to the divestiture

The Company, Samsung Display Co., Ltd. and others are jointly and severally liable to fulfill the debts of Samsung Display Co., Ltd. and others which relate to the periods prior to Samsung Display Co., Ltd.'s separation from the Company.

(D) Other commitments

As of June 30, 2023, the Company has commitments for the acquisition of tangible and intangible assets that have not yet been incurred of ₩ 12,505,566 million.

14. Contract Liabilities

The Company has recognized contract liabilities related to contracts with customers as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Contract liabilities ^(*)	1,471,578	1,133,426

^(*) Contract liabilities include advances received, accrued expenses, other current liabilities and others.

15. Share Capital

As of June 30, 2023, the Company's total number of authorized shares is 25,000,000,000 shares (₩ 100 per share). The Company has issued 5,969,782,550 shares of ordinary shares and 822,886,700 shares of preference shares as of June 30, 2023, excluding retired shares. As of June 30, 2023, the number of shares outstanding is the same as the number of shares issued above, and no changes were made to the number of shares outstanding during the six-month period ended June 30, 2023 and the year ended December 31, 2022. Due to the retirement of shares, the total par value of the shares issued is ₩ 679,267 million (ordinary shares of ₩ 596,978 million and preference shares of ₩ 82,289 million), which does not agree with paid-in capital of ₩ 897,514 million.

16. Retained Earnings

(A) Retained earnings as of June 30, 2023 and December 31, 2022 consist of the following:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Legal reserves	450,789	450,789
Discretionary reserves, etc.	212,774,825	203,937,227
Total	213,225,614	204,388,016

(B) Details of interim dividends are as follows (Record date: March 31 and June 30, 2023 and 2022)

<i>(In millions of Korean won and number of shares)</i>			2023	2022
1 st Quarter	Number of shares eligible for dividends	Ordinary shares	5,969,782,550	5,969,782,550
		Preference shares	822,886,700	822,886,700
	Dividend rate (based on par value)	Ordinary/Preference	361%	361%
		Ordinary shares	2,155,092	2,155,092
	Dividend amount	Preference shares	297,062	297,062
		Total	2,452,154	2,452,154
2 nd Quarter	Number of shares eligible for dividends	Ordinary shares	5,969,782,550	5,969,782,550
		Preference shares	822,886,700	822,886,700
	Dividend rate (based on par value)	Ordinary/Preference	361%	361%
		Ordinary shares	2,155,092	2,155,092
	Dividend amount	Preference shares	297,062	297,062
		Total	2,452,154	2,452,154

17. Other Components of Equity

Other components of equity as of June 30, 2023 and December 31, 2022 consist of the following:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Gain (loss) on valuation of financial assets at fair value through other comprehensive income	147,468	(122,644)
Remeasurement of net defined benefit liabilities (assets)	(2,246,105)	(1,910,996)
Others	1,760,408	1,760,408
Total	(338,229)	(273,232)

18. Expenses by Nature

Expenses by nature for the three and six-month periods ended June 30, 2023 and 2022 consist of the following:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Changes in finished goods, work in process, and other	(1,921,558)	(4,458,251)	(2,057,842)	(4,147,431)
Raw materials used, merchandise purchased, and other	21,586,066	47,300,307	28,305,000	55,942,597
Wages and salaries	3,973,830	8,056,082	3,820,721	8,060,769
Post-employment benefit	174,390	348,059	236,313	472,649
Depreciation	6,224,767	12,502,893	6,092,718	12,020,188
Amortization	660,403	1,317,524	637,341	1,265,858
Welfare	902,204	1,666,756	1,005,792	1,686,083
Utilities	1,183,576	2,411,748	835,588	1,668,263
Outsourcing	927,790	1,859,249	944,007	1,747,749
Advertising	382,376	655,398	435,815	788,863
Sales promotion	320,547	612,671	254,948	660,344
Other	9,012,800	17,232,195	7,972,009	15,888,905
Total^(*)	43,427,191	89,504,631	48,482,410	96,054,837

^(*) Equal to the sum of cost of sales and selling and administrative expenses in the statements of profit or loss.

19. Selling and Administrative Expenses

Selling and administrative expenses for the three and six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Selling and administrative expenses				
Wages and salaries	648,380	1,384,662	563,646	1,292,305
Post-employment benefit	31,629	62,604	40,861	82,316
Commissions	814,025	1,715,912	681,356	1,342,168
Depreciation	115,774	228,549	100,601	199,384
Amortization	97,537	193,249	90,610	179,405
Advertising	382,376	655,398	435,815	788,863
Sales promotion	320,547	612,671	254,948	660,344
Transportation	135,377	271,208	298,887	560,372
Service charges	377,408	651,168	226,239	501,542
Other	582,925	1,079,247	606,931	1,046,927
Subtotal	3,505,978	6,854,668	3,299,894	6,653,626
Research and development expenses				
Research and development	6,112,643	11,727,904	5,218,248	10,252,031
Total	9,618,621	18,582,572	8,518,142	16,905,657

20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three and six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Other non-operating income				
Dividend income	13,405,935	21,845,780	10,331	137,839
Rental income	44,502	90,399	42,472	85,710
Gain on disposal of property, plant and equipment	37,373	69,275	40,594	88,692
Other	45,548	97,888	51,000	115,427
Total	13,533,358	22,103,342	144,397	427,668

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Other non-operating expenses				
Loss on disposal of property, plant and equipment	2,172	5,338	3,185	4,119
Donations	20,292	77,639	76,946	129,403
Other	16,727	48,454	19,045	20,263
Total	39,191	131,431	99,176	153,785

21. Financial Income and Expenses

Details of financial income and expenses for the three and six-month periods ended June 30, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Financial income				
Interest income:	88,806	150,581	85,462	168,920
- Interest income from financial assets measured at amortized cost	88,806	150,581	85,462	168,920
Foreign exchange differences	1,740,510	3,596,340	2,392,638	3,789,545
Gain from derivatives	-	235,753	11,043	270,573
Total	1,829,316	3,982,674	2,489,143	4,229,038

<i>(In millions of Korean won)</i>	2023		2022	
	3 Months	6 Months	3 Months	6 Months
Financial expenses				
Interest expenses:	316,475	477,978	65,175	119,096
- Interest expense from financial liabilities measured at amortized cost	254,760	333,472	12,109	23,926
- Other financial liabilities	61,715	144,506	53,066	95,170
Foreign exchange differences	1,746,798	3,905,443	2,367,962	3,756,409
Loss from derivatives	93,579	93,579	-	-
Total	2,156,852	4,477,000	2,433,137	3,875,505

The Company recognizes foreign exchange gains and losses arising from foreign currency transactions and translation as financial income and expenses.

22. Income Tax Expense

Income tax expense is recognized based on management's best estimate of the weighted average annual income tax rate expected for the full financial year. The average annual tax rate expected as of June 30, 2023 to be effective for the year ended December 31, 2022 is 0.9%.

23. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the three and six-month periods ended June 30, 2023 and 2022 are calculated as follows:

(1) Ordinary shares

<i>(In millions of Korean won and thousands of number of shares)</i>	2023		2022	
	3 Month	6 Month	3 Month	6 Month
Profit for the period	9,584,633	13,742,728	8,191,308	15,843,251
Profit for the period available for ordinary shares	8,423,518	12,077,888	7,198,986	13,923,947
Weighted-average number of ordinary shares outstanding	5,969,783	5,969,783	5,969,783	5,969,783
Basic earnings per ordinary share (in Korean won)	1,411	2,023	1,206	2,332

(2) Preference shares

<i>(In millions of Korean won and thousands of number of shares)</i>	2023		2022	
	3 Month	6 Month	3 Month	6 Month
Profit for the period	9,584,633	13,742,728	8,191,308	15,843,251
Profit for the period available for preference shares	1,161,115	1,664,840	992,322	1,919,304
Weighted-average number of preference shares outstanding	822,887	822,887	822,887	822,887
Basic earnings per preference share (in Korean won)	1,411	2,023	1,206	2,332

(B) Diluted earnings per share

The Company does not have dilutive potential ordinary shares and as a result, basic earnings per share and diluted earnings per share are the same for the three and six-month periods ended June 30, 2023 and 2022.

24. Statements of Cash Flows

(A) The Company used the indirect method to present cash flows from operating activities. Adjustments and changes in assets and liabilities arising from operating activities for the six-month periods ended June 30, 2023 and 2022 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2023	2022
Adjustments:		
Income tax expense	127,993	4,094,874
Financial income	(712,113)	(1,111,466)
Financial expenses	1,504,324	1,031,223
Post-employment benefits	348,059	472,649
Depreciation	12,502,893	12,020,188
Amortization	1,317,524	1,265,858
Bad debt expenses	7,777	6,180
Dividend income	(21,845,780)	(137,839)
Gain on disposal of property, plant and equipment	(69,275)	(88,692)
Loss on disposal of property, plant and equipment	5,338	4,119
Loss on valuation of inventories	2,890,936	662,791
Others	13,768	18,390
Total	(3,908,556)	18,238,275

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2023	2022
Changes in assets and liabilities :		
Decrease (increase) in trade receivables	(1,433,395)	1,214,372
Decrease in other receivables	575,435	286,145
Increase in prepaid expenses	(173,745)	(182,769)
Increase in inventories	(7,416,523)	(5,988,520)
Increase in trade payables	707,640	462,580
Decrease in other payables	(2,880,364)	(1,720,329)
Decrease in advances received	(82,392)	(45,620)
Decrease in withholdings	(107,177)	(228,396)
Decrease in accrued expenses	(1,635,068)	(971,137)
Increase in provisions	1,164,499	423,398
Payment of post-employment benefits	(202,846)	(179,735)
Other	(354,414)	(776,812)
Total	(11,838,350)	(7,706,823)

(B) For the six-month periods ended June 30, 2023 and 2022, cash outflows from principal portion of lease liabilities (financial activities) were ₩ 80,125 million and ₩ 72,124 million, respectively, and cash outflows due to interest expenses (operating activities) in relation to the lease liabilities amount to ₩ 11,552 million and ₩ 4,571 million, respectively.

25. Financial Risk Management

The Company's financial risk management focuses on minimizing market risk, credit risk, and liquidity risk arising from operating activities. To mitigate these risks, the Company implements and operates a financial risk policy and program that closely monitors and manages such risks. In addition, the Company uses derivatives to hedge certain risk exposure.

The finance team mainly carries out the Company's financial risk management. After implementing the global financial risk management policies, the finance team periodically measures, evaluates, and hedges financial risk.

The Company also manages foreign exchange risk by monitoring foreign exchange rate fluctuations through local finance centers in the major regions (United States, United Kingdom, Singapore, China, Brazil, and Russia), which act as an agent for the subsidiaries in each region to manage foreign exchange transactions. In addition, local finance centers in the major regions manages liquidity risk through a globally integrated finance structure.

The Company's financial assets that are under financial risk management are comprised of cash and cash equivalents, short-term financial instruments, trade receivables and others. The Company's financial liabilities under financial risk management are comprised of trade payables, borrowings, and others.

(A) Market risk

(1) Foreign exchange risk

The Company is exposed to foreign exchange risk arising from its global operations performed in currencies other than its functional currency. The major currencies the Company is exposed to foreign exchange risk are the US dollar, Euro, and Indian Rupee.

The Company focuses on minimizing the impact of foreign exchange fluctuation by maintaining matching levels of assets and liabilities denominated in each foreign currency. To minimize exchange position, the Company's foreign exchange management policy requires normal business transactions, including import and export, as well as financing transactions such as depositing and borrowing, to be in local currency or match as closely as possible cash inflows and outflows incurred in the respective foreign currencies. Moreover, the Company periodically evaluates and monitors the foreign exchange risk to efficiently mitigate such risk, and the speculative foreign exchange transactions are strictly prohibited.

(2) Interest rate risk

Risk of changes in interest rates for floating interest rate financial instruments is defined as the risk that the fair value of components of the statements of financial position, and future cash flows of interest income (expenses) of a financial instrument, will fluctuate because of changes in market interest rates. The Company's position with regard to interest rate risk exposure is mainly driven by its floating interest rate debt obligations and interest-bearing deposits. The Company has implemented policies and practices to minimize uncertainty arising from changes in interest rates and financial expenses.

(3) Price risk

The Company's investment portfolio consists of direct and indirect investments in equity instruments classified as financial assets at fair value through other comprehensive income, which is in line with the Company's strategy.

As of June 30, 2023 and 2022, price fluctuation of marketable equity securities (listed stocks) by 1% would result in changes in other comprehensive income (before income tax) of ₩ 16,142 million and ₩ 13,857 million, respectively.

(B) Credit risk

Credit risk arises during the normal course of transactions and investing activities where clients or other parties fail to discharge an obligation. The Company monitors and sets the client's and counterparty's credit limit on a periodic basis based on the client's and counterparty's financial conditions, default history and other factors. Adequate insurance coverage is maintained for trade receivables related to trading partners situated in higher risk countries.

Credit risk can arise from transactions with financial institutions which include financial instrument transactions such as cash and cash equivalents, deposits, and derivative instruments. To minimize such risk, the Company transacts only with banks which have a strong international credit rating (S&P A and above), and all new transactions with financial institutions with no prior transaction history are approved, managed and monitored by the Company's finance team and the local finance centers. The Company generally enters into a financial agreement with no restrictions, such as debt ratio covenants, provision of collateral and/or repayment of loans/borrowings. The Company requires separate approvals for contracts with restrictions.

As of the reporting date, the Company estimates that its maximum exposure to credit risk is the carrying amount of its financial assets, net of impairment losses.

(C) Liquidity risk

Due to large investments made by the Company, maintaining adequate levels of liquidity is critical. The Company strives to achieve this goal by periodically forecasting its cash balance, estimating required cash levels, and managing cash inflows and outflows.

The Company manages its liquidity risk by periodically forecasting projected cash flows. The Company maintains a liquidity management process which provides additional financial support from the local finance center and the Company. The Cash Pooling program allows the sharing of surplus funds among entities and contributes to minimizing liquidity risk and strengthening the Company's competitive position by reducing financing burden and financial expenses.

The Company secures credit lines for its overseas subsidiaries by means of payment guarantees for the overseas subsidiaries' large-scale liquidity needs, the Company secures credit limit for the overseas subsidiaries through its payment guarantees.

(D) Capital risk management

The purpose of capital management is to maintain a sound capital structure. The Company monitors capital on the basis of credit ratings and debt ratio. Debt ratio is calculated by dividing total liabilities by total equity in the financial statements.

The Company has maintained an AA- credit rating from S&P and Aa2 Moody's as of June 30, 2023.

The total liabilities to equity ratios as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023	December 31, 2022
Total liabilities	67,838,801	50,667,559
Total equity	218,188,792	209,416,191
Debt ratio	31.1%	24.2%

(E) Fair value measurement

- (1) Carrying amounts and fair values of financial instruments by category as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	12,892,470	(*)	3,921,593	(*)
Short-term financial instruments	1,403	(*)	137	(*)
Trade receivables	22,140,988	(*)	20,503,223	(*)
Financial assets at fair value through other comprehensive income	1,730,986	1,730,986	1,364,325	1,364,325
Financial assets at fair value through profit or loss	61	61	283	283
Other ^{(*)2}	5,026,078	169,957	5,470,355	(*)
Total financial assets	41,791,986		31,259,916	
Financial liabilities				
Trade payables	9,474,012	(*)	8,729,315	(*)
Short-term borrowings	2,668,838	(*)	2,381,512	(*)
Other payables	12,579,242	(*)	18,324,604	(*)
Current portion of long-term liabilities	201,192	6,995	135,753	6,580
- Current portion of long-term borrowings	194,722	(*)3	129,525	(*)3
- Current portion of debentures	6,470	6,995	6,228	6,580
Debentures	25,883	30,086	24,912	27,845
Long-term borrowings	22,826,584	(*)3	654,979	(*)3
Long-term other payables	4,414,940	(*)	2,083,790	(*)
Other	3,541,169	(*)	3,145,473	(*)
Total financial liabilities	55,731,860		35,480,338	

(*)1 Assets and liabilities whose carrying amount is a reasonable approximation of fair value are excluded from the fair value disclosures.

(*)2 Assets measured at the cost of ₩4,856,121 million is excluded as the carrying amount is a reasonable estimation of fair value.

(*)3 Lease liabilities, classified under the current portion of long-term liabilities and long-term borrowings, are excluded from the fair value disclosures in accordance with *Korean IFRS 1107*

- (2) Fair value hierarchy classifications of the financial instruments that are measured or disclosed at fair value as of June 30, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	June 30, 2023			
	Level 1	Level 2	Level 3	Total balance
1) Assets				
Financial assets at fair value through other comprehensive income	1,614,189	-	116,797	1,730,986
Financial assets at fair value through profit or loss	-	-	61	61
Other	-	-	169,957	169,957
2) Liabilities				
Current portion of debentures	-	6,995	-	6,995
Debentures	-	30,086	-	30,086

<i>(In millions of Korean won)</i>	December 31, 2022			
	Level 1	Level 2	Level 3	Total balance
1) Assets				
Financial assets at fair value through other comprehensive income	1,247,882	-	116,443	1,364,325
Financial assets at fair value through profit or loss	-	-	283	283
2) Liabilities				
Current portion of debentures	-	6,580	-	6,580
Debentures	-	27,845	-	27,845

The levels of the fair value hierarchy and its application to financial assets and liabilities are described below.

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly
- Level 3: Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs)

The fair value of financial instruments traded in active markets is based on quoted market prices at the reporting date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. These instruments are included in Level 1. The instruments included in Level 1 are listed equity investments, most of which are classified as financial assets at fair value through other comprehensive income.

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where available and rely as little as possible on entity-specific estimates. If all significant inputs required to measure the fair value an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs are not based on observable market data, the instrument is included in Level 3.

The Company performs the fair value measurements required for financial reporting purposes, including Level 3 fair values and discusses valuation processes and results in line with the financial reporting timelines. The Company's policy is to recognize transfers between levels at the end of the reporting period, if corresponding events or changes in circumstances have occurred.

Specific valuation techniques used to value financial instruments include:

- Quoted market prices or dealer quotes for similar instruments
- The fair value of forward foreign exchange contracts is determined using forward exchange rates at the reporting date, with the resulting value discounted to present value

Other techniques, such as discounted cash flow analysis, are used to determine fair value for the remaining financial instruments. For trade and other receivables that are classified as current assets, the book value approximates a reasonable estimate of fair value.

(3) Valuation technique and the inputs

The Company utilizes a present value technique to discount future cash flows using respective proper interest rate for corporate bonds, government and public bonds, and bank debentures that are classified as Level 2 in the fair value hierarchy.

The following table presents the valuation technique and the inputs used for major financial instruments classified as Level 3 as of June 30, 2023.

(In millions of Korean won, and percentage)

Classification	Fair value	Valuation technique	Level 3 inputs	Input range
Financial assets at fair value through other comprehensive income				
Samsung Venture Investment	32,236	Discounted cash flow	Permanent growth rate	1.0%
			Weighted average cost of capital	18.1%
MiCo Ceramics Co., Ltd.	30,714	Discounted cash flow and others	Permanent growth rate	0.0%
			Weighted average cost of capital	14.3%
Others				
Call option on equity instruments	169,957	Binomial model	Risk-free discount rate	3.7%
			Price volatility	55.0%

(4) Changes in Level 3 instruments:

<i>(In millions of Korean won)</i>	2023	2022
Financial assets		
Balance as of January 1	116,726	120,347
Acquisitions	27,784	-
Disposals	(283)	(150)
Amount recognized in profit for the period	141,062	-
Amount recognized in other comprehensive income	1,526	12,822
Other	-	(13,828)
Balance as of June 30	286,815	119,191

(5) Sensitivity analysis for recurring fair value measurements categorized within Level 3

Sensitivity analysis of financial instruments is performed to measure favorable and unfavorable changes in the fair value of financial instruments which are affected by the unobservable parameters, using a statistical technique. When the fair value is affected by more than two input parameters, the amounts represent the most favorable or unfavorable.

The results of the sensitivity analysis for effect on other comprehensive income or loss before tax from changes in inputs for major financial instruments which are categorized within Level 3 and subject to sensitivity analysis are as follows:

<i>(In millions of Korean won)</i>	Favorable changes		Unfavorable changes	
	Profit or loss	Equity	Profit or loss	Equity
Financial assets at fair value through other comprehensive income ^(*)	-	3,113	-	(2,543)
Other ^(*)	57,071	-	(46,533)	-

^(*) For equity securities, changes in fair value are calculated with the correlation between the discount rate and growth rate (-1% ~1%), which are significant unobservable inputs.

^(*) Changes in fair value were calculated based on the correlation between underlying asset price (20%) and price volatility (10%), which are significant unobservable inputs.

26. Segment Information

The chief operating decision-maker has been identified as the Management Committee. The Company determines operating segments based on the units reported to the Management Committee. The Management Committee reviews the operating profits of each operating segment in order to assess performance and to make strategic decisions regarding the allocation of resources to each segment.

Sales revenue consists mostly of product sales. The operating segments are product-based and are identified based on the internal organization and revenue streams. As of the reporting date, the operating segments are comprised of DX, DS, and others.

Total assets and liabilities of each operating segment are excluded from the disclosure as these have not been provided regularly to the Management Committee.

(1) For the three-month period ended June 30, 2023

<i>(In millions of Korean won)</i>	DX	DS	Total^(*)
Revenue	25,539,424	14,511,343	39,729,088
Depreciation	134,701	6,039,304	6,224,767
Amortization	423,127	178,340	660,403
Operating profit	1,035,370	(4,885,030)	(3,698,103)

^(*) Other operating segments are not separately disclosed.

(2) For the six-month period ended June 30, 2023

<i>(In millions of Korean won)</i>	DX	DS	Total^(*)
Revenue	54,775,598	27,855,964	81,897,767
Depreciation	270,034	12,132,145	12,502,893
Amortization	830,016	371,066	1,317,524
Operating profit	2,257,012	(9,867,407)	(7,606,864)

^(*) Other operating segments are not separately disclosed.

(3) For the three-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	DX	DS	Total^(*)
Revenue	30,994,646	28,327,697	58,641,288
Depreciation	135,790	5,914,663	6,092,718
Amortization	391,409	191,232	637,341
Operating profit	545,002	9,611,354	10,158,878

^(*) Other operating segments are not separately disclosed.

(4) For the six-month period ended June 30, 2022

<i>(In millions of Korean won)</i>	DX	DS	Total^(*)
Revenue	62,111,009	54,703,997	115,365,546
Depreciation	271,910	11,664,052	12,020,188
Amortization	773,610	385,034	1,265,858
Operating profit	1,740,202	17,564,175	19,310,709

^(*) Other operating segments are not separately disclosed.

27. Related Party Transactions

(A) Subsidiaries

List of subsidiaries as of June 30, 2023 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	Samsung Electronics America, Inc. (SEA)	Sale of electronic devices	100.0
	Samsung International, Inc. (SII)	Manufacture of TV and monitors	100.0
	Samsung Mexicana S.A. de C.V (SAMEX)	Manufacture of electronic devices	100.0
	Samsung Electronics Home Appliances America, LLC (SEHA)	Manufacture of home appliances	100.0
	Samsung Research America, Inc (SRA)	R&D	100.0
	SAMSUNG NEXT LLC (SNX)	Management of overseas subsidiaries	100.0
	SAMSUNG NEXT FUND LLC (SNXF)	Technology business, venture capital investments	100.0
	NeuroLogica Corp.	Manufacture and sale of medical equipment	100.0
	Samsung HVAC America, LLC	Sale of air conditioning products	100.0
America	Joyent, Inc.	Cloud services	100.0
	SmartThings, Inc.	Sale of smart home electronics	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	100.0
	Samsung Federal, Inc. (SFI)	R&D	100.0
	Samsung Austin Semiconductor LLC. (SAS)	Manufacture of semiconductors	100.0
	Samsung Oak Holdings, Inc. (SHI)	Management of overseas subsidiaries	100.0
	SEMES America, Inc.	Semiconductor equipment services	100.0
	Emerald Intermediate, Inc.	Management of overseas subsidiaries	100.0
	Emerald Merger Sub, Inc.	Management of overseas subsidiaries	100.0
	Samsung Electronics Canada, Inc. (SECA)	Sale of electronic devices	100.0
	AdGear Technologies Inc.	Digital advertising platforms	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	Samsung Eletronica da Amazonia Ltda. (SEDA)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Mexico S.A. De C.V. (SEM)	Sale of electronic devices	100.0
	Samsung Electronics Digital Appliance Mexico, SA de CV (SEDAM)	Manufacture of home appliances	100.0
	Samsung Electronics Latinoamerica(Zona Libre), S. A. (SELA)	Sale of electronic devices	100.0
	Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	Sale of electronic devices	100.0
	Samsung Electronica Colombia S.A. (SAMCOL)	Sale of electronic devices	100.0
	Samsung Electronics Argentina S.A. (SEASA)	Marketing and services	100.0
	Samsung Electronics Chile Limitada (SECH)	Sale of electronic devices	100.0
	Samsung Electronics Peru S.A.C. (SEPR)	Sale of electronic devices	100.0
	Samsung Electronics Venezuela, C.A. (SEVEN)	Marketing and services	100.0
	Samsung Electronics Panama. S.A. (SEPA)	Consulting	100.0
	Harman International Industries, Inc.	Management of overseas subsidiaries	100.0
America	Harman Becker Automotive Systems, Inc.	Manufacture and sale of audio products, R&D	100.0
	Harman Connected Services, Inc.	Connected service provider	100.0
	Harman Connected Services Engineering Corp.	Connected service provider	100.0
	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Manufacture and sale of audio products	100.0
	Harman de Mexico, S. de R.L. de C.V.	Manufacture of audio products	100.0
	Harman do Brasil Industria Eletronica e Participacoes Ltda.	Sale of audio products, R&D	100.0
	Harman Financial Group LLC	Management company	100.0
	Harman International Industries Canada Ltd.	Sale of audio products	100.0
	Harman International Mexico, S. de R.L. de C.V.	Sale of audio products	100.0
	Harman KG Holding, LLC	Management of overseas subsidiaries	100.0
	Harman Professional, Inc.	Sale of audio products, R&D	100.0
	Beijing Integrated Circuit Industry International Fund, L.P	Venture capital investments	61.4
	China Materialia New Materials 2016 Limited Partnership	Venture capital investments	99.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	Samsung Electronics (UK) Ltd. (SEUK)	Sale of electronic devices	100.0
	Samsung Electronics Ltd. (SEL)	Management of overseas subsidiaries	100.0
	Samsung Semiconductor Europe Limited (SSEL)	Sale of semiconductor and display panels	100.0
	Samsung Electronics GmbH (SEG)	Sale of electronic devices	100.0
	Samsung Electronics Holding GmbH (SEHG)	Management of overseas subsidiaries	100.0
	Samsung Semiconductor Europe GmbH (SSEG)	Sale of semiconductor and display panels	100.0
	Samsung Electronics France S.A.S (SEF)	Sale of electronic devices	100.0
	Samsung Electronics Italia S.P.A. (SEI)	Sale of electronic devices	100.0
	Samsung Electronics Iberia, S.A. (SESA)	Sale of electronic devices	100.0
	Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP)	Sale of electronic devices	100.0
	Samsung Electronics Hungarian Private Co. Ltd. (SEH)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Europe Logistics B.V. (SELS)	Logistics	100.0
	Samsung Electronics Benelux B.V. (SEBN)	Sale of electronic devices	100.0
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	Management of overseas subsidiaries	100.0
	Samsung Electronics Nordic Aktiebolag (SENA)	Sale of electronic devices	100.0
	Samsung Electronics Slovakia s.r.o (SESK)	Manufacture of TV and monitors	100.0
	Samsung Display Slovakia, s.r.o., v likvidácii (SDSK)	Toll processing of display panels	100.0
	Samsung Electronics Polska, SP.Zo.o (SEPOL)	Sale of electronic devices	100.0
	Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	Manufacture of home appliances	100.0
Europe & CIS	Samsung Electronics Romania LLC (SEROM)	Sale of electronic devices	100.0
	Samsung Electronics Austria GmbH (SEAG)	Sale of electronic devices	100.0
	Samsung Electronics Switzerland GmbH (SESG)	Sale of electronic devices	100.0
	Samsung Electronics Czech and Slovak s.r.o. (SECZ)	Sale of electronic devices	100.0
	SAMSUNG ELECTRONICS BALTICS SIA (SEB)	Sale of electronic devices	100.0
	Samsung Electronics Greece S.M.S.A (SEGR)	Sale of electronic devices	100.0
	Samsung Electronics Air Conditioner Europe B.V. (SEACE)	Sale of air conditioning products	100.0
	Samsung Nanoradio Design Center (SNDC)	R&D	100.0
	Samsung Denmark Research Center ApS (SDRC)	R&D	100.0
	Samsung Cambridge Solution Centre Limited (SCSC)	R&D	100.0
	SAMSUNG Zhilabs, S.L.	Development and sale of network solutions	100.0
	FOODIENT LTD.	R&D	100.0
	Samsung Electronics Rus Company LLC (SERC)	Sale of electronic devices	100.0
	Samsung Electronics Rus Kaluga LLC (SERK)	Manufacture of TV	100.0
	Samsung Electronics Ukraine Company LLC (SEUC)	Sale of electronic devices	100.0
	Samsung R&D Institute Ukraine (SRUKR)	R&D	100.0
	Samsung Electronics Central Eurasia LLP (SECE)	Sale of electronic devices	100.0
	Samsung Electronics Overseas B.V. (SEO)	Sale of electronic devices	100.0
	Samsung R&D Institute Rus LLC (SRR)	R&D	100.0
	Samsung Electronics Caucasus Co. Ltd (SECC)	Marketing	100.0
	Samsung Electronics Uzbekistan Ltd. (SEUZ)	Marketing	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
	AKG Acoustics GmbH	Manufacture and sale of audio products	100.0
	Apostera UA, LLC	Connected Service Provider	100.0
	Harman Audio Iberia Espana Sociedad Limitada	Sale of audio products	100.0
	Harman Automotive UK Limited	Manufacture of audio products	100.0
	Harman Becker Automotive Systems GmbH	Manufacture and sale of audio products, R&D	100.0
	Harman Becker Automotive Systems Italy S.R.L.	Sale of audio products	100.0
	Harman Becker Automotive Systems Manufacturing Kft	Manufacture of audio products, R&D	100.0
	Harman Belgium SA	Sale of audio products	100.0
	Harman Connected Services AB.	Connected service provider	100.0
	Harman Finland Oy	Connected service provider	100.0
	Harman Connected Services GmbH	Connected service provider	100.0
	Harman Connected Services Poland Sp.zoo	Connected service provider	100.0
	Harman Connected Services UK Ltd.	Connected service provider	100.0
	Harman Consumer Nederland B.V.	Sale of audio products	100.0
Europe & CIS	Harman Deutschland GmbH	Sale of audio products	100.0
	Harman Finance International GP S.a.r.l	Management of overseas subsidiaries	100.0
	Harman France SNC	Sale of audio products	100.0
	Harman Holding GmbH & Co. KG	Management Company	100.0
	Harman Hungary Financing Ltd.	Financing Company	100.0
	Harman Inc. & Co. KG	Management of overseas subsidiaries	100.0
	Harman International Estonia OU	R&D	100.0
	Harman International Industries Limited	Sale of audio products, R&D	100.0
	Harman International Romania SRL	R&D	100.0
	Harman Finance International, SCA	Financing Company	100.0
	Harman Management GmbH	Management of overseas subsidiaries	100.0
	Harman Professional Kft	Manufacture of audio products, R&D	100.0
	Harman Professional Denmark ApS	Sale of audio products, R&D	100.0
	Red Bend Software SAS	Software design	100.0
	Studer Professional Audio GmbH	Sale of audio products, R&D	100.0
	Harman Connected Services OOO	Connected Service Provider	100.0
	Harman RUS CIS LLC	Sale of audio products	100.0
	Samsung Gulf Electronics Co., Ltd. (SGE)	Sale of electronic devices	100.0
	Samsung Electronics Turkiye (SETK)	Sale of electronic devices	100.0
	Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Manufacture of electronic devices	100.0
	Samsung Electronics Levant Co.,Ltd. (SELV)	Sale of electronic devices	100.0
Middle East & Africa	Samsung Electronics Maghreb Arab (SEMAG)	Sale of electronic devices	100.0
	Samsung Electronics Egypt S.A.E (SEEG)	Manufacture and sale of electronic devices	100.0
	Samsung Electronics Israel Ltd. (SEIL)	Marketing	100.0
	Samsung Electronics Tunisia S.A.R.L (SETN)	Marketing	100.0
	Samsung Electronics Pakistan(Private) Ltd. (SEPAK)	Marketing	100.0
	Samsung Electronics Saudi Arabia Ltd. (SESAR)	Sale of electronic devices	100.0
	Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	R&D	100.0
	Corephotonics Ltd.	R&D	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
Middle East & Africa	Samsung Electronics South Africa(Pty) Ltd. (SSA)	Sale of electronic devices	100.0
	Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	Manufacture of TV and monitors	100.0
	Samsung Electronics West Africa Ltd. (SEWA)	Marketing	100.0
	Samsung Electronics East Africa Ltd. (SEEA)	Marketing	100.0
	Global Symphony Technology Group Private Ltd.	Management of overseas subsidiaries	100.0
	Harman Connected Services Morocco	Connected service provider	100.0
	Harman Industries Holdings Mauritius Ltd.	Management of overseas subsidiaries	100.0
	Red Bend Ltd.	Manufacture of audio products	100.0
Asia (Excluding China)	Samsung Asia Pte. Ltd. (SAPL)	Management of overseas subsidiaries	100.0
	Samsung Electronics Singapore Pte. Ltd. (SESP)	Sale of electronic devices	100.0
	Samsung Malaysia Electronics (SME) Sdn. Bhd. (SME)	Sale of electronic devices	100.0
	Samsung Electronics Display (M) Sdn. Bhd. (SDMA)	Manufacture of electronic devices	100.0
	Samsung Electronics (M) Sdn. Bhd. (SEMA)	Manufacture of home appliances	100.0
	Samsung Vina Electronics Co., Ltd. (SAVINA)	Sale of electronic devices	100.0
	Samsung Electronics Vietnam Co., Ltd. (SEV)	Manufacture of electronic devices	100.0
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Manufacture of communication equipment	100.0
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Manufacture and sale of electronic devices	100.0
	Samsung Display Vietnam Co., Ltd. (SDV)	Manufacture of display panels	100.0
	DOWOINSYS VINA COMPANY LIMITED	Manufacture of display components	100.0
	PT Samsung Electronics Indonesia (SEIN)	Manufacture and sale of electronic devices	100.0
	PT Samsung Telecommunications Indonesia (STIN)	Sale of electronic devices and services	100.0
	Thai Samsung Electronics Co., Ltd. (TSE)	Manufacture and sale of electronic devices	91.8
	Laos Samsung Electronics Sole Co., Ltd (LSE)	Marketing	100.0
	Samsung Electronics Philippines Corporation (SEPCO)	Sale of electronic devices	100.0
	Samsung Electronics Australia Pty. Ltd. (SEAU)	Sale of electronic devices	100.0
	Samsung Electronics New Zealand Limited (SENZ)	Sale of electronic devices	100.0
	Samsung India Electronics Private Ltd. (SIEL)	Manufacture and sale of electronic devices	100.0
	Red Brick Lane Marketing Solutions Pvt. Ltd.	Marketing	100.0
	Samsung Display Noida Private Limited (SDN)	Manufacture of display panels	100.0
	Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	R&D	100.0
	Samsung R&D Institute BanglaDesh Limited (SRBD)	R&D	100.0
	Samsung Nepal Services Pvt, Ltd (SNSL)	Service	100.0
	Samsung Japan Corporation (SJC)	Sale of semiconductor and display panels	100.0
	Samsung R&D Institute Japan Co. Ltd. (SRJ)	R&D	100.0
	Samsung Electronics Japan Co., Ltd. (SEJ)	Sale of electronic devices	100.0
	Harman Connected Services Corp. India Pvt. Ltd.	Connected service provider	100.0
	Harman International (India) Private Limited	Sale of audio products, R&D	100.0
	Harman International Industries PTY Ltd.	Management of overseas subsidiaries	100.0
	Harman International Japan Co., Ltd.	Sale of audio products, R&D	100.0
	Harman Singapore Pte. Ltd.	Sale of audio products	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
China	Samsung (CHINA) Investment Co., Ltd. (SCIC)	Sale of electronic devices	100.0
	Samsung Electronics Hong Kong Co., Ltd. (SEHK)	Sale of electronic devices	100.0
	Samsung Electronics Taiwan Co., Ltd. (SET)	Sale of electronic devices	100.0
	Tianjin Samsung Electronics Co., Ltd. (TSEC)	Manufacture of TV and monitors	91.2
	Suzhou Samsung Electronics Co., Ltd. (SSEC)	Manufacture of home appliances	88.3
	Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	Manufacture of home appliances	100.0
	Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	R&D	100.0
	Tianjin Samsung Telecom Technology Co., Ltd. (TSTC)	Manufacture of communication equipment	90.0
	Beijing Samsung Telecom R&D Center (SRC-Beijing)	R&D	100.0
	Samsung Electronics China R&D Center (SRC-Nanjing)	R&D	100.0
	Samsung Mobile R&D Center China-Guangzhou (SRC-Guangzhou)	R&D	100.0
	Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	R&D	100.0
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Sale of semiconductor and display panels	100.0
	Samsung (China) Semiconductor Co., Ltd. (SCS)	Manufacture of semiconductors	100.0
	Samsung SemiConductor Xian Co., Ltd. (SSCX)	Sale of semiconductor and display panels	100.0
	Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	Toll processing of semiconductors	100.0
	Tianjin Samsung LED Co., Ltd. (TSLED)	Manufacture of LED	100.0
	Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	R&D	100.0
	Samsung Display Dongguan Co., Ltd. (SDD)	Manufacture of display panels	100.0
	Samsung Display Tianjin Co., Ltd. (SDT)	Manufacture of display panels	95.0
	SEMES (XIAN) Co., Ltd.	Semiconductor/FPD equipment services	100.0
	Samsung Semiconductor Investment L.P.I	Technology business, venture capital investments	99.0
	Harman (China) Technologies Co., Ltd.	Manufacture of audio products	100.0
	Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	Sale of audio products	100.0
	Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	Manufacture of audio products, R&D	100.0
	Harman Commercial (Shanghai) Co., Ltd.	Sale of audio products	100.0
	Harman Connected Services Solutions (Chengdu) Co., Ltd.	Connected service provider	100.0
	Harman Holding Limited	Sale of audio products	100.0
	Harman International (China) Holdings Co., Ltd.	Sale of audio products, R&D	100.0
	Harman Technology (Shenzhen) Co., Ltd.	Sale of audio products, R&D	100.0

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ^(*)
Domestic	Samsung Display Co., Ltd.	Manufacture and sale of display panels	84.8
	SU Materials	Manufacture of display components	50.0
	STECO Co., Ltd.	Manufacture of semiconductor components	70.0
	SEMES Co., Ltd.	Manufacture and sale of semiconductor/FPD	91.5
	Samsung Electronics Service Co., Ltd.	Repair services for electronic devices	99.3
	Samsung Electronics Service Customer Satisfaction Co., Ltd.	Call center for repair services for electronic devices	100.0
	Samsung Electronics Sales Co., Ltd.	Sale of electronic devices	100.0
	Samsung Electronics Logitech Co., Ltd.	General logistics agency	100.0
	Samsung Medison Co., Ltd.	Manufacture and sale of medical equipment	68.5
	Stella Forest of Hope	Manufacture of food	100.0
	Mirero System Co., Ltd.	Development and supply of semiconductor process defect and quality control software	99.9
	Dowooinsys Co., Ltd.	Manufacture of display components	69.0
	Gf-System Co., Ltd.	Manufacture of display components	100.0
	Harman International Korea	Software development and supply, etc.	100.0
	Samsung Venture Capital Union #21	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #22	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #26	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #28	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #29	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #32	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #33	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #37	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #40	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #42	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #43	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #45	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #48	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #52	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #55	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #56	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #57	Technology business, Venture capital investments	99.0
	Samsung Venture Capital Union #62	Technology business, Venture capital investments	99.0
	Growth type private equity trust specialized in semiconductors	Investment on semiconductor industry	66.7
System LSI mutual benefit private equity trust	Investment on semiconductor industry	62.5	

^(*) Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

(B) Sale and purchase transactions

Sale and purchase transactions with related parties for the six-month periods ended June 30, 2023 and 2022 are as follows:

(In millions of Korean won)	Name of company ^(*)	2023			
		Sales and other	Disposal of non- current assets	Purchases and other	Purchase of non- current assets
	Samsung Display Co., Ltd.	137,144	-	738,877	-
	Samsung Electronics America, Inc. (SEA)	14,863,612	-	105,379	-
	Samsung Asia Pte. Ltd. (SAPL)	37	-	14,289	-
	Harman and its subsidiaries ^(*)	-	-	30,015	-
	Samsung (China) Semiconductor Co., Ltd. (SCS)	51,078	30,686	5,008,994	10,575
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	1,947,849	196	10,352,523	263
	Samsung Semiconductor, Inc. (SSI)	9,097,034	-	331,874	-
	Samsung Austin Semiconductor LLC. (SAS)	1,135	-	2,091,445	1,058
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	3,861,951	-	5,270	-
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	-	-	-	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	1,200,221	-	6,675,894	767
	Samsung India Electronics Private Ltd. (SIEL)	1,569,624	118	2,195,873	-
	Samsung Display Vietnam Co., Ltd. (SDV)	631,355	-	-	-
Subsidiaries	Samsung Eletronica da Amazonia Ltda. (SEDA)	676,922	-	12,630	-
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	265,417	965	2,617,708	-
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	5,606,090	-	-	-
	Samsung International, Inc. (SII)	123,097	51	3,575,194	-
	Thai Samsung Electronics Co., Ltd. (TSE)	1,413,307	-	1,226,275	-
	Samsung Electronics (UK) Ltd. (SEUK)	1,114,666	-	56,462	-
	Samsung Electronics Europe Logistics B.V. (SELS)	2,494,493	-	4,298	-
	Samsung Electronics Mexico S.A. De C.V. (SEM)	1,297,667	-	3,041	-
	SEMES Co., Ltd.	4,380	-	1,243,475	-
	Samsung Display Dongguan Co., Ltd. (SDD)	58,882	-	-	-
	Samsung Electronics GmbH (SEG)	1,680,581	-	3,457	-
	Samsung Electronics Benelux B.V. (SEBN)	1,164,819	-	685	-
	Other	27,765,854	2,717	6,705,608	1,964
	Total	77,027,215	34,733	42,999,266	14,627
	Samsung SDS Co., Ltd	100,607	-	871,968	148,503
	Samsung Electro-Mechanics Co., Ltd	49,539	-	441,319	-
Associates and joint ventures	Samsung SDI Co., Ltd	41,079	-	198,085	16,901
	Cheil Worldwide Inc.	34,644	-	419,220	76
	Other	278,091	-	425,725	3,003
	Total	503,960	-	2,356,317	168,483
	Samsung C&T Corporation	13,016	70	24,997	1,874,820
Other related parties	Other	207,882	-	449,283	118,060
	Total	220,898	70	474,280	1,992,880
	Samsung Engineering Co., Ltd	680	-	15,188	1,359,554
Other	S-1 Corporation	2,606	-	222,138	7,432
	Other	77,658	-	101,852	147,800
	Total	80,944	-	339,178	1,514,786

(*) Transactions with separate entities that are related parties of the Company.

(*) Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

		2022			
(In millions of Korean won)	Name of company ^(*)	Sales and other	Disposal of non- current assets	Purchases and other	Purchase of non- current assets
Subsidiaries	Samsung Display Co., Ltd.	116,235	-	374,350	-
	Samsung Electronics America, Inc. (SEA)	18,774,290	-	99,204	-
	Samsung Asia Pte. Ltd. (SAPL)	25	-	15,071	-
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	4,503,346	-	15,027,178	59
	Samsung (China) Semiconductor Co., Ltd. (SCS)	113,310	5,135	4,869,112	1,608
	Harman and its subsidiaries ^(*)	-	-	43,916	-
	Samsung Semiconductor, Inc. (SSI)	22,720,846	-	244,899	-
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	871,795	-	4,008	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	3,073,882	6	8,133,380	-
	Samsung Austin Semiconductor LLC (SAS)	28	-	1,625,294	1,430
	Samsung India Electronics Private Ltd. (SIEL)	3,062,570	-	2,585,609	-
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	10,266,046	-	47	-
	Samsung Display Vietnam Co., Ltd. (SDV)	836,339	-	-	-
	Samsung Eletronica da Amazonia Ltda. (SEDA)	633,873	-	10,335	-
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	354,262	2,775	2,858,565	355
	Samsung Electronics (UK) Ltd. (SEUK)	845,212	-	48,687	-
	Thai Samsung Electronics Co., Ltd. (TSE)	916,293	-	1,536,606	-
	Samsung International, Inc. (SII)	185,607	216	4,529,493	-
	Samsung Electronics Europe Logistics B.V. (SELS)	2,651,208	-	1,719	-
	Samsung Electronics Benelux B.V. (SEBN)	416,273	-	1,214	-
	Samsung Electronics Hungarian Private Co., Ltd. (SEH)	233,426	141	1,513	-
	Samsung Display Dongguan Co., Ltd. (SDD)	154,618	-	-	-
	Samsung Electronics GmbH (SEG)	1,991,533	-	3,567	-
	SEMES Co., Ltd.	4,709	-	1,123,457	-
	Other	30,989,327	3,644	7,046,249	2,011
Total		103,715,053	11,917	50,183,473	5,463
Associates and joint ventures	Samsung SDS Co., Ltd	128,256	-	792,366	172,753
	Samsung Electro-Mechanics Co., Ltd	47,427	-	486,789	-
	Samsung SDI Co., Ltd	36,570	-	207,099	7,252
	Cheil Worldwide Inc.	29,923	-	441,732	-
	Other	248,805	-	400,521	2,404
Total		490,981	-	2,328,507	182,409
Other related parties	Samsung C&T Corporation	25,175	-	35,202	2,595,379
	Other	158,280	-	303,463	37,825
	Total		183,455	-	338,665
Other	Samsung Engineering Co., Ltd	875	-	12,995	1,030,441
	S-1 Corporation	2,117	-	208,373	11,040
	Other	69,002	-	76,038	66,110
	Total		71,994	-	297,406

(*) Transactions with separate entities that are related parties of the Company.

(**) Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

(C) Balances of receivables and payables

Balances of receivables and payables arising from sales and purchases of goods and services as of June 30, 2023 and December 31, 2022 are as follows:

(In millions of Korean won)	Name of company ^(*)	June 30, 2023	
		Receivables and other ^(*)	Payables and other ^(*)
	Samsung Display Co., Ltd.	14,686	49,590
	Samsung Electronics America, Inc. (SEA)	1,187,456	392,797
	Samsung Asia Pte. Ltd. (SAPL)	1,624	1,490
	Samsung (China) Semiconductor Co., Ltd. (SCS)	59,044	916,679
	Harman and its subsidiaries ^(*)	-	7,753
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	625,911	2,636,407
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	89,730	943
	Samsung Semiconductor, Inc. (SSI)	3,887,532	376,972
	Samsung Austin Semiconductor LLC. (SAS)	4,933	418,948
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	411	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	326,389	1,534,787
	Samsung India Electronics Private Ltd. (SIEL)	1,080,694	354,918
	Samsung Display Vietnam Co., Ltd. (SDV)	112,611	-
Subsidiaries	Samsung Eletronica da Amazonia Ltda. (SEDA)	213,218	3,879
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	2,595,113	22,553
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	143,848	406,402
	Thai Samsung Electronics Co., Ltd. (TSE)	102,719	200,015
	Samsung Electronics (UK) Ltd. (SEUK)	95,644	39,104
	Samsung Electronics Europe Logistics B.V. (SELS)	382,101	749
	Samsung International, Inc. (SII)	91,221	296,012
	Samsung Electronics Mexico S.A. De C.V. (SEM)	402,146	242
	Samsung Display Dongguan Co., Ltd. (SDD)	10,164	-
	Samsung Electronics GmbH (SEG)	89,519	2,642
	SEMES Co., Ltd.	47,821	780,695
	Samsung Electronics Benelux B.V. (SEBN)	35,992	1,916
	Other	7,423,977	1,553,132
	Total	19,024,504	9,998,625
	Samsung SDS Co., Ltd	24,604	480,778
	Samsung Electro-Mechanics Co., Ltd	1,716	87,444
Associates and joint ventures	Samsung SDI Co., Ltd	117,507	44,271
	Cheil Worldwide Inc.	14	302,171
	Other	87,493	112,288
	Total	231,334	1,026,952
	Samsung C&T Corporation	189,932	733,038
Other related parties	Other	14,013	201,169
	Total	203,945	934,207
	Samsung Engineering Co., Ltd	340	877,530
Other ^(*)	S-1 Corporation	689	26,747
	Other	4,702	170,253
	Total	5,731	1,074,530

(*) Transactions with separate entities that are related parties of the Company.

(*) The Company has not recognized bad debt allowance in relation to the receivables due from subsidiaries as of June 30, 2023.

(*) Payables and others include lease liabilities.

(*) Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries

(*5) Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

(In millions of Korean won)		Name of Company ^(*1)	December 31, 2022	
			Receivables and other ^(*2)	Payables and other ^(*3)
		Samsung Display Co., Ltd.	32,521	108,011
		Samsung Electronics America, Inc. (SEA)	868,937	983,709
		Samsung Asia Pte. Ltd. (SAPL)	1,604	1,812
		Harman and its subsidiaries ^(*4)	-	6,537
		Samsung (China) Semiconductor Co., Ltd. (SCS)	57,423	751,693
		Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	606,030	2,396,411
		Samsung (CHINA) Investment Co., Ltd. (SCIC)	131,285	283,459
		Samsung Semiconductor, Inc. (SSI)	4,700,427	263,757
		Samsung Electronics Vietnam Co., Ltd. (SEV)	369,380	1,748,670
		Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	693	-
		Samsung Austin Semiconductor LLC. (SAS)	21,309	386,640
		Samsung Display Vietnam Co., Ltd. (SDV)	196,643	7
		Samsung India Electronics Private Ltd. (SIEL)	1,219,298	312,243
Subsidiaries		Shanghai Samsung Semiconductor Co., Ltd. (SSS)	1,623,968	77
		Samsung Eletronica da Amazonia Ltda. (SEDA)	227,180	3,037
		Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	234,870	358,082
		Thai Samsung Electronics Co., Ltd. (TSE)	115,103	379,098
		Samsung Electronics (UK) Ltd. (SEUK)	76,264	-
		Samsung Electronics Benelux B.V. (SEBN)	18,403	-
		Samsung Electronics Hungarian Private Co. Ltd. (SEH)	11,449	-
		Samsung Electronics Europe Logistics B.V. (SELS)	273,816	506,872
		Samsung Display Dongguan Co., Ltd. (SDD)	20,177	11
		SEMES Co., Ltd.	54,327	561,368
		Samsung Electronics GmbH (SEG)	10,607	-
		Samsung Electronics Mexico S.A. De C.V. (SEM)	230,508	1,093
		Other	6,565,258	2,226,116
		Total	17,667,480	11,278,703
		Samsung SDS Co., Ltd	24,604	480,778
		Samsung Electro-Mechanics Co., Ltd	1,716	87,444
Associates and joint ventures		Samsung SDI Co., Ltd	117,507	44,271
		Cheil Worldwide Inc.	14	302,171
		Other	87,493	112,288
		Total	231,334	1,026,952
		Samsung C&T Corporation	189,932	733,038
Other related parties		Other	14,013	201,170
		Total	203,945	934,208
		Samsung Engineering Co., Ltd	340	877,530
Other ^(*5)		S-1 Corporation	689	26,747
		Other	4,702	170,253
		Total	5,731	1,074,530

(*1) Transactions with separate entities that are related parties of the Company.

(*2) The Company has not recognized any bad debt allowance in relation to the receivables due from subsidiaries as of December 31, 2022.

(*3) Payables and others include lease liabilities.

(*4) Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

(*5) Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

- (D) For the six-month period ended June 30, 2023 and 2022, the Company had no lendings to its subsidiaries, but had borrowing from its subsidiaries amounting to ₩ 21,990,000 million and ₩ 0 million, respectively. In addition, the Company had no lendings to or borrowings from associates and joint ventures during the three-month periods ended June 30, 2023 and 2022.
- (E) For the six-month periods ended June 30, 2023 and 2022, the Company invested ₩ 10,532 million and ₩ 58,864 million, respectively, in subsidiaries, and received ₩ 107,217 million and ₩ 74,448 million in return of investments, respectively. In addition, the Company invested ₩ 58,982 million and ₩ 882,125 million in associates and joint ventures for the six-month period ended June 30, 2023 and received ₩ 518 million in return of investments.
- (F) For the six-month periods ended June 30, 2023 and 2022, the Company declared dividend of ₩ 825,850 million and ₩ 835,814 million, respectively, to related parties. In addition, for the six-month periods ended June 30, 2023 and 2022, the Company declared dividends of ₩ 64,116 million and ₩ 64,116 million, respectively, to the entities that are not related parties of the Company in accordance with *Korean IFRS 1024*, but belong to the same conglomerate according to the Monopoly Regulation and Fair Trade Act. As of June 30, 2023 and December 31, 2022, there were no dividend payable amounts outstanding.
- (G) For the six-month periods ended June 30, 2023 and 2022, the Company had no lease agreements to its subsidiaries (₩ 20 million for the six-month period ended June 30, 2022), and lease payments made to the related parties amounted to ₩ 9,963 million and ₩ 23,515 million, respectively.
- (H) As of June 30, 2023, the Company provides guarantees in relation to borrowings of the related parties (refer to Note 13).
- (I) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the six-month periods ended June 30, 2023 and 2022 consists of:

<i>(In millions of Korean won)</i>	2023	2022
Short-term employee benefits	5,154	4,694
Post-employment benefits	279	289
Other long-term employee benefits	3,917	3,873

6. Dividends

We continue to work to enhance shareholder value alongside our efforts to strengthen competitiveness of our products and businesses. We utilized 50% of the free cash flow as the shareholder return pool for 2018 to 2020 as part of our shareholder return policy for 2018 to 2020 and paid annual, regular dividends of KRW 9.6 trillion. A special cash dividend of KRW 10.7 trillion was paid out at the same time as the 2020 end-year, regular dividend. The shareholder return policy for 2021 to 2023 was announced in January 2021. For this term, we kept the shareholder return pool at 50% of the free cash flow, but increased the annual, regular dividend to KRW 9.8 trillion. Any remaining portion of the 50% of the free cash flow will be paid out to shareholders.

Dividends paid in the three most recent fiscal years are as follows:

[Key dividend indices]

Classification		1H23	2022	2021
Par value per share (KRW)		100	100	100
Consolidated net profit ¹⁾ (KRW mil)		2,948,270	54,730,018	39,243,791
Separate net profit (KRW mil)		13,742,728	25,418,778	30,970,954
EPS ²⁾ (KRW)		434	8,057	5,777
Total cash dividend (KRW mil)		4,904,308	9,809,438	9,809,438
Total stock dividend (KRW mil)		-	-	-
Dividend payout ratio (%)		166.3	17.9	25.0
Cash dividend yield (%)	Common	1.0	2.5	1.8
	Preferred	1.2	2.7	2.0
Stock dividend yield (%)	Common	-	-	-
	Preferred	-	-	-
Cash dividend per share (KRW)	Common	722	1,444	1,444
	Preferred	722	1,445	1,445
Stock dividend per share (share)	Common	-	-	-
	Preferred	-	-	-

Dividends were KRW 2,452,154 million or KRW 361 per share in the first two quarters of 2023 and the first three quarters of 2022 and 2021. For further information relating to total cash dividend, see retained earnings in 『3. Note to Consolidated Financial Statements』 in 『III. Financial Affairs』.

1) Equity attributable to owners of the parent.

2) Basic earnings per common share on a consolidated basis. For further information relating to the calculation of basic EPS, see Earnings Per Share in 『3. Note to Consolidated Financial Statements』 in 『III. Financial Affairs』.

The history of dividend payouts is as follows:

Number of continuous dividend payments		Average dividend yield	
Quarterly/biannual dividends	End-year dividends	Past 3 years	Past 5 years
38	42	2.7%	2.9%

The number of continuous dividend payments includes the quarterly dividend for the quarter and the end-year dividend for the recent business year. Continuous payment of the end-year dividend started in 1981, biannual dividend in 1999, and quarterly dividend in 2017.

The average dividend yield is based on common shares. The average dividend yield of preferred shares for the past 3 years and past 5 years are 3.0% and 3.3% respectively.

The “past 3 years” refers to the period from 2020 to 2022, and the “past 5 years” refers to the period from 2018 to 2022. For the dividend yield of 1H23, please refer to the table of key dividends above (common shares at 1.0%, preferred shares at 1.2%).

7. Matters about financing through the issuance of securities

7-1 Financing through the issuance of securities

[Issuance of equity securities]

N/A

[Issuance of debt securities]

A. List of issued debt securities

(As of June 30, 2023)

(KRW mil, %)

Issuing company	Type of securities	Issuance method	Date of Issuance	Total nominal amount	Interest rate	Rating (rating institution)	Maturity date	Payment status	Management company
Samsung Electronics	Corporate bonds	Public offering	Oct 2, 1997	131,280	7.7	Aa2(Moody's), AA-(S&P)	Oct 1, 2027	Partial redemption	Goldman Sachs et al.
Harman International Industries, Inc	Corporate bonds	Public offering	May 11, 2015	525,120	4.2	Baa1 (Moody's), A- (S&P)	May 15, 2025	Unredeemed	J.P.Morgan et al.
Dowooinsys Co., Ltd	Corporate bonds	Private placement	Feb 28, 2020	23,000	0.5	-	Feb 28, 2025	Unredeemed	-
Dowooinsys Co., Ltd	Corporate bonds	Private placement	Dec 8, 2022	42,000	0.5	-	Dec 8, 2027	Unredeemed	-
SEMES	Commercial paper	Private placement	Jan 30, 2023	30,000	4.1	A1	Feb 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Jan 30, 2023	50,000	4.0	A1	Feb 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 10, 2023	70,000	3.9	A1	Mar 10, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 28, 2023	1,000	4.0	A1	Mar 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 28, 2023	9,000	4.0	A1	Mar 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Mar 10, 2023	70,000	4.1	A1	Apr 10, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Mar 28, 2023	45,000	4.0	A1	Apr 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Apr 10, 2023	70,000	4.0	A1	May 10, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	May 10, 2023	70,000	4.0	A1	Jun 12, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Jun 12, 2023	50,000	4.1	A1	Jul 12, 2023	Unredeemed	-
Total	-	-	-	1,186,400	-	-	-	-	-

※ The rating institutions of Commercial paper are NICE Investors Service and Korea Ratings Corporation.

B. Commercial Paper Unredeemed Balance

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 10 days	Above 10 days / under 30 days	Above 30 days / under 90 days	Above 90 days / under 180 days	Above 180 days / under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-	-
	Private	-	50,000	-	-	-	-	-	-	50,000
	Total	-	50,000	-	-	-	-	-	-	50,000

C. Short-term Bond Unredeemed Balance

Not Applicable

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 10 days	Above 10 days / under 30 days	Above 30 days / under 90 days	Above 90 days / under 180 days	Above 180 days / under 1 year	Total	Issue limit	Balance limit
Unredeemed balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

D. Corporate Bond Unredeemed Balance

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	6,564	531,684	6,564	6,564	6,564	-	-	557,940
	Private	-	23,000	-	-	42,000	-	-	65,000
	Total	6,564	554,684	6,564	6,564	48,564	-	-	622,940

※ Based on consolidated financial statements

※ The exchange rate as of the reporting date has been applied.

※ Unredeemed balance of corporate bonds of Dowoosys are intercompany balances eliminated in consolidated financial statements

- Corporate Bond Unredeemed Balance (Samsung Electronics)

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	6,564	6,564	6,564	6,564	6,564	-	-	32,820
	Total	6,564	6,564	6,564	6,564	6,564	-	-	32,820

※ The exchange rate as of the reporting date has been applied.

- Corporate Bond Unredeemed Balance (Harman)

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	-	525,120	-	-	-	-	-	525,120
	Total	-	525,120	-	-	-	-	-	525,120

※ The exchange rate as of the reporting date has been applied.

- Corporate Bond Unredeemed Balance (Dowoinsys)

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Private	-	23,000	-	-	42,000	-	-	65,000
	Total	-	23,000	-	-	42,000	-	-	65,000

※ Unredeemed balance of corporate bonds of Dowoinsys are intercompany balances eliminated in consolidated financial statements

E. Hybrid Bond Unredeemed Balance

Not Applicable

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 5 years	Above 5 years / under 10 years	Above 10 years / under 15 years	Above 15 years / under 20 years	Above 20 years / under 30 years	Above 30 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

F. Contingent Convertible Bond Unredeemed Balance

Not Applicable

(Reporting Date: June 30, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years / under 20 years	Above 20 years / under 30 years	Above 30 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-

G. Details and Compliance of the Bond Management Contract (Samsung Electronics)

(Reporting Date: June 30, 2023)

(KRW mil, %)

Name of security	Date of issuance	Maturity date	Issued amount	Settlement date of bond management contract	Debenture management company
US\$ 100,000,000 7.7% debenture	Oct 2, 1997	Oct 1, 2027	131,280	Oct 2, 1997	The Bank of New York Mellon Trust Company, N.A.

(Reporting Date: June 30, 2023)

Financial ratios	Contract details	Not applicable
	Implementation status	Not applicable
Constraint on collateral	Contract details	Less than 10% of net tangible assets
	Implementation status	Compliant (there is no collateral for the relevant assets)
Constraint on disposal of assets	Contract details	Certain requirements, such as transfer of obligations on the bond, must be satisfied to dispose all or most of an asset
	Implementation status	Compliant (disposed assets accounted for 0.1% of the total assets during 1H23)
Constraint on governance	Contract Details	Not applicable
	Implementation status	Not applicable
Submission of implementation report	Implementation status	Not applicable

- ※ The exchange rate as of the base date has been applied.
- ※ The date of the bond management contract was signed on the same day as the Fiscal Agency Agreement; accordingly, the Bank of New York Mellon Trust Company, N.A. is under the authority of the Fiscal Agent.
- ※ The net tangible assets subjected to the limitation of collaterals are production facilities and stocks owned by the Company.
- ※ The reporting date is the date when most recent financial statements were prepared, which are used to determine the status of implementation.
- ※ The constraint on governance is as of the reporting date.

7-2 Use of funds financed through the issuance of securities

Not applicable

8. Other financial information

A. Restatement of financial statements and other matters to note

- (1) Restatement of financial statements: Not Applicable
- (2) Acquisition, divestment, asset sales, and sale of business

The major acquisition, divestment and transfer of business during past three years are as follows.

[Sale of SSL, SSM]

On August 28, 2020, Samsung Display Co., Ltd., the Company's subsidiary, decided to sell its 100% ownership in Samsung Suzhou Module Co., Ltd. ("SSM") and 60% ownership in Samsung Suzhou LCD Co., Ltd. ("SSL") to TCL China Star Optoelectronics Technologies Co. Ltd. ("CSOT"). The sales were completed on April 1, 2021.

- (3) Information on the accounting treatment of the sales of assets related to asset backed securities and contingent liabilities

Accounting Treatment of the sale of assets related to asset backed securities:

- Not applicable

Litigation

The Company is involved in various claims, disputes, and investigations conducted by regulatory bodies, which arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, as of the reporting date, the Company believes the outcome will not have a material impact on the financial position of the Company.

Debt guarantee

- Domestic: Not applicable

- Overseas:

(USD thousand)

Company	Relationship	Creditor	Guarantee	Transactions			Limit of guarantee
			Expiry date	Beginning of period	Increase/decrease	End of period	
SEA	Subsidiary	BOA etc.	Jun 13, 2024	-	-	-	1,278,000
SEM	Subsidiary	BBVA etc.	Jun 13, 2024	-	-	-	715,000
SAMCOL	Subsidiary	Citibank etc.	Jun 13, 2024	-	-	-	210,000
SEDA	Subsidiary	BRADESCO etc.	Dec 16, 2023	-	-	-	409,000
SECH	Subsidiary	Citibank etc.	Jun 13, 2024	-	-	-	62,000
SEPR	Subsidiary	BBVA etc.	Jun 13, 2024	-	-	-	150,000
SSA	Subsidiary	SCB etc.	Jun 13, 2024	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	Dec 16, 2023	-	-	-	110,000
SETK	Subsidiary	BNP etc.	Jun 13, 2024	239,395	25,052	264,447	777,000
SETK-P	Subsidiary	BNP etc.	Dec 16, 2023	25,649	-12,206	13,443	130,000
SECE	Subsidiary	Citibank	Dec 16, 2023	-	-	-	100,000
SEEG	Subsidiary	HSBC	Jun 13, 2024	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	Jun 13, 2024	-	-	-	70,000
SJC	Subsidiary	Mizuho Bank etc.	Apr 30, 2024	-	-	-	808,985
SEUC	Subsidiary	Credit Agricole etc.	Jun 13, 2024	-	-	-	125,000
SEDAM	Subsidiary	Citibank etc.	Jun 13, 2024	155,768	-155,768	-	537,000
SECA	Subsidiary	BoA	Nov 08, 2023	-	-	-	70,000
SELA	Subsidiary	Citibank	Dec 16, 2023	-	-	-	60,000
SEEH	Subsidiary	HSBC etc.	Jun 13, 2024	-	-	-	888,400
SERK	Subsidiary	SMBC	Nov 08, 2023	-	-	-	20,000
SELV	Subsidiary	Citibank	Dec 16, 2023	-	-	-	10,000
SEIL	Subsidiary	Citibank	Dec 16, 2023	9,664	-9,664	-	15,600
SAPL	Subsidiary	BOA etc.	Jun 13, 2024	-	-	-	404,000
SAVINA	Subsidiary	HSBC	Jun 13, 2024	-	-	-	51,000
SCIC	Subsidiary	HSBC etc.	Jun 13, 2024	-	-	-	300,000
SME	Subsidiary	SCB	Nov 08, 2023	-	-	-	110,000
SAMEX	Subsidiary	Citibank	Dec 16, 2023	-	-	-	5,000
SEASA	Subsidiary	Citibank	Dec 16, 2023	-	-	-	2,000
SSAP	Subsidiary	SCB	Nov 08, 2023	-	-	-	35,000
SEPM	Subsidiary	HSBC	Jun 13, 2024	-	-	-	35,000
SESAR	Subsidiary	HSBC	Jun 13, 2024	-	-	-	20,000
SEUZ	Subsidiary	Citibank	Dec 16, 2023	-	-	-	10,000
AdGear Technologies Inc.	Subsidiary	BOA	Nov 08, 2023	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	Jun 13, 2024	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Nov 08, 2023	-	-	-	25,000
Harman Holding Limited	Subsidiary	HSBC	Jun 13, 2024	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Nov 08, 2023	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.							
Harman International Industries Limited	Subsidiary	HSBC	Jun 13, 2024	-	-	-	30,000
SDN	Subsidiary	SIEL	Feb 19, 2026	513,366	4,453	517,819	609,199
SAS	Subsidiary	Epcor	The date of debt expiration	-	-	-	340,000
DOWOINSYS VINA COMPANY LIMITED	Subsidiary	ANZ	Nov 09, 2025	20,000	-	20,000	20,000
Total				963,842	-148,133	815,709	9,092,184

※ Information above are prepared on a consolidated basis. Debt guarantees for SDN are provided by Samsung Display Co., Ltd., SAS by SEA, and DOWOINSYS VINA COMPANY LIMITED by Dowoosys, respectively.

※ SEC requires Board approval for individual guarantees exceeding 2.5% of total equity. When the guarantee amount is between 0.1% and/or less than 2.5%, the approval decision is delegated to the Management Committee. Samsung Display Co., Ltd requires Board approval for individual guarantees over KRW 10,000 million.

※ SEC claims fees on the debt guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc. In 2022, the Company claimed approximately USD 547,000 in guarantee fees and collected the amount in 2023.

In 2022, Samsung Display Co., Ltd. claimed approximately USD 3,080,000 in guarantee fees to SDN and collected the amount in 2023.

Refer to the notes to the consolidated financial statements for the information on contingent liabilities.

(4) Other matters requiring attention in relation to the use of the financial statements

A. Emphasis of matter and key audit matter in Independent auditor's report

Period	Emphasis of matter	Key audit matter
1H23	Not applicable	Not applicable
2022	Not applicable	(Consolidated financial statement) 1. Sales deduction related to the Sales promotion activities of products (Separate financial statement) 1. Sales deduction related to the Sales promotion activities of products
2021	Not applicable	(Consolidated financial statement) 1. Sales deduction related to the Sales promotion activities of products (Separate financial statement) 1. Sales deduction related to the Sales promotion activities of products

B. Allowance for bad debt

The allowances for bad debt by account over the past 3 years are as follows:

(KRW mil, %)

Period	Account	Receivables amount	Allowance amount	Allowance
1H23	Trade receivables	36,493,987	389,845	1.1%
	Short-term loans	28,309	205	0.7%
	Other receivables	5,908,097	85,325	1.4%
	Advances	1,806,631	4,337	0.2%
	Trade receivables (long-term)	92,950	-	0.0%
	Other receivables (long-term)	1,328,612	527	0.0%
	Advances (long-term)	3,352,214	10,279	0.3%
	Long-term loans	242,488	1,265	0.5%
	Total	49,253,288	491,783	1.0%
2022	Trade receivables	36,033,784	312,221	0.9%
	Short-term loans	22,403	215	1.0%
	Other receivables	6,227,068	77,859	1.3%
	Advances	1,741,031	3,965	0.2%
	Trade receivables (long-term)	204,248	-	0.0%
	Other receivables (long-term)	824,468	242	0.0%
	Advances (long-term)	2,382,711	10,969	0.5%
	Long-term loans	225,983	1,206	0.5%
	Total	47,661,696	406,677	0.9%
2021	Trade receivables	41,024,295	310,880	0.8%
	Short-term loans	17,895	73	0.4%
	Other receivables	4,569,772	72,515	1.6%
	Advances	1,122,660	3,847	0.3%
	Trade receivables (long-term)	225,739	-	0.0%
	Other receivables (long-term)	1,002,404	290	0.0%
	Advances (long-term)	1,770,999	9,003	0.5%
	Long-term loans	199,577	917	0.5%
	Total	49,933,341	397,525	0.8%

※ Based on consolidated financial statements

※ Receivables amount represents the value after deducting present value discount account

Allowance for bad debt by year

(KRW mil)

	1H23	2022	2021
1. Allowance for bad debt (beginning balance)	406,677	397,525	388,943
2. Net bad debt expense (① - ② + ③)	-9,944	16,658	25,926
① Bad debt expense, etc (Write-off)	11,150	9,711	22,400
② Bad debt recovered	-	-	-
③ Others	-21,094	6,947	3,526
3. Bad debts expense	75,162	25,810	34,508
4. Allowance for bad debts (Ending balance)	491,783	406,677	397,525

※ Based on consolidated financial statements.

The guideline for bad debt allowances for trade receivables

(1) Calculation of bad debt allowance

- Bad debt allowance is calculated using an expected credit loss impairment model which is based on write-off experience rate and future expected bad debt amount.

(2) Calculation basis of write-off experience rate and future expected bad debt:

- Write-off experience rate for each aging group of receivables is calculated based on the actual rate of credit losses to three-year average receivables balance.
- Future expected bad debt is determined taking into consideration cases of debtor bankruptcy, compulsory execution, death, disappearance, credit information of debtor and forward-looking information.

[Bad debt allowance by circumstance]

Circumstance	Rate of allowance
Dispute or conflict	25%
Receivable through utilization of third party collection agency	50%
Receivable under litigation	75%
Customer filed or in the process of filing bankruptcy	100%

(3) Instruction: Write-off is recorded when trade receivables contain the following characteristics:

- Objective proof of bad debts, such as bankruptcy, compulsory execution, discontinuance of business, debtor's death or disappearance
- Legal action has failed or the right of collection has been extinguished.
- When the third party collection agency notifies that collection is not possible.
- When the collateral is sold or insurance is received.
- When collection expense exceeds receivables amount.

The outstanding period of trade receivables

(Reporting Date: June 30, 2023)

(KRW mil, %)

	Less than 6 months	6 months ~ 1 year	1 year ~ 3 years	More than 3 years	Total
Amount	36,424,023	38,095	11,103	113,716	36,586,937
Ratio	99.6%	0.1%	0.0%	0.3%	100.0%

※ Base on consolidated financial statements

※ Receivables amount represents the value after deducting present value discount account

C. Inventory

- The inventory status by Division over the last three years is as follows:

(KRW mil, %)

Division	Category	1H23	2022	2021	Note
DX	Finished goods	6,782,945	7,712,885	8,894,766	
	Work in process	827,801	1,013,606	799,218	
	Raw material	10,486,278	10,520,293	11,384,887	
	Material in transit	1,082,985	943,322	1,299,624	
	Total	19,180,009	20,190,106	22,378,495	
DS	Finished goods	7,086,418	6,601,087	2,490,097	
	Work in process	22,817,806	18,756,104	11,809,911	
	Raw material	3,721,497	3,639,061	2,118,424	
	Material in transit	63,911	61,352	36,685	
	Total	33,689,632	29,057,604	16,455,117	
SDC	Finished goods	269,909	811,518	294,777	
	Work in process	579,484	542,473	874,229	
	Raw material	782,353	788,521	810,325	
	Material in transit	18,204	23,626	48,253	
	Total	1,649,950	2,166,138	2,027,584	
Harman	Finished goods	834,063	799,919	533,008	
	Work in process	114,404	119,890	105,271	
	Raw material	858,119	913,085	736,109	
	Material in transit	358,022	269,715	321,128	
	Total	2,164,608	2,102,609	1,695,516	
Total	Finished goods	15,086,419	16,032,226	12,280,579	
	Work in process	24,175,740	20,077,519	13,473,618	
	Raw material	14,979,482	14,979,280	14,184,841	
	Material in transit	1,263,157	1,098,841	1,445,366	
	Total	55,504,798	52,187,866	41,384,404	
Inventory ratio (%) [Inventory ÷ Total Assets] × 100		12.0%	11.6%	9.7%	
Inventory turnover (x) [Yearly COGS ÷ {(Beginning of inventory + End of inventory)÷2}]		3.3	4.1	4.5	

※ Based on consolidated financial statements

Inventory counts

(1) Inspection date

- End of May and November (twice a year)
- For the difference in inventories between the inspection date and at the end of the year, the Company checks all the warehouse record during the period in order to confirm the existence of the inventories as of the date of the financial statements.

(2) Inspection method

- Internal warehouse: Closed & entire quantity inspection
- ※ Sample inspection for semi-conductor and DP work-in-progress inventories, SVC materials
- Outside warehouse
Perform check for the possession confirmation documents and sample tests at the third party warehouse and inventory-in-transit.
- External auditors join and observe the inspection and carry out sample tests to check the existence and completeness.
- ※ For the HQ, the most recent inventory inspection was conducted from May 29 to Jun 5, 2023, and the subsidiaries conducted the inventory inspection during the same period as HQ.

Inventory aging and valuation

Inventories are stated at the lower of cost or net realizable value. Inventory as of June 30, 2023 are as follows:

(KRW mil)

Category	Acquisition cost	Inventory valuation reserve	Balance	Note
Finished goods	16,909,611	-1,823,192	15,086,419	
Work in process	27,960,258	-3,784,518	24,175,740	
Raw material	16,304,014	-1,324,533	14,979,481	
Material in transit	1,263,158	-	1,263,158	
Total	62,437,041	-6,932,243	55,504,798	

- ※ Based on consolidated financial statements

D. Fair value estimation

Refer to 3. Financial Instruments by Category and 25. Financial Risk Management in 『Ⅲ. Financial Affairs』.

IV. Management Discussion and Analysis

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Management Discussion and Analysis section, reported in the full-year business report, is not included in the half-year reports.

V. Auditor's Report

1. Introduction

Samjong KPMG conducted a review and audit on the consolidated/separate financial statements of financial position of the Company as of June 30, 2023, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the period then ended. The consolidated/separate financial statements for the period ended June 30, 2023, are presented fairly, in all material respects, in accordance with Korean IFRS 1034 Interim Financial Reporting.

Deloitte Anjin conducted audits on the consolidated/separate financial statements of financial position of the Company as of December 31, 2022, and December 31, 2021, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the years then ended and expressed an unqualified opinion on those financial statements.

All of the Company's subsidiaries received unqualified opinion for the periods ended December 31, 2022, and December 31, 2021.

Period end	Company Auditor	Audit Opinion	Emphasis of Matter	Key Audit Matter(s)
Jun 30, 2023	Samjong KPMG	Not applicable	Not applicable	Not applicable
Dec 31, 2022	Deloitte Anjin	Unqualified	Not applicable	(Consolidated) 1. Sales deduction related to the sales promotion activities of products (Separate) 1. Sales deduction related to the sales promotion activities of products
Dec 31, 2021	Deloitte Anjin	Unqualified	Not applicable	(Consolidated) 1. Sales deduction related to the sales promotion activities of products (Separate) 1. Sales deduction related to the sales promotion activities of products

※ Audit opinion on both separate and consolidated financial statements.

[Audit Contract Description]

(KRW mil)

Fiscal Period	Auditor	Description	Contract		Actual	
			Audit fee	Total Hours	Fee Claimed	Hours spent
Half-year ended Jun 30, 2023	Samjong KPMG	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of separate/consolidated Internal Control over Financial Reporting	7,800	85,700	3,119	34,264
Year ended Dec 31, 2022	Deloitte Anjin	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	8,424	78,000	8,424	78,146
Year ended Dec 31, 2021	Deloitte Anjin	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	7,900	76,741	7,900	76,999

< Review plan for the period ended June 30, 2023 >

Review Period		Planned Dates
2023 1Q	Pre-review	Mar 6, 2023 ~ Mar 29, 2023
	Review	Apr 7, 2023 ~ May 12, 2023
2023 2Q	Pre-review	Jun 5, 2023 ~ Jun 30, 2023
	Review	Jul 7, 2023 ~ Aug 11, 2023

※ Above schedule is for the review of separate and consolidated financial statements

[Non-Audit Service Contract Description]

(KRW mil)

Fiscal Period	Contract Date	Non-audit Service Description	Period for Service	Compensation	Note
Half-year ended Jun 30, 2023	Feb 2017	Tax advisory services(overseas subsidiaries)	Jan – Jun 2023	33	Samjong KPMG
	Sep 2018	Tax advisory services(overseas subsidiaries)	Jan – Jun 2023	27	
	May 2019	Tax advisory services(overseas subsidiaries)	Jan – Jun 2023	-	
	May 2023	ESG certification(domestic subsidiaries)	May – Jun 2023	25	
Year ended Dec 31, 2022	-	-	-	-	-
Year ended Dec 31, 2021	Jun 2017	E-discovery advisory services	Jan – Dec 2021	394	Deloitte Anjin

[Details of internal audit committee's discussion with Auditors]

No.	Date	Participants	Method	Details of discussion
1	Jan 27, 2023	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 4 others	Face-to-face meeting	- Key Audit Matters and others audit focus areas - Progress of audit of Internal Control over Financial Reporting - Other required communications at the completion stage of the audit
2	Apr 25, 2023	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 5 others	Face-to-face meeting	- Reporting on progress of quarterly review - Audit plan for the year ending December 31, 2023 - Other required communications at the planning stage of the audit
3	Jul 25, 2023	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 5 others	Face-to-face meeting	- Annual audit plan and its progress - Plan for the Key Audit Matters selection - Progress of audit of Internal Control over Financial Reporting - Discussion of quarterly review focus areas and other required communications

2. Change of Independent Auditor

Upon termination of the contract with previous auditor, Deloitte Anjin, the audit committee has newly appointed Samjong KPMG as the Company's external auditor for three years from 2023 to 2025, in accordance with Article 10 (1), (3) and (4) of the "Act on External Audit of Stock Companies, Etc.". As a result, the Company's external auditor has been changed from Deloitte Anjin to Samjong KPMG from the beginning of this period.

There are 233 subsidiaries as at June 30, 2023. For the period ending June 30, 2023, 8 domestic subsidiaries, including Samsung Display Co., Ltd., changed external auditor from Deloitte Anjin to Samjong KPMG and SU Materials Co., Ltd. changed E&Y Hanyoung to Samjong KPMG. 30 overseas subsidiaries, including Samsung Electronics America, Inc. (SEA), changed Deloitte to KPMG, 65 overseas subsidiaries, including Samsung (China) Semiconductor Co., Ltd. (SCS), changed PwC to KPMG and 6 overseas subsidiaries, including Samsung Electronics Benelux B.V. (SEBN), changed E&Y to KPMG, Laos Samsung Electronics Sole Co., Ltd (LSE) changed KPP Co., Ltd to KPMG. Samsung Electronics Uzbekistan Ltd. (SEUZ), DOWOOLINSYS VINA COMPANY LIMITED appointed KPMG, and Samsung Venture Capital Union SVIC No. 62 appointed Samjong KPMG as their new external auditors, respectively.

These changes in external auditors were to improve efficiency in audit of consolidated financial statements due to the change of the Company's external auditor. Appointment of auditor was decided at the entities' own discretion.

Details of change in subsidiaries' external auditors are as follows:

Subsidiaries	Previous auditor	Current Auditor
Samsung Display Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Service Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Service CS Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Sales Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Logitech Co., Ltd.	Deloitte Anjin	Samjong KPMG
Dowoosys Co., Ltd.	Deloitte Anjin	Samjong KPMG
Gf-System Co., Ltd.	Deloitte Anjin	Samjong KPMG
Mirero System Co., Ltd.	Deloitte Anjin	Samjong KPMG
SU Materials Co., Ltd.	E&Y Hanyoung	Samjong KPMG
Samsung Electronics America, Inc. (SEA)	Deloitte	KPMG
Samsung Semiconductor, Inc. (SSI)	Deloitte	KPMG
Samsung Mexicana S.A. de C.V (SAMEX)	Deloitte	KPMG
Samsung International, Inc. (SII)	Deloitte	KPMG
Samsung Austin Semiconductor LLC. (SAS)	Deloitte	KPMG
Samsung Electronics Mexico S.A. De C.V. (SEM)	Deloitte	KPMG
Samsung Electronics (UK) Ltd. (SEUK)	Deloitte	KPMG
Samsung Electronics Holding GmbH (SEHG)	Deloitte	KPMG
Samsung Semiconductor Europe GmbH (SSEG)	Deloitte	KPMG
Samsung Electronics GmbH (SEG)	Deloitte	KPMG
Samsung Semiconductor Europe Limited (SSEL)	Deloitte	KPMG
Samsung Vina Electronics Co., Ltd. (SAVINA)	Deloitte	KPMG
Samsung Electronics Singapore Pte. Ltd. (SESP)	Deloitte	KPMG
Samsung Asia Pte. Ltd. (SAPL)	Deloitte	KPMG
Samsung Electronics Australia Pty. Ltd. (SEAU)	Deloitte	KPMG
Thai Samsung Electronics Co., Ltd. (TSE)	Deloitte	KPMG
Samsung Display Vietnam Co., Ltd. (SDV)	Deloitte	KPMG
Samsung R&D Institute BanglaDesh Limited (SRBD)	Deloitte	KPMG
Samsung Electronics Vietnam Co., Ltd. (SEV)	Deloitte	KPMG
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Deloitte	KPMG

Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Deloitte	KPMG
Samsung (CHINA) Investment Co., Ltd. (SCIC)	Deloitte	KPMG
Samsung Electronics Taiwan Co., Ltd. (SET)	Deloitte	KPMG
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Deloitte	KPMG
Samsung Gulf Electronics Co., Ltd. (SGE)	Deloitte	KPMG
Samsung Electronics Saudi Arabia Ltd. (SESAR)	Deloitte	KPMG
Samsung Electronics South Africa(Pty) Ltd. (SSA)	Deloitte	KPMG
Samsung Electronics Turkiye (SETK)	Deloitte	KPMG
Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Deloitte	KPMG
Samsung Eletronica da Amazonia Ltda. (SEDA)	Deloitte	KPMG
Samsung Japan Corporation (SJC)	PwC	KPMG
Samsung R&D Institute Japan Co. Ltd. (SRJ)	PwC	KPMG
Samsung Electronics Japan Co., Ltd. (SEJ)	PwC	KPMG
Samsung Oak Holdings, Inc. (SHI)	PwC	KPMG
Samsung Electronics Canada, Inc. (SECA)	PwC	KPMG
Samsung Research America, Inc (SRA)	PwC	KPMG
SAMSUNG NEXT LLC (SNX)	PwC	KPMG
SAMSUNG NEXT FUND LLC (SNXF)	PwC	KPMG
Samsung Electronics Home Appliances America, LLC (SEHA)	PwC	KPMG
Samsung Electronics Digital Appliance Mexico, SA de CV (SEDAM)	PwC	KPMG
Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	PwC	KPMG
Samsung Electronics France S.A.S (SEF)	PwC	KPMG
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	PwC	KPMG
Samsung Electronics Czech and Slovak s.r.o. (SECZ)	PwC	KPMG
Samsung Electronics Italia S.P.A. (SEI)	PwC	KPMG
Samsung Electronics Europe Logistics B.V. (SELS)	PwC	KPMG
Samsung Electronics Romania LLC (SEROM)	PwC	KPMG
Samsung Electronics Overseas B.V. (SEO)	PwC	KPMG
Samsung Electronics Polska, SP.Zo.o (SEPOL)	PwC	KPMG
Samsung Electronics Nordic Aktiebolag (SENA)	PwC	KPMG
Samsung Electronics Austria GmbH (SEAG)	PwC	KPMG
Samsung Electronics Switzerland GmbH (SESG)	PwC	KPMG
SAMSUNG ELECTRONICS BALTICS SIA (SEB)	PwC	KPMG
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	PwC	KPMG
Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	PwC	KPMG
Samsung Electronics Greece S.M.S.A (SEGR)	PwC	KPMG
Samsung Nanoradio Design Center (SNDC)	PwC	KPMG
Samsung Electronics Air Conditioner Europe B.V. (SEACE)	PwC	KPMG
Samsung Denmark Research Center ApS (SDRC)	PwC	KPMG
Samsung Cambridge Solution Centre Limited (SCSC)	PwC	KPMG
Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	PwC	KPMG
Samsung Electronics New Zealand Limited (SENZ)	PwC	KPMG
PT Samsung Electronics Indonesia (SEIN)	PwC	KPMG
PT Samsung Telecommunications Indonesia (STIN)	PwC	KPMG
Samsung Display Noida Private Limited (SDN)	PwC	KPMG
Samsung Display Dongguan Co., Ltd. (SDD)	PwC	KPMG
Samsung Display Tianjin Co., Ltd. (SDT)	PwC	KPMG
Samsung Electronics Hong Kong Co., Ltd. (SEHK)	PwC	KPMG

Suzhou Samsung Electronics Co., Ltd. (SSEC)	PwC	KPMG
Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	PwC	KPMG
Samsung Mobile R&D Center China-Guangzhou (SRC-Guangzhou)	PwC	KPMG
Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	PwC	KPMG
Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	PwC	KPMG
SEMES (XIAN) Co., Ltd.	PwC	KPMG
Beijing Samsung Telecom R&D Center (SRC-Beijing)	PwC	KPMG
Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	PwC	KPMG
Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	PwC	KPMG
Samsung Electronics China R&D Center (SRC-Nanjing)	PwC	KPMG
Samsung (China) Semiconductor Co., Ltd. (SCS)	PwC	KPMG
Samsung Semiconductor Xian Co., Ltd. (SSCX)	PwC	KPMG
Samsung Electronics West Africa Ltd. (SEWA)	PwC	KPMG
Samsung Electronics East Africa Ltd. (SEEA)	PwC	KPMG
Samsung Electronics Israel Ltd. (SEIL)	PwC	KPMG
Samsung Electronics Tunisia S.A.R.L (SETN)	PwC	KPMG
Samsung Electronics Pakistan(Private) Ltd. (SEPAK)	PwC	KPMG
Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	PwC	KPMG
Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	PwC	KPMG
Samsung Electronics Maghreb Arab (SEMAG)	PwC	KPMG
Samsung Electronics Latinoamerica(Zona Libre), S. A. (SELA)	PwC	KPMG
Samsung Electronica Colombia S.A. (SAMCOL)	PwC	KPMG
Samsung Electronics Chile Limitada (SECH)	PwC	KPMG
Samsung Electronics Peru S.A.C. (SEPR)	PwC	KPMG
Samsung Electronics Ukraine Company LLC (SEUC)	PwC	KPMG
Samsung R&D Institute Ukraine (SRUKR)	PwC	KPMG
Samsung Electronics Central Eurasia LLP (SECE)	PwC	KPMG
Samsung Electronics Iberia, S.A. (SESA)	E&Y	KPMG
Samsung Electronics Benelux B.V. (SEBN)	E&Y	KPMG
Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP)	E&Y	KPMG
Samsung Electronics Philippines Corporation (SEPCO)	E&Y	KPMG
Samsung Electronics Levant Co.,Ltd. (SELV)	E&Y	KPMG
Samsung Electronics Caucasus Co. Ltd (SECC)	E&Y	KPMG
Laos Samsung Electronics Sole Co., Ltd (LSE)	KPP Co., Ltd	KPMG

There are 232 subsidiaries as of December 31, 2022, and Samsung R&D Institute Ukraine (SRUKR) newly appointed PwC, and Samsung Venture Capital Union SVIC No. 52, No. 55, No. 56, and No. 57 appointed KPMG as the external auditor, respectively.

There are 228 subsidiaries as of December 31, 2021. Samsung Electronics Singapore Pte. Ltd. (SESP) and Samsung Electronics Industry and Commerce Ltd (SETK-P) newly appointed Deloitte, and Gf-System Co., Ltd. newly appointed Anjin as the external auditor. And Samsung Electronics Benelux B.V. (SEBN) have changed the external auditor to E&Y from Deloitte, and Dowoosys Co., Ltd to Anjin from Samduk, respectively. Appointment of auditor was decided at the entities' own discretion.

3. Regarding Internal Control

[Audit opinion of Internal Control over Financial Reporting (ICFR)]

Fiscal Period	Group Auditor	Opinion	Remarks
Half-year ended Jun 30, 2023	Samjong KPMG	Not applicable	Not applicable
Year ended Dec 31, 2022	Deloitte Anjin	[Audit Opinion] The Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on <i>Conceptual Framework for Designing and Operating Internal Control over Financial Reporting</i> .	Not applicable
Year ended Dec 31, 2021	Deloitte Anjin	[Audit Opinion] The Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on <i>Conceptual Framework for Designing and Operating Internal Control over Financial Reporting</i> .	Not applicable

VI. Corporate Governance

1. Board of Directors

A. Overview

The Board of Directors consisted of 11 directors, 5 of whom are Executive Directors (Jong-hee Han, Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, and Jung-bae Lee) and 6 Independent Directors (Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, and Myung-hee Yoo). The Board has appointed Han-jo Kim as Chairman as he will be able to mediate the different opinions of Directors and is most qualified to manage Board activities. The roles of Board Chairman and CEO have been separated to enhance the Board's independence and transparency.

The Board has six committees: Management Committee, Audit Committee, Independent Director Recommendation Committee, Related Party Transactions Committee, Compensation Committee, and Sustainability Committee.

[As of June 30, 2023]

Classification	Composition	Members	Head	Role
Board of Directors	5 Executive Directors	Jong-hee Han, Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, Jung-bae Lee	Han-jo Kim (Independent)	<ul style="list-style-type: none"> - Make resolutions on matters provided for by the relevant laws and regulations or the Articles of Incorporation, matters delegated by a general meeting of shareholders, as well as on important matters concerning basic policies and business execution. - Supervise management.
	6 Independent Directors	Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo		
Management Committee	5 Executive Directors	Jong-hee Han, Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, Jung-bae Lee	Jong-hee Han (Executive)	<ul style="list-style-type: none"> - Deliberate and decide on matters related to finance, general management, and on matters specifically delegated by the Board.
Audit Committee	3 Independent Directors	Han-jo Kim, Sun-uk Kim, Jeong Kim	Han-jo Kim (Independent)	<ul style="list-style-type: none"> - Review and audit matters concerning management of the Company, including the Company's financial situation.
Independent Director Recommendation Committee	3 Independent Director	Sun-uk Kim, Eun-nyeong Heo, Myung-hee Yoo	-	<ul style="list-style-type: none"> - Assess the independence, diversity, and ability of potential candidates for Independent Director positions. - Recommend candidates.
Related Party Transactions Committee	3 Independent Directors	Sun-uk Kim, Han-jo Kim, Jeong Kim	Sun-uk Kim (Independent)	<ul style="list-style-type: none"> - Voluntarily comply with fair transaction regulations to enhance corporate transparency.
Compensation Committee	3 Independent Directors	Jeong Kim, Han-jo Kim, Jun-sung Kim	Jeong Kim (Independent)	<ul style="list-style-type: none"> - Ensure the objectivity and transparency of the decision-making process for Director compensation.
Sustainability Committee	6 Independent Directors	Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo	Han-jo Kim (Independent)	<ul style="list-style-type: none"> - Promote sustainability management in ESG areas and enhance shareholder value.

Jan 27, 2023: Independent Director Jeong Kim was appointed as the Head of Compensation Committee.

Mar 15, 2023: Jong-hee Han was reappointed as Executive Director at the AGM

Mar 15, 2023: Independent Directors Eun-nyeong Heo and Myung-hee Yoo were appointed as Independent Director Recommendation Committee members at the Board meeting.

The Independent Director Recommendation Committee will appoint a committee head during its next meeting.

Apr 27, 2023: Executive Director Jong-hee Han was appointed as the Head of Management Committee

The number of Independent Directors and changes in the number are shown below.

Number of Directors	Number of Independent Directors	Changes of Independent Directors		
		Appointed	Dismissed	Resigned
11	6	-	-	-

B. Agendas considered and voting results

Date	Agenda	Results	Executive Directors (attendance)					Independent Directors (attendance)							
			Jong-hee Han (100%)	Kye-hyun Kyung (50%)	Tae-moon Roh (75%)	Hark-kyu Park (100%)	Jung-bae Lee (100%)	Han-jo Kim (100%)	Sun-uk Kim (100%)	Jeong Kim (100%)	Jun-sung Kim (100%)	Eun-nyeong Heo (100%)	Myung-hee Yoo (100%)		
Jan 31	① Approval of FY22 financial statements and full-year business report	Approved	For	For	Absent	For	For	For	For	For	For	For	For	For	
	② Lease agreement(lessee) with Samsung Display	Approved	For	For	Absent	For	For	For	For	For	For	For	For	For	
	※ Reported Items 1) Report on FY22 internal accounting management system activities 2) Report on evaluation of FY22 internal accounting management system activities														
Feb 14	① Financial transaction with Samsung Display	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	
	② Decision to convene the 54th AMG	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	
	③ Decision on the 54th AGM agenda items	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	
	※ Reported Items 1) FY22 annual audit report 2) FY22 full-year business report 3) Report on transaction with affiliate company 4) Report on FY22 internal accounting management system activities														
	※ Agenda item 1: Approval of FY22 financial statements, including balance sheet, income statement, and the statement of appropriation of retained earnings, etc.														
	※ Agenda item 2: Appointment of Executive Directors of Jong-hee Han														
	※ Agenda item 3: Approval of remuneration limit for Directors														
	④ Approval of 2023 social contribution matching fund	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	For
⑤ Donation to Chung-nam Samsung Institute	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	For	
⑥ Purchase of product liability insurance	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	For	
⑦ Establishment of plans on health and safety for 2023	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	For	
Mar 15	① Appointment of CEO	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	
	② Appointment of Board committee members	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	
	③ Setting remuneration of Directors	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	
	④ Appointment of SCC member	Approved	For	Absent	For	For	For	For	For	For	For	For	For	For	

Date	Agenda	Results	Executive Directors (attendance)					Independent Directors (attendance)					
			Jong-hee Han (100%)	Kye-hyun Kyung (50%)	Tae-moon Roh (75%)	Hark-kyu Park (100%)	Jung-bae Lee (100%)	Han-jo Kim (100%)	Sun-uk Kim (100%)	Jeong Kim (100%)	Jun-sung Kim (100%)	Eun-nyeong Heo (100%)	Myung-hee Yoo (100%)
Apr 27	① Approval of 1Q23 interim business report and quarterly dividend	Approved	For	For	For	For	For	For	For	For	For	For	For
	② Promotion of supporting a smart factory project	Approved	For	For	For	For	For	For	For	For	For	For	For
	③ Donation to incentive fund for DS Division's suppliers	Approved	For	For	For	For	For	For	For	For	For	For	For

Mar 15, 2023: Jong-hee Han was reappointed as Executive Director at the AGM

C. Committees

(1) Composition of Board Committees

[As of June 30, 2023]

Committee	Composition	Members	Responsibilities and authorities	Note
Management	5 Executive Directors	Jong-hee Han (head), Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, Jung-bae Lee	See below	Appointment of Executive Director Jong-hee Han as the Head (April 27, 2023)
Related Party Transactions	3 Independent Directors	Sun-uk Kim (head), Han-jo Kim, Jeong Kim		Appointment of Independent Director Sun-uk Kim as the Head (April 27, 2021)
Compensation	3 Independent Directors	Jeong Kim(head), Han-jo Kim, Jun-sung Kim		Appointment of Independent Director Jeong Kim as the Head (January 27, 2023)
Sustainability	6 Independent Directors	Han-jo Kim (head), Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo		Appointment of Independent Director Han-jo Kim as the Head (April 28, 2022)

The Audit Committee and Independent Director Recommendation Committee was excluded according to Corporate Disclosure Guidelines.

Jan 27, 2023: Independent Director Jeong Kim was appointed as the Head of Compensation Committee

Apr 27, 2023: Executive Director Jong-hee Han was appointed as the Head of Management Committee

(The Management Committee)

Responsibilities: The Management Committee deliberates and decides on matters specified by Board regulations and resolutions or specifically delegated by the Board. The composition and operation of the management committee are determined by the Board.

- **Authorities:**

(A) General management

1. Annual or mid to long-term management policy and strategy
2. Key management strategy
3. Business planning and restructuring
4. Establishment, relocation, and withdrawal of overseas branch and corporation
5. Initiating cooperation such as strategic partnership with foreign companies
6. Acquisition or disposal of domestic and overseas subsidiaries (provided that the value of transaction exceeds 0.1% of total equity)

7. Other major management issues
8. Establishment, relocation, and withdrawal of branches and operations
9. Appointment or dismissal of supervisors
10. Suspension or shutdown of production over 5% of the total production in the recent year
11. Licensing agreements and technology transfer, partnership in regards to technology of over 0.5% of the total equity
12. Acquisitions and transfers of patents related to new material and new technology of over 0.5% of the total equity
13. Collection and destruction of products corresponding to over 5% of the total sales in the recent business year
14. Contracting for over 5% of the total sales in the recent business year
15. Contracting or canceling of single sales agency and suppliers over 5% of the total sales in the recent business year
16. Establishment of basic principles of organization management
17. Decision making on basic principles and any changes related to wages, bonus, and fringe benefits
18. Appointments, dismissals and changes of transfer agent
19. Closing of shareholder register and setting reference date
20. Establishment of corporate guidelines for business and management related activities

(B) Matters related to Finance

1. Acquisitions or disposals of equity investments with a value no less than 0.1% and less than 2.5% of the total equity
2. Direct overseas investments with a value no less than 0.1% and less than 2.5% of the total equity
3. New debt guarantee (excluding extension of period) or collateral issuance with a value no less than 0.1% and less than 2.5% of the total equity
 - A. Collateral: Only in the case of providing collateral for others
 - B. Guarantee: Excludes performance guarantee (e.g., bid, contract, defect, difference guarantee) and tax payment guarantee
4. New credit agreement contract (excluding extension of period) with a value no less than 0.1% and less than 5% of the total equity
5. Approval of related party transactions:
 Related party transactions with affiliates involving cash (loans and payments), equity (stocks and bonds) or assets (such as real estate and intangible property rights) with a value between KRW 3 billion and/or less than KRW 5 billion, as defined in the Monopoly Regulation and Fair Trade Act
 ※ Excluding cases where existing contracts are renewed without significant change.
6. Issuance of corporate bonds
7. Acquisition and disposal of real estate with a value of over 0.1% of the total equity, provided that the transaction is with a third party
8. Any matters that the CEO deems necessary and important for the business (e.g., capex)

(C) All other matters except for those delegated to the Board and other committees in accordance with Board regulations

(Related Party Transactions Committee)

- Responsibilities: Improve management transparency through the establishment of a voluntary compliance system
- Authorities:
 1. Right to receive reports on related party transactions:
 The Committee can request reports on related party transactions with affiliates
 ※ According to the Monopoly Regulation and Fair Trade Act, the Related Party Transactions committee is permitted to conduct preliminary reviews and approves on related party transactions over KRW 5 billion and other transactions that are deemed as significant
 2. Right to order ex officio investigation of related party transactions
 3. Right to propose corrective measures for related party transactions

(Compensation Committee)

- Responsibilities: Provide transparent and objective decision making process related to remuneration of directors
- Authorities:

1. Propose remuneration limit of directors at AGM
2. Establish the director remuneration system
3. Other matters delegated by the Board

(Sustainability Committee)

- Responsibilities: Promote sustainability management in ESG areas and enhance shareholder value

- Authorities:

1. Matters related to corporate sustainability management
 - Key strategies and policies on sustainability management
 - Report on key activities for sustainability management including environment, society, and governance
 - Plans for publishing the Company's Sustainability Report
2. Matters related to shareholder value enhancement
 - Preliminary review on shareholder return policies
 - Report on key issues related to shareholder rights and interests
 - Other matters that may significantly impact sustainability management and shareholder value that are deemed necessary for the Committee to discuss
3. Establishment, composition, operation of organizations under the committee including research groups, councils, etc.
4. Other matters delegated by the Board

(2) Committee Activities

□ The Management Committee (2023)

Date	Agenda	Voting results	Director (attendance)				
			Jong-hee Han (100%)	Kye-hyun Kyung (100%)	Tae-moon Roh (67%)	Hark-kyu Park (100%)	Jung-bae Lee (100%)
Jan 19	① Leasing agreement	Approved	For	For	For	For	For
	② Executive OPI change	Approved	For	For	For	For	For
Apr 27	① Appointment of the head of the Management Committee	Approved	For	For	For	For	For
	② Establishment of overseas subsidiary	Approved	For	For	For	For	For
	③ Liquidation of an overseas(China) subsidiary	Approved	For	For	For	For	For
	④ Liquidation of an overseas(Europe) subsidiary	Approved	For	For	For	For	For
May 15	① Investment in Memory Business	Approved	For	For	Absent	For	For
	② Acquisition of an overseas subsidiary	Approved	For	For	Absent	For	For

□ The Related Party Transactions Committee (2023)

Date	Agenda	Voting results	Directors (attendance)		
			Sun-uk Kim (100%)	Han-jo Kim (100%)	Jeong Kim (100%)
Jan 27	① Prior review on large-scale related party transactions 1) Lease agreement (lessee) with Samsung Display	-	-	-	-
	② Report on 4Q22 related party transactions	-	-	-	-
Feb 10	① Prior review on large-scale related party transactions 1) Purchase of product liability insurance 2) Financial transaction with Samsung Display	-	-	-	-
Apr 25	① Report on 1Q23 related party transactions	-	-	-	-

□ The Compensation Committee (2023)

Date	Agenda	Voting results	Directors (attendance)		
			Jeong Kim (100%)	Han-jo Kim (100%)	Jun-sung Kim (100%)
Jan 27	① Appointment of the head of the Compensation Committee	Approved	For	For	For
	② Review on 2023 fixed annual salary for each Executive Director	Approved	For	For	For
	③ Review on 2023 remuneration limit for Directors	Approved	For	For	For

Jan 27, 2023: Independent Director Jeong Kim was appointed as the Head of Compensation Committee

□ The Sustainability Committee (2023)

Date	Agenda	Voting results	Directors (attendance)					
			Han-jo Kim (100%)	Sun-uk Kim (100%)	Jeong Kim (100%)	Jun-sung Kim (100%)	Eun-nyeong Heo (100%)	Myung-hee Yoo (100%)
Jan 31	※ Reporting Item 1) Updates of IR activities	-	-	-	-	-	-	-
Apr 27	※ Reporting Item 1) Updates of IR activities	-	-	-	-	-	-	-
	2) Current status and response; ESG information disclosure request (draft)	-	-	-	-	-	-	-
	3) Current status and response: EU supply chain due diligence directive	-	-	-	-	-	-	-

D. Director independence

(1) Appointment of Directors

The Board nominates Executive Director candidates and the Independent Director Recommendation Committee nominates Independent Director candidates. Directors are then appointed at the general meeting.

A candidate for Director needs to meet the requirements of relevant laws and the Articles of Incorporation. Executive Directors are appointed based on his or her expertise and leadership among a list of candidates that is constantly updated. Independent Directors should have no material interests with the Company and its major shareholder, possess knowledge and experience in finance, law, IT, ESG, investment, environment, energy, and international trade, etc., and be able to fulfill the roles and responsibilities of supervising management from an independent position. The company has not set separate standards with respect to the independence of Directors besides the requirements in relevant laws and the Article of Incorporation.

Please refer to 『VIII. Executives and Employees』 for more information about the career of each Director.

The Board submits shareholders' proposal for appointment of Directors at the general shareholder meeting as a separate agenda if the proposal satisfies related laws and regulations.

The composition of the Board of Directors, as appointed by shareholders, is as follows:

[As of June 30, 2023]

Position	Name	Term (No. of reappointments)	Reasons for appointment	Nominator	Responsibility	Transaction with the Company	Relationship with the Company's major shareholders
Executive Director (CEO)	Jong-hee Han	Mar 2020 – Mar 2026 (1)	Director Jong-hee Han is an expert in display R&D and played a leading role in continuously achieving the top position in the global TV market. As the Head of the DX Division, he will contribute to further solidifying leadership amid intensifying competition by using his outstanding business capabilities.	The Board	Overall management of the DX Division	N/A	Related party
Executive Director (CEO)	Kye-hyun Kyung	Mar 2022 – Mar 2025 (None)	As the Head of the DS Division, Director Kye-hyun Kyung has developed technologies in all three major memory products—DRAM, flash, and solution. He was judged to be the most qualified person to improve organization's fundamentals through communicative and empathetic leadership as well as to firmly solidify our position as a leader in the global semiconductor market.	The Board	Overall management of the DS Division	N/A	Related party
Executive Director	Tae-moon Roh	Mar 2022 – Mar 2025 (None)	Director Tae-moon Roh has served in various core positions in the MX Business, and in 2021, delivered record results—the highest since 2014—achieving KRW 104 trillion in revenue through products such as S21 and foldables. He is expected to contribute significantly to enhancing corporate fundamentals, such as improving profitability and solidifying business fundamentals.	The Board	Overall management of the MX Business	N/A	Related party

Position	Name	Term (No. of reappointments)	Reasons for appointment	Nominator	Responsibility	Transaction with the Company	Relationship with the Company's major shareholders
Executive Director	Hark-kyu Park	Mar 2022 – Mar 2025 (None)	Director Hark-kyu Park has held numerous key positions in core businesses and proved his risk management capabilities. Furthermore, he has successfully led business innovations with a broad perspective. As the Head of Corporate Management Office of the DX Division, his responsibilities include overall corporate support, management analysis, and even auditing to deliver business achievements, and he contributes significantly to coordinating management issues across the entire Company.	The Board	Overall management	N/A	Related party
Executive Director	Jung-bae Lee	Mar 2022 – Mar 2025 (None)	Director Jung-bae Lee is an expert who has the experience of serving in key positions, including development, quality, and strategy. He oversaw the Company achievement of being the top firm in terms of DRAM revenue for a 30th consecutive year by securing product competitiveness, and he spearheaded the efforts to regain the title of No.1 global semiconductor revenue in 2021, demonstrating his extensive experience and outstanding capabilities in DS Division businesses.	The Board	Overall management of the Memory Business	N/A	Related party

Position	Name	Term (No. of reappointments)	Reasons for appointment	Nominator	Responsibility	Transaction with the Company	Relationship with the Company's major shareholders
Independent Director	Han-jo Kim	Mar 2019 – Mar 2025 (1)	Director Han-jo Kim has built expertise in finance and business management through his experience as a President of Korea Exchange Bank and now serves as the chairman of a social contribution foundation. He will contribute to the Company by providing valuable insight on overall business issues and by utilizing expertise in finance, co-growth, etc.	Independent Director Recommendation Committee	Overall management	N/A	N/A
Independent Director	Sun-uk Kim	Mar 2018 – Mar 2024 (1)	Director Sun-uk Kim is a legal expert and has experience as a professor at a school of law and the Legislation Minister. She can present a new perspective to the Board based on objective and juridical reasoning.	Independent Director Recommendation Committee	Overall management	N/A	N/A
Independent Director	Jeong Kim	Mar 2018 – Mar 2024 (1)	Director Jeong Kim is an IT expert and an entrepreneur. He will contribute to the Board's strategic decisions by utilizing his expertise, wide network, and business capability.	Independent Director Recommendation Committee	Overall management	N/A	N/A
Independent Director	Jun-sung Kim	Mar 2022 – Mar 2025 (None)	Director Jun-sung Kim is an expert in the global economy and investment who has experience analyzing and investing in stock markets in advanced economies. He will effectively represent foreign markets and investors and contribute significantly to establishing investment strategies in line with current trends via global networking.	Independent Director Recommendation Committee	Overall management	N/A	N/A

Position	Name	Term (No. of reappointments)	Reasons for appointment	Nominator	Responsibility	Transaction with the Company	Relationship with the Company's major shareholders
Independent Director	Eun-nyeong Heo	Nov 2022 – Nov 2025 (None)	Director Eun-nyeong Heo is an expert in energy, resources, and the environment and, in particular, how they relate to economy and policy. As a renowned international scholar, he will contribute to strengthening the Company's management in the relevant fields and provide practical advice to the Board.	Independent Director Recommendation Committee	Overall management	N/A	N/A
Independent Director	Myung-hee Yoo	Nov 2022 – Nov 2025 (None)	Director Myung-hee Yoo is an expert in international trade who served as Korea's Trade Minister. Backed by her diplomatic communication skills and global network, she will enhance communication with the Company's key investors and stakeholders.	Independent Director Recommendation Committee	Overall management	N/A	N/A

Relationship with Company's major shareholders is in accordance with Article 542-8 of the Commercial Act.

Mar 15, 2023: Jong-hee Han was reappointed as an Executive Director at the AGM.

Mar 15, 2023: Executive Director Jong-hee Han was appointed as CEO at the Board meeting.

(2) Independent Director Recommendation Committee

The Independent Director Recommendation Committee assesses the independence and ability of potential candidates and recommends selected candidates to be appointed at the AGM. As of the reporting date (June 30, 2023), The Committee currently consists of 3 Independent Directors (Sun-uk Kim, Eun-nyeong Heo, and Myung-hee Yoo), meeting the requirement of having Independent Directors comprise the majority of Committee members, as stipulated in Article 542-8, Paragraph 4 of the Commercial Act.

Date	Agenda	Voting results	Directors (attendance)		
			Sun-uk Kim (-)	Eun-nyeong Heo(-)	Myung-hee Yoo(-)
-	-	-	-	-	-

Mar 15, 2023: Eun-nyeong Heo and Myung-hee Yoo were appointed as Independent Director Recommendation Committee member at the AGM.

(3) Expertise of Independent Directors

1) Support team for Independent Directors

[As of June 30, 2023]

Team	Number of employees	Position (total years served/ years in support team)	Key activities
Board of Directors Office	4	Vice President: 1 person (18 years and 5 months / 7 months) Principal Professional: 2 person (18 years and 5 months / 5 year and 2 months) Professional: 1 person (6 years and 5 months / 4 months)	<ul style="list-style-type: none"> Support operation of annual shareholders' meeting, Board meetings, and Committee meetings Support education for Independent Directors and their activities Establish database on Director candidates Provide information regarding the agenda to each Director Administrative work for meetings Record meeting agendas for the Board and committee meetings

2) Education programs to provide updates on key management issues for Independent Directors

① Inspection of domestic and overseas business sites

Date	Organizer	Participants	Reasons for absence	Education contents
Apr 28, 2022	MX Business	Han-jo Kim, Sun-uk Kim, Byung-gook Park, Jeong Kim, Jun-sung Kim	N/A	On-site visit to check the current management status of businesses
Jul 28, 2022	Memory Business	Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim	N/A	On-site visit to check the current management status of businesses
Nov 30, 2022	Foundry Business	Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo	N/A	On-site visit to check the current management status of businesses
Jan 31, 2023	Design Management Center	Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo	N/A	On-site visit to check the current status of business organizations
Apr 27, 2023	Digital Appliances Business Unit	Han-jo Kim, Sun-uk Kim, Jeong Kim, Eun-nyeong Heo, Myung-hee Yoo	Business Trip	On-site visit to check the current management status of businesses

② Orientation for newly appointed Independent Directors

Date	Organizer	Participants	Reasons for absence	Education contents
Apr 27, 2022	Corporate Management Office	Jun-sung Kim	N/A	Key issues regarding Board activities and management
Nov 28, 2022	Corporate Management Office	Eun-nyeong Heo, Myung-hee Yoo	N/A	Key issues regarding Board activities and management

New Independent Directors are subject to the orientation.

③ Orientation for Independent Directors

Date	Organizer	Participants	Reasons for absence	Education contents
Mar 15, 2023	Samsung Human Resources Development Center	Han-jo Kim, Sun-uk Kim, Jeong Kim, Jun-sung Kim, Eun-nyeong Heo, Myung-hee Yoo	N/A	Key issues regarding management, including the company history and management philosophy
Apr 25, 2023	Global Marketing Division Global EHS Center	Han-jo Kim, Sun-uk Kim, Jeong Kim, Eun-nyeong Heo, Myung-hee Yoo	Business Trip	Understanding of marketing activities Understanding of EHS management status and environment management

2. Audit System

A. Profiles of Audit Committee members

As of June 30, 2023, SEC operates an Audit Committee consisting of three Independent Directors. Director Han-jo Kim qualifies as an expert in finance in accordance with relevant regulations.

Name	Major experience	Accounting/financial expertise ¹⁾	
		Classification	Relevant experience
Han-jo Kim	<ul style="list-style-type: none"> • 2021–present: CEO/Rep Director, Hana Nanum Foundation • 2019–2021: CEO/Rep Director, Hana Foundation • 2015–2019: CEO/Rep Director, Hana Nanum Foundation • 2015–2016: Vice Chairman, Hana Financial Group • 2014–2015: President, Korea Exchange Bank • 2013–2014: President, KEB Capital Inc. 	Type 4 ²⁾	<ul style="list-style-type: none"> • 2015–2016: Vice Chairman, Hana Financial Group • 2014–2015: President, Korea Exchange Bank • 2013–2014: President, KEB Capital • 2012–2013: Head of Corporate Business Group, Korea Exchange Bank • 1999–2002, 2004–2005: Head of Branch, Korea Exchange Bank
Sun-uk Kim	<ul style="list-style-type: none"> • 2018–present: Professor Emeritus, School of Law, Ewha Womans University • 1995–2018: Professor, Ewha Law School, Ewha Womans University • 2010–2014: President, Ewha Womans University • 2005–2007: Minister of Government Legislation 	–	–
Jeong Kim	<ul style="list-style-type: none"> • 2013-present: Co-Founder and Executive Chairman, Kiswe Mobile • 2011-2013: Chief Strategy Officer, Alcatel-Lucent • 2005-2013: President, Alcatel-Lucent Bell Labs • 2002-2013: Professor of Electrical and Computer Engineering & Mechanical Engineering, University of Maryland • 1998-2001: President, Lucent Technologies • 1992-1998: Founder, Chairman & CEO, Yurie Systems 	–	–

1) Defined in Public Disclosure Guideline and Article 37-2 of the Enforcement Decree of the Commercial Act

2) Experience at financial, government, securities-related organizations in charge of accounting or finance or in charge of supervision over accounting or finance for an aggregate of at least five years

B. Audit Committee independence

Pursuant to related laws and the Articles of Incorporation, SEC has prepared internal audit regulations which encompass composition, operation, authority, and responsibility of the Audit Committees to carry out audit related activities.

The Audit Committee is exclusively composed of Independent Directors recommended by the Board and appointed at the general shareholder meeting. Currently, it includes financial expert Han-jo Kim and legal expert Sun-uk Kim. Committee members do not have any relation to the Company's major shareholders that may undermine the independence of the Committee. Also, the Audit Committee satisfies requirements of relevant laws (e.g., the stipulation that the role of head of the committee be held by an Independent Director).

Requirements	Requirement status	Applicable acts, etc.
The audit committee shall consist of at least three directors.	Satisfied: the committee consists of three Directors	Article 415-2 (2) of the Commercial Act, Article 2 of the Company's Audit Committee Regulation
The ratio of independent directors shall exceed two thirds of the total number of members.	Satisfied: all members are independent directors)	
At least one member of the committee shall be an accounting or financing expert.	Satisfied: Independent Director Han-jo Kim	Article 542-11 (2) of the Commercial Act, Article 3 of the Company's Audit Committee Regulation
The representative of the committee shall be an Independent Director.	Satisfied: Independent Director Han-jo Kim	
Other conditions (related party of the major shareholder, etc.)	Satisfied (n/a)	Article 542-11 (3) of the Commercial Act

[As of June 30, 2023]

Name	Term (No. of reappointments)	Reasons for appointment	Nominator	Relationship with the Company	Relationship with the Company's major shareholders	Concurrent positions
Han-jo Kim	Mar 2019– Mar 2025 (1)	As an expert in finance with broad experience and expertise, he will offer impartial judgement on overall management activities while carrying out his duties.	Independent Director Recommendation Committee	N/A	N/A	-
Sun-uk Kim	Mar 2018– Mar 2024 (1)	Based on the legal expertise and experience running organizations in areas including administration, finance, international affairs, etc., she can carry out the duties in an aboveboard manner with strict standards.	Independent Director Recommendation Committee	N/A	N/A	-
Jeong Kim	Mar 2018– Mar 2024 (1)	As a global business leader with the experience of operating a number of companies transparently and fairly, he will offer independent and objective perspective while carrying out his duties	Independent Director Recommendation Committee	N/A	N/A	Chairman of Kiswe Mobile (2013-present)

Relationship with the Company and Company's major shareholders is in accordance with Article 542-8 of the Commercial Act.

The Audit Committee reviews accounting documents including financial statements and audit process related documents presented by the external auditor, and if needed, requests the external auditor to perform additional reviews on accounting books and records. To ensure the reliability of accounting related disclosures, the audit committee receives and reviews a report on internal accounting control systems prepared by internal accounting managers. In addition, the Committee attends the Board meetings and other significant meetings. The Committee receives reports on deliberations of the Management Committee and on business performance from Directors and requests additional reviews and supplementation of data as needed.

C. Major activities of the Audit Committee (2023)

Date	Agenda	Voting results	Directors (attendance)		
			Han-jo Kim(100%)	Sun-uk Kim(100%)	Jeong Kim(100%)
Jan 27	- Report on 2022 internal accounting management system activities	-	-	-	-
	- Report on evaluation of 2022 internal accounting management system activities	-	-	-	-
	- Communication between external auditor and audit committee	-	-	-	-
	- Report on 2022 financial statement and business report	-	-	-	-
	- Report on 4Q22 non-audit activities	-	-	-	-
	- Report on 4Q22 external contributions	-	-	-	-
	- Report on 2022 audit activities	-	-	-	-
Feb 10	- Review of the 54th AGM agenda	-	-	-	-
	- Report on activities of internal compliance system in 2022	-	-	-	-
Apr 25	- Communication between external auditor and audit committee	-	-	-	-
	- Report on 2022 audit activities	-	-	-	-
	- Report on 1Q23 interim business report	-	-	-	-
	- Report on 1Q23 non-audit activities	-	-	-	-
	- Report on plans for reviewing 2023 internal accounting management system activities	-	-	-	-
	- Report on 1Q23 external contributions	-	-	-	-
	- Report on plans for evaluating 2023 internal accounting management system activities	-	-	-	-

D. Education programs for the Audit Committee

In accordance with the working guide for internal accounting management system, we are conducting additional training to ensure the expertise of the Audit Committee. Organized by external experts, finance team, and audit team, education on changes to internal control, internal accounting management system is provided more than once a year.

E. Previous education sessions

Date	Organizer	Participants	Reasons for absence	Education contents
Jul 27, 2021	External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Internal accounting management system
May 25, 2022	Corporate Finance & Accounting Team, External experts	Jeong Kim	N/A	Introduction materials
Jul 26, 2022	External experts	Han-jo Kim Sun-uk Kim Jeong Kim	N/A	Internal accounting management system

F. Support team for the Audit Committee

[As of June 30, 2023]

Team	Composition	Service years on team	Major tasks
Audit team	1 Executive Vice President, 1 Principal Professional, 2 Senior Professionals	Executive Vice President: 3 years and 6 months Principal professional: 5 years and 6 months Senior Professional: 2 year and 11 months	Support the Audit Committee
Internal accounting assessment support group	1 Vice President, 1 Lawyer, 1 Principle Professional, 2 Senior Professional	Vice President: 4 years and 6 months Lawyer: 2 years and 3 months Principle Professional: 1 month Senior Professional: 1 year and 6 months	Support assessment of the internal accounting management system

Service years are based on the period in charge of the assigned duty.

G. Compliance Officer

[As of June 30, 2023]

1. Personal information and major career	Name	Jung-ho Park
	Date of birth	September 1971
	Sex	Male
	Current position	Corporate Compliance Team leader at Samsung Electronics (December 2022–present)
	Career	May 2004: HR Team, Corporate Management Office, SEC (lawyer) Dec 2014: Corporate Legal Team, Corporate Legal Office, SEC (Vice President) Mar 2018: Legal & Compliance Team, DS Division, SEC (Vice President) Jan 2020: Compliance Team, SEC (Vice President) Dec 2022: Head of Compliance Team, SEC (Executive Vice President)
	Academic background	Bachelor's Degree in Law (Seoul National University) Master's Degree in Human Resources & Labor Relations (Michigan State University)
2. Date of Board resolution		December 20, 2022
3. Disqualifications		N/A
4. Others		N/A

Compliance officer meets the eligibility requirement (lawyer) stated in Article 542-13 (5) of the Commercial Act.

H. Major compliance activities

The Company conducts compliance assessments on a regular and ad-hoc basis and reflects the results in the Company's business activities to improve compliance of the Company and its employees.

Date	Assessment subject	Assessment area	Results
Jan 2023	Compliance of domestic organizations involved with quality	Trade secrets, technology misuse, etc	Overall result was satisfactory. Internal policies were followed in areas where there was room for improvement.
Mar 2023	Compliance of domestic and overseas third-party production customers	Technology leak, product liability, etc.	
May 2023	Voluntary compliance of overseas subsidiaries	Status of compliance program	
	Monitored potential risks of trade secret infringement	Trade secrets	
Jun 2023	Compliance of overseas sales subsidiaries	Fair transaction, trade secrets, etc.	
	Compliance of domestic and overseas third-party production customers	Technology leak, product liability, etc.	

Assessment conducted in the final month of each quarter.
Each assessment was conducted on selected organizations.

I. Support team for the Compliance Officer

[As of June 30, 2023]

Team	Composition	Service years (average)	Major tasks
Compliance team, etc.	Vice Presidents (2) Principal Professionals/Engineers (17) Lawyers (12) Senior Professionals (33) Professionals (2) Total: 66	Vice Presidents (7 years and 7 months) Principal Professionals (8 years and 5 months) Lawyers (5 years and 3 months) Senior Professionals (5 years) Professionals (1 year and 10 months)	Supports activities of the Compliance Officer

3. General meeting of shareholders

A. Voting method

As of June 30, 2023, the Company has not adopted cumulative voting or paper voting and has adopted electronic voting, which was used at the AGM on March 15, 2023.

On January 30, 2020, the Board resolved to adopt electronic voting to enhance convenience in exercising voting rights for shareholders in accordance with Article 368-4 (Exercise of Voting Rights by Electronic Means) of the Commercial Act. E-voting has been used at every AGM since it was introduced at the AGM on March 18, 2020.

The convocation notice of general meeting of shareholders includes the information that voting rights can be exercised electronically. Owners of shares as of the last day of every settlement term can exercise their voting rights via the electronic voting system of Korea Securities Depository ten days prior to general meeting date until the day before the meeting, without being present at the meeting.

[As of June 30, 2023]

Classification	Cumulative voting	Paper voting	Electronic voting
Adoption	Excluded	Not adopted	Adopted
Implementation	-	-	AGM (2022)

The Company as of the reporting date employs proxy voting and it contacts shareholders directly to recommend delegating voting rights, contacts shareholders by mail or email, and also made a power of attorney form available on the Company website.

B. Voting shares

As of June 30, 2023, SEC has 5,969,782,550 issued shares of common stock, and 822,886,700 issued shares of preferred stock with no voting rights. There are 597,454,635 shares of common stock with limited voting rights under relevant laws. Thus, the total number of shares with full voting rights is 5,372,327,915.

[As of June 30, 2023]

Classification	Share type	Number of shares	Note
Number of issued shares (A)	Common	5,969,782,550	-
	Preferred	822,886,700	-
Shares with no voting rights (B)	Common	-	-
Shares with no voting rights according to Articles of Incorporation (C)	Preferred	822,886,700	-
Shares with limited voting rights under relevant laws (D)	Common	596,959,200 ¹⁾	508,157,148 shares held by Samsung Life Insurance & 88,802,052 shares held by Samsung Fire & Marine Insurance
	Common	495,435	Restricted by the Insurance Business Act: Shares held by Samsung Life Insurance in certain special accounts
Shares with voting rights (F = A - B - C - D)	Common	5,372,327,915	-
	Preferred	-	-

1) Pursuant to Korea's Monopoly Regulation and Fair Trade Act, owners can exercise certain rights on some shares in accordance with related laws, including the right to vote on agendas such as the appointment or dismissal of directors and revisions to the Articles of Incorporation.

C. Results of shareholder meetings

[As of June 30, 2023]

Date	Agenda	Results
AGM (Mar 15, 2023)	1. Approval of FY22 financial statements, including balance sheet, income statement, and the statement of appropriation of retained earnings, etc. 2. Appointment of Executive Directors as Jong-hee Han 3. Approval of remuneration limit for Directors	Approved Approved Approved
EGM (Nov 3, 2022)	1. Appointment of Independent Directors 1-1: Appointment of Eun-nyeong Heo as an Independent Director 1-2: Appointment of Myung-hee Yoo as an Independent Director	Approved Approved
AGM (Mar 16, 2022)	1. Approval of FY21 financial statements, including balance sheet, income statement, and the statement of appropriation of retained earnings, etc. 2. Appointment of Directors 2-1: Appointment of Independent Directors 2-1-1: Appointment of Han-jo Kim as Independent Director 2-1-2: Appointment of Wha-jin Han as Independent Director 2-1-3: Appointment of Jun-sung Kim as Independent Director 2-2: Appointment of Executive Directors 2-2-1: Appointment of Kye-hyun Kyung as Executive Director 2-2-2: Appointment of Tae-moon Roh as Executive Director 2-2-3: Appointment of Hark-kyu Park as Executive Director 2-2-4: Appointment of Jung-bae Lee as Executive Director 2-3: Appointment of Audit Committee Member 2-3-1: Appointment of Han-jo Kim as Audit Committee Member 2-3-2: Appointment of Jeong Kim as Audit Committee Member 3. Approval of remuneration limit for Directors	Approved Approved Approved Approved Approved Approved Approved Approved Approved Approved Approved
AGM (Mar 17, 2021)	1. Approval of Balance Sheet, Income Statement, and Statement of Appropriation of Retained Earnings, etc. for 2020 2. Appointment of Directors 2.1: Appointment of Independent Directors 2.1.1: Appointment of Byung-gook Park as Independent Director 2.1.2: Appointment of Jeong Kim as Independent Director 2.2: Appointment of Executive Directors 2.2.1: Appointment of Ki-nam Kim as Executive Director 2.2.2: Appointment of Hyun-suk Kim as Executive Director 2.2.3: Appointment of Dong-jin Koh as Executive Director 3. Appointment of Sun-uk Kim as Independent Director for Audit Committee Member 4. Approval of remuneration limit for Directors	Approved Approved Approved Approved Approved Approved Approved Approved

VII. Information on Shareholders

1. Ownership of shares by the major shareholder(s) and related parties

[As of June 30, 2023]

Name	Relationship ¹⁾	Type of share	Ownership				Notes
			Period start		Period end		
			Shares	Stake (%)	Shares	Stake (%)	
Samsung Life Insurance	Major shareholder	Common	508,157,148	8.51	508,157,148	8.51	-
		Preferred	43,950	0.01	43,950	0.01	-
Samsung Life Insurance (special accounts)	Major shareholder	Common	10,246,942	0.17	9,561,743	0.17	Open market transactions
		Preferred	403,278	0.05	514,646	0.06	Open market transactions
Samsung C&T	Affiliate	Common	298,818,100	5.01	298,818,100	5.01	-
Samsung Fire & Marine Insurance	Affiliate	Common	88,802,052	1.49	88,802,052	1.49	-
Samsung Welfare Foundation	Funded foundation	Common	4,484,150	0.08	4,484,150	0.08	-
Samsung Foundation Of Culture	Funded foundation	Common	1,880,750	0.03	1,880,750	0.03	-
Ra-hee Hong	Related party of the major shareholder	Common	117,302,806	1.96	117,302,806	1.96	-
		Preferred	206,633	0.03	206,633	0.03	-
Jae-yong Lee	Related party of the major shareholder	Common	97,414,196	1.63	97,414,196	1.63	-
		Preferred	137,757	0.02	137,757	0.02	-
Boo-jin Lee	Executive member of affiliate	Common	55,394,044	0.93	55,394,044	0.93	-
		Preferred	137,755	0.02	137,755	0.02	-
Seo-hyun Lee	Related party of the major shareholder	Common	55,394,044	0.93	55,394,044	0.93	-
		Preferred	137,755	0.02	137,755	0.02	-
Jong-hee Han	Executive member of affiliate	Common	15,000	0.00	15,000	0.00	-
Kye-hyun Kyung	Executive member of affiliate	Common	18,050	0.00	21,050	0.00	Open market transactions
Tae-moon Roh	Executive member of affiliate	Common	13,000	0.00	13,000	0.00	-
Hark-kyu Park	Executive member of affiliate	Common	22,500	0.00	22,500	0.00	-
Jung-bae Lee	Executive member of affiliate	Common	15,000	0.00	15,000	0.00	-

Name	Relationship ¹⁾	Type of share	Ownership				Notes
			Period start		Period end		
			Shares	Stake (%)	Shares	Stake (%)	
Han-jo Kim	Executive member of affiliate	Common	3,655	0.00	3,655	0.00	-
Total		Common	1,237,981,437	20.74	1,237,299,238	20.73	-
		Preferred	1,067,128	0.13	1,178,496	0.14	-

Common shares carry full voting rights while preferred shares do not. (Owners of certain common shares have limited voting rights in accordance with relevant laws.)

For changes after June 30, 2023, please refer to ‘Ownership status of securities, etc. of executives and major shareholder’ published in Korean in DART (<https://dart.fss.or.kr>).

1) In accordance with Article 3 Paragraph 1 of Enforcement Decree of the Act on Corporate Governance of Financial Companies.

2. Matters related to the major shareholder

A. Overview of the major shareholder (corporation or organization)

(1) Basic information of the major shareholder (Samsung Life Insurance Co., Ltd.)

- 1) Legal, commercial name: Samsung Life Insurance Co., Ltd.
- 2) Date of establishment: April 24, 1957
- 3) Address, phone number, and English language website of the corporate headquarters
 - Address: 11, Seocho-daero 74-gil, Seocho-gu, Seoul, Republic of Korea
 - Phone: +82-2-1588-3114
 - Website: <https://www.samsunglife.com>

4) CEO and major shareholder of the major shareholder (Samsung Life Insurance)

Name	Number of investors	CEO		Major shareholder	
		Name	Share ratio (%)	Name	Share ratio (%)
Samsung Life Insurance Co., Ltd	96,766	Young-muk Jeon	0.00	Samsung C&T	19.34

As of June 30, 2023, based on common shares.

5) Changes to the CEO and major shareholder of the major shareholder (Samsung Life Insurance)

Date of change	CEO		Major shareholder	
	Name	Share ratio (%)	Name	Share ratio (%)
Mar 16, 2021	Young-muk Jeon	0.00	-	-
Apr 29, 2021	-	-	Kun-hee Lee	-
Apr 29, 2021	-	-	Samsung C&T	19.34

Apr 29, 2021: The major shareholder changed to Samsung C&T as the shares of the previous major shareholder (who passed away on October 25, 2020) were inherited.

(2) Financial status of the recent settlement term of the major shareholder (Samsung Life Insurance)

(KRW mil)

Classification	
Name of the corporation or organization	Samsung Life Insurance Co., Ltd
Total assets	300,600,003
Total liabilities	257,035,867
Total equity	43,564,136
Revenue	16,273,105
Operating profit	1,200,113
Net profit	1,038,875

The financial status is as of June 30, 2023, based on the consolidated K-IFRS financial statements.

(3) Business conditions of the major shareholder (Samsung Life Insurance)

Samsung Life Insurance is a company in which life insurance and its related reinsurance contract are the key purpose of business operations, and it operates businesses in accordance with the Insurance Business Act and other related laws.

Its key subsidiary, Samsung Card, is a specialized credit finance business company that operates specialized credit finance businesses (including credit card business, facility leasing business, and installment financing business) in accordance with the Specialized Credit Finance Business Act and other related laws.

☞ Please refer to the business report (interim and half-year) of Samsung Life Insurance published in DART (<https://dart.fss.or.kr>) for more details of the major shareholder.

B. Certain transaction that may cause changes in the major shareholder

N/A

C. Overview of the major shareholder of the major shareholder

(1) Basic information of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

1) Legal, commercial name: Samsung C&T Corporation

2) Date of establishment and period of existence: Dongwha Real Estate was first established on December 23, 1963, and the company name was changed to Cheil Industries in July 2014. It merged with Samsung C&T Corporation (founded as Samsung Sanghoe on March 1, 1938, and established as Samsung C&T in January 1951) and changed the company name to Samsung C&T Corporation on September 2, 2015 (merger registration date).

3) Address, phone number, and English language website of the corporate headquarters

- Address: 26, Sangil-ro 6-gil, Gangdong-gu, Seoul, Republic of Korea
- Phone: +82-2-2145-5114
- Website: <https://www.samsungcnt.com>

4) CEO and major shareholder of the major shareholder (Samsung C&T) of the major shareholder

Name	Number of investors	CEO		Major shareholder	
		Name	Share ratio (%)	Name	Share ratio (%)
Samsung C&T	177,363	Jung-suk Koh	0.00	Jae-yong Lee	18.26
		Se-chul Oh	0.00		
		Hai-lin Jeong	0.00		

As of June 30, 2023, based on common shares

5) Changes to the CEO and major shareholder of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

Date of change	CEO		Major shareholder	
	Name	Share ratio (%)	Name	Share ratio (%)
Mar 19, 2021	Jung-suk Koh	0.00	-	-
Mar 19, 2021	Se-chul Oh	0.00	-	-
Apr 29, 2021	-	-	Jae-yong Lee	18.26
Mar 17, 2023	Seung-hwan Han	-	-	-
Mar 17, 2023	Hai-lin Jeong	0.00	-	-

Mar 19, 2021: Young-ho Lee and Keum-yong Chung resigned from their positions as CEO, Executive Directors Se-chul Oh and Seung-hwan Han were appointed as CEOs, and Jung-suk Koh was reappointed as CEO.

Apr 29, 2021: The share ratio (common share) of the major shareholder was changed (17.48%→18.26%) as the shares were inherited (by Jae-yong Lee and three others).

Mar 17, 2023: Seung-hwan Han resigned from his position as CEO, and Executive Director Hai-lin Jeong was appointed as CEO.

(2) Financial status of the recent settlement term of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

(KRW mil)

Classification	
Name of the corporation or organization	Samsung C&T
Total assets	62,832,693
Total liabilities	25,896,057
Total equity	36,936,636
Revenue	20,824,745
Operating profit	1,412,836
Net profit	1,446,607

The financial status is as of June 30, 2023, based on the consolidated K-IFRS financial statements.

(3) Business conditions of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

Samsung C&T is consisted of Engineering & Construction, Trading & Investment, Fashion, and Resort Groups as well as biomedicine OEM and biosimilar businesses. The Engineering & Construction Group operates businesses in building, civil infrastructure, plant, and housing areas domestically and globally; Trading & Investment trades internationally in various fields, including resource development, steel, chemical, industrial materials, and textiles. The Fashion Group manufactures and sells clothing, and processes and sells wool products (fabric). The Resort Group manages landscaping business, Everland (dry park), Caribbean Bay (water park), golf course, food supply services, and food distribution business (Samsung Welstory).

☞ Please refer to the business report (interim and half-year) of Samsung C&T published in DART (<https://dart.fss.or.kr>) for more details of the major shareholder of the major shareholder.

3. Change of the major shareholder

[As of June 30, 2023]

Date of change	Name of major Shareholder	Number of shares owned	Share ratio (%)	Reason for change	Note
Apr 29, 2021	Samsung Life Insurance	1,263,050,053	21.16	Shares of the previous major shareholder were inherited by beneficiaries	-

Number of shares owned and share ratio are the sum of those of the major shareholder and its related parties, and the number of shares is based on shares with voting rights (including those with limited voting rights in accordance with relevant laws).

4. Ownership of shares

A. Share ownership status

[As of June 30, 2023]

Classification	Name	Number of shares owned	Share ratio (%)	Note
Shareholders with over 5% voting shares ¹⁾	Samsung Life Insurance	517,718,891	8.68	Including special accounts
	National Pension Service	439,039,024	7.35	-
	BlackRock Fund Advisors	300,391,061	5.03	Based on January 28, 2019
	Samsung C&T	298,818,100	5.01	-
Employee Stock Ownership Association		-	-	-

Number of shares owned and share ratio of BlackRock Fund Advisors is based on the "Report on Mass Holding of Securities" disclosed on DART (<http://dart.fss.or.kr>) on February 7, 2019.

The number of shares owned and share ratio of Samsung Life Insurance includes special accounts.

1) Including shares with limited voting rights in accordance with relevant laws. For more information, please refer to 『VI. Corporate Governance-3. General meeting of shareholders-D. Voting shares』

B. Minority shareholders

[As of June 30, 2023]

Classification	Shareholder			Shares owned ¹⁾			Note
	Number of shareholders	Total shareholders	Portion (%)	Number of shares	Total number of shares	Portion (%)	
Minority shareholder	5,668,319	5,668,455	99.99	4,005,369,716	5,969,782,550	67.09	-

Shareholders with shares less than 1/100 of total issued stocks

1) Number of voting shares, including those with limited voting rights in accordance with relevant laws.

5. Stock price and stock transactions

A. Domestic stock market

Type			Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023
Common stock	Stock price (KRW)	High	64,600	63,800	64,000	66,100	72,300	72,700
		Low	55,400	60,500	59,000	62,300	64,100	70,500
		Average	60,540	62,320	61,145	64,855	66,900	71,676
	Volume (shares)	High (day)	29,746,731	23,285,983	18,278,602	27,476,120	27,476,897	19,165,568
		Low (day)	9,646,327	7,665,046	8,318,514	9,176,149	8,172,021	8,783,093
		Month	304,721,328	259,275,907	273,644,150	291,035,766	269,419,265	265,070,208
Preferred stock	Stock price (KRW)	High	58,200	57,100	54,700	55,800	60,400	61,200
		Low	50,500	53,400	52,000	53,100	54,400	59,100
		Average	54,830	55,720	53,141	54,850	56,575	60,148
	Volume (shares)	High (day)	1,949,266	1,287,426	2,624,397	2,309,225	3,822,138	2,092,560
		Low (day)	388,253	432,218	699,742	830,959	417,228	444,802
		Month	17,897,148	15,693,926	28,775,173	26,024,392	23,281,506	23,729,722

Stock price is based on the closing exchange rate of the applicable trading day.

B. Overseas stock market

□ Name of stock exchange: London Stock Exchange (common stock)

Type				Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023
Common stock	Price per GDR	High	USD	1,314.50	1,301.00	1,228.50	1,267.00	1,372.00	1,414.00
			KRW	1,618,675	1,602,051	1,601,718	1,677,761	1,818,723	1,825,615
		Low	USD	1,076.50	1,148.00	1,112.50	1,181.00	1,190.00	1,353.00
			KRW	1,365,971	1,512,375	1,451,701	1,573,919	1,575,798	1,788,125
		Average	USD	1,226.90	1,219.00	1,171.76	1,224.67	1,257.90	1,383.05
			KRW	1,529,630	1,547,529	1,530,932	1,617,217	1,671,688	1,795,027
	Volume (shares)	High (day)		21,049	14,900	14,375	13,275	19,105	14,553
		Low (day)		7,270	3,469	4,916	4,355	4,793	5,690
		Month		274,301	193,873	196,049	165,207	209,478	197,373

Stock price in KRW is based on the closing exchange rate of the applicable trading day.

High and low price in KRW are based on the KRW/USD closing exchange rate of the applicable trading day; average price in KRW is based on monthly average KRW/USD exchange rate.

Conversion ratio between GDRs and original shares is 1:25.

□ Name of stock exchange: Luxembourg Stock Exchange (preferred stock)

Type				Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023
Preferred stock	Price per GDR	High	USD	1,184.00	1,152.00	1,046.00	1,064.00	1,142.00	1,204.00
			KRW	1,457,978	1,418,573	1,364,821	1,408,949	1,513,835	1,554,484
		Low	USD	980.00	1,018.00	967.00	1,000.00	1,016.00	1,118.00
			KRW	1,243,522	1,341,113	1,261,838	1,332,700	1,341,425	1,477,549
		Average	USD	1,108.38	1,085.50	1,014.87	1,032.00	1,061.40	1,154.82
			KRW	1,381,861	1,378,050	1,325,950	1,362,794	1,410,549	1,498,815
	Volume (shares)	High (day)		3,165	7,375	4,057	1,687	6,009	2,298
		Low (day)		394	170	264	247	275	324
		Month		25,182	27,610	26,068	13,367	28,086	19,269

Stock price in KRW is based on the closing exchange rate of the applicable trading day.

High and low price in KRW are based on the KRW/USD closing exchange rate of the applicable trading day; average price in KRW is based on monthly average KRW/USD exchange rate.

Conversion ratio between GDRs and original shares is 1:25.

VIII. Executives and Employees

1. Executives and employees

A. Registered Executives

[As of June 30, 2023]

(Shares)

Name	Gender	Date of birth	Position	Registered Executive	Full/part-time	Responsibility	Major career	Number of shares owned ¹⁾		Relationship with the major shareholder ²⁾	Length of service (months)	Term expiration
								Common	Preferrred			
Jong-hee Han	M	Mar 1962	Vice Chairman	Executive Director	Full	- CEO (head of the DX Division)	- Bachelor's degree in Electronic Engineering from Inha University - Head of DX Division	15,000	-	Executive Member of an affiliate	40	Mar 17, 2026
Kye-hyun Kyung	M	Mar 1963	President	Executive Director	Full	- CEO (head of the DS Division)	- Doctor's degree in Control and Measurement Engineering from Seoul National University - Head of DS Division	21,050	-	Executive Member of an affiliate	16	Mar 15, 2025
Tae-moon Roh	M	Sep 1968	President	Executive Director	Full	- Head of MX Business	- Doctor's degree in Electrical Engineering from Pohang University of Science and Technology - Head of MX Business	13,000	-	Executive Member of an affiliate	16	Mar 15, 2025
Hark-kyu Park	M	Nov 1964	President	Executive Director	Full	- CFO	- Master's degree in Business and Technology Management from Korea Advanced Institute of Science and Technology - Head of Corporate Management Office	22,500	-	Executive Member of an affiliate	16	Mar 15, 2025
Jung-bae Lee	M	Feb 1967	President	Executive Director	Full	- Head of Memory Business	- Doctor's degree in Electronic Engineering from Seoul National University - Head of Memory Business	15,000	-	Executive Member of an affiliate	16	Mar 15, 2025
Han-jo Kim	M	Jul 1956	Director	Independent Director	Part	- Board Chair - Head of Audit Committee - Related Party Transactions Committee Member - Compensation Committee Member - Head of Sustainability Committee	- Bachelor's degree in French language and Literature from Yonsei University - Chairman of Hana Foundation	3,655	-	Executive Member of an affiliate	52	Mar 19, 2025
Sun-uk Kim	F	Dec 1952	Director	Independent Director	Part	- Audit Committee Member - Head of the Related Party Transactions Committee - Independent Director Recommendation Committee Member - Sustainability	- Doctor's degree in Administrative Law from University of Konstanz - Professor Emeritus at Ewha Womans University	-	-	Executive Member of an affiliate	64	Mar 22, 2024

						Committee Member						
Jeong Kim	M	Aug 1960	Director	Independent Director	Part	- Audit Committee Member - Related Party Transactions Committee Member - Head of Compensation Committee - Sustainability Committee Member	- Doctor's degree in Reliability Engineering from the University of Maryland - President of Kiswe Mobile	-	-	Executive Member of an affiliate	64	Mar 22, 2024
Jun-sung Kim	M	Oct 1967	Director	Independent Director	Part	- Compensation Committee Member - Sustainability Committee Member	- Bachelor's degree in Economics & Business Administration from Carnegie Mellon University - Managing Director of Government of Singapore Investment Corporation (GIC) Total Return Group	-	-	Executive Member of an affiliate	16	Mar 15, 2025
Eun-nyeong Heo	M	Aug 1964	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Sustainability Committee Member	- Doctor's degree in Mineral Economics from The Pennsylvania State University - Professor of College of Engineering at Seoul National University	-	-	Executive Member of an affiliate	8	Nov 2, 2025
Myung-hee Yoo	F	Jun 1967	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Sustainability Committee Member	- Doctor's degree in Administrative Law from Vanderbilt University - Visiting Professor of Graduate School of International Studies at Seoul National University	-	-	Executive Member of an affiliate	8	Nov 2, 2025

1) As of the reporting date; for changes after the reporting date, please refer to 'Ownership status of securities, etc. of executives and major shareholder' published in Korean in DART (<https://dart.fss.or.kr>).

2) In accordance with Article 3 Paragraph 1 of the Enforcement Decree of the Act on Corporate Governance of Financial Companies.

Feb 15, 2022: Executive Directors Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh resigned from their positions as CEO; and Executive Director Jong-hee Han was appointed as CEO at the Board meeting.

Mar 16, 2022: Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, and Jung-bae Lee were newly appointed as Executive Directors; Wha-jin Han and Jun-sung Kim were newly appointed as Independent Directors; and Han-jo Kim was reappointed as Independent Director at the AGM.

Mar 16, 2022: Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh resigned from their positions as Executive Director.

Mar 16, 2022: Executive Director Kye-hyun Kyung was appointed as CEO at the Board meeting.

Mar 19, 2022: Terms of Jae-wan Bahk and Curie Ahn as Independent Director expired.

Apr 20, 2022: Wha-jin Han resigned from her position as Independent Director.

May 17, 2022: Independent Director Byung-gook Park passed away.

Nov 3, 2022: Eun-nyeong Heo and Myung-hee Yoo were newly appointed as Independent Directors at the EGM.

Mar 15, 2023: Jong-hee Han was reappointed as an Independent Director at the AGM.

B. Registered Executives with concurrent positions

[As of June 30, 2023]

Concurrent office holder		Company		
Name	Position	Name of company	Position	Period
Jeong Kim	Independent Director	Kiswe Mobile	Chairman	2013–present
Myung-hee Yoo	Independent Director	HD Hyundai Construction Equipment	Independent Director	2022–present

C. Employees

[As of June 30, 2023]

(KRW mil)

Division	Gender	Number of employees ¹⁾				Average length of service (years)	Total compensation (KRW mil)	Average compensation per employee ²⁾ (KRW mil)	Non-affiliated ³⁾		
		Regular	Contract-based	Others	Total				Male	Female	Total
DX	M	38,047	302	-	38,349	16.3			-	-	-
	F	12,312	87	-	12,177	13.0	-	-			
DS	M	52,932	141	-	53,073	10.5	-	-			
	F	20,624	27	-	20,471	10.8	-	-			
Gender total	M	90,979	443	-	91,422	12.9	4,899,585	55			
	F	32,936	114	-	32,648	11.6	1,264,675	42			
Total		123,915	557	-	124,070	12.6	6,164,260	51			

Total compensation for 1H23 and average compensation per employee were calculated before income tax and other deductions based on the earned income payment record submitted to the district tax office in accordance with Article 20 of the Income Tax Act.

1) Separate basis; represents employees of domestic headquarters in Korea, including employees on leave and excluding 11 registered executives (5 Executive Directors and 6 Independent Directors).

2) Calculated based on average number of employees: 120,164 employees (male: 89,892, female: 30,273).

Pursuant to the reporting guidelines set forth by the Financial Supervisory Service (FSS) of South Korea, the “Non-affiliated” section, reported in the full-year business report, is not included in the interim and half-year Business Reports.

D. Remuneration of non-registered Executives

[As of June 30, 2023]

(KRW mil)

Classification	Number of employees ¹⁾	Total compensation	Average compensation per employee	Note
Non-registered Executives	988	225,049	232	-

Total compensation for 1H23 and average compensation per employee is calculated based on the earned income payment record (before earned income tax credit) submitted to the district tax office in accordance with Article 20 of the Income Tax Act.

Total compensation for 1H23 includes incentives, and timing of the incentives being paid differ every year.

Average compensation per employee is calculated based on the average of the 964 employees.

1) In office as of the reporting date, and non-registered executives whose earned income was not domestic were excluded.

2. Remuneration for Directors

A. Summary on total remuneration

<Remuneration of directors and auditors>

(1) Remuneration approved at the annual general meetings of shareholders

(KRW mil)

	Number of persons ¹⁾	Amount approved at shareholders' meeting ²⁾	Note
Registered Directors	5	-	-
Independent Directors	3	-	-
Audit Committee members or Auditor	3	-	-
Total	11	48,000	-

1) As of the day of AGM, as approved on the occasion

2) Remuneration limit for directors (including those retired) approved at the AGM on March 15, 2023, as per Article 388 of the Commercial Act and our Articles of Incorporation.

(2) Remuneration Paid

[Remuneration paid for directors and auditors]

(KRW mil)

Number of persons ¹⁾	Total amount of remuneration ²⁾	Average remuneration per Director	Note
11	5,154	469	-

There are no recognized expenses (compensation expenses) in this term from granting stock options.

Based on the Income Tax Act that incumbent or retired registered directors, independent directors, and members of audit committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the Enforcement Decree of the same Act. 1) Based on the number of persons as of the reporting date.

2) Earned income as per Income Tax Act (Article 20: Wage and Salary Income, Article 21: Other Income, Article 22: Retirement income). Includes remuneration that newly appointed or resigned directors received as non-registered executives.

[Remuneration paid, by Director type]

(KRW mil)

	Number of persons ¹⁾	Total amount of remuneration ²⁾	Average remuneration per Director
Registered Directors (excluding Independent Directors and Audit Committee members)	5	4,540	908
Independent Directors (excluding Audit Committee members)	3	317	106
Audit Committee members	3	296	99
Auditor	-	-	-

There are no recognized expenses (compensation expenses) in this term from granting stock options.

Based on the Income Tax Act that incumbent or retired registered directors, independent directors, and members of audit committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the Enforcement Decree of the same Act.

1) Based on the number of persons as of the reporting date.

2) Earned income as per Income Tax Act (Article 20: Wage and Salary Income, Article 21: Other Income, Article 22: Retirement income). Includes remuneration that newly appointed or resigned directors received as non-registered executives.

(3) Criteria and methodology

Remuneration of directors is paid in accordance with internal regulations for Executive treatment and Independent Director treatment within the remuneration limit approved at the AGM.

Type	Criteria and methodology
Registered Directors (excluding Independent Directors and Audit Committee members)	<ul style="list-style-type: none"> • Salary: In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position, responsibilities, and performance results. • Traditional-holiday bonuses: 100% of monthly wage for each • Target achievement incentive: Paid on biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance.) • Performance incentive: Paid once a year within 0–50% of salary based on the compensation resources calculated according to financial factors such as profit after tax (\pm assessed considerations) and cost of capital for the fiscal year by business unit. (Adjusted according to individual performance.) • Long-term incentive: Calculated within the director remuneration limit, based on the average salary of 3 years, using ROE, stock performance, and EBIT margin as criteria. Paid over the course of 3 years. • Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
Independent Directors (excluding Audit Committee members)	<ul style="list-style-type: none"> • Salary: In accordance with internal regulations for independent director treatment, remuneration is determined based on responsibilities, etc. • Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for independent director treatment
Audit Committee members	<ul style="list-style-type: none"> • Salary: In accordance with internal regulations for independent director treatment, remuneration is determined based on responsibilities, etc. • Fringe benefits: Medical services, checkups, group accident insurance are provided in line with the internal regulations for independent director treatment

<Remuneration for individual Directors and Auditors who are paid KRW 500 million or more >

(1) Summary on Remuneration by Executive

(KRW mil)

Name	Position	Total amount of remuneration	Remuneration not included in total amount
Jong-hee Han	CEO	1,186	-
Kye-hyun Kyung	CEO	954	-
Tae-moon Roh	Executive Director	905	-
Hark-kyu Park	Executive Director	697	-
Jung-bae Lee	Executive Director	798	-

Based on the Income Tax Act that incumbent or retired registered directors, independent directors, and members of audit committee in the fiscal year received in accordance with Article 159 of the Financial Investment Services and Capital Markets Act and Article 168 of the Enforcement Decree of the same Act.

Earned income as per Income Tax Act (Article 20: Wage and Salary Income, Article 21: Other Income, Article 22: Retirement income). Includes remuneration that directors who were newly appointed or resigned during the fiscal year received as non-registered executives.

(2) Criteria and methodology

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Jong-hee Han (CEO)	Earned Income	Salary	744	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position (vice chairman), responsibilities, and performance results. He was paid KRW 101 million per month from January to February, KRW 181 million in March, and KRW 121 million per month from April to June.
		Bonus	433	- New-year's bonus: 100% of monthly wage - Target achievement incentive: Paid on biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance; applied retroactively) Quantitative indicators suggest that the DX Division achieved revenue of KRW 182.5 trillion and operating profit of KRW 12.7 trillion in 2022. Qualitative indicators include his contributions to leading the improvement of product competitiveness of the DX Division by enhancing the company-wide common platform and boosting future competitiveness by reinforcing B2B and services businesses. The bonus amount was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	9	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Kye-hyun Kyung (CEO)	Earned Income	Salary	611	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position (president), responsibilities, and performance results. He was paid KRW 83 million per month from January to February,

				KRW 149 million in March, and KRW 99 million per month from April to June.
	Bonus	330		<ul style="list-style-type: none"> - New-year's bonus: 100% of monthly wage - Target achievement incentive: Paid on biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance; applied retroactively) Quantitative indicators suggest that the DS Division achieved revenue of KRW 98.5 trillion and operating profit of KRW 23.8 trillion in 2022. Qualitative indicators include his contributions to boosting future competitiveness of the semiconductor businesses, including through the development of the highly advanced 12nm-class DRAM, the world's first mass production of 3nm products in foundry, and the development of industry's first 200MP image sensor. The bonus amount was determined based on the indicators listed above.
	Profit from exercising stock option	-		n/a
	Other Income	14		- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-		n/a
	Other Income	-		n/a

(KRW mil)

Name	Type of remuneration	Total amount	Criteria and methodology
Tae-moon Roh (Director)	Salary	632	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on his position (president), responsibilities, and performance results. He was paid KRW 82 million per month from January to February, KRW 131 million in March and KRW 94 million per month from April to December.
	Bonus	250	<ul style="list-style-type: none"> - New-year's bonus: 100% of monthly wage - Target achievement incentive: Paid on biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance; applied retroactively) Quantitative indicators suggest that the MX Business achieved revenue of KRW 115.4 trillion and operating profit of KRW 10.5 trillion in 2022. Qualitative indicators include his contributions to leading the efforts to fortify the Company's leadership position through technology innovations in mobile and by strengthening our sales strategy by region, as well as to improving the Company's brand image through risk management. The bonus amount was determined based on the indicators listed above.
	Profit from exercising stock option	-	n/a
	Other Income	24	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a
	Other Income	-	n/a

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Hark-kyu Park (Director)	Earned Income	Salary	518	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on his position (president), responsibilities, and performance results. He was paid KRW 74 million per month from January to February, KRW 118 million in March and KRW 85 million per month from April to June.
		Bonus	149	- New-year's bonus: 100% of monthly wage - Target achievement incentive: Paid on biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance; applied retroactively) Quantitative indicators suggest that the DX Division achieved revenue of KRW 182.5 trillion and operating profit of KRW 12.7 trillion in 2022. Qualitative indicators include his contributions to driving solid performance through preemptive management of business risks and advanced operation of resources amid global economic crises; and securing future growth engines by effectively distributing mid-to long-term investment resources. The bonus amount was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	30	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Jung-bae Lee (Director)	Earned Income	Salary	510	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on his position (president), responsibilities, and performance results. He was paid KRW 69 million per month from January to February, KRW 124 million in March and KRW 83 million per month from April to June.
		Bonus	276	- New-year's bonus: 100% of monthly wage - Target achievement incentive: Paid on biannual basis within the range of 0–200% of monthly wage, and CEO decides the amount according to the level of target achieved. (Adjusted according to division performance; applied retroactively) Quantitative indicators suggest that the Memory Business achieved revenue of KRW 68.5 trillion and operating profit of KRW 20.8 trillion in 2022. Qualitative indicators include contributing to fortifying the Company's market leadership for DRAM/Flash and enhancing future competitiveness of the Company's memory products, including the development of the highly advanced 12nm-class DRAM and 8th generation V-NAND. The bonus amount was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	12	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	

Name	Type of remuneration	Total amount	Criteria and methodology
	Other Income	-	n/a

< Remuneration for five highest-paid Executive Directors who are paid KRW 500 million or more >

(1) Summary on remuneration by Executive

(KRW mil)

Name	position	Total amount of remuneration	Remuneration not included in total amount
Wooseung Jang	Vice President	2,814	-
KC Choi	Vice President	2,680	-
Haechang Lee	Vice President	1,881	-
Geunhwi Lim	Vice President	1,575	-
Jeanie Han	Vice President	1,363	-

Earned income as per Income Tax Act (Article 20: Wage and Salary Income, Article 21: Other Income, Article 22: Retirement income).

(2) Criteria and methodology

Name	Type of remuneration	Total amount	Criteria and methodology
Wooseung Jang	Salary	249	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position (EVP), responsibility, and performance results. He was paid an average of KRW 41 million per month from January to June.
	Bonus	2,487	- New-year's bonus: KRW 25 million - Performance Incentive: Paid on annual basis, and CEO determines the amount according to the level of target achieved (enhancing Big Data infrastructure and expanding its utilization, supporting online business expansion, etc.). Quantitative indicators suggest that the DX Division achieved revenue of KRW 182.5 trillion and operating profit of KRW 12.7 trillion in 2022. Qualitative indicators include his contributions to boosting future competitiveness, including through the enhancement of Big Data infrastructures and expansion of its utilization, and his support for expanding the online business. The bonus was determined based on the indicators listed above.
	Profit from exercising stock option	-	n/a
	Other Income	79	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a
	Other Income	-	n/a

(KRW mil)

Name	Type of remuneration	Total amount	Criteria and methodology
KC Choi	Earned Salary	587	In accordance with internal regulations for executive treatment (Board resolution),

	Income			remuneration is determined based on position (EVP), responsibility, and performance results. He was paid an average of KRW 98 million per month from January to June.
		Bonus	2,064	- New-year's bonus: KRW 59 million - Performance Incentive: Paid on annual basis, and CEO determines the amount according to the level of target achieved (expanding B2B sales and strengthening B2B partnership). Quantitative indicators suggest that the MX Business achieved revenue of KRW 115.4 trillion and operating profit of KRW 10.5 trillion in 2022. Qualitative indicators include his contributions to enhancing B2B customer satisfaction and establishing the foundation for business expansion. The bonus was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	28	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Haechang Lee	Earned Income	Salary	256	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position (EVP), responsibility, and performance results. He was paid an average of KRW 43 million per month from January to June.
		Bonus	1,600	- New-year's bonus: KRW 38 million - Performance Incentive: Paid on annual basis, and CEO determines the amount according to the level of target achieved (developing and commercializing automotive CIS products). Quantitative indicators suggest that the Company achieved the target order amount—USD 500 million—for the new business of Automotive CIS in 2022. Qualitative indicators include his contributions to improving performance of new products and paving the foundation for business expansion toward China. The bonus was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	26	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	
	Other Income	-	n/a	

(KRW mil)

Name	Type of remuneration		Total amount	Criteria and methodology
Geunhwi Lim	Earned Income	Salary	164	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position (EVP), responsibility, and performance results. He was paid an average of KRW 27 million per month from January to June.
		Bonus	343	- New-year's bonus: 17 million won - Performance Incentive: Paid on annual basis, and CEO determines the amount

				according to the level of target achieved (enhancing Big Data infrastructure and expanding its utilization, supporting online business expansion, etc.). Quantitative indicators suggest that the DX Division achieved revenue of KRW 182.5trillion and operating profit of KRW 12.7 trillion in 2022. Qualitative indicators include his contributions to boosting future competitiveness, including through the enhancement of Big Data infrastructures and expansion of its utilization, and his support for expanding the online business. The bonus was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	68	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
		Retirement Income	-	n/a
		Other Income	-	n/a

(KRW mil)

Name	Type of remuneration	Total amount	Criteria and methodology	
Jeanie Han	Earned Income	Salary	684	In accordance with internal regulations for executive treatment (Board resolution), remuneration is determined based on position (EVP), responsibility, and performance results. He was paid an average of KRW 114 million per month from January to June.
		Bonus	657	- New-year's bonus: 69 million won - Performance Incentive: Paid on annual basis, and CEO determines the amount according to the level of target achieved (expanding service scope to Samsung Wallet, Digital Car Key, etc.). Quantitative indicators suggest that the DX Business achieved revenue of KRW 182.5 trillion and operating profit of KRW 12.7 trillion in 2022. Qualitative indicators include his contributions to securing competitiveness in the MX business through expansion of digital services. The bonus was determined based on the indicators listed above.
		Profit from exercising stock option	-	n/a
		Other Income	23	- Fringe benefits: Medical services, checkups, and group accident insurance are provided in line with the internal regulations for executive treatment (Board resolution)
	Retirement Income	-	n/a	
	Other Income	-	n/a	

B. Stock options granted and exercised

(1) Status of stock options granted to registered Directors

As of June 30, 2023, there were no accumulated-basis unexercised stock options granted to registered Directors, auditors, or people who instruct another person to conduct business.

(KRW mil)

Type	Number ¹⁾	Total fair value of stock options	Note
Registered Director	5	-	-
Independent Director	3	-	-
Audit Committee member or auditor	3	-	-
Person who instructs another person to conduct business	1,151	-	-
Total	1,162	-	-

1) Based on the number of persons as of the reporting date.

IX. Affiliates and Subsidiaries

1. Affiliates & subsidiaries

A. Affiliates

As of June 30, 2023, Samsung Group is consisted of 63 domestic affiliates. Among the Samsung Group's 63 domestic affiliates, seventeen (17) affiliates including Samsung Electronics are listed, and forty-six (46) affiliates are unlisted.

[As of June 30, 2023]

Name of affiliated group	No. of Affiliates		
	Listed	Unlisted	Total
Samsung	17	46	63

B. Ownership status of affiliates and subsidiaries

1) Domestic

Investee Investor	Samsung C&T Corporation	Samsung BioLogics	Samsung Life Insurance	Samsung SDI	Samsung SDS	SamsungFN REIT	Samsung Engineering	Samsung Electro-mechanics	Samsung Electronics	Samsung Heavy Industries	Samsung Securities	Samsung Card	Samsung Fire & Marine Insurance	MULTI CAMPUS	S1 Corporation	Cheil Worldwide
Samsung C&T Corporation		43.1	19.3		17.1		7.0		5.0	0.1						
Samsung BioLogics																
Samsung Life Insurance	0.1	0.1		0.1	0.1	19.5	0.1	0.1	8.7	3.0	29.4	71.9	15.0	0.0	5.4	0.3
Samsung SDI							11.7			0.4					11.0	
Samsung SDS														47.2		
Samsung Electro-mechanics										2.1						
Samsung Electronics		31.2		19.6	22.6			23.7		15.2						25.2
Samsung Heavy Industries																
Samsung Securities.						2.9									1.3	
Samsung Card															1.9	3.0
Samsung Fire & Marine Insurance						18.7	0.2		1.5						1.0	
S1 Corporation																
Cheil Worldwide										0.1						
Hotel Shilla																
SDC																
Samsung Asset Management																
Samsung Electronics Service																
Miracom																
Samsung Global Research														15.2		
Harman International Industries, Inc.																
Total	0.1	74.3	19.3	19.7	39.8	41.2	19.0	23.8	15.2	20.9	29.4	71.9	15.0	62.4	20.7	28.6

※ Percent of ownership as of June 30, 2023 based on common shares

Investee Investor	Hotel Shilla	Samsung Display	Samsung Medison	Samsung BioEpis	Samsung Venture Investment	Samsung Life Service	Samsung Futures	Samsung Active Asset Management	Samsung SRA Asset Management	Samsung Welstory	Samsung Asset Management	Samsung Electronics Logitech	Samsung Electronics Service	Samsung Electronics Service CS	Samsung Electronics Sales	Samsung Card Customer Service
Samsung C&T Corporation					16.7					100.0						
Samsung BioLogics				100.0												
Samsung Life Insurance	7.4					99.8			100.0		100.0					
Samsung SDI	0.1	15.2			16.3											
Samsung SDS																
Samsung Electro-mechanics					17.0											
Samsung Electronics	5.1	84.8	68.5		16.3							100.0	99.3		100.0	
Samsung Heavy Industries					17.0											
Samsung Securities.	3.1				16.7		100.0									
Samsung Card	1.3															100.0
Samsung Fire & Marine Insurance																
S1 Corporation																
Cheil Worldwide																
Hotel Shilla																
SDC																
Samsung Asset Management								100.0								
Samsung Eelectronics Service														100.0		
Miracom																
Samsung Global Research																
Harman International Industries, Inc.																
Total	17.0	100.0	68.5	100.0	100.0	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.3	100.0	100.0	100.0

※ Percent of ownership as of June 30, 2023 based on common shares

Investee Investor	Samsung Corning Advanced Glass	Samsung Hedge Asset Management	Samsung Fire & Marine Insurance Service	Samsung Claim Adjustment Service	SEMES	Suwon Samsung Bluewings FC	STECO	Shilla HM	SD Flex	SBTM	S-1CRM	SU Materials	S-Core	STM	HDC Shilla Duty Free LTD	Open Hands
Samsung C&T Corporation																
Samsung BioLogics																
Samsung Life Insurance																
Samsung SDI									50.0					100.0		
Samsung SDS													81.8			100.0
Samsung Electro-mechanics																
Samsung Electronics					91.5		70.0									
Samsung Heavy Industries																
Samsung Securities.																
Samsung Card																
Samsung Fire & Marine Insurance			100.0	100.0												
S1 Corporation											100.0		0.6			
Cheil Worldwide						100.0							5.2			
Hotel Shilla								100.0		100.0					50.0	
SDC	50.0											50.0				
Samsung Asset Management		100.0														
Samsung Eelectronics Service																
Miracom													0.5			
Samsung Global Research																
Harman International Industries, Inc.																
Total	50.0	100.0	100.0	100.0	91.5	100.0	70.0	100.0	50.0	100.0	100.0	50.0	88.1	100.0	50.0	100.0

※ Percent of ownership as of June 30, 2023 based on common shares

Investee Investor	Cheil Fashion Retail	Miracom	Samsung Global Research	Samsung Lions	Samsung Life Financial Service	Samsung Fire & Marine Financial Service	Samwoo Architects & Engineers	Seoul Lakeside CC	SECUI	CVnet	SHP Corporation	Harman International Korea	Human TSS	Stellarforest
Samsung C&T Corporation	100.0		1.0				100.0	100.0	8.7	40.1				
Samsung BioLogics														
Samsung Life Insurance			14.8		100.0									
Samsung SDI			29.6											
Samsung SDS		83.6							56.5	9.4				
Samsung Electro-mechanics			23.8											
Samsung Electronics			29.8											100.0
Samsung Heavy Industries			1.0											
Samsung Securities.														
Samsung Card														
Samsung Fire & Marine Insurance						100.0								
S1 Corporation		0.6											100.0	
Cheil Worldwide		5.4		67.5										
Hotel Shilla											100.0			
SDC														
Samsung Asset Management														
Samsung Eelectronics Service														
Miracom														
Samsung Global Research														
Harman International Industries, Inc.												100.0		
Total	100.0	89.6	100.0	67.5	100.0	100.0	100.0	100.0	65.2	49.5	100.0	100.0	100.0	100.0

※ Percent of ownership as of June 30, 2023 based on common shares

2) Overseas

Investor	Investee	Ownership
Samwoo Architects & Engineers	SAMOO AUSTIN INC	100.0
Samwoo Architects & Engineers	SAMOO HU Designer and Engineering Services Limited	100.0
Samwoo Architects & Engineers	SAMOO DESIGNERS & ENGINEERS INDIA PRIVATE LIMITED	100.0
Samwoo Architects & Engineers	SAMOO (KL) SDN. BHD.	100.0
Samwoo Architects & Engineers	SAMOO Design Consulting Co.,Ltd	100.0
Samsung C&T America Inc.	Samsung Green repower, LLC	100.0
Samsung C&T America Inc.	Samsung Solar Construction Inc.	100.0
Samsung C&T America Inc.	QSSC, S.A. de C.V.	20.0
Samsung C&T America Inc.	Samsung Solar Energy LLC	100.0
Samsung C&T America Inc.	Equipment Trading Solutions Group, LLC	70.0
Samsung Renewable Energy Inc.	SP Armow Wind Ontario LP	50.0
Samsung Renewable Energy Inc.	SRE GRW EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE GRW EPC LP	100.0
Samsung Renewable Energy Inc.	SRE SKW EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE SKW EPC LP	100.0
Samsung Renewable Energy Inc.	SRE WIND PA GP INC.	100.0
Samsung Renewable Energy Inc.	SRE WIND PA LP	100.0
Samsung Renewable Energy Inc.	SRE GRS Holdings GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE GRS Holdings LP	100.0
Samsung Renewable Energy Inc.	SRE K2 EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE K2 EPC LP	100.0
Samsung Renewable Energy Inc.	SRE KS HOLDINGS GP INC.	100.0
Samsung Renewable Energy Inc.	SRE KS HOLDINGS LP	100.0
Samsung Renewable Energy Inc.	SP Belle River Wind LP	42.5
Samsung Renewable Energy Inc.	SRE Armow EPC GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Armow EPC LP	100.0
Samsung Renewable Energy Inc.	North Kent Wind 1 LP	35.0
Samsung Renewable Energy Inc.	SRE Wind GP Holding Inc.	100.0
Samsung Renewable Energy Inc.	South Kent Wind LP Inc.	50.0
Samsung Renewable Energy Inc.	Grand Renewable Wind LP Inc.	45.0
Samsung Renewable Energy Inc.	SRE North Kent 2 LP Holdings LP	100.0
Samsung Renewable Energy Inc.	SRE Solar Development GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Solar Development LP	100.0
Samsung Renewable Energy Inc.	SRE Windsor Holdings GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Southgate Holdings GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Solar Construction Management GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Solar Construction Management LP	100.0
Samsung Renewable Energy Inc.	SRE BRW EPC GP INC.	100.0
Samsung Renewable Energy Inc.	SRE BRW EPC LP	100.0
Samsung Renewable Energy Inc.	SRE North Kent 1 GP Holdings Inc	100.0
Samsung Renewable Energy Inc.	SRE North Kent 2 GP Holdings Inc	100.0
Samsung Renewable Energy Inc.	SRE Belle River GP Holdings Inc	100.0
Samsung Renewable Energy Inc.	SRE NK1 EPC GP Inc	100.0
Samsung Renewable Energy Inc.	SRE NK1 EPC LP	100.0
Samsung Renewable Energy Inc.	SRE Summerside Construction GP Inc.	100.0
Samsung Renewable Energy Inc.	SRE Summerside Construction LP	100.0
Samsung Green repower, LLC	Monument Power, LLC	100.0
SP Armow Wind Ontario GP Inc	SP Armow Wind Ontario LP	0.0
Samsung C&T Oil & Gas Parallel Corp.	PLL Holdings LLC	83.6
Samsung C&T Oil & Gas Parallel Corp.	PLL E&P LLC	90.0
SRE GRW EPC GP Inc.	SRE GRW EPC LP	0.0

Investor	Investee	Ownership
SRE SKW EPC GP Inc.	SRE SKW EPC LP	0.0
PLL Holdings LLC	Parallel Petroleum LLC	61.0
SRE WIND PA GP INC.	SRE WIND PA LP	0.0
SRE GRS Holdings GP Inc.	Grand Renewable Solar GP Inc.	50.0
SRE GRS Holdings GP Inc.	SRE GRS Holdings LP	0.0
SRE K2 EPC GP Inc.	SRE K2 EPC LP	0.0
SRE KS HOLDINGS GP INC.	KINGSTON SOLAR GP INC.	50.0
SRE KS HOLDINGS GP INC.	SRE KS HOLDINGS LP	0.0
SP Belle River Wind GP Inc	SP Belle River Wind LP	0.0
SRE Armow EPC GP Inc.	SRE Armow EPC LP	0.0
SRE Wind GP Holding Inc.	SP Armow Wind Ontario GP Inc	50.0
SRE Wind GP Holding Inc.	South Kent Wind GP Inc.	50.0
SRE Wind GP Holding Inc.	Grand Renewable Wind GP Inc.	50.0
South Kent Wind GP Inc.	South Kent Wind LP Inc.	0.0
Grand Renewable Wind GP Inc.	Grand Renewable Wind LP Inc.	0.0
North Kent Wind 1 GP Inc	North Kent Wind 1 LP	0.0
SRE Solar Development GP Inc.	SRE Solar Development LP	0.0
SRE Solar Construction Management GP Inc.	SRE Solar Construction Management LP	0.0
SRE BRW EPC GP INC.	SRE BRW EPC LP	0.0
SRE North Kent 1 GP Holdings Inc	North Kent Wind 1 GP Inc	50.0
SRE North Kent 2 GP Holdings Inc	SRE North Kent 2 LP Holdings LP	0.0
SRE Belle River GP Holdings Inc	SP Belle River Wind GP Inc	50.0
SRE NK1 EPC GP Inc	SRE NK1 EPC LP	0.0
SRE Summerside Construction GP Inc.	SRE Summerside Construction LP	0.0
Samsung Solar Energy LLC	Samsung Solar Energy 1 LLC	100.0
Samsung Solar Energy LLC	Samsung Solar Energy 2 LLC	100.0
Samsung Solar Energy LLC	Samsung Solar Energy 3, LLC	100.0
Samsung Solar Energy 1 LLC	CS SOLAR LLC	50.0
Samsung Solar Energy 2 LLC	5S ENERGY HOLDINGS, LLC	50.0
Samsung C&T Deutschland GmbH	SungEel Recycling Park Thüringen GmbH	50.0
Samsung C&T Deutschland GmbH	POSS-SLPC, S.R.O	20.0
Samsung C&T Deutschland GmbH	Solluce Romania 1 B.V.	20.0
Samsung C&T Deutschland GmbH	S.C. Otelinox S.A	99.9
Samsung C&T Malaysia SDN. BHD	WARIS GIGIH ENGINEERING AND TECHNOLOGY SDN. BHD.	70.0
Samsung C&T Singapore Pte., Ltd.	Samsung Chemtech Vina LLC	48.3
Samsung C&T Singapore Pte., Ltd.	Samsung C&T Thailand Co., Ltd	0.2
Samsung C&T Singapore Pte., Ltd.	Malaysia Samsung Steel Center Sdn.Bhd	30.0
Samsung C&T Singapore Pte., Ltd.	S&G Biofuel PTE.LTD	12.6
S&G Biofuel PTE.LTD	PT. Gandaerah Hendana	95.0
S&G Biofuel PTE.LTD	PT. Inecda	95.0
Vista Contracting and Investment Global Pte. Ltd.	VISTA CONTRACTING AND DEVELOPMENT BANGLADESH LTD.	100.0
Vista Contracting and Investment Global Pte. Ltd.	WELVISTA COMPANY LIMITED	30.0
CHEIL HOLDING INC.	SAMSUNG CONST. CO. PHILS.	75.0
Samsung C&T Hongkong Ltd.	Samsung C&T Thailand Co., Ltd	6.8
Samsung C&T Hongkong Ltd.	SAMSUNG TRADING (SHANGHAI) CO., LTD	100.0
Samsung C&T Hongkong Ltd.	Samsung Precision Stainless Steel(pinghu) Co.,Ltd.	45.0
Samsung Electronics	Samsung Japan Corporation	100.0
Samsung Electronics	Samsung R&D Institute Japan Co. Ltd.	100.0
Samsung Electronics	Samsung Electronics America, Inc.	100.0
Samsung Electronics	Samsung Electronics Canada, Inc.	100.0
Samsung Electronics	Samsung Electronics Mexico S.A. De C.V.	63.6
Samsung Electronics	Samsung Electronics Ltd.	100.0

Investor	Investee	Ownership
Samsung Electronics	Samsung Electronics (UK) Ltd.	100.0
Samsung Electronics	Samsung Electronics Holding GmbH	100.0
Samsung Electronics	Samsung Electronics Iberia, S.A.	100.0
Samsung Electronics	Samsung Electronics France S.A.S	100.0
Samsung Electronics	Samsung Electronics Hungarian Private Co. Ltd.	100.0
Samsung Electronics	Samsung Electronics Italia S.P.A.	100.0
Samsung Electronics	Samsung Electronics Europe Logistics B.V.	100.0
Samsung Electronics	Samsung Electronics Benelux B.V.	100.0
Samsung Electronics	Samsung Electronics Overseas B.V.	100.0
Samsung Electronics	Samsung Electronics Polska, SP.Zo.o	100.0
Samsung Electronics	Samsung Electronics Portuguesa, Unipessoal, Lda.	100.0
Samsung Electronics	Samsung Electronics Nordic Aktiebolag	100.0
Samsung Electronics	Samsung Electronics Austria GmbH	100.0
Samsung Electronics	Samsung Electronics Slovakia s.r.o	55.7
Samsung Electronics	Samsung Electronics Europe Holding Cooperatief U.A.	100.0
Samsung Electronics	Samsung Electronics Display (M) Sdn. Bhd.	75.0
Samsung Electronics	Samsung Electronics (M) Sdn. Bhd.	100.0
Samsung Electronics	Samsung Vina Electronics Co., Ltd.	100.0
Samsung Electronics	Samsung Asia Pte. Ltd.	100.0
Samsung Electronics	Samsung India Electronics Private Ltd.	100.0
Samsung Electronics	Samsung R&D Institute India-Bangalore Private Limited	100.0
Samsung Electronics	Samsung Electronics Australia Pty. Ltd.	100.0
Samsung Electronics	PT Samsung Electronics Indonesia	100.0
Samsung Electronics	Thai Samsung Electronics Co., Ltd.	91.8
Samsung Electronics	Samsung Malaysia Electronics (SME) Sdn. Bhd.	100.0
Samsung Electronics	Samsung Electronics Hong Kong Co., Ltd.	100.0
Samsung Electronics	Suzhou Samsung Electronics Co., Ltd.	69.1
Samsung Electronics	Samsung (CHINA) Investment Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Suzhou Semiconductor Co., Ltd.	100.0
Samsung Electronics	Tianjin Samsung Electronics Co., Ltd.	48.2
Samsung Electronics	Samsung Electronics Taiwan Co., Ltd.	100.0
Samsung Electronics	Tianjin Samsung Telecom Technology Co., Ltd.	90.0
Samsung Electronics	Shanghai Samsung Semiconductor Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Suzhou Computer Co., Ltd.	73.7
Samsung Electronics	Samsung Semiconductor (China) R&D Co., Ltd.	100.0
Samsung Electronics	Samsung (China) Semiconductor Co., Ltd.	100.0
Samsung Electronics	Samsung SemiConductor Xian Co., Ltd.	100.0
Samsung Electronics	Samsung Gulf Electronics Co., Ltd.	100.0
Samsung Electronics	Samsung Electronics Egypt S.A.E	0.1
Samsung Electronics	Samsung Electronics South Africa(Pty) Ltd.	100.0
Samsung Electronics	Samsung Electronics Latinoamerica(Zona Libre), S. A.	100.0
Samsung Electronics	Samsung Eletronica da Amazonia Ltda.	87.0
Samsung Electronics	Samsung Electronics Argentina S.A.	98.0
Samsung Electronics	Samsung Electronics Chile Limitada	4.1
Samsung Electronics	Samsung Electronics Rus Company LLC	100.0
Samsung Electronics	Samsung Electronics Rus Kaluga LLC	100.0
Samsung Electronics	Tianjin Samsung LED Co., Ltd.	100.0
Samsung Biologics	Samsung Biologics America, Inc.	100.0
Samsung BioEpis	Samsung Bioepis United States Inc.	100.0
Samsung BioEpis	SAMSUNG BIOEPIS UK LIMITED	100.0
Samsung BioEpis	Samsung Bioepis NL B.V.	100.0
Samsung BioEpis	Samsung Bioepis CH GmbH	100.0

Investor	Investee	Ownership
Samsung BioEpis	Samsung Bioepis PL Sp z o.o.	100.0
Samsung BioEpis	SAMSUNG BIOEPIS AU PTY LTD	100.0
Samsung BioEpis	SAMSUNG BIOEPIS NZ LIMITED	100.0
Samsung BioEpis	Samsung Bioepis TW Limited	100.0
Samsung BioEpis	Samsung Bioepis HK Limited	100.0
Samsung BioEpis	SAMSUNG BIOEPIS IL LTD	100.0
Samsung BioEpis	SAMSUNG BIOEPIS BR PHARMACEUTICAL LTDA	100.0
Samsung Display	Intellectual Keystone Technology LLC	41.9
Samsung Display	Emerald	100.0
Samsung Display	Samsung Display Slovakia, s.r.o., v likvidácii	100.0
Samsung Display	Samsung Display Vietnam Co., Ltd.	100.0
Samsung Display	Samsung Display Noida Private Limited	100.0
Samsung Display	Samsung Display Dongguan Co., Ltd.	100.0
Samsung Display	Samsung Display Tianjin Co., Ltd.	95.0
Samsung Display	Novalded GmbH	9.9
SEMES	SEMES America, Inc.	100.0
SEMES	SEMES (XIAN) Co., Ltd.	100.0
Samsung Electronics America, Inc.	NeuroLogica Corp.	100.0
Samsung Electronics America, Inc.	Samsung HVAC America, LLC	100.0
Samsung Electronics America, Inc.	SmartThings, Inc.	100.0
Samsung Electronics America, Inc.	Samsung Oak Holdings, Inc.	100.0
Samsung Electronics America, Inc.	Joyent, Inc.	100.0
Samsung Electronics America, Inc.	TeleWorld Solutions, Inc.	100.0
Samsung Electronics America, Inc.	Samsung Semiconductor, Inc.	100.0
Samsung Electronics America, Inc.	Samsung Research America, Inc	100.0
Samsung Electronics America, Inc.	Samsung Electronics Home Appliances America, LLC	100.0
Samsung Electronics America, Inc.	Samsung International, Inc.	100.0
Samsung Electronics America, Inc.	Harman International Industries, Inc.	100.0
Samsung Semiconductor, Inc.	Samsung Federal, Inc.	100.0
Samsung Semiconductor, Inc.	Samsung Austin Semiconductor LLC.	100.0
Samsung Electronics Canada, Inc.	AdGear Technologies Inc.	100.0
Samsung Research America, Inc	SAMSUNG NEXT LLC	100.0
SAMSUNG NEXT LLC	SAMSUNG NEXT FUND LLC	100.0
Samsung International, Inc.	Samsung Mexicana S.A. de C.V	100.0
Samsung Electronics Mexico S.A. De C.V.	Samsung Electronics Digital Appliance Mexico, SA de CV	100.0
Emerald	Emerald Merger Sub, Inc.	100.0
Harman International Industries, Inc.	Harman International Japan Co., Ltd.	100.0
Harman International Industries, Inc.	Harman International Industries Canada Ltd.	100.0
Harman International Industries, Inc.	Harman Becker Automotive Systems, Inc.	100.0
Harman International Industries, Inc.	Harman Professional, Inc.	100.0
Harman International Industries, Inc.	Harman Connected Services, Inc.	100.0
Harman International Industries, Inc.	Harman Financial Group LLC	100.0
Harman International Industries, Inc.	Harman Belgium SA	100.0
Harman International Industries, Inc.	Harman France SNC	100.0
Harman International Industries, Inc.	Red Bend Software SAS	100.0
Harman International Industries, Inc.	Harman Inc. & Co. KG	66.0
Harman International Industries, Inc.	Harman KG Holding, LLC	100.0
Harman International Industries, Inc.	Harman Becker Automotive Systems Italy S.R.L.	100.0
Harman International Industries, Inc.	Harman Finance International, SCA	100.0
Harman International Industries, Inc.	Harman Finance International GP S.a.r.l	100.0
Harman International Industries, Inc.	Harman Industries Holdings Mauritius Ltd.	100.0
Harman International Industries, Inc.	Harman International Mexico, S. de R.L. de C.V.	99.9

Investor	Investee	Ownership
Harman Becker Automotive Systems, Inc.	Harman International Estonia OU	100.0
Harman Professional, Inc.	Harman Singapore Pte. Ltd.	100.0
Harman Professional, Inc.	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	0.0
Harman Professional, Inc.	Harman do Brasil Industria Eletronica e Participacoes Ltda.	0.0
Harman Connected Services, Inc.	Harman Connected Services Engineering Corp.	100.0
Harman Connected Services, Inc.	Harman Connected Services AB.	100.0
Harman Connected Services, Inc.	Harman Connected Services UK Ltd.	100.0
Harman Connected Services, Inc.	Harman Connected Services Corp. India Pvt. Ltd.	1.6
Harman Connected Services, Inc.	Global Symphony Technology Group Private Ltd.	100.0
Harman Financial Group LLC	Harman International (India) Private Limited	0.0
Harman Financial Group LLC	Harman International Mexico, S. de R.L. de C.V.	0.1
Harman Financial Group LLC	Harman de Mexico, S. de R.L. de C.V.	0.0
Samsung Electronics (UK) Ltd.	Samsung Semiconductor Europe Limited	100.0
Samsung Electronics Holding GmbH	Samsung Semiconductor Europe GmbH	100.0
Samsung Electronics Holding GmbH	Samsung Electronics GmbH	100.0
Samsung Electronics Hungarian Private Co. Ltd.	Samsung Electronics Czech and Slovak s.r.o.	31.4
Samsung Electronics Hungarian Private Co. Ltd.	Samsung Electronics Slovakia s.r.o	44.3
Samsung Electronics Benelux B.V.	Samsung Electronics Mexico S.A. De C.V.	36.4
Samsung Electronics Benelux B.V.	SAMSUNG ELECTRONICS BALTICS SIA	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics West Africa Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics East Africa Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Saudi Arabia Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Egypt S.A.E	99.9
Samsung Electronics Benelux B.V.	Samsung Electronics Israel Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Tunisia S.A.R.L	99.0
Samsung Electronics Benelux B.V.	Samsung Electronics Pakistan(Private) Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics South Africa Production (pty) Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Türkiye	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Industry and Commerce Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Semiconductor Israel R&D Center, Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Levant Co.,Ltd.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Maghreb Arab	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Venezuela, C.A.	100.0
Samsung Electronics Benelux B.V.	Samsung Eletronica da Amazonia Ltda.	13.0
Samsung Electronics Benelux B.V.	Samsung Electronics Chile Limitada	95.9
Samsung Electronics Benelux B.V.	Samsung Electronics Peru S.A.C.	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Ukraine Company LLC	100.0
Samsung Electronics Benelux B.V.	Samsung R&D Institute Ukraine	100.0
Samsung Electronics Benelux B.V.	Samsung R&D Institute Rus LLC	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Central Eurasia LLP	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Caucasus Co. Ltd	100.0
Samsung Electronics Benelux B.V.	Samsung Electronics Uzbekistan Ltd.	100.0
Samsung Electronics Benelux B.V.	Corephotonics Ltd.	100.0
Samsung Electronics Nordic Aktiebolag	Samsung Nanoradio Design Center	100.0
AKG Acoustics GmbH	Harman Professional Denmark ApS	100.0
AKG Acoustics GmbH	Studer Professional Audio GmbH	100.0
Harman Professional Denmark ApS	Martin Professional Japan Ltd.	40.0
Harman Becker Automotive Systems GmbH	Harman International Romania SRL	0.0
Harman Becker Automotive Systems GmbH	Apostera UA, LLC	100.0
Harman Holding GmbH & Co. KG	Harman Becker Automotive Systems GmbH	100.0
Harman Holding GmbH & Co. KG	Harman Deutschland GmbH	100.0
Harman Holding GmbH & Co. KG	Harman Becker Automotive Systems Manufacturing Kft	100.0

Investor	Investee	Ownership
Harman Holding Gmbh & Co. KG	Harman RUS CIS LLC	100.0
Harman Inc. & Co. KG	Harman Holding Gmbh & Co. KG	100.0
Harman Inc. & Co. KG	Harman Management Gmbh	100.0
Harman Inc. & Co. KG	Harman Hungary Financing Ltd.	100.0
Harman Connected Services GmbH	Harman Connected Services OOO	100.0
Harman KG Holding, LLC	Harman Inc. & Co. KG	34.0
Harman Becker Automotive Systems Manufacturing Kft	Harman Professional Kft	100.0
Harman Becker Automotive Systems Manufacturing Kft	Harman Consumer Nederland B.V.	100.0
Harman Becker Automotive Systems Manufacturing Kft	Harman International Romania SRL	100.0
Harman Becker Automotive Systems Manufacturing Kft	Red Bend Ltd.	100.0
Harman Becker Automotive Systems Manufacturing Kft	Harman do Brasil Industria Eletronica e Participacoes Ltda.	100.0
Harman Hungary Financing Ltd.	Harman International Industries Limited	100.0
Harman Finance International GP S.a.r.l	Harman Finance International, SCA	0.0
Harman Consumer Nederland B.V.	AKG Acoustics Gmbh	100.0
Harman Consumer Nederland B.V.	Harman Audio Iberia España Sociedad Limitada	100.0
Harman Consumer Nederland B.V.	Harman Holding Limited	100.0
Harman Audio Iberia España Sociedad Limitada	Harman France SNC	0.0
Harman Connected Services AB.	Harman Finland Oy	100.0
Harman Connected Services AB.	Harman Connected Services GmbH	100.0
Harman Connected Services AB.	Harman Connected Services Poland Sp.zoo	100.0
Harman Connected Services AB.	Harman Connected Services Solutions (Chengdu) Co., Ltd.	100.0
Harman International Industries Limited	Harman Automotive UK Limited	100.0
Harman International Industries Limited	Harman International Industries PTY Ltd.	100.0
Harman International Industries Limited	Harman de Mexico, S. de R.L. de C.V.	100.0
Harman Connected Services UK Ltd.	Harman Connected Services Morocco	100.0
Samsung Electronics Austria GmbH	Samsung Electronics Switzerland GmbH	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Czech and Slovak s.r.o.	68.6
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Romania LLC	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	SAMSUNG Zhilabs, S.L.	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Porta Nuova Varesine Building 2 S.r.l.	49.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Poland Manufacturing SP.Zo.o	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Greece S.M.S.A	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Air Conditioner Europe B.V.	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	FOODIENT LTD.	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Denmark Research Center ApS	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Cambridge Solution Centre Limited	100.0
Samsung Electronics Europe Holding Cooperatief U.A.	Novald GmbH	40.0
Samsung Electronics Singapore Pte. Ltd.	Samsung Electronics Display (M) Sdn. Bhd.	25.0
Samsung Electronics Singapore Pte. Ltd.	iMarket Asia Co., Ltd.	11.4
Samsung Asia Pte. Ltd.	Samsung Electronics Japan Co., Ltd.	100.0
Samsung Asia Pte. Ltd.	Samsung Electronics Singapore Pte. Ltd.	100.0
Samsung Asia Pte. Ltd.	Samsung Electronics New Zealand Limited	100.0
Samsung Asia Pte. Ltd.	Samsung Electronics Philippines Corporation	100.0
Samsung Asia Pte. Ltd.	Samsung R&D Institute BanglaDesh Limited	100.0
Samsung Asia Pte. Ltd.	Samsung Electronics Vietnam Co., Ltd.	100.0
Samsung Asia Pte. Ltd.	Samsung Electronics Vietnam THAINGUYEN Co., Ltd.	100.0
Samsung Asia Pte. Ltd.	Samsung Electronics HCMC CE Complex Co., Ltd.	100.0
Samsung India Electronics Private Ltd.	Samsung Nepal Services Pvt, Ltd	100.0
Samsung India Electronics Private Ltd.	Red Brick Lane Marketing Solutions Pvt. Ltd.	100.0
PT Samsung Electronics Indonesia	PT Samsung Telecommunications Indonesia	100.0
Thai Samsung Electronics Co., Ltd.	Laos Samsung Electronics Sole Co., Ltd	100.0
Samsung Electronics Hong Kong Co., Ltd.	iMarket Asia Co., Ltd.	11.3

Investor	Investee	Ownership
Suzhou Samsung Electronics Co., Ltd.	Samsung Suzhou Electronics Export Co., Ltd.	100.0
Samsung (CHINA) Investment Co., Ltd.	Suzhou Samsung Electronics Co., Ltd.	19.2
Samsung (CHINA) Investment Co., Ltd.	Samsung Mobile R&D Center China-Guangzhou	100.0
Samsung (CHINA) Investment Co., Ltd.	Samsung R&D Institute China-Shenzhen	100.0
Samsung (CHINA) Investment Co., Ltd.	Tianjin Samsung Electronics Co., Ltd.	43.1
Samsung (CHINA) Investment Co., Ltd.	Beijing Samsung Telecom R&D Center	100.0
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics Suzhou Computer Co., Ltd.	26.3
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics China R&D Center	100.0
Harman International (China) Holdings Co., Ltd.	Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	100.0
Harman International (China) Holdings Co., Ltd.	Harman Technology (Shenzhen) Co., Ltd.	100.0
Harman International (China) Holdings Co., Ltd.	Harman (China) Technologies Co., Ltd.	100.0
Harman Holding Limited	Harman Commercial (Shanghai) Co., Ltd.	100.0
Harman Holding Limited	Harman International (China) Holdings Co., Ltd.	100.0
Harman Holding Limited	Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	100.0
Samsung Gulf Electronics Co., Ltd.	Samsung Electronics Egypt S.A.E	0.1
Samsung Electronics Maghreb Arab	Samsung Electronics Tunisia S.A.R.L	1.0
Harman Industries Holdings Mauritius Ltd.	Harman International (India) Private Limited	100.0
Global Symphony Technology Group Private Ltd.	Harman Connected Services Corp. India Pvt. Ltd.	98.4
Samsung Electronics Latinoamerica(Zona Libre), S. A.	Samsung Electronics Latinoamerica Miami, Inc.	100.0
Samsung Electronics Latinoamerica(Zona Libre), S. A.	Samsung Electronica Colombia S.A.	100.0
Samsung Electronics Latinoamerica(Zona Libre), S. A.	Samsung Electronics Panama. S.A.	100.0
Samsung Eletronica da Amazonia Ltda.	Samsung Electronics Argentina S.A.	2.0
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	100.0
Samsung Electronics Central Eurasia LLP	Samsung Electronics Caucasus Co. Ltd	0.0
Samsung SDI	Intellectual Keystone Technology LLC	41.0
Samsung SDI	Samsung SDI Japan Co., Ltd.	89.2
Samsung SDI	Samsung SDI America, Inc.	91.7
Samsung SDI	Samsung SDI Hungary., Zrt.	100.0
Samsung SDI	Samsung SDI Europe GmbH	100.0
Samsung SDI	Samsung SDI Battery Systems GmbH	100.0
Samsung SDI	Samsung SDI Vietnam Co., Ltd.	100.0
Samsung SDI	Samsung SDI Energy Malaysia Sdn, Bhd.	100.0
Samsung SDI	Samsung SDI India Private Limited	100.0
Samsung SDI	Samsung SDI(Hong Kong) Ltd.	97.6
Samsung SDI	Samsung SDI China Co., Ltd.	100.0
Samsung SDI	Samsung SDI-ARN (Xi'An) Power Battery Co., Ltd.	65.0
Samsung SDI	Samsung SDI (Tianjin) Battery Co.,Ltd.	80.0
Samsung SDI	STARPLUS ENERGY LLC.	51.0
Samsung SDI	Novald GmbH	50.1
Samsung SDI	SAMSUNG SDI WUXI CO.,LTD.	100.0
Samsung SDI	iMarket Asia Co., Ltd.	8.7
Samsung SDI(Hong Kong) Ltd.	Samsung SDI India Private Limited	0.0
Samsung SDI(Hong Kong) Ltd.	Tianjin Samsung SDI Co., Ltd.	80.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Japan Co., Ltd.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics America, Inc.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics GmbH	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Philippines, Corp.	100.0
Samsung Electro-Mechanics	Calamba Premier Realty Corporation	39.8
Samsung Electro-Mechanics	Samsung Electro-Mechanics Pte Ltd.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Vietnam Co., Ltd.	100.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics Software India Bangalore Private Limited	99.9
Samsung Electro-Mechanics	Dongguan Samsung Electro-Mechanics Co., Ltd.	100.0

Investor	Investee	Ownership
Samsung Electro-Mechanics	Tianjin Samsung Electro-Mechanics Co., Ltd.	81.8
Samsung Electro-Mechanics	Samsung High-Tech Electro-Mechanics(Tianjin) Co., Ltd.	95.0
Samsung Electro-Mechanics	Samsung Electro-Mechanics (Shenzhen) Co., Ltd.	100.0
Samsung Electro-Mechanics	Kunshan Samsung Electro-Mechanics Co., Ltd.	100.0
Samsung Electro-Mechanics	iMarket Asia Co., Ltd.	8.7
Calamba Premier Realty Corporation	Batino Realty Corporation	100.0
Samsung Electro-Mechanics Pte Ltd.	Samsung Electro-Mechanics Software India Bangalore Private Limited	0.1
Samsung Fire & Marine Insurance	Samsung Fire & Marine Management Corporation	100.0
Samsung Fire & Marine Insurance	SAMSUNG FIRE & MARINE INSURANCE COMPANY OF EUROPE LTD.	100.0
Samsung Fire & Marine Insurance	PT. Asuransi Samsung Tugu	70.0
Samsung Fire & Marine Insurance	SAMSUNG VINA INSURANCE COMPANY LIMITED	75.0
Samsung Fire & Marine Insurance	Samsung Reinsurance Pte. Ltd.	100.0
Samsung Fire & Marine Insurance	Samsung Property & Casualty Insurance Company(China), Ltd	37.0
Samsung Fire & Marine Insurance	Samsung Fire & Marine Insurance Management Middle East Limited	100.0
Samsung Heavy Industries Co.,Ltd.	Camellia Consulting Corporation	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries India Pvt.Ltd.	100.0
Samsung Heavy Industries Co.,Ltd.	SAMSUNG HEAVY INDUSTRIES (M) SDN.BHD	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries(Rongcheng) Co., Ltd	100.0
Samsung Heavy Industries Co.,Ltd.	SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries Mozambique LDA	100.0
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries Rus LLC	100.0
SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	SHI - MCI FZE	70.0
Samsung Life Insurance	Porta Nuova Varesine Building 2 S.r.l.	51.0
Samsung Life Insurance	Samsung Life Insurance (Thailand) Public Co., Ltd	48.9
Samsung Life Insurance	Beijing Samsung Real Estate Co.. Ltd	90.0
Samsung Asset Management	Samsung Asset Management (New York), Inc.	100.0
Samsung Asset Management	Samsung Global SME Private Equity Manager Fund Co., Ltd.	100.0
Samsung Asset Management	Samsung Asset Management U.S. Holdings, Inc.	100.0
Samsung Asset Management	Samsung Private Equity Fund 2022 GP, Ltd.	100.0
Samsung Asset Management	Samsung Co-Investment 2021 GP, Ltd.	100.0
Samsung Asset Management	Samsung Asset Management(London) Ltd.	100.0
Samsung Asset Management	Samsung Private Equity Manager I Co., Ltd.	100.0
Samsung Asset Management	Samsung Asset Management (Hong Kong) Ltd.	100.0
Samsung Asset Management (Hong Kong) Ltd.	Samsung Asset Management (Beijing) Ltd.	100.0
Samsung C&T Corporation	Samsung C&T Japan Corporation	100.0
Samsung C&T Corporation	Samsung C&T America Inc.	100.0
Samsung C&T Corporation	Samsung E&C America, INC.	100.0
Samsung C&T Corporation	Samsung Renewable Energy Inc.	100.0
Samsung C&T Corporation	QSSC, S.A. de C.V.	80.0
Samsung C&T Corporation	Samsung C&T Oil & Gas Parallel Corp.	100.0
Samsung C&T Corporation	Samsung C&T Lima S.A.C.	100.0
Samsung C&T Corporation	Samsung C&T Deutschland GmbH	100.0
Samsung C&T Corporation	Samsung C&T U.K. Ltd.	100.0
Samsung C&T Corporation	Samsung C&T ECUK Limited	100.0
Samsung C&T Corporation	Whessoe engineering Limited	100.0
Samsung C&T Corporation	POSS-SLPC, S.R.O	50.0
Samsung C&T Corporation	Solluce Romania 1 B.V.	80.0
Samsung C&T Corporation	SAM investment Manzanilo.B.V	53.3
Samsung C&T Corporation	Samsung C&T (KL) Sdn.,Bhd.	100.0
Samsung C&T Corporation	Samsung C&T Malaysia SDN. BHD	100.0
Samsung C&T Corporation	Erdsam Co., Ltd.	100.0
Samsung C&T Corporation	Samsung Chemtech Vina LLC	51.7

Investor	Investee	Ownership
Samsung C&T Corporation	Samsung C&T Thailand Co., Ltd	93.0
Samsung C&T Corporation	Samsung C&T India Private Limited	100.0
Samsung C&T Corporation	Samsung C&T Corporation India Private Limited	100.0
Samsung C&T Corporation	Malaysia Samsung Steel Center Sdn.Bhd	70.0
Samsung C&T Corporation	Samsung C&T Singapore Pte., Ltd.	100.0
Samsung C&T Corporation	S&G Biofuel PTE.LTD	50.5
Samsung C&T Corporation	SAMSUNG C&T Mongolia LLC.	70.0
Samsung C&T Corporation	Samsung C&T Eng.&Const. Mongolia LLC.	100.0
Samsung C&T Corporation	S&WOO CONSTRUCTION PHILIPPINES,INC.	100.0
Samsung C&T Corporation	VSSC STEEL CENTER LIMITED LIABILITY COMPANY	70.0
Samsung C&T Corporation	Vista Contracting and Investment Global Pte. Ltd.	100.0
Samsung C&T Corporation	SAMSUNG CONST. CO. PHILS.	25.0
Samsung C&T Corporation	CHEIL HOLDING INC.	40.0
Samsung C&T Corporation	Samsung C&T Renewable Energy Australia Pty Ltd	100.0
Samsung C&T Corporation	Samsung C&T Hongkong Ltd.	100.0
Samsung C&T Corporation	Samsung C&T Taiwan Co., Ltd.	100.0
Samsung C&T Corporation	Samsung Precision Stainless Steel(pinghu) Co.,Ltd.	55.0
Samsung C&T Corporation	SAMSUNG C&T (SHANGHAI) CO., LTD.	100.0
Samsung C&T Corporation	Samsung C&T (Xi'an) Co., Ltd.	100.0
Samsung C&T Corporation	WARIS GIGIH ENGINEERING AND TECHNOLOGY SDN. BHD.	30.0
Samsung C&T Corporation	SAMSUNG C&T CORPORATION SAUDI ARABIA	100.0
Samsung C&T Corporation	SAM Gulf Investment Limited	100.0
Samsung C&T Corporation	Samsung C&T Chile Copper SpA	100.0
Samsung C&T Corporation	SCNT Power Kelar Inversiones Limitada	100.0
Samsung C&T Corporation	Samsung C&T Corporation Rus LLC	100.0
Samsung C&T Corporation	Samsung SDI America, Inc.	8.3
Samsung C&T Corporation	Samsung SDI(Hong Kong) Ltd.	2.4
Samsung C&T Corporation	Beijing Samsung Real Estate Co.. Ltd	10.0
Samsung C&T Corporation	CHEIL INDUSTRIES ITALY SRL	100.0
Samsung C&T Corporation	Samsung Fashion Trading Co. ,Ltd	100.0
Samsung C&T Corporation	SAMSUNG C&T CORPORATION VIETNAM CO., LTD	100.0
Samsung C&T Corporation	Samsung C&T Corporation UEM Construction JV Sdn Bhd	60.0
Samsung C&T Corporation	iMarket Asia Co., Ltd.	19.3
Samsung Welstory	WELSTORY VIETNAM COMPANY LIMITED	100.0
Samsung Welstory	Shanghai Ever-Hongjun Business Mgt Service Co.,LTD	85.0
Samsung Welstory	Shanghai Welstory Food Company Limited	81.6
MULTICAMPUS	LANGUAGE TESTING INTERNATIONAL, INC.	82.4
WELSTORY VIETNAM COMPANY LIMITED	WELVISTA COMPANY LIMITED	70.0
Pengtai Greater China Company Limited	PENGTAI CHINA CO.,LTD.	100.0
Pengtai Greater China Company Limited	PengTai Taiwan Co., Ltd.	100.0
PENGTAI CHINA CO.,LTD.	PENGTAI E-COMMERCE CO.,LTD	100.0
PENGTAI CHINA CO.,LTD.	PENGTAI MARKETING SERVICE CO.,LTD.	100.0
PENGTAI INTERACTIVE ADVERTISING CO.,LTD	Medialytics Inc.	100.0
PENGTAI INTERACTIVE ADVERTISING CO.,LTD	Beijing Pengtai Baozun E-commerce Co., Ltd.	51.0
iMarket Asia Co., Ltd.	iMarket China Co., Ltd.	80.0
Samsung Securities	Samsung Securities (America), Inc.	100.0
Samsung Securities	Samsung Securities (Europe) Limited.	100.0
Samsung Securities	Samsung Securities (Asia) Limited.	100.0
Samsung SDS	iMarket Asia Co., Ltd.	40.6
Samsung SDS	Samsung SDS America, Inc.	100.0
Samsung SDS	SAMSUNG SDS GSCL Canada., Ltd.	100.0
Samsung SDS	Samsung SDS Europe, Ltd.	100.0

Investor	Investee	Ownership
Samsung SDS	Samsung SDS Global SCL Hungary, Kft.	100.0
Samsung SDS	Samsung SDS Global SCL Slovakia, S.R.O.	100.0
Samsung SDS	Samsung SDS Global SCL Poland Sp. Z.o.o.	100.0
Samsung SDS	Samsung GSCL Sweden AB	100.0
Samsung SDS	Samsung SDS Global SCL France SAS	100.0
Samsung SDS	Samsung SDS Global SCL Italy S.R.L. A Socio Unico	100.0
Samsung SDS	Samsung SDS Global Supply Chain Logistics Spain S.L.U	100.0
Samsung SDS	Samsung SDS Global SCL Netherlands Cooperatief U.A.	100.0
Samsung SDS	Samsung SDS Global SCL Germany GmbH	100.0
Samsung SDS	Samsung SDS Global SCL Romania S.R.L	100.0
Samsung SDS	Samsung SDS Asia Pacific Pte, Ltd.	100.0
Samsung SDS	Samsung Data Systems India Private Limited	100.0
Samsung SDS	Samsung SDS Vietnam Co., Ltd.	100.0
Samsung SDS	PT. Samsung SDS Global SCL Indonesia	100.0
Samsung SDS	Samsung SDS Global SCL Philippines Co., Ltd.Inc.	100.0
Samsung SDS	Samsung SDS Global SCL Thailand Co.,Ltd	100.0
Samsung SDS	Samsung SDS Global SCL Malaysia SDN.BHD.	100.0
Samsung SDS	SAMSUNG SDS Global SCL Australia Pty.,Ltd.	100.0
Samsung SDS	SDS-ACUTECH CO., Ltd.	50.0
Samsung SDS	ALS SDS Joint Stock Company	51.0
Samsung SDS	SDS-MP Logistics Joint Stock Company	51.0
Samsung SDS	Samsung SDS China Co., Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL Hong Kong Co., Ltd.	100.0
Samsung SDS	SAMSUNG SDS Global SCL Egypt	100.0
Samsung SDS	Samsung SDS Global SCL South Africa (PTY) Ltd.	100.0
Samsung SDS	Samsung SDS Global SCL Nakliyat ve Lojistik Anonim Sirketi	100.0
Samsung SDS	Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	100.0
Samsung SDS	Samsung SDS Latin America Tecnologia E Logistica LTDA.	99.7
Samsung SDS	INTE-SDS Logistics S.A. de C.V.	51.0
Samsung SDS	Samsung SDS Rus Limited Liability Company	100.0
Samsung SDS America, Inc.	Samsung SDS Mexico, S.A. DE C.V.	99.0
Samsung SDS America, Inc.	Samsung SDS Global SCL Panama S.A.	100.0
Samsung SDS America, Inc.	Samsung SDS Global SCL Chile Limitada	100.0
Samsung SDS America, Inc.	Samsung SDS Global SCL Peru S.A.C	100.0
Samsung SDS America, Inc.	Samsung SDS Global SCL Colombia S.A.S	100.0
Samsung SDS America, Inc.	Samsung SDS Latin America Solucoes Em Tecnologia Ltda.	0.3
Samsung SDS Europe, Ltd.	Samsung SDS Global SCL Netherlands Cooperatief U.A.	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Global SCL Poland Sp. Z.o.o.	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Global SCL Romania S.R.L	0.0
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Rus Limited Liability Company	0.0
Samsung Engineering	Samsung Engineering America Inc.	100.0
Samsung Engineering	Samsung Project Management Inc.	100.0
Samsung Engineering	Samsung Engineering Hungary Ltd.	100.0
Samsung Engineering	Samsung Engineering Italy S.R.L.	100.0
Samsung Engineering	Samsung Engineering (Malaysia) SDN. BHD.	100.0
Samsung Engineering	PT Samsung Engineering Indonesia Co., Ltd.	100.0
Samsung Engineering	Samsung Engineering (Thailand) Co., Ltd.	81.0
Samsung Engineering	Samsung Engineering India Private Limited	100.0
Samsung Engineering	Samsung Engineering Vietnam Co., Ltd.	100.0
Samsung Engineering	Samsung Engineering Global Private Limited	100.0
Samsung Engineering	Samsung Engineering Construction(Shanghai) Co., Ltd	100.0
Samsung Engineering	Samsung Engineering Construction Xi' an Co., Ltd.	100.0

Investor	Investee	Ownership
Samsung Engineering	Samsung Saudi Arabia Co., Ltd.	100.0
Samsung Engineering	Muharrag Wastewater Services Company W.L.L.	99.8
Samsung Engineering	Muharrag STP Company B.S.C.	6.6
Samsung Engineering	Muharrag Holding Company 1 Ltd.	65.0
Samsung Engineering	Samsung Ingenieria Mexico Construccion Y Operacion S.A. De C.V.	99.9
Samsung Engineering	Samsung Engineering Trinidad Co., Ltd.	100.0
Samsung Engineering	Samsung Ingenieria Manzanillo, S.A. De C.V.	99.9
Samsung Engineering	Grupo Samsung Ingenieria Mexico, S.A. De C.V.	100.0
Samsung Engineering	Samsung Ingenieria Energia S.A. De C.V.	100.0
Samsung Engineering	Samsung Engineering Bolivia S.A	100.0
Samsung Engineering	Samsung Ingenieria DUBA S.A. de C.V.	100.0
Samsung Engineering	Samsung Engineering Kazakhstan L.L.P.	100.0
Samsung Engineering America Inc.	SEA Construction, LLC	100.0
Samsung Engineering America Inc.	SEA Louisiana Construction, L.L.C.	100.0
Samsung Engineering (Malaysia) SDN. BHD.	Muharrag Wastewater Services Company W.L.L.	0.3
Samsung Engineering India Private Limited	Samsung Engineering Global Private Limited	0.0
Samsung Engineering India Private Limited	Samsung Saudi Arabia Co., Ltd.	0.0
Samsung Saudi Arabia Co., Ltd.	Samsung EPC Company Ltd.	75.0
Muharrag Holding Company 1 Ltd.	Muharrag Holding Company 2 Ltd.	100.0
Muharrag Holding Company 2 Ltd.	Muharrag STP Company B.S.C.	89.9
Samsung Ingenieria DUBA S.A. de C.V.	Asociados Constructores DBNR, S.A. de C.V.	49.0
S1 Corporation	S-1 CORPORATION HUNGARY LLC	100.0
S1 Corporation	S-1 CORPORATION VIETNAM CO., LTD	100.0
S1 Corporation	Samsung Beijing Security Systems	100.0
Cheil Worldwide	Pengtai Greater China Company Limited	98.8
Cheil Worldwide	PENGTAI INTERACTIVE ADVERTISING CO.,LTD	100.0
Cheil Worldwide	Cheil USA Inc.	100.0
Cheil Worldwide	Cheil Central America Inc.	100.0
Cheil Worldwide	Iris Worldwide Holdings Limited	100.0
Cheil Worldwide	CHEIL EUROPE LIMITED	100.0
Cheil Worldwide	Cheil Germany GmbH	100.0
Cheil Worldwide	Cheil France SAS	100.0
Cheil Worldwide	CHEIL SPAIN S.L	100.0
Cheil Worldwide	Cheil Benelux B.V.	100.0
Cheil Worldwide	Cheil Nordic AB	100.0
Cheil Worldwide	Cheil India Private Limited	100.0
Cheil Worldwide	Cheil (Thailand) Ltd.	100.0
Cheil Worldwide	Cheil Singapore Pte. Ltd.	100.0
Cheil Worldwide	CHEIL VIETNAM COMPANY LIMITED	99.0
Cheil Worldwide	Cheil Integrated Marketing Philippines, Inc.	100.0
Cheil Worldwide	CHEIL MALAYSIA SDN. BHD.	100.0
Cheil Worldwide	Cheil New Zealand Limited	100.0
Cheil Worldwide	Cheil Worldwide Australia Pty Ltd	100.0
Cheil Worldwide	CHEIL CHINA	100.0
Cheil Worldwide	Cheil Hong Kong Ltd.	100.0
Cheil Worldwide	Caishu (Shanghai) Business Consulting Co., Ltd	100.0
Cheil Worldwide	Cheil MEA FZ-LLC	100.0
Cheil Worldwide	Cheil South Africa (Pty) Ltd	100.0
Cheil Worldwide	CHEIL KENYA LIMITED	99.0
Cheil Worldwide	Cheil Communications Nigeria Ltd.	99.0
Cheil Worldwide	Cheil Worldwide Inc./Jordan LLC.	100.0
Cheil Worldwide	Cheil Ghana Limited	100.0

Investor	Investee	Ownership
Cheil Worldwide	Cheil Egypt LLC	99.9
Cheil Worldwide	Cheil Maghreb LLC	100.0
Cheil Worldwide	Cheil Brasil Comunicacoes Ltda.	100.0
Cheil Worldwide	Cheil Mexico, S.A. de C.V.	98.0
Cheil Worldwide	Cheil Chile SpA.	100.0
Cheil Worldwide	Cheil Peru S.A.C.	100.0
Cheil Worldwide	CHEIL ARGENTINA S.A.	98.0
Cheil Worldwide	Cheil Rus LLC	100.0
Cheil Worldwide	Cheil Ukraine LLC	100.0
Cheil Worldwide	Cheil Kazakhstan LLC	100.0
Hotel Shilla	Samsung Hospitality America Inc.	100.0
Hotel Shilla	Shilla Travel Retail Pte. Ltd.	100.0
Hotel Shilla	Samsung Shilla Business Service Beijing Co., Ltd.	100.0
Hotel Shilla	Shilla Travel Retail Hong Kong Limited	100.0
HDC Shilla Duty Free LTD	HDC SHILLA (SHANGHAI) CO., LTD	100.0
SBTM	Samsung Hospitality U.K. Ltd.	100.0
SBTM	Samsung Hospitality Europe GmbH	100.0
SBTM	SAMSUNG HOSPITALITY ROMANIA SRL	100.0
SBTM	Samsung Hospitality Vietnam Co., Ltd.	99.0
SBTM	Samsung Hospitality Philippines Inc.	100.0
SBTM	Samsung Hospitality India Private Limited	100.0
Samsung Venture Investment	Samsung Venture Investment (Shanghai) Co., Ltd.	100.0
Iris Americas, Inc.	Iris (USA) Inc.	100.0
Iris Americas, Inc.	Iris Atlanta, Inc.	100.0
Iris Americas, Inc.	89 Degrees, Inc.	100.0
Cheil USA Inc.	The Barbarian Group LLC	100.0
Cheil USA Inc.	McKinney Ventures LLC	100.0
Cheil USA Inc.	Cheil India Private Limited	0.0
Cheil USA Inc.	Cheil Mexico, S.A. de C.V.	2.0
Iris Worldwide Holdings Limited	Iris Nation Worldwide Limited	100.0
Iris Nation Worldwide Limited	Iris Americas, Inc.	100.0
Iris Nation Worldwide Limited	Irisnation Latina No.2, S. de R.L. de C.V.	100.0
Iris Nation Worldwide Limited	Irisnation Latina, S. de R.L. de C.V.	100.0
Iris Nation Worldwide Limited	Pricing Solutions Ltd	100.0
Iris Nation Worldwide Limited	Iris London Limited	100.0
Iris Nation Worldwide Limited	Iris Promotional Marketing Ltd	100.0
Iris Nation Worldwide Limited	Iris Ventures 1 Limited	100.0
Iris Nation Worldwide Limited	Founded Partners Limited	100.0
Iris Nation Worldwide Limited	Iris Digital Limited	100.0
Iris Nation Worldwide Limited	Iris Amsterdam B.V.	100.0
Iris Nation Worldwide Limited	Iris Ventures (Worldwide) Limited	100.0
Iris Nation Worldwide Limited	Concise Consultants Limited	100.0
Iris Nation Worldwide Limited	WDMP Limited	49.0
Iris Nation Worldwide Limited	Iris Services Limited Doel Skopje	100.0
Iris Nation Worldwide Limited	Irisnation Singapore Pte. Ltd.	100.0
Iris Nation Worldwide Limited	Iris Worldwide Integrated Marketing Private Limited	100.0
Iris Nation Worldwide Limited	Iris Sydney PTY Ltd	100.0
Iris Nation Worldwide Limited	Iris Worldwide (Thailand) Limited	100.0
Iris London Limited	Iris Partners LLP	100.0
Iris Promotional Marketing Ltd	Holdings BR185 Limited	100.0
Iris Ventures 1 Limited	Iris Germany GmbH	100.0
Founded Partners Limited	Founded, Inc.	100.0

Investor	Investee	Ownership
Iris Germany GmbH	Pepper NA, Inc.	100.0
CHEIL EUROPE LIMITED	Beattie McGuinness Bungay Limited	100.0
CHEIL EUROPE LIMITED	Cheil Italia S.r.l	100.0
Cheil Germany GmbH	Cheil Austria GmbH	100.0
Cheil Germany GmbH	Centrade Integrated SRL	100.0
Centrade Integrated SRL	Centrade Cheil HU Kft.	100.0
Centrade Integrated SRL	Centrade Cheil Adriatic D.O.O.	100.0
Cheil India Private Limited	Experience Commerce Software Private Limited	100.0
Cheil Singapore Pte. Ltd.	PT. CHEIL WORLDWIDE INDONESIA	100.0
Cheil Integrated Marketing Philippines, Inc.	Cheil Philippines Inc.	30.0
Shilla Travel Retail Pte. Ltd.	Shilla Retail Plus Pte. Ltd.	100.0
Samsung Shilla Business Service Beijing Co., Ltd.	Tianjin Samsung International Travel Service Co., Ltd	100.0
Shilla Travel Retail Hong Kong Limited	Shilla Retail Limited	100.0
Shilla Travel Retail Hong Kong Limited	BNY Trading Hong Kong Limited	100.0
Cheil MEA FZ-LLC	One Agency FZ-LLC	100.0
Cheil MEA FZ-LLC	One RX Project Management Design and Production Limited Company	0.0
Cheil MEA FZ-LLC	Cheil Egypt LLC	0.1
Cheil South Africa (Pty) Ltd	CHEIL KENYA LIMITED	1.0
Cheil South Africa (Pty) Ltd	Cheil Communications Nigeria Ltd.	1.0
One Agency FZ-LLC	Iris Korea Limited	100.0
One Agency FZ-LLC	One RX India Private Limited	100.0
One Agency FZ-LLC	One RX Project Management Design and Production Limited Company	100.0
One Agency FZ-LLC	ONE RX INTERIOR DECORATION L.L.C	100.0
One Agency FZ-LLC	ONE AGENCY PRINTING L.L.C	100.0
ONE RX INTERIOR DECORATION L.L.C	One RX India Private Limited	0.0
Holdings BR185 Limited	Brazil 185 Participacoes Ltda	100.0
Brazil 185 Participacoes Ltda	Iris Router Marketing Ltda	100.0
Cheil Brasil Comunicacoes Ltda.	CHEIL ARGENTINA S.A.	2.0

※ Percent of ownership as of June 30, 2023 based on common shares

C. Related statute & regulation

Restrictions on cross-holdings within Samsung Group in accordance with the Monopoly Regulation and Fair Trade Act

(1) Date of announcement by authorities of companies deemed Samsung Group companies for the current year:
May 1, 2023

(2) Summary of Regulation

- Restriction on cross-holdings
- Restriction on debt guarantee between affiliates
- Restriction on affiliate voting rights of financial & insurance companies
- Decision making of board committee and public disclosure of large-scale inter-affiliate transactions
- Public disclosure of important matters of unlisted companies
- Other public disclosures related to Group status

D. Concurrent position with other affiliates

[As of June 30, 2023]

		Concurrent position		
Name	Position	Name of company	Position	Full/part time
Yong-kwan Kim	Executive VP	Samsung Medison	Representative Director	Full time
Keun-sung Yook	VP	Samsung Electronics Sales	Auditor	Part time
		Samsung Electronics Logitech	Auditor	Part time
		Samsung Electronics Service	Auditor	Part time
Seung-ho Ryu	Executive VP	Samsung Medison	Auditor	Part time
Kyu-tae Yoo	Executive VP	Samsung Medison	Internal Director	Full time
Jeong-jun Choi	Executive VP	Samsung Venture Investment	Auditor	Part time
Han-jong Yoo	VP	Samsung Global Research	Auditor	Part time
Khi-jae Cho	Executive VP	Samsung Display	Auditor	Part time
Jong-hoon Oh	Executive VP	SEMES	Auditor	Part time
Hee-don Hwang	VP	SEMES	Non-Executive director	Part time
Doug-yong Sung	VP	SEMES	Non-Executive director	Part time
Jae-kyun Oh	VP	STECO	Auditor	Part time
Dong-wook Park	VP	STECO	Non-Executive director	Part time

E. Equity investments in other corporations

The total book value of equity investments in other corporations as of June 30, 2023 is KRW 59,090 billion (for the purpose of management participation, etc.)

(As of June 30, 2023)

(KRW Million)

Investment Purpose	No. of investees			Invested amount			
	Listed	Unlisted	Total	Beginning Balance	Increase(decrease)		Ending Balance
					Acquisition (Disposal)	Valuation gain(loss)	
Management Participation	20	81	101	58,678,404	-37,703	350,005	58,990,706
General Investment	-	-	-	-	-	-	-
Simple Investment	5	34	39	83,453	-801	16,716	99,368
	25	115	140	58,761,857	-38,504	366,721	59,090,074

X. Transactions with Affiliates and Subsidiaries

1. Credit offerings for affiliates and subsidiaries

As of June 30, 2023, SEC provides a debt guarantee for financing of subsidiaries, including Samsung Electronics America, Inc. (SEA) and other subsidiaries as listed below. (USD thousand)

Company	Relationship	Creditor	Type	Purpose	Guarantee start date	Guarantee expiry date	Limit of guarantee		Transactions			Interest Rate (%)
							Beginning of period	End of period	Beginning of period	Increase/decrease	End of period	
SEA	Subsidiary	BOA etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	1,278,000	1,278,000	-	-	-	
SEM	Subsidiary	BBVA etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	715,000	715,000	-	-	-	
SAMCOL	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	210,000	210,000	-	-	-	
SEDA	Subsidiary	BRADESCO etc.	Payment guarantee	Operating fund	Oct 01, 2022	Dec 16, 2023	409,000	409,000	-	-	-	
SECH	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Dec 17, 2022	Jun 13, 2024	62,000	62,000	-	-	-	
SEPR	Subsidiary	BBVA etc.	Payment guarantee	Operating fund	Dec 17, 2022	Jun 13, 2024	150,000	150,000	-	-	-	
SSA	Subsidiary	SCB etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	318,000	318,000	-	-	-	
SEMAG	Subsidiary	SocGen etc.	Payment guarantee	Operating fund	Nov 09, 2022	Dec 16, 2023	110,000	110,000	-	-	-	
SETK	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	777,000	777,000	239,395	25,052	264,447	48.2%
SETK-P	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Nov 09, 2022	Dec 16, 2023	130,000	130,000	25,649	-12,206	13,443	29.6%
SECE	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	60,000	100,000	-	-	-	
SEEG	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	85,000	85,000	-	-	-	
SEIN	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	70,000	70,000	-	-	-	
SJC	Subsidiary	Mizuho Bank etc.	Payment guarantee	Operating fund	Nov 09, 2022	Apr 30, 2024	832,572	808,985	-	-	-	
SEUC	Subsidiary	Credit Agricole etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	150,000	125,000	-	-	-	
SEDAM	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	537,000	537,000	155,768	-155,768	-	
SECA	Subsidiary	BoA	Payment guarantee	Operating fund	Nov 09, 2022	Nov 08, 2023	70,000	70,000	-	-	-	
SELA	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	60,000	60,000	-	-	-	
SEEH	Subsidiary	HSBC etc.	Payment guarantee	Operating fund	Nov 01, 2022	Jun 13, 2024	888,400	888,400	-	-	-	
SERK	Subsidiary	SMBC	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	45,000	20,000	-	-	-	
SELV	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	10,000	10,000	-	-	-	
SEIL	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	15,600	15,600	9,664	-9,664	-	
SAPL	Subsidiary	BOA etc.	Payment guarantee	Operating fund	Nov 09, 2022	Jun 13, 2024	404,000	404,000	-	-	-	
SAVINA	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	51,000	51,000	-	-	-	
SCIC	Subsidiary	HSBC etc.	Payment guarantee	Operating fund	Nov 09, 2022	Dec 16, 2024	300,000	300,000	-	-	-	
SME	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 09, 2022	Nov 08, 2023	110,000	110,000	-	-	-	
SAMEX	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	5,000	5,000	-	-	-	
SEASA	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	2,000	2,000	-	-	-	
SSAP	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 09, 2022	Nov 08, 2023	35,000	35,000	-	-	-	
SEPM	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	35,000	35,000	-	-	-	
SESAR	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	20,000	20,000	-	-	-	
SEUZ	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	-	10,000				

AdGear Technologies Inc.	Subsidiary	BOA	Payment guarantee	Operating fund	Nov 09, 2022	Nov 08, 2023	2,000	2,000	-	-	-
Harman International Industries, Inc.	Subsidiary	JP Morgan	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	100,000	100,000	-	-	-
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Payment guarantee	Operating fund	Nov 09, 2022	Nov 08, 2023	25,000	25,000	-	-	-
Harman Holding Limited	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	30,000	30,000	-	-	-
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Payment guarantee	Operating fund	Nov 09, 2022	Nov 08, 2023	15,000	15,000	-	-	-
Harman da Amazonia Industria Eletronica e Participacoes Ltda.											
Harman International Industries Limited	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2023	Jun 13, 2024	30,000	30,000	-	-	-
Total							8,146,572	8,122,985	430,476	-152,586	277,890

Separate basis.

See 『1. Subsidiaries subject to consolidated financial statements (detailed)』 in 『XII. Appendix』 for names of subsidiaries.

The approval decision is resolved by the Management Committee when the guarantee amount per transaction is between 0.1% and/or less than 2.5%, and by the Board of Directors when the guarantee amount per transaction is 2.5% and above.

SEC receives fees on the debt it guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc.

The Company claimed approximately USD 547 thousand in guarantee fees in 2022 and received it in 2023.

2. Acquisitions and disposals of assets with affiliates and subsidiaries

In 1H23, the Company sold assets to affiliates, including Samsung (China) Semiconductor Co., Ltd. (SCS), to increase production capacity of such affiliates. Also, the Company acquired assets including facility equipment from affiliates to improve efficiency of production.

(KRW mil)

Company	Relationship	Transaction type	Transaction date ¹⁾	Asset	Purpose of transaction	Amount ²⁾	Gain or loss on disposal
SCS	Affiliates	Asset sale/purchase	Jun 30, 2023	Machinery, etc.	Enhance capacity and production efficiency	41,262	23,688
SESS	Affiliates	Asset sale/purchase	Jun 12, 2023	Machinery, etc.	Enhance capacity and production efficiency	4,176	466
SAS	Affiliates	Asset purchase	Jun 28, 2023	Machinery, etc.	Enhance capacity and production efficiency	1,058	-
SEHC	Affiliates	Asset sale	May 19, 2023	Machinery, etc.	Enhance capacity and production efficiency	965	93
SEV	Affiliates	Asset purchase	Mar 23, 2023	Machinery, etc.	Enhance capacity and production efficiency	767	-
SEVT	Affiliates	Asset sale/purchase	Jun 21, 2023	Machinery, etc.	Enhance capacity and production efficiency	459	148
TSLED	Affiliates	Asset sale	Mar 19, 2023	Machinery, etc.	Enhance capacity and production efficiency	372	361
SIEL	Affiliates	Asset sale	Jun 15, 2023	Machinery, etc.	Enhance capacity and production efficiency	118	13

Separate basis

The above acquisition and disposal transactions of assets are not subject to the Board's approval.

1) Most recent transaction.

2) Properly calculated by an appropriate method based upon market value assessment. Transaction was made under normal conditions (e.g., terms of cash payment within the 15th, 30th of the following month of transaction).

Transactions worth less than KRW 100 million were excluded according to Corporate Disclosure Guidelines.

3. Business transactions with affiliates and subsidiaries

In 1H23, the Company had transactions (e.g., sales and purchases) with affiliates, including Samsung Electronics America, Inc. (SEA)

(KRW mil)

Company	Relationship	Type of transaction	Date	Details	Amount
SEA	Affiliates	Sales, purchases, etc.	Jan 2023–Jun 2023	HHPs, consumer electronics, etc.	14,968,991
SEVT	Affiliates	Sales, purchases, etc.	Jan 2023–Jun 2023	HHPs, etc.	12,300,373

Separate basis; Transactions worth 5% and above of revenue of the current business year are subject to public disclosure.

See 『1. Subsidiaries subject to consolidated financial statements (detailed)』 in 『XII. Appendix』 for names of subsidiaries.

4. Transactions with stakeholders other than affiliates and subsidiaries

As of June 30, 2023, the Company's outstanding loan amount is KRW 139.7 billion related to support for supplier companies for product competitiveness and mutual development as well as home loan and educational expenses for employee welfare.

(KRW mil)

Company	Relationship	Loans			
		Account title	Transaction		
			Beginning of period (Jan 1, 2022)	Change	End of period (Dec 31, 2022)
Elentec Co., Ltd., etc.	Partner company and employee	Short-term loans	47,161	-923	46,238
Bumjin I&D, etc.	Partner company and employee	Long-term loans	92,898	608	93,506
Total			140,059	-315	139,744

Separate basis; amounts reflect the discounted present value of debts before accounting for impaired debts (impairment losses).

XI. Other Information

1. Changes in public disclosure

- N/A

2. Contingent liabilities

A. Litigation

The Company is involved in various claims, disputes, and investigations conducted by regulatory bodies, which arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, as of the reporting date, the Company believes the outcome will not have a material impact on the financial position of the Company.

Samsung Electronics and its spun-off companies, including SDC, are liable to fulfill in solidarity the debts of SDC which relate to the periods prior to SDC's separation from the Company.

For information related to other contingent liabilities and commitments, see retained earnings in 『3. Notes to consolidated financial statements』 and 『5. Notes to non-consolidated financial statements』 in 『III. Financial Affairs』.

B. Guarantees

(USD thousand)

Company	Relationship	Creditor	Guarantee	Transactions				Limit of guarantee
			Expiry date	Beginning of period	Increase	Decrease	End of period	
SEA	Subsidiary	BOA etc.	13-Jun-24	-	-	-	-	1,278,000
SEM	Subsidiary	BBVA etc.	13-Jun-24	-	-	-	-	715,000
SAMCOL	Subsidiary	Citibank etc.	13-Jun-24	-	-	-	-	210,000
SEDA	Subsidiary	BRADESCO etc.	16-Dec-23	-	-	-	-	409,000
SECH	Subsidiary	Citibank etc.	13-Jun-24	-	-	-	-	62,000
SEPR	Subsidiary	BBVA etc.	13-Jun-24	-	-	-	-	150,000
SSA	Subsidiary	SCB etc.	13-Jun-24	-	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	16-Dec-23	-	-	-	-	110,000
SETK	Subsidiary	BNP etc.	13-Jun-24	239,395	25,052	-	264,447	777,000
SETK-P	Subsidiary	BNP etc.	16-Dec-23	25,649	-	-12,206	13,443	130,000
SECE	Subsidiary	Citibank etc.	16-Dec-23	-	-	-	-	100,000
SEEG	Subsidiary	HSBC	13-Jun-24	-	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	13-Jun-24	-	-	-	-	70,000
SJC	Subsidiary	Mizuho Bank etc.	30-Apr-24	-	-	-	-	808,985
SEUC	Subsidiary	Credit Agricole etc.	13-Jun-24	-	-	-	-	125,000
SEDAM	Subsidiary	Citibank etc.	13-Jun-24	155,768	-	-155,768	-	537,000
SECA	Subsidiary	BoA	08-Nov-23	-	-	-	-	70,000
SELA	Subsidiary	Citibank	16-Dec-23	-	-	-	-	60,000
SEEH	Subsidiary	HSBC etc.	13-Jun-24	-	-	-	-	888,400
SERK	Subsidiary	SMBC	13-Jun-24	-	-	-	-	20,000
SELV	Subsidiary	Citibank	16-Dec-23	-	-	-	-	10,000
SEIL	Subsidiary	Citibank	16-Dec-23	9,664	-	-9,664	-	15,600
SAPL	Subsidiary	BOA etc.	13-Jun-24	-	-	-	-	404,000
SAVINA	Subsidiary	HSBC	13-Jun-24	-	-	-	-	51,000
SCIC	Subsidiary	HSBC etc.	13-Jun-24	-	-	-	-	300,000
SME	Subsidiary	SCB	08-Nov-23	-	-	-	-	110,000
SAMEX	Subsidiary	Citibank	16-Dec-23	-	-	-	-	5,000
SEASA	Subsidiary	Citibank	16-Dec-23	-	-	-	-	2,000
SSAP	Subsidiary	SCB	08-Nov-23	-	-	-	-	35,000
SEPM	Subsidiary	HSBC	13-Jun-24	-	-	-	-	35,000

SESTAR	Subsidiary	HSBC	13-Jun-24	-	-	-	-	20,000
SEUZ	Subsidiary	Citibank	16-Dec-23	-	-	-	-	10,000
AdGear Technologies Inc.	Subsidiary	BOA	08-Nov-23	-	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	13-Jun-24	-	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	08-Nov-23	-	-	-	-	25,000
Harman Holding Limited	Subsidiary	HSBC	13-Jun-24	-	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	08-Nov-23	-	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.								
Harman International Industries Limited	Subsidiary	HSBC	13-Jun-24	-	-	-	-	30,000
SDN	Subsidiary	SIEL	19-Feb-26	513,366	4,453	-	517,819	609,013
SAS	Subsidiary	Epcor	Date of debt expiration	-	-	-	-	340,000
DOWOOINSYS VINA COMPANY LIMITED	Subsidiary	ANZ	09-Nov-25	20,000	-	-	20,000	20,000
Total				963,842	29,505	-177,638	815,709	9,092,184

Consolidated basis.

See 『1. Subsidiaries subject to consolidated financial statements (detailed)』 in 『XII. Appendix』 for names of subsidiaries.

Debt guarantees for SDN are provided by SDC, SAS by SEA, and DOWOOINSYS VINA COMPANY LIMITED by Dowooinsys Co., Ltd.

SEC requires Board approval for individual guarantees exceeding 2.5% of total equity; the approval decision is delegated to the Management Committee when the guarantee amount is between 0.1% and/or less than 2.5%.

SDC requires Board approval for individual guarantees over KRW 10,000 million.

SEC claims fees on the debt guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc.: the Company in 2022 claimed approximately USD 547,000 as guarantee fee and collected the amount in 2023; and SDC in 2022 claimed approximately USD 3,080,000 as guarantee fee to SDN and has collected the amount in 2023.

3. Sanctions and others

A. Sanctions of investigative and judicial agencies

[Summary]

(KRW mil)

Date	Agency	Subject	Punishment or measure	Amount of monetary sanction	Amount of embezzlement/breach of trust	Relevant laws
Jan 25, 2021	Seoul High Court (Retrial)	Employees of SEC	Imprisonment	-	Approximately 8,681	Act on the Aggravated Punishment, etc. of Specific Economic Crimes
Feb 4, 2021	Supreme Court of Korea	Employees of SEC	Imprisonment	-	-	Articles 90, 81, etc., of the Trade Union and Labor Relations Adjustment Act
		Subsidiary and employees (Samsung Electronics Service)	Fine, Imprisonment	50	-	Articles 90, 81, etc., of the Trade Union and Labor Relations Adjustment Act, Article 10 of the Punishment of Tax Offenses Act
Jul 7, 2022	Gwangju District Court	Employees of SEC	Fine	6	-	Article 33 Paragraph 7, Article 34, Article 18 Paragraph 1, etc., of the Environmental Testing and Inspection Act
Feb 9, 2023	Gwangju District Court	Employees of SEC	Fine	25	-	Article 10 Paragraph 1 of the former Occupational Safety and Health Act, Article 57 Paragraph 1 of the Occupational Safety and Health Act, etc.

Regarding matters related to the allegations of violation of the Act on the Aggravated Punishment, etc., of Specific Economic Crimes (embezzlement) by five of the Company's executives (Vice Chairman Jae-yong Lee, former Vice Chairman Geesung Choi, former President Choong-ki Chang, former President Sang-jin Park, and former Senior Vice President Seongsoo Hwang) in the case of an influence-peddling scandal involving South Korea's president, the Supreme Court of Korea

on August 29, 2019 rejected part of a lower court's ruling and ordered a retrial to the Seoul High Court. On January 18, 2021 at the retrial, the Seoul High Court sentenced Vice Chairman Jae-yong Lee, former Vice Chairman Gee-sung Choi, and former President Choong-ki Chang each to 2 years and 6 months in prison. Former President Sang-jin Park and former Senior Vice President Seong-soo Hwang each received sentences of 2 years and 6 months in prison and a 4-year suspended sentence. The judgments were confirmed on January 25, 2021.

To prevent recurrences, the Company has strengthened its process regarding external contributions and newly established the Samsung Compliance Committee, an external and independent organization.

On February 4, 2021, the Supreme Court dismissed an appeal regarding the violation of Articles 90 and 81 of the Trade Union and Labor Relations Adjustment Act by SEC and employees of SEC and confirmed the sentences of 1 year and 4 months for Executive Vice President A (29 service years), 1 year and 2 months and a 2-year suspended sentence for former Executive Vice President B, 10 months and a 2-year suspended sentence for Executive Vice President C (34 service years), 1 year and a 2-year suspended sentence for former Executive Vice President D, 1 year for Senior Vice President E (32 service years), 1 year and 2 months and a 2-year suspended sentence for Senior Vice President F (24 service years), 10 months and a 2-year suspended sentence for Vice President G (27 service years), 10 months and a 2-year suspended sentence for Vice President H (18 service years) as ordered by the Seoul High Court on August 10, 2020; and SEC and former SEC Chairman of the Board (39 service years) were pronounced not guilty. Moreover, regarding the violation of Articles 90 and 81 of the Trade Union and Labor Relations Adjustment Act and violation of Article 10 of the Punishment of Tax Offenses Act with regard to receiving fake tax invoices (amount of violation approximately KRW 1,678 million) by Samsung Electronics Service and employees, the court issued a penalty of KRW 50 million for Samsung Electronics Service (amount of tax collected is approximately KRW 97 million), and confirmed sentencing of prison terms for Samsung Electronics Service's former CEO (4 service years) of 1 year and 4 months, Senior Vice President I (11 service years) of 1 year, Vice President J (21 service years) of 10 months and a 2-year suspended sentence.

To prevent recurrence, the Company has specified the guarantee of labor's three primary rights in the code of conduct and provides education on the prevention of unfair labor practices to all employees.

On January 20, 2021, the Suncheon Branch of Gwangju District Court ordered SEC employees A (11 service years) and B (8 service years) to pay a fine of KRW 3 million each for violating Article 18, etc., of the Environmental Testing and Inspection Act, and on July 7, 2022 at the retrial, the Gwangju District Court dismissed the appeal. To prevent recurrence, the Company is conducting regular cross measurement, etc.

On February 9, 2023, the Gwangju District Court issued a summary order against SEC and five SEC employees for violations of Article 10 Paragraph 1 of the former Occupational Safety, Health Act, Article 57 Paragraph 1 of the Occupational Safety and Health Act, etc. Neither the Company nor the five employees applied for a formal trial, thus resulting in the confirmation of the summary order (with fine of KRW 15 million for SEC and KRW 2 million for each employee), and the Company has subsequently paid the fine. As part of SEC's efforts to prevent recurrence of such issues, the Company has provided special education for Environmental Safety Managers and Supervisors to ensure compliance with the relevant regulations.

B. Sanctions of administrative agencies

(1) Sanctions of Fair Trade Commission (FTC)

[Summary]

(KRW mil)

Date	Agency	Subject	Punishment or measure	Amount of monetary sanction	Reasons and relevant laws
Jun 22, 2021	FTC	SEC and employees of SEC	Prosecution charge	-	Article 23 (Prohibition on Unfair Trade Practices) Paragraph 1 Subparagraph 7 of the Monopoly Regulation and Fair Trade Act
Aug 27, 2021	FTC	SEC	Corrective measure, penalty surcharge	101,217	Article 23 (Prohibition on Unfair Trade Practices) Paragraph 1 Subparagraph 7 of the Monopoly Regulation and Fair Trade Act
		Subsidiary (Samsung Display)	Corrective measure, penalty surcharge	22,857	Article 23 (Prohibition on Unfair Trade Practices) Paragraph 1 Subparagraph 7 of the Monopoly Regulation and Fair Trade Act
Nov 17, 2021	FTC	Subsidiary (Samsung Electronics Service CS)	Fine	2.4	Article 11-4 (Disclosure of Status of Business Groups) of the Monopoly Regulation and Fair Trade Act
Mar 17, 2022	FTC	Employees of SEC	Warning	-	Article 31 (Designation of Business Groups Subject to Limitations on Cross Shareholding) Paragraph 4 of the Monopoly Regulation and Fair Trade Act
Jun 27, 2022	FTC	SEC	Fine	10	Article 5 (Duty to Prepare Agency Transaction Contract) Paragraph 1 of the Fair Agency Transactions Act

On June 22, 2021, the Fair Trade Commission, regarding matters related to food service transactions with Samsung Welstory, filed a complaint against the Company and the former Head of Future Strategy Office Gee-sung Choi, a retiree, for violating Article 23 (Prohibition on Unfair Trade Practices) Paragraph 1 Subparagraph 7 of the Monopoly Regulation and Fair Trade Act.

On August 27, 2021, the Fair Trade Commission, regarding matters related to food service transactions with Samsung Welstory, issued corrective measures and ordered Samsung Electronics and Samsung Display to pay penalties (SEC: KRW 101.217 billion; SD: 22.857 billion) for violating Article 23 Paragraph 1 Subparagraph 7 of the Act of the Monopoly Regulation and Fair Trade Act. The administrative litigation against the disposition is in progress, and on January 27, 2022, the decision to suspend the execution of the corrective measures was finalized.

On November 5, 2021, the Fair Trade Commission, regarding a voluntary correction disclosure of Status of Large Business Groups (omission of member of the Board of Directors) of the Company's subsidiary, Samsung Electronics Service CS, ordered the company to pay a fine of KRW 2.4 million for violating Article 11-4 (Disclosure of Status of Business Groups) of the Monopoly Regulation and Fair Trade Act, and on November 17, 2021, the company has subsequently paid the fine.

To prevent recurrences and comply with the relevant law, Samsung Electronics Service CS has strengthened its internal management standard, including adding more people in charge.

On March 17, 2022, the Fair Trade Commission issued a warning against SEC's Vice Chairman Jae-yong Lee for omitting three companies—Balbec KPL Korea, Balbec KPL Partners, and Balbec KPL Asset Management—controlled by an Independent Director of Samsung Card from the affiliate list of Samsung, a business group subject to limitations on cross shareholding, when submitting materials in 2018 and 2019 pursuant to Article 31 Paragraph 4.

On June 27, 2022, the Fair Trade Commission ordered the Company to pay a fine of KRW 10 million for violating Article 5 (Duty to Prepare Agency Transaction Contract) Paragraph 1 of the Fair Agency Transactions Act, and the Company is in the middle of a procedure to object to the order.

To comply with the Monopoly Regulation and Fair Trade Act, the Act on Fair Labeling and Advertising, Fair Agency Transactions Act, and relevant laws, the Company has strengthened its internal management standard and is providing relevant prevention education for executives and employees.

(2) Sanctions of other administrative or public agencies (including financial supervision and tax authorities)

[Summary]

(KRW mil)

Date	Agency	Subject	Punishment or measure	Amount of monetary sanction	Reasons and relevant laws
Jan 3, 2019–Feb 23, 2022	Ministry of Employment and Labor	SEC (Pyeongtaek, Onyang, Cheonan, Giheung/Hwaseong sites)	Fine	14.7	Article 48 (Submission of Hazard Prevention Plans) Paragraph 1 of the former Occupational Safety and Health Act, Article 46 (Implementation of Process-Safety Reports) Paragraph 1, etc., of the Occupational Safety and Health Act
Mar 2, 2021	Ministry of Environment	SEC (Gwangju site)	Cancellation of designation of green enterprise	-	Article 16-3 (Cancellation of Designation of Green Enterprise) Paragraph 1 Subparagraph 1 of the Environmental Technology and Industry Support Act
Aug 10, 2021	Ministry of Justice	SEC	Fine	0.1	Article 19 (Obligation to Report by Employers of Aliens) of the Immigration Act
Apr 1, 2021	Ministry of Employment and Labor	Subsidiary (Samsung Electronics Service CS)	Fine	1	Article 15 (Reporting, etc. on Insured Status) of the Employment Insurance Act
Sep 29, 2021	Ministry of Employment and Labor	Subsidiary (Samsung Electronics Service)	Partial suspension of work order, fine	14	Article 16 (Supervisors) Paragraph 1, Article 41 (Measures for Preventing Health Impairments Caused by Abusive Language of Customers) Paragraph 7, Article 53 (Corrective Measures by Minister of Employment and Labor) Paragraph 3, and Article 114 (Posting of Material Safety Data Sheets and Education) Paragraph 3 of the Occupational Safety and Health Act
Nov 23, 2021	Ministry of Employment and Labor	Subsidiary (Samsung Display)	Fine	0.2	Article 46 (Implementation of Process-Safety Reports) Paragraph 1 of the Occupational Safety And Health Act
Oct 13, 2022	City of Gwangju	SEC (Gwangju site)	Fine	3.2	Article 39 Paragraph 1 of the Clean Air Conservation Act
Dec 14, 2022	Ministry of Environment	SEC (Overall domestic operations)	Fine	2.0	Article 17 Paragraph 2 of the Act on the Allocation and Trading of Greenhouse-gas Emission Permits
Dec 22, 2022	Ministry of Environment	SEC (Gwangju site)	Fine	1.6	Article 31 Paragraph 1 Subparagraph 4 of the Clean Air Conservation

Date	Agency	Subject	Punishment or measure	Amount of monetary sanction	Reasons and relevant laws
Dec 23, 2022	Ministry of Employment and Labor	SEC (Gwangju site)	Fine	0.08	Article 37 Paragraph 1 of the Occupational Safety And Health Act
Jan 16, 2023	Ministry of Employment and Labor	SEC (Gwangju site)	Fine	0.16	Article 37 Paragraph 1, Article 115 Paragraph 2 of the Occupational Safety And Health Act

Pursuant to the results of the 2nd process safety management (PSM) inspection on the Pyeongtaek site (P1-2) by the Ministry of Employment and Labor over September 10 through September 13, 2018, the Company was ordered to pay a fine of KRW 10 million for violating Article 48 (Submission, etc. of Plans for Prevention of Harm and Dangers) Paragraph 1 of the former Occupational Safety and Health Act on January 3, 2019 and has subsequently paid the fine.

Pursuant to results of monitoring the implementation of a PSM system on the Onyang site by the Ministry of Employment and Labor on February 19, 2020, the Company was ordered to pay a fine of KRW 0.2 million for violating Article 46 (Implementation of Process-Safety Reports) Paragraph 1, etc., of the Occupational Safety and Health Act on February 25, 2020 and has subsequently paid the fine.

Pursuant to results of monitoring the implementation of a PSM system on the Cheonan site by the Ministry of Employment and Labor from May 26–28, 2020, the Company was ordered to pay a fine of KRW 0.9 million for violating Article 46 (Implementation of Process-Safety Reports) Paragraph 1, etc., of the Occupational Safety and Health Act on June 29, 2020 and has subsequently paid the fine.

Pursuant to results of monitoring the implementation of a PSM system on the Pyeongtaek site by the Ministry of Employment and Labor from November 16–18, 2020, the Company was ordered to pay a fine of KRW 2.1 million for violating Article 46 (Implementation of Process-Safety Reports) Paragraph 1, etc., of the Occupational Safety and Health Act on November 26, 2020 and has subsequently paid the fine.

Pursuant to results of monitoring the implementation of a PSM system on the Giheung·Hwaseong site by the Ministry of Employment and Labor from December 7–11, 2020, the Company was ordered to pay a fine of KRW 0.9 million for violating Article 46 (Implementation of Process-Safety Reports) Paragraph 1, etc. of the Occupational Safety and Health Act on December 14, 2020 and has subsequently paid the fine.

Pursuant to the regular assessment of the implementation of a PSM system at the Onyang site by the Ministry of Employment and Labor from February 21–23, 2022, the rating went up by one stage, but the Company was ordered to pay a fine of KRW 0.6 million for violating Article 46 (Implementation of Process-Safety Reports) Paragraph 1 of the Occupational Safety and Health Act on April 21, 2022 and has subsequently paid the fine.

The Company took measures regarding the violations above and submitted a report on improvements to the Ministry of Employment and Labor. We also established a PSM Innovation Organization and a PSM Management System which manages activities related to approval, design, 12 key tasks, expertise improvement, etc. We also foster development of on-site process safety experts and conduct voluntary process safety evaluation.

On March 2, 2021, Yeongsangang River Basin Environmental Office of Ministry of Environment, based on its air pollutant measurement, cancelled the Green Enterprise designation on our Gwangju site in pursuant to Article 16-3 (Cancellation of Designation of Green Enterprise) Paragraph 1 Subparagraph 1 of the Environmental Technology and Industry Support Act.

To enhance the credibility of the measurement, the Company is conducting regular cross measurement, etc.

On August 10, 2021, the Suwon Immigration Office ordered the Company to pay a fine of KRW 100,000 for violating the obligation to report changes to the employment status of non-Korean employees under Article 19 (Obligation to Report by Employers of Aliens) Paragraph 1 of the Immigration Act and the Company has subsequently paid the fine.

To strengthen compliance of the deadline for reporting changes in employment of non-Korean employees no longer employed by the Company, the Company has improved the exit process.

On July 7, 2022, the Gwangju District Court ruled that two employees of the Company had violated Article 18, etc., of the Environmental Testing and Inspection Act, and on October 13, 2022, the City of Gwangju levied a fine of KRW 3.2 million for violating Article 39 (Self-Measurement) Paragraph 1 of the Clean Air Conservation Act concerning the record of the results of self-measurement of air pollutants, and the Company subsequently paid the fine.

To enhance credibility of measurements, the Company conducts regular cross measurements, etc.

Pursuant to the results of the inspection of the air pollution prevention facilities on the Gwangju site by the Ministry of Environment on November 28–29, 2022, the Company was ordered to pay a fine of KRW 1.6 million for violating Article 31 (Operation of Emission Facilities and Prevention Facilities) Paragraph 1 of the Clean Air Conservation Act on December 22, 2022, and it has subsequently paid the fine.

To prevent the recurrence and strengthen compliance, the Company has strengthened inspection of the air pollution prevention facilities.

On December 14, 2022, the Ministry of Environment ordered the Company to pay a fine of KRW 2 million for violating Article 17 (Revocation of Allocation of Emission Permits) Paragraph 2 of the Act on the Allocation and Trading of Greenhouse-gas Emission Permits, and the Company has subsequently paid the fine. To prevent the recurrence and strengthen compliance, the Company has strengthened management of greenhouse-gas emitting facilities.

Pursuant to the results of the inspection of the Occupational Safety and Health Management on the Gwangju site by the Ministry of Employment and Labor on December 19–21, 2022, the Company was ordered to pay a fine of KRW 80 thousand for violating Article 37 (Installation and Affixing of Safety and Health Signs) Paragraph 1 of the Occupational Safety and Health Act on December 23, 2022, and it has subsequently paid the fine. Also, pursuant to the results of the inspection of the Occupational Safety and Health Management on the Gwangju site by the Ministry of Employment and Labor on January 9–11, 2023, the Company was ordered to pay a fine of KRW 160,000 for violating Article 115 (Warnings on Containers of Substances Subject to Material Safety Data Preparation) Paragraph 1 and Article 37 (Installation and Affixing of Safety and Health Signs) Paragraph 1 of the Occupational Safety and Health Act on January 16, 2023, and it has subsequently paid the fine. To prevent the recurrence and strengthen compliance, the Company has strengthened monitoring of the installation and affixing of safety signs.

On April 1, 2021, Samsung Electronics Service CS was ordered by the Jungbu Regional Employment and Labor Office of Ministry of Employment and Labor to pay a fine of KRW 1 million for the delayed report of the attainment of the employment insurance, violating Article 15 (Reporting, etc. on Insured Status) of the Employment Insurance Act, and the Company has subsequently paid the fine.

To prevent reoccurrences and strengthen compliance, Samsung Electronics Service CS is monitoring the revision of the Employment Insurance Act periodically and providing education for managers.

Regarding an electrocution accident of a worker who was repairing a washing machine on September 28, 2021, the Southern Seoul District Office of the Seoul Regional Employment and Labor Office of the Ministry of Employment and Labor ordered Samsung Electronics Service on September 29, 2021 to partially suspend work in pursuant to Article 53 (Corrective Measures by Minister of Employment and Labor) of the Occupational Safety and Health Act.

In response, Samsung Electronics Service submitted plans to improve safety and health measures for all of its domestic worksites, and the order of partial suspension was withdrawn on November 10, 2021.

Moreover, on November 15, 2021, Samsung Electronics Service was ordered to pay fines of KRW 14 million in total for violating Article 16 (Supervisors) Paragraph 1, Article 41 (Measures for Preventing Health Impairments Caused by Abusive Language of Customers) Paragraph 7, and Article 114 (Posting of Material Safety Data Sheets and Education) Paragraph 3 of the Occupational Safety and Health Act, and on December 28, 2021, it has subsequently paid the fine.

Pursuant to results of monitoring the implementation of a PSM system at the Giheung site by the Ministry of Employment and Labor from November 15–16, 2021, Samsung Display was ordered to pay a fine of KRW 0.16 million for violating Article 46 (Implementation of Process-Safety Reports) Paragraph 1, etc., of the Occupational Safety and Health Act on November 23, 2021 and has subsequently paid the fine.

C. Sanctions from Korea Exchange

- N/A

D. Return of short-swing profits

- N/A

4. Subsequent events and other matters

A. Subsequent events

- N/A

B. External contributions

Contribution	Amount	Details	Date of Board approval
Contribution to Samsung Dream Scholarship Foundation	KRW 1.12 billion	<ul style="list-style-type: none"> The contribution was made to support education of low-income high school students. 	Jan 30, 2020
Management plans for Social Contribution Fund for 2020	KRW 11.89 billion	<ul style="list-style-type: none"> The Social Contribution Fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 11.89 billion in matching funds for 2020. The contribution was made to support adolescent education. 	Feb 21, 2020
Donation to Chung-nam Samsung Institute	KRW 2.576 billion	<ul style="list-style-type: none"> The contribution was made to improve education of the region. 	
Donation to support emergency relief related to COVID-19	KRW 23.0 billion	<ul style="list-style-type: none"> The contribution was made to support emergency relief measures for persons and communities impacted by COVID-19. 	Feb 26, 2020
Donation to Samsung Welfare Foundation, etc.	KRW 51.8 billion	<ul style="list-style-type: none"> The contribution was made to support Dream Class, a program to support learning for underprivileged middle school students (Samsung Welfare Foundation, KRW 10.6 billion) The contribution was made to improve facilities and research infrastructure at Samsung Medical Center and support research for MERS vaccine development (Samsung Life Public Welfare Foundation, KRW 26.5 billion) The contribution was made for the Ho-Am Prize (Ho-Am Foundation) The contribution was made to provide funds for legal expenses for faculty members and Samsung scholarships for students (Sungkyunkwan University, KRW 14.7 billion) 	Apr 29, 2020
Performance incentive to suppliers of the DS division	Approximately KRW 62.0 billion	<ul style="list-style-type: none"> The incentive was provided to prevent safety incidents at sites, enhance productivity, and promote co-growth with suppliers For the first and secondary suppliers of the DS division stationed at the sites 	
Donation to Ho-Am Foundation	KRW 4.1 billion	<ul style="list-style-type: none"> The contribution was made to help award those with significant contributions in the field of academia, art, and human welfare 	May 27, 2020
Donation to Heemang 2021 Nanum Campaign	KRW 33.8 billion	<ul style="list-style-type: none"> The contribution was made to Community Chest of Korea to fulfill corporate social responsibilities and help the marginalized. 	Nov 30, 2020
Contribution to the United Nations Development Programme (Samsung Global Goals)	USD 1,421,154 (approximately KRW 1.57 billion)	<ul style="list-style-type: none"> The contribution was made to the UNDP (United Nations Development Programme) for relief activities in different countries. 	
Management plans for Social Contribution Fund	KRW 11.61 billion	<ul style="list-style-type: none"> The Fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 11.61 billion in matching funds in 2021. 	Feb 16, 2021

Contribution	Amount	Details	Date of Board approval
for 2021		<ul style="list-style-type: none"> The contribution will be used for educating adolescents and vulnerable population. 	
Donation to Chung-nam Samsung Institute	KRW 2.446 billion	<ul style="list-style-type: none"> The contribution was made to improve education of the region. 	
Donation to Samsung Welfare Foundation, etc.	KRW 60.1 billion	<ul style="list-style-type: none"> The contribution was made to support Dream Class, a program to support learning for underprivileged middle school students (Samsung Welfare Foundation, KRW 11.5 billion) The contribution was made to support facilities and research infrastructure at Samsung Medical Center and support the operation of emergency helicopters (Samsung Life Public Welfare Foundation, KRW 29.9 billion) The contribution was made to provide funds for legal expenses for faculty members and Samsung scholarships for students (Sungkyunkwan University, KRW 15 billion) The contribution was made to help award those with significant contributions in the field of academia, art, and human welfare (Ho-Am Foundation, KRW 3.7 billion) 	Apr 29, 2021
Performance incentive to suppliers of the DS division	Approximately KRW 63.2 billion	<ul style="list-style-type: none"> The incentive was provided to prevent safety incidents at sites, enhance productivity, and promote co-growth with suppliers For the first and secondary suppliers of the DS division stationed at the sites 	

Contribution	Amount	Details	Date of Board approval
Sponsoring the WorldSkills Competition	EUR 1.5 million (approximately KRW 2.09 billion)	<ul style="list-style-type: none"> The contribution was made to support WorldSkills International and WorldSkills Shanghai 2020. 	Oct 28, 2021
Contribution to Joint Investment Technology Development Agreement Fund	KRW 15 billion	<ul style="list-style-type: none"> Participated in Joint Investment Technology Development Agreement Fund supervised by the Ministry of SMEs and Startups. The contribution was made to establish an agreement fund with the Ministry of SMEs and Startups, which will be allocated to chosen SMEs based on evaluations of tasks related to robotics, AI, biohealth, system semiconductors, and domestic production of materials, parts, and equipment. 	
Donation to Heemang 2022 Nanum Campaign	KRW 25.6 billion	<ul style="list-style-type: none"> The contribution was made to Community Chest of Korea to fulfill corporate social responsibilities and help the marginalized. 	Nov 30, 2021
Contribution to the United Nations Development Programme (Samsung Global Goals)	USD 2,689,094 (approximately KRW 3.20 billion)	<ul style="list-style-type: none"> The contribution was made to the UNDP (United Nations Development Programme) for relief activities in different countries. 	
Management plans for Social Contribution Fund for 2022	KRW 11.75 billion	<ul style="list-style-type: none"> The Fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 11.75 billion in matching funds in 2022. The contribution will be used for educating adolescents and vulnerable population. 	Feb 15, 2022
Donation to Chung-nam Samsung Institute	KRW 2.324 billion	<ul style="list-style-type: none"> The contribution was made to improve education of the region. 	
Donation to Samsung Welfare Foundation, etc.	KRW 46.8 billion	<ul style="list-style-type: none"> The contribution was made to support Dream Class, a program to support learning for underprivileged middle school students (Samsung Welfare Foundation, KRW 4.4 billion) The contribution was made to support the construction expenses for the renovation of Samsung Medical Center (Samsung Life Public Welfare Foundation, KRW 23.2 billion) The contribution was made to provide funds for legal expenses for faculty members and Samsung scholarships for students (Sungkyunkwan University, KRW 15 billion) The contribution was made to help award those with significant contributions in the field of academia, art, and human welfare (Ho-Am Foundation, KRW 4.2 billion) 	Apr 28, 2022
Performance incentive to suppliers of the DS division	Approximately KRW 74.0 billion	<ul style="list-style-type: none"> The incentive was provided to prevent safety incidents at sites, enhance productivity, and promote co-growth with suppliers For the first and secondary suppliers of the DS division stationed at the sites 	
Donation to the Inter-University Semiconductor Research Center of Seoul National University to help cover operating costs	KRW 5 billion	<ul style="list-style-type: none"> Support of operating costs for education infrastructure and employment of research talents for the Inter-University Semiconductor Research Center of Seoul National University 	Jul 28, 2022
Contribution for support related to the tragedy in Itaewon and to strengthen the public safety system	KRW 4 billion	<ul style="list-style-type: none"> The contribution of KRW 4 billion in cash was made to Hope Bridge Korea Disaster Relief Association to offer assistance related to the tragedy in Itaewon and strengthen the public safety system. 	Nov 3, 2022 Board resolution
Donation to Heemang 2023 Nanum Campaign	KRW 18.37 billion	<ul style="list-style-type: none"> The contribution was made to Community Chest of Korea to fulfill corporate social responsibilities and help the marginalized. 	Nov 30, 2022 Board resolution
Contribution to the United Nations Development Programme (Samsung Global Goals)	USD 7,188,329 (approximately KRW 9.57 billion)	<ul style="list-style-type: none"> The contribution was made to the UNDP (United Nations Development Programme) for relief activities in different countries. 	
Sponsorship of the Worldskills Competition	EUR 1.65 million (approximately KRW 2.25 billion)	<ul style="list-style-type: none"> Sponsorship supporting the 47th WorldSkills Competition that will take place in Lyon, France, and WorldSkills International 	

Contribution	Amount	Details	Date of Board approval
Management plans for Social Contribution Fund for 2023	KRW 12.34 billion	<ul style="list-style-type: none"> The fund consists of voluntary contributions of employees and matching funds raised by SEC. SEC plans to contribute KRW 12.34 billion in matching funds in 2023 The contribution will be used for educating adolescents and vulnerable members of the population 	Feb 14, 2023 Board resolution
Donation to Chung-nam Samsung Institute	KRW 2.378 billion	<ul style="list-style-type: none"> The contribution was made to improve education of the region 	
Promotion of supporting a smart factory project	KRW 22.4 billion	<ul style="list-style-type: none"> The contribution was made to enhance domestic manufacturing competitiveness and promote balanced development of regions by supporting a smart factory project 	April 27, 2023 Board resolution
Incentives for Excellent Partners in the DS Division	KRW 80.1 billion	<ul style="list-style-type: none"> The incentive was provided to prevent safety incidents at sites, enhance productivity, and promote co-growth with suppliers Incentive targets first and secondary suppliers of the DS division stationed at the sites 	

External contributions are based on a resolution of the Board.

C. Green management

The Company is actively securing “Designation of Green Enterprise” and “Green Technology Certifications” to follow the Low Carbon Green Growth policy of the Korean government. In particular, greenhouse gas emission and energy consumption generated at our operations are reported to the government, required by relevant law. Also, relevant information are provided transparently to stakeholders through the Sustainability Report, etc.

(Designation of Green Enterprise)

The Company strives to fulfill its responsibility as an eco-friendly enterprise by reducing pollutants, conserving resources and energy, establishing/utilizing a green management system, etc. As of June 30, 2023 (on a separate basis), our business sites in Suwon, Gumi, Giheung, Hwaseong, Pyeongtaek, and Onyang have been designated as green enterprises in accordance with Article 16-2 (Designation, etc., of Green Enterprise) of the Environmental Technology and Industry Support Act. In March 2021, the Green Enterprise designation was cancelled for Gwangju site pursuant to Article 16-3 (Cancellation of Designation of Green Enterprise) Paragraph 1 Subparagraph 1 of the Environmental Technology and Industry Support Act.

(Green Technology Certification)

The Company is acquiring Green Technology Certifications in accordance with Article 32 (Standardization and Certification and Green Technology Green Industries) Paragraph 2 of the Framework Act on Low Carbon Green Growth. By concentrating on developing and expanding supply of eco-friendly products with the announcement of our new environmental strategy, which strives to achieve carbon neutrality target by 2050 in a way that respects people and nature, the Company has secured 7 valid Green Technology Certifications (as of June 30, 2023) since the certification system was introduced in 2010. In addition, the Company has acquired ‘Green Technology’ product certificates for 183 models of commercialized products.

Certified Green Technologies as of June 30, 2023, are as follows:

Division	Certified Green Technologies	No.
DX	Technology to reduce stand-by power use by laptops using high-efficiency power conversion technology; enhance energy efficiency of dryers using high-efficiency heat pump and heat exchanger; and reduce stand-by power use by monitors etc.	7

Separate basis.

(Greenhouse gas emission and energy consumption management)

The Company is a “controlled entity” according to Article 42 (Coping with Climate Change and Management of Targets for Energy) Paragraph 6 of the Framework Act on Low Carbon, Green Growth. Thus, the Company has been reporting the amount of greenhouse gas emission and energy consumption, verified by a third-party, to the authorities and disclosing it to stakeholders according to Article 44 (Reporting on Quantity of Greenhouse Gases Emitted and Quantity of Energy Consumed) of the same Act since May 2011.

The reported amount of greenhouse gas emission and energy use on a separate basis are provided below:

(Unit: tCO₂-eq, TJ)

	2022	2021	2020
Greenhouse gas (tCO ₂ -eq)	14,929,733	14,515,620	12,534,930
Energy (TJ)	222,876	200,942	177,156

Separate basis.

Domestic manufacturing facilities, office buildings, buildings owned by the Company, leased buildings, etc.

Reported Greenhouse gas emission excludes ozone depletion substances (ODS).

Amounts may differ based on the result of governmental evaluations on emissions.

From 2015, in accordance with Article 8 (Designation of Business Entities Eligible for Allocation) of the Act on the Allocation and Trading of Greenhouse-Gas Emission Permits, the Company is an eligible business entity under the Act.

XII. Appendix

1. Subsidiaries subject to consolidated financial statements (detailed)

As of June 30, 2023, Samsung Electronics' consolidated subsidiaries numbered 233 with the addition of 4 subsidiaries and reduction of 3 subsidiary when compared to totals as of December 31, 2022. Below is the list of consolidated subsidiaries.

(KRW mil)

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics America, Inc. (SEA)	Jul 1978	Electronic goods sales	37,883,156	Over 50%	Y
Samsung International, Inc. (SII)	Oct 1983	Electronic goods production	1,595,348	Over 50%	Y
Samsung Mexicana S.A. de C.V (SAMEX)	Mar 1988	Electronic goods production	114,887	Over 50%	Y
Samsung Electronics Home Appliances America, LLC (SEHA)	Aug 2017	Home appliance production	1,004,065	Over 50%	Y
Samsung Research America, Inc (SRA)	Oct 1988	R&D	824,812	Over 50%	Y
SAMSUNG NEXT LLC (SNX)	Aug 2016	Subsidiary management (overseas)	190,103	Over 50%	Y
SAMSUNG NEXT FUND LLC (SNXF)	Aug 2016	Tech/emerging-tech venture firm investments	305,097	Over 50%	Y
NeuroLogica Corp.	Feb 2004	Medical device production and sales	236,677	Over 50%	Y
Samsung HVAC America, LLC	Jul 2001	Air conditioner sales	62,570	Over 50%	N
Joyent, Inc.	Mar 2005	Cloud services	190,791	Over 50%	Y
SmartThings, Inc.	Apr 2012	Smart home platform	205,450	Over 50%	Y
TeleWorld Solutions, Inc. (TWS)	May 2002	Network equipment installation and optimization	31,801	Over 50%	N
Samsung Semiconductor, Inc. (SSI)	Jul 1983	Semiconductor and display panel sales	12,199,102	Over 50%	Y
Samsung Federal, Inc. (SFI)	May 2023	R&D	-	Over 50%	N
Samsung Austin Semiconductor LLC. (SAS)	Feb 1996	Semiconductor production	9,301,017	Over 50%	Y
Samsung Oak Holdings, Inc. (SHI)	Jun 2016	Subsidiary management (overseas)	550,459	Over 50%	Y
SEMES America, Inc.	Oct 1998	Semiconductor equipment services	2,292	Over 50%	N
Emerald Intermediate, Inc.	May 2023	Subsidiary management (overseas)	-	Over 50%	N
Emerald Merger Sub, Inc.	May 2023	Subsidiary management (overseas)	-	Over 50%	N
Samsung Electronics Canada, Inc. (SECA)	Jul 1980	Electronic goods sales	1,652,195	Over 50%	Y
AdGear Technologies Inc.	Aug 2010	Digital advertising platform	125,162	Over 50%	Y
Samsung Eletronica da Amazonia Ltda. (SEDA)	Jan 1995	Electronic goods production and sales	4,600,508	Over 50%	Y
Samsung Electronics Mexico S.A. De C.V. (SEM)	Jul 1995	Electronic goods sales	1,816,895	Over 50%	Y
Samsung Electronics Digital Appliance Mexico, SA de CV (SEDAM)	Dec 2012	Home appliance production	1,257,964	Over 50%	Y
Samsung Electronics Latinoamerica (Zona Libre), S. A. (SELA)	Apr 1989	Electronic goods sales	1,234,491	Over 50%	Y
Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	May 1995	Electronic goods sales	395,124	Over 50%	Y
Samsung Electronica Colombia S.A. (SAMCOL)	Mar 1997	Electronic goods sales	487,904	Over 50%	Y
Samsung Electronics Argentina S.A. (SEASA)	Jun 1996	Marketing and services	102,325	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics Chile Limitada (SECH)	Dec 2002	Electronic goods sales	646,185	Over 50%	Y
Samsung Electronics Peru S.A.C. (SEPR)	Apr 2010	Electronic goods sales	357,460	Over 50%	Y
Samsung Electronics Venezuela, C.A. (SEVEN)	May 2010	Marketing and services	37	Over 50%	N
Samsung Electronics Panama, S.A. (SEPA)	Jul 2012	Consulting	5,636	Over 50%	N
Harman International Industries, Inc.	Jan 1980	Subsidiary management (overseas)	15,627,849	Over 50%	Y
Harman Becker Automotive Systems, Inc.	Jun 1981	Audio product production, sales, and R&D	2,930,229	Over 50%	Y
Harman Connected Services, Inc.	Feb 2002	Connected Service Provider	2,249,385	Over 50%	Y
Harman Connected Services Engineering Corp.	Sep 2004	Connected Service Provider	2,980	Over 50%	N
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Jul 2005	Audio product production and sales	134,845	Over 50%	Y
Harman de Mexico, S. de R.L. de C.V.	Feb 1997	Audio product production	180,271	Over 50%	Y
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Nov 1958	Audio product sales and R&D	273,861	Over 50%	Y
Harman Financial Group LLC	Jun 2004	Management Company	755	Over 50%	N
Harman International Industries Canada Ltd.	May 2005	Audio product sales	313	Over 50%	N
Harman International Mexico, S. de R.L. de C.V.	Dec 2014	Audio product sales	31,954	Over 50%	N
Harman KG Holding, LLC	Mar 2009	Subsidiary management (overseas)	-	Over 50%	N
Harman Professional, Inc.	Jul 2006	Audio product sales and R&D	892,007	Over 50%	Y
Beijing Integrated Circuit Industry International Fund, L.P	Dec 2014	Venture firm investments	13,443	Over 50%	N
China Materialia New Materials 2016 Limited Partnership	Sep 2017	Venture firm investments	8,089	Over 50%	N
Samsung Electronics (UK) Ltd. (SEUK)	Jul 1995	Electronic goods sales	2,819,792	Over 50%	Y
Samsung Electronics Ltd. (SEL)	Jan 1999	Subsidiary management (overseas)	6,711	Over 50%	N
Samsung Semiconductor Europe Limited (SSEL)	Apr 1997	Semiconductor and display panel sales	102,683	Over 50%	Y
Samsung Electronics GmbH (SEG)	Dec 1984	Electronic goods sales	1,968,273	Over 50%	Y
Samsung Electronics Holding GmbH (SEHG)	Feb 1982	Subsidiary management (overseas)	651,158	Over 50%	Y
Samsung Semiconductor Europe GmbH (SSEG)	Dec 1987	Semiconductor and display panel sales	816,633	Over 50%	Y
Samsung Electronics France S.A.S (SEF)	Jan 1988	Electronic goods sales	1,053,910	Over 50%	Y
Samsung Electronics Italia S.P.A. (SEI)	Apr 1991	Electronic goods sales	959,801	Over 50%	Y
Samsung Electronics Iberia, S.A. (SESA)	Jan 1989	Electronic goods sales	1,098,852	Over 50%	Y
Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP)	Sep 1982	Electronic goods sales	273,915	Over 50%	Y
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	Oct 1989	Electronic goods production and sales	2,374,317	Over 50%	Y
Samsung Electronics Europe Logistics B.V. (SELS)	May 1991	Logistics	2,194,975	Over 50%	Y
Samsung Electronics Benelux B.V. (SEBN)	Jul 1995	Electronic goods sales	2,377,730	Over 50%	Y
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	Oct 2008	Subsidiary management (overseas)	10,841,515	Over 50%	Y
Samsung Electronics Nordic Aktiebolag (SENA)	Mar 1992	Electronic goods sales	697,034	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics Slovakia s.r.o (SESK)	Jun 2002	TV and monitor production	1,585,901	Over 50%	Y
Samsung Display Slovakia, s.r.o. (SDSK)	Mar 2007	Display panel processing	28,179	Over 50%	N
Samsung Electronics Polska, SP.Zo.o (SEPOL)	Apr 1996	Electronic goods sales	1,172,265	Over 50%	Y
Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	Feb 2010	Home appliance production	808,474	Over 50%	Y
Samsung Electronics Romania LLC (SEROM)	Sep 2007	Electronic goods sales	371,708	Over 50%	Y
Samsung Electronics Austria GmbH (SEAG)	Jan 2002	Electronic goods sales	574,106	Over 50%	Y
Samsung Electronics Switzerland GmbH (SESG)	May 2013	Electronic goods sales	390,327	Over 50%	Y
Samsung Electronics Czech and Slovak s.r.o. (SE CZ)	Jan 2010	Electronic goods sales	344,331	Over 50%	Y
SAMSUNG ELECTRONICS BALTICS SIA (SEB)	Oct 2001	Electronic goods sales	146,994	Over 50%	Y
Samsung Electronics Greece S.M.S.A (SEGR)	Apr 2010	Electronic goods sales	129,431	Over 50%	Y
Samsung Electronics Air Conditioner Europe B.V. (SEACE)	Apr 2017	Air conditioner sales	286,316	Over 50%	Y
Samsung Nanoradio Design Center (SNDC)	Feb 2004	R&D	26,918	Over 50%	N
Samsung Denmark Research Center ApS (SDRC)	Sep 2012	R&D	24,563	Over 50%	N
Samsung Cambridge Solution Centre Limited (SCSC)	Sep 2012	R&D	170,489	Over 50%	Y
Samsung Zhilabs, S.L.	Nov 2008	Network solution R&D and sales	9,812	Over 50%	N
FOODIENT LTD.	Mar 2012	R&D	2,349	Over 50%	N
Samsung Electronics Rus Company LLC (SERC)	Oct 2006	Electronic goods sales	876,346	Over 50%	Y
Samsung Electronics Rus Kaluga LLC (SERK)	Jul 2007	TV production	1,149,970	Over 50%	Y
Samsung Electronics Ukraine Company LLC (SEUC)	Sep 2008	Electronic goods sales	244,279	Over 50%	Y
Samsung R&D Institute Ukraine (SRUKR)	Feb 2022	R&D	8,119	Over 50%	N
Samsung Electronics Central Eurasia LLP (SECE)	Sep 2008	Electronic goods sales	606,726	Over 50%	Y
Samsung Electronics Overseas B.V. (SEO)	Jan 1997	Electronic goods sales	1,960	Over 50%	N
Samsung R&D Institute Rus LLC (SRR)	Nov 2011	R&D	52,581	Over 50%	N
Samsung Electronics Caucasus Co. Ltd (SECC)	Oct 2014	Marketing	2,500	Over 50%	N
Samsung Electronics Uzbekistan Ltd. (SEUZ)	Mar 2022	Marketing	6,418	Over 50%	N
AKG Acoustics GmbH	Mar 1947	Audio product production and sales	350,440	Over 50%	Y
Apostera UA, LLC	Oct 2020	Connected Service Provider	631	Over 50%	N
Harman Audio Iberia Espana Sociedad Limitada	Nov 2012	Audio product sales	1,399	Over 50%	N
Harman Automotive UK Limited	Oct 2012	Audio product production	-	Over 50%	N
Harman Becker Automotive Systems GmbH	Jul 1990	Audio product production, sales, and R&D	3,962,309	Over 50%	Y
Harman Becker Automotive Systems Italy S.R.L.	Dec 2005	Audio product sales	1,047	Over 50%	N
Harman Becker Automotive Systems Manufacturing Kft	Aug 1994	Audio product R&D and production	3,291,277	Over 50%	Y
Harman Belgium SA	Apr 1967	Audio product sales	2,944	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Harman Connected Services AB.	Oct 1984	Connected Service Provider	12,527	Over 50%	N
Harman Finland Oy	Jul 1998	Connected Service Provider	-	Over 50%	N
Harman Connected Services GmbH	Dec 2005	Connected Service Provider	51,968	Over 50%	N
Harman Connected Services Poland Sp.zoo	Jun 2007	Connected Service Provider	10,015	Over 50%	N
Harman Connected Services UK Ltd.	Sep 2008	Connected Service Provider	54,603	Over 50%	N
Harman Consumer Nederland B.V.	Dec 1995	Audio product sales	489,585	Over 50%	Y
Harman Deutschland GmbH	Mar 1998	Audio product sales	13,547	Over 50%	N
Harman Finance International GP S.a.r.l	Apr 2015	Subsidiary management (overseas)	-	Over 50%	N
Harman France SNC	Nov 1995	Audio product sales	167,450	Over 50%	Y
Harman Holding GmbH & Co. KG	Jun 2002	Management Company	5,700,548	Over 50%	Y
Harman Hungary Financing Ltd.	Jun 2012	Financing Company	45,415	Over 50%	N
Harman Inc. & Co. KG	Jun 2012	Subsidiary management (overseas)	4,540,799	Over 50%	Y
Harman International Estonia OU	May 2015	R&D	232	Over 50%	N
Harman International Industries Limited	Mar 1980	Audio product sales and R&D	79,014	Over 50%	Y
Harman International Romania SRL	Feb 2015	R&D	17,145	Over 50%	N
Harman Finance International, SCA	Apr 2015	Financing Company	10,320	Over 50%	N
Harman Management GmbH	Apr 2002	Subsidiary management (overseas)	-	Over 50%	N
Harman Professional Kft	Dec 2014	Audio product R&D and production	68,463	Over 50%	N
Harman Professional Denmark ApS	Jul 1987	Audio product sales and R&D	55,117	Over 50%	N
Red Bend Software SAS	Oct 2002	Software design	7,259	Over 50%	N
Studer Professional Audio GmbH	Nov 2003	Audio product sales and R&D	4,586	Over 50%	N
Harman Connected Services OOO	Nov 1998	Connected Service Provider	37,721	Over 50%	N
Harman RUS CIS LLC	Aug 2011	Audio product sales	52,838	Over 50%	N
Samsung Gulf Electronics Co., Ltd.(SGE)	May 1995	Electronic goods sales	1,031,216	Over 50%	Y
Samsung Electronics Turkiye (SETK)	Dec 1984	Electronic goods sales	693,954	Over 50%	Y
Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Feb 2021	Electronic goods production	130,961	Over 50%	Y
Samsung Electronics Levant Co.,Ltd. (SELV)	Jul 2009	Electronic goods sales	262,165	Over 50%	Y
Samsung Electronics Maghreb Arab (SEMAG)	Nov 2009	Electronic goods sales	291,185	Over 50%	Y
Samsung Electronics Egypt S.A.E (SEEG)	Jul 2012	Electronic goods production and sales	1,055,570	Over 50%	Y
Samsung Electronics Israel Ltd. (SEIL)	Sep 2012	Marketing	16,764	Over 50%	N
Samsung Electronics Tunisia S.A.R.L (SETN)	Sep 2012	Marketing	5,294	Over 50%	N
Samsung Electronics Pakistan(Private) Ltd. (SEPAK)	Nov 2012	Marketing	3,765	Over 50%	N
Samsung Electronics Saudi Arabia Ltd. (SESAR)	Nov 2019	Electronic goods sales	469,588	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	Oct 2007	R&D	153,328	Over 50%	Y
Corephotonics Ltd.	Jan 2012	R&D	21,964	Over 50%	N
Samsung Electronics South Africa(Pty) Ltd. (SSA)	Jun 1994	Electronic goods sales	573,688	Over 50%	Y
Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	Jul 2014	TV and monitor production	81,698	Over 50%	Y
Samsung Electronics West Africa Ltd. (SEWA)	Mar 2010	Marketing	33,487	Over 50%	N
Samsung Electronics East Africa Ltd. (SEEA)	Dec 2011	Marketing	18,273	Over 50%	N
Global Symphony Technology Group Private Ltd.	Jan 2002	Subsidiary management (overseas)	61,038	Over 50%	N
Harman Connected Services Morocco	Apr 2012	Connected Service Provider	73	Over 50%	N
Harman Industries Holdings Mauritius Ltd.	Oct 2009	Subsidiary management (overseas)	93,636	Over 50%	Y
Red Bend Ltd.	Feb 1998	Audio product production	129,006	Over 50%	Y
Samsung Asia Pte. Ltd. (SAPL)	Jul 2006	Subsidiary management (overseas)	26,894,611	Over 50%	Y
Samsung Electronics Singapore Pte. Ltd. (SESP)	Oct 2020	Electronic goods sales	625,194	Over 50%	Y
Samsung Malaysia Electronics (SME) Sdn. Bhd. (SME)	May 2003	Electronic goods sales	541,255	Over 50%	Y
Samsung Electronics Display (M) Sdn. Bhd. (SDMA)	Mar 1995	Electronic goods production	24,689	Over 50%	N
Samsung Electronics (M) Sdn. Bhd. (SEMA)	Sep 1989	Home appliance production	278,943	Over 50%	Y
Samsung Vina Electronics Co., Ltd. (SAVINA)	Jan 1995	Electronic goods sales	129,160	Over 50%	Y
Samsung Electronics Vietnam Co., Ltd. (SEV)	Mar 2008	Electronic goods production	10,931,037	Over 50%	Y
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Mar 2013	Telecom product production	15,718,299	Over 50%	Y
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Feb 2015	Electronic goods production and sales	3,732,057	Over 50%	Y
Samsung Display Vietnam Co., Ltd. (SDV)	Jul 2014	Display panel production	7,471,680	Over 50%	Y
DOWOINSYS VINA COMPANY LIMITED	Jun 2022	Display panel component production	58,171	Over 50%	N
PT Samsung Electronics Indonesia (SEIN)	Aug 1991	Electronic goods production and sales	883,023	Over 50%	Y
PT Samsung Telecommunications Indonesia (STIN)	Mar 2003	Electronic goods sales and service	58,012	Over 50%	N
Thai Samsung Electronics Co., Ltd. (TSE)	Oct 1988	Electronic goods production and sales	3,263,473	Over 50%	Y
Laos Samsung Electronics Sole Co., Ltd (LSE)	Sep 2016	Marketing	1,099	Over 50%	N
Samsung Electronics Philippines Corporation (SEPCO)	Mar 1996	Electronic goods sales	353,596	Over 50%	Y
Samsung Electronics Australia Pty. Ltd. (SEAU)	Nov 1987	Electronic goods sales	593,991	Over 50%	Y
Samsung Electronics New Zealand Limited (SENZ)	Sep 2013	Electronic goods sales	178,053	Over 50%	Y
Samsung India Electronics Private Ltd. (SIEL)	Aug 1995	Electronic goods production and sales	6,772,537	Over 50%	Y
Red Brick Lane Marketing Solutions Pvt. Ltd.	Jan 2012	Marketing	2,082	Over 50%	N
Samsung Display Noida Private Limited (SDN)	Jul 2019	Display panel production	597,383	Over 50%	Y
Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	May 2005	R&D	351,226	Over 50%	Y
Samsung R&D Institute BanglaDesh Limited (SRBD)	Aug 2010	R&D	16,386	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Samsung Nepal Services Pvt, Ltd (SNSL)	Nov 2017	Service	506	Over 50%	N
Samsung Japan Corporation (SJC)	Dec 1975	Semiconductor and display panel sales	1,445,517	Over 50%	Y
Samsung R&D Institute Japan Co. Ltd. (SRJ)	Aug 1992	R&D	157,868	Over 50%	Y
Samsung Electronics Japan Co., Ltd. (SEJ)	Sep 2008	Electronic goods sales	906,235	Over 50%	Y
Harman Connected Services Corp. India Pvt. Ltd.	Apr 2002	Connected Service Provider	305,295	Over 50%	Y
Harman International (India) Private Limited	Jan 2009	Audio product sales and R&D	370,100	Over 50%	Y
Harman International Industries PTY Ltd.	Dec 2014	Subsidiary management (overseas)	-	Over 50%	N
Harman International Japan Co., Ltd.	Jun 1991	Audio product sales and R&D	77,535	Over 50%	Y
Harman Singapore Pte. Ltd.	Aug 2007	Audio product sales	14,332	Over 50%	N
Samsung (CHINA) Investment Co., Ltd. (SCIC)	Mar 1996	Electronic goods sales	13,830,988	Over 50%	Y
Samsung Electronics Hong Kong Co., Ltd. (SEHK)	Sep 1988	Electronic goods sales	1,366,841	Over 50%	Y
Samsung Electronics Taiwan Co., Ltd. (SET)	Nov 1994	Electronic goods sales	1,364,801	Over 50%	Y
Tianjin Samsung Electronics Co., Ltd. (TSEC)	Apr 1993	TV and monitor production	392,205	Over 50%	Y
Suzhou Samsung Electronics Co., Ltd. (SSEC)	Apr 1995	Home appliance production	668,331	Over 50%	Y
Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	Apr 1995	Home appliance production	504,994	Over 50%	Y
Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	Sep 2002	R&D	150,161	Over 50%	Y
Tianjin Samsung Telecom Technology Co., Ltd. (TSTC)	Mar 2001	Telecom product production	643,732	Over 50%	Y
Beijing Samsung Telecom R&D Center (SRC-Beijing)	Sep 2000	R&D	106,400	Over 50%	Y
Samsung Electronics China R&D Center (SRC-Nanjing)	May 2004	R&D	25,344	Over 50%	N
Samsung Mobile R&D Center China- Guangzhou (SRC-Guangzhou)	Jan 2010	R&D	109,198	Over 50%	Y
Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	Mar 2013	R&D	38,911	Over 50%	N
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Oct 2001	Semiconductor and display panel sales	5,067,891	Over 50%	Y
Samsung (China) Semiconductor Co., Ltd. (SCS)	Sep 2012	Semiconductor production	17,095,000	Over 50%	Y
Samsung SemiConductor Xian Co., Ltd. (SSCX)	Apr 2016	Semiconductor and display panel sales	906,967	Over 50%	Y
Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	Dec 1994	Semiconductor processing	1,494,205	Over 50%	Y
Tianjin Samsung LED Co., Ltd. (TSLED)	May 2009	LED production	509,355	Over 50%	Y
Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	Apr 2003	R&D	76,826	Over 50%	Y
Samsung Display Dongguan Co., Ltd. (SDD)	Nov 2001	Display panel production	2,135,132	Over 50%	Y
Samsung Display Tianjin Co., Ltd. (SDT)	Jun 2004	Display panel production	1,446,605	Over 50%	Y
SEMES (XIAN) Co., Ltd.	Jul 2013	Semiconductor/FPD equipment services	3,712	Over 50%	N
Samsung Semiconductor Investment L.P. I	Dec 2021	Tech/emerging-tech venture firm investments	14,754	Over 50%	N
Harman (China) Technologies Co., Ltd.	Mar 2011	Audio product production	181,150	Over 50%	Y
Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	Mar 2013	Audio product sales	9,890	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	Sep 2006	Audio product R&D and production	351,647	Over 50%	Y
Harman Commercial (Shanghai) Co., Ltd.	Oct 2010	Audio product sales	347	Over 50%	N
Harman Connected Services Solutions (Chengdu) Co., Ltd.	Aug 2007	Connected Service Provider	10,427	Over 50%	N
Harman Holding Limited	May 2007	Audio product sales	765,662	Over 50%	Y
Harman International (China) Holdings Co., Ltd.	Jun 2009	Audio product sales and R&D	589,116	Over 50%	Y
Harman Technology (Shenzhen) Co., Ltd.	Sep 2004	Audio product sales and R&D	48,247	Over 50%	N
Samsung Display	Apr 2012	Display panel production and sales	57,302,567	Over 50%	Y
SU Materials	Aug 2011	Display panel component production	36,204	Over 50%	N
STECO	Jun 1995	Semiconductor component production	133,987	Over 50%	Y
SEMES	Jan 1993	Semiconductor/FPD manufacturing equipment production and sales	2,065,558	Over 50%	Y
Samsung Electronics Service	Oct 1998	Electronics goods repair services	711,020	Over 50%	Y
Samsung Electronics Service CS	Oct 2018	Customer management services	15,593	Over 50%	N
Samsung Electronics Sales	Jul 1996	Electronic goods sales	1,393,235	Over 50%	Y
Samsung Electronics Logitech	Apr 1998	Total logistics services	415,659	Over 50%	Y
Samsung Medison	Jul 1985	Medical device production and sales	528,834	Over 50%	Y
Stellarforest	Dec 2022	Food manufacturing and processing	895	Over 50%	N
Mirero System	Jan 1994	Semiconductor software development and supply	39,440	Over 50%	N
Dowoo Insys	Mar 2010	Display panel component production	128,665	Over 50%	Y
GF Co., Ltd.	Oct 2015	Display panel component production	7,241	Over 50%	N
Harman Korea	Jan 2005	Semiconductor software development and supply	24,424	Over 50%	N
SVIC #21 Venture Capital Union	Nov 2011	Tech/emerging-tech venture firm investments	82,214	Over 50%	Y
SVIC #22 Venture Capital Union	Nov 2011	Tech/emerging-tech venture firm investments	56,370	Over 50%	N
SVIC #26 Venture Capital Union	Nov 2014	Tech/emerging-tech venture firm investments	50,614	Over 50%	N
SVIC #28 Venture Capital Union	Feb 2015	Tech/emerging-tech venture firm investments	370,503	Over 50%	Y
SVIC #29 Venture Capital Union	Apr 2015	Tech/emerging-tech venture firm investments	27,519	Over 50%	N
SVIC #32 Venture Capital Union	Aug 2016	Tech/emerging-tech venture firm investments	283,547	Over 50%	Y
SVIC #33 Venture Capital Union	Nov 2016	Tech/emerging-tech venture firm investments	334,846	Over 50%	Y
SVIC #37 Venture Capital Union	Nov 2017	Tech/emerging-tech venture firm investments	22,549	Over 50%	N
SVIC #40 Venture Capital Union	Jun 2018	Tech/emerging-tech venture firm investments	40,354	Over 50%	N
SVIC #42 Venture Capital Union	Nov 2018	Tech/emerging-tech venture firm investments	35,845	Over 50%	N
SVIC #43 Venture Capital Union	Dec 2018	Tech/emerging-tech venture firm investments	11,034	Over 50%	N
SVIC #45 Venture Capital Union	May 2019	Tech/emerging-tech venture firm investments	221,274	Over 50%	Y
SVIC #48 Venture Capital Union	Dec 2019	Tech/emerging-tech venture firm investments	75,744	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2022	Ownership	Classified as major subsidiary (Y/N)
SVIC #52 Venture Capital Union	May 2021	Tech/emerging-tech venture firm investments	46,829	Over 50%	N
SVIC #55 Venture Capital Union	Sep 2021	Tech/emerging-tech venture firm investments	136,758	Over 50%	Y
SVIC #56 Venture Capital Union	Nov 2021	Tech/emerging-tech venture firm investments	31,135	Over 50%	N
SVIC #57 Venture Capital Union	Aug 2022	Tech/emerging-tech venture firm investments	18,681	Over 50%	N
SVIC #62 Venture Capital Union	Mar 2023	Tech/emerging-tech venture firm investments	-	Over 50%	N
Private Equity Fund for Semiconductor Growth	Mar 2017	Semiconductor industry investments	69,862	Over 50%	N
Private Equity Fund for Co-existence of System Semiconductor Firms	Apr 2020	Semiconductor industry investments	79,664	Over 50%	Y

Companies with over KRW 75 billion in total assets as of December 31, 2022 are classified as major subsidiaries.

See 『II. Businesses Overview』 for detailed information about major business segments.

2. Affiliates

A. Domestic Affiliates

As of June 30, 2023, Samsung Group is consisted of 63 domestic affiliates. Among the Samsung Group's 63 domestic affiliates, seventeen (17) affiliates including Samsung Electronics are listed, and forty-six (46) affiliates are unlisted.

[As of June 30, 2023]

Listing	No. of affiliates	Name of affiliates
Listed	17	Samsung C&T; Samsung Biologics; Samsung Life Insurance; Samsung SDI; Samsung SDS; SamsungFN REIT; Samsung Engineering; Samsung Electro-mechanics; Samsung Electronics; Samsung Heavy Industries; Samsung Securities; Samsung Card; Samsung Fire & Marine Insurance; Multicampus; S1; Cheil Worldwide; Hotel Shilla
Unlisted	46	Samsung Display; Samsung Medison; Samsung Bioepis; Samsung Venture Investment Corporation; Samsung Life Service; Samsung Futures; Samsung Active Asset Management; Samsung SRA Asset Management; Samsung Welstory; Samsung Asset Management; Samsung Electronics Logitech; Samsung Electronics Service; Samsung Electronics Service CS; Samsung Electronics Sales; Samsung Card Customer Service; Samsung Corning Advanced Glass; Samsung Hedge Asset Management; Samsung Fire & Marine Insurance Service; Samsung Claim Adjustment Service; SUNGKYUNKWAN Holdings Co., Ltd.; SEMES; Suwon Samsung Bluewings FC; STECO; Shilla HM; SD Flex; SBTM; S-1CRM; SU Materials; S-Core; STM; HDC Shilla Duty Free LTD; OpenHands; Cheil Fashion Retail Co., Ltd.; Miracom; Samsung global research(SGR); Samsung Lions; Samsung Life Financial Service; Samsung Fire & Marine Insurance Financial Service; Samwoo Architects & Engineers; Seoul Lakeside CC; SECUI; CVnet Corporation; SHP Corporation; Harman International Korea; Human TSS; Stellarforest
Total	63	

B. Foreign Affiliates

[As of June 30, 2023]

Listing	No. of affiliates	Name of affiliates	Country
Unlisted	566	SAMOO AUSTIN INC	USA
		SAMOO HU Designer and Engineering Services Limited	Hungary
		SAMOO DESIGNERS & ENGINEERS INDIA PRIVATE LIMITED	India
		SAMOO (KL) SDN. BHD.	Malaysia
		SAMOO Design Consulting Co.,Ltd	China
		Samsung Green repower, LLC	USA
		Samsung Solar Construction Inc.	USA
		QSSC, S.A. de C.V.	Mexico
		Samsung Solar Energy LLC	USA
		Equipment Trading Solutions Group, LLC	USA
		SP Armow Wind Ontario LP	Canada
		SRE GRW EPC GP Inc.	Canada
		SRE GRW EPC LP	Canada
		SRE SKW EPC GP Inc.	Canada
		SRE SKW EPC LP	Canada
		SRE WIND PA GP INC.	Canada
		SRE WIND PA LP	Canada
		SRE GRS Holdings GP Inc.	Canada
		SRE GRS Holdings LP	Canada
		SRE K2 EPC GP Inc.	Canada
		SRE K2 EPC LP	Canada
		SRE KS HOLDINGS GP INC.	Canada
		SRE KS HOLDINGS LP	Canada
		SP Belle River Wind LP	Canada
		SRE Armow EPC GP Inc.	Canada
		SRE Armow EPC LP	Canada
		North Kent Wind 1 LP	Canada
		SRE Wind GP Holding Inc.	Canada
		South Kent Wind LP Inc.	Canada
		Grand Renewable Wind LP Inc.	Canada
		SRE North Kent 2 LP Holdings LP	Canada
		SRE Solar Development GP Inc.	Canada
		SRE Solar Development LP	Canada
		SRE Windsor Holdings GP Inc.	Canada
		SRE Southgate Holdings GP Inc.	Canada
		SRE Solar Construction Management GP Inc.	Canada
		SRE Solar Construction Management LP	Canada
		SRE BRW EPC GP INC.	Canada
		SRE BRW EPC LP	Canada
		SRE North Kent 1 GP Holdings Inc	Canada
SRE North Kent 2 GP Holdings Inc	Canada		

Listing	No. of affiliates	Name of affiliates	Country
		SRE Belle River GP Holdings Inc	Canada
		SRE NK1 EPC GP Inc	Canada
		SRE NK1 EPC LP	Canada
		SRE Summerside Construction GP Inc.	Canada
		SRE Summerside Construction LP	Canada
		Monument Power, LLC	USA
		PLL Holdings LLC	USA
		PLL E&P LLC	USA
		Parallel Petroleum LLC	USA
		Grand Renewable Solar GP Inc.	Canada
		KINGSTON SOLAR GP INC.	Canada
		SP Armow Wind Ontario GP Inc	Canada
		South Kent Wind GP Inc.	Canada
		Grand Renewable Wind GP Inc.	Canada
		North Kent Wind 1 GP Inc	Canada
		SP Belle River Wind GP Inc	Canada
		Samsung Solar Energy 1 LLC	USA
		Samsung Solar Energy 2 LLC	USA
		Samsung Solar Energy 3, LLC	USA
		CS SOLAR LLC	USA
		5S ENERGY HOLDINGS, LLC	USA
		SungEel Recycling Park Thuringen GmbH	Germany
		POSS-SLPC, S.R.O	Slovakia
		Solluce Romania 1 B.V.	Romania
		S.C. Otelinox S.A	Romania
		WARIS GIGIH ENGINEERING AND TECHNOLOGY SDN. BHD.	Malaysia
		Samsung Chemtech Vina LLC	Vietnam
		Samsung C&T Thailand Co., Ltd	Thailand
		Malaysia Samsung Steel Center Sdn.Bhd	Malaysia
		S&G Biofuel PTE.LTD	Singapore
		PT. Gandaerah Hendana	Indonesia
		PT. Inecda	Indonesia
		VISTA CONTRACTING AND DEVELOPMENT BANGLADESH LTD.	Bangladesh
		WELVISTA COMPANY LIMITED	Vietnam
		SAMSUNG CONST. CO. PHILS.	Philippines
		SAMSUNG TRADING (SHANGHAI) CO., LTD	China
		Samsung Precision Stainless Steel(pinghu) Co.,Ltd.	China
		Samsung Japan Corporation	Japan
		Samsung R&D Institute Japan Co. Ltd.	Japan
		Samsung Electronics America, Inc.	USA
		Samsung Electronics Canada, Inc.	Canada
		Samsung Electronics Mexico S.A. De C.V.	Mexico
		Samsung Electronics Ltd.	United Kingdom
		Samsung Electronics (UK) Ltd.	United Kingdom
		Samsung Electronics Holding GmbH	Germany

Listing	No. of affiliates	Name of affiliates	Country
		Samsung Electronics Iberia, S.A.	Spain
		Samsung Electronics France S.A.S	France
		Samsung Electronics Hungarian Private Co. Ltd.	Hungary
		Samsung Electronics Italia S.P.A.	Italy
		Samsung Electronics Europe Logistics B.V.	Netherlands
		Samsung Electronics Benelux B.V.	Netherlands
		Samsung Electronics Overseas B.V.	Netherlands
		Samsung Electronics Polska, SP.Zo.o	Poland
		Samsung Electronics Portuguesa, Unipessoal, Lda.	Portugal
		Samsung Electronics Nordic Aktiebolag	Sweden
		Samsung Electronics Austria GmbH	Austria
		Samsung Electronics Slovakia s.r.o	Slovakia
		Samsung Electronics Europe Holding Cooperatief U.A.	Netherlands
		Samsung Electronics Display (M) Sdn. Bhd.	Malaysia
		Samsung Electronics (M) Sdn. Bhd.	Malaysia
		Samsung Vina Electronics Co., Ltd.	Vietnam
		Samsung Asia Pte. Ltd.	Singapore
		Samsung India Electronics Private Ltd.	India
		Samsung R&D Institute India-Bangalore Private Limited	India
		Samsung Electronics Australia Pty. Ltd.	Australia
		PT Samsung Electronics Indonesia	Indonesia
		Thai Samsung Electronics Co., Ltd.	Thailand
		Samsung Malaysia Electronics (SME) Sdn. Bhd.	Malaysia
		Samsung Electronics Hong Kong Co., Ltd.	Hong Kong
		Suzhou Samsung Electronics Co., Ltd.	China
		Samsung (CHINA) Investment Co., Ltd.	China
		Samsung Electronics Suzhou Semiconductor Co., Ltd.	China
		Tianjin Samsung Electronics Co., Ltd.	China
		Samsung Electronics Taiwan Co., Ltd.	Taiwan
		Tianjin Samsung Telecom Technology Co., Ltd.	China
		Shanghai Samsung Semiconductor Co., Ltd.	China
		Samsung Electronics Suzhou Computer Co., Ltd.	China
		Samsung Semiconductor (China) R&D Co., Ltd.	China
		Samsung (China) Semiconductor Co., Ltd.	China
		Samsung SemiConductor Xian Co., Ltd.	China
		Samsung Gulf Electronics Co., Ltd.	Utd.Arab Emir.
		Samsung Electronics Egypt S.A.E	Egypt
		Samsung Electronics South Africa(Pty) Ltd.	South Africa
		Samsung Electronics Latinoamerica(Zona Libre), S. A.	Panama
		Samsung Eletronica da Amazonia Ltda.	Brazil
		Samsung Electronics Argentina S.A.	Argentina
		Samsung Electronics Chile Limitada	Chile
		Samsung Electronics Rus Company LLC	Russian Fed.
		Samsung Electronics Rus Kaluga LLC	Russian Fed.
		Tianjin Samsung LED Co., Ltd.	China

Listing	No. of affiliates	Name of affiliates	Country
		Samsung Biologics America, Inc.	USA
		Samsung Bioepis United States Inc.	USA
		SAMSUNG BIOEPIS UK LIMITED	United Kingdom
		Samsung Bioepis NL B.V.	Netherlands
		Samsung Bioepis CH GmbH	Switzerland
		Samsung Bioepis PL Sp z o.o.	Poland
		SAMSUNG BIOEPIS AU PTY LTD	Australia
		SAMSUNG BIOEPIS NZ LIMITED	New Zealand
		Samsung Biopis TW Limited	Taiwan
		Samsung Bioepis HK Limited	Hong Kong
		SAMSUNG BIOEPIS IL LTD	Israel
		SAMSUNG BIOEPIS BR PHARMACEUTICAL LTDA	Brazil
		Intellectual Keystone Technology LLC	USA
		Emerald	USA
		Samsung Display Slovakia, s.r.o., v likvidácii	Slovakia
		Samsung Display Vietnam Co., Ltd.	Vietnam
		Samsung Display Noida Private Limited	India
		Samsung Display Dongguan Co., Ltd.	China
		Samsung Display Tianjin Co., Ltd.	China
		Novald GmbH	Germany
		SEMES America, Inc.	USA
		SEMES (XIAN) Co., Ltd.	China
		NeuroLogica Corp.	USA
		Samsung HVAC America, LLC	USA
		SmartThings, Inc.	USA
		Samsung Oak Holdings, Inc.	USA
		Joyent, Inc.	USA
		TeleWorld Solutions, Inc.	USA
		Samsung Semiconductor, Inc.	USA
		Samsung Research America, Inc	USA
		Samsung Electronics Home Appliances America, LLC	USA
		Samsung International, Inc.	USA
		Harman International Industries, Inc.	USA
		Samsung Federal, Inc.	USA
		Samsung Austin Semiconductor LLC.	USA
		AdGear Technologies Inc.	Canada
		SAMSUNG NEXT LLC	USA
		SAMSUNG NEXT FUND LLC	USA
		Samsung Mexicana S.A. de C.V	Mexico
		Samsung Electronics Digital Appliance Mexico, SA de CV	Mexico
		Emerald Merger Sub, Inc.	USA
		Harman International Japan Co., Ltd.	Japan
		Harman International Industries Canada Ltd.	Canada
		Harman Becker Automotive Systems, Inc.	USA
		Harman Professional, Inc.	USA

Listing	No. of affiliates	Name of affiliates	Country
		Harman Connected Services, Inc.	USA
		Harman Financial Group LLC	USA
		Harman Belgium SA	Belgium
		Harman France SNC	France
		Red Bend Software SAS	France
		Harman Inc. & Co. KG	Germany
		Harman KG Holding, LLC	USA
		Harman Becker Automotive Systems Italy S.R.L.	Italy
		Harman Finance International, SCA	Luxembourg
		Harman Finance International GP S.a.r.l	Luxembourg
		Harman Industries Holdings Mauritius Ltd.	Mauritius
		Harman International Mexico, S. de R.L. de C.V.	Mexico
		Harman International Estonia OU	Estonia
		Harman Singapore Pte. Ltd.	Singapore
		Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Brazil
		Harman do Brasil Industria Eletronica e Participacoes Ltda.	Brazil
		Harman Connected Services Engineering Corp.	USA
		Harman Connected Services AB.	Sweden
		Harman Connected Services UK Ltd.	United Kingdom
		Harman Connected Services Corp. India Pvt. Ltd.	India
		Global Symphony Technology Group Private Ltd.	Mauritius
		Harman International (India) Private Limited	India
		Harman de Mexico, S. de R.L. de C.V.	Mexico
		Samsung Semiconductor Europe Limited	United Kingdom
		Samsung Semiconductor Europe GmbH	Germany
		Samsung Electronics GmbH	Germany
		Samsung Electronics Czech and Slovak s.r.o.	Czech Republic
		SAMSUNG ELECTRONICS BALTICS SIA	Latvia
		Samsung Electronics West Africa Ltd.	Nigeria
		Samsung Electronics East Africa Ltd.	Kenya
		Samsung Electronics Saudi Arabia Ltd.	Saudi Arabia
		Samsung Electronics Israel Ltd.	Israel
		Samsung Electronics Tunisia S.A.R.L	Tunisia
		Samsung Electronics Pakistan(Private) Ltd.	Pakistan
		Samsung Electronics South Africa Production (pty) Ltd.	South Africa
		Samsung Electronics Turkiye	Turkiye
		Samsung Electronics Industry and Commerce Ltd.	Turkiye
		Samsung Semiconductor Israel R&D Center, Ltd.	Israel
		Samsung Electronics Levant Co.,Ltd.	Jordan
		Samsung Electronics Maghreb Arab	Morocco
		Samsung Electronics Venezuela, C.A.	Venezuela
		Samsung Electronics Peru S.A.C.	Peru
		Samsung Electronics Ukraine Company LLC	Ukraine
		Samsung R&D Institute Ukraine	Ukraine
		Samsung R&D Institute Rus LLC	Russian Fed.

Listing	No. of affiliates	Name of affiliates	Country
		Samsung Electronics Central Eurasia LLP	Kazakhstan
		Samsung Electronics Caucasus Co. Ltd	Azerbaijan
		Samsung Electronics Uzbekistan Ltd.	Uzbekistan
		Corephotonics Ltd.	Israel
		Samsung Nanoradio Design Center	Sweden
		Harman Professional Denmark ApS	Denmark
		Studer Professional Audio GmbH	Switzerland
		Martin Professional Japan Ltd.	Japan
		Harman International Romania SRL	Romania
		Apostera UA, LLC	Ukraine
		Harman Becker Automotive Systems GmbH	Germany
		Harman Deutschland GmbH	Germany
		Harman Becker Automotive Systems Manufacturing Kft	Hungary
		Harman RUS CIS LLC	Russian Fed.
		Harman Holding GmbH & Co. KG	Germany
		Harman Management GmbH	Germany
		Harman Hungary Financing Ltd.	Hungary
		Harman Connected Services OOO	Russian Fed.
		Harman Professional Kft	Hungary
		Harman Consumer Nederland B.V.	Netherlands
		Red Bend Ltd.	Israel
		Harman International Industries Limited	United Kingdom
		AKG Acoustics GmbH	Austria
		Harman Audio Iberia Espana Sociedad Limitada	Spain
		Harman Holding Limited	Hong Kong
		Harman Finland Oy	Finland
		Harman Connected Services GmbH	Germany
		Harman Connected Services Poland Sp.zoo	Poland
		Harman Connected Services Solutions (Chengdu) Co., Ltd.	China
		Harman Automotive UK Limited	United Kingdom
		Harman International Industries PTY Ltd.	Australia
		Harman Connected Services Morocco	Morocco
		Samsung Electronics Switzerland GmbH	Switzerland
		Samsung Electronics Romania LLC	Romania
		SAMSUNG Zhilabs, S.L.	Spain
		Porta Nuova Varesine Building 2 S.r.l.	Italy
		Samsung Electronics Poland Manufacturing SP.Zo.o	Poland
		Samsung Electronics Greece S.M.S.A	Greece
		Samsung Electronics Air Conditioner Europe B.V.	Netherlands
		FOODIENT LTD.	United Kingdom
		Samsung Denmark Research Center ApS	Denmark
		Samsung Cambridge Solution Centre Limited	United Kingdom
		iMarket Asia Co., Ltd.	Hong Kong
		Samsung Electronics Japan Co., Ltd.	Japan
		Samsung Electronics Singapore Pte. Ltd.	Singapore

Listing	No. of affiliates	Name of affiliates	Country
		Samsung Electronics New Zealand Limited	New Zealand
		Samsung Electronics Philippines Corporation	Philippines
		Samsung R&D Institute BanglaDesh Limited	Bangladesh
		Samsung Electronics Vietnam Co., Ltd.	Vietnam
		Samsung Electronics Vietnam THAINGUYEN Co., Ltd.	Vietnam
		Samsung Electronics HCMC CE Complex Co., Ltd.	Vietnam
		Samsung Nepal Services Pvt, Ltd	Nepal
		Red Brick Lane Marketing Solutions Pvt. Ltd.	India
		PT Samsung Telecommunications Indonesia	Indonesia
		Laos Samsung Electronics Sole Co., Ltd	Laos
		Samsung Suzhou Electronics Export Co., Ltd.	China
		Samsung Mobile R&D Center China-Guangzhou	China
		Samsung R&D Institute China-Shenzhen	China
		Beijing Samsung Telecom R&D Center	China
		Samsung Electronics China R&D Center	China
		Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	China
		Harman Technology (Shenzhen) Co., Ltd.	China
		Harman (China) Technologies Co., Ltd.	China
		Harman Commercial (Shanghai) Co., Ltd.	China
		Harman International (China) Holdings Co., Ltd.	China
		Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	China
		Samsung Electronics Latinoamerica Miami, Inc.	USA
		Samsung Electronica Colombia S.A.	Colombia
		Samsung Electronics Panama. S.A.	Panama
		Samsung SDI Japan Co., Ltd.	Japan
		Samsung SDI America, Inc.	USA
		Samsung SDI Hungary., Zrt.	Hungary
		Samsung SDI Europe GmbH	Germany
		Samsung SDI Battery Systems GmbH	Austria
		Samsung SDI Vietnam Co., Ltd.	Vietnam
		Samsung SDI Energy Malaysia Sdn, Bhd.	Malaysia
		Samsung SDI India Private Limited	India
		Samsung SDI(Hong Kong) Ltd.	Hong Kong
		Samsung SDI China Co., Ltd.	China
		Samsung SDI-ARN (Xi'An) Power Battery Co., Ltd.	China
		Samsung SDI (Tianjin) Battery Co.,Ltd.	China
		STARPLUS ENERGY LLC.	USA
		SAMSUNG SDI WUXI CO.,LTD.	China
		Tianjin Samsung SDI Co., Ltd.	China
		Samsung Electro-Mechanics Japan Co., Ltd.	Japan
		Samsung Electro-Mechanics America, Inc.	USA
		Samsung Electro-Mechanics GmbH	Germany
		Samsung Electro-Mechanics Philippines, Corp.	Philippines
		Calamba Premier Realty Corporation	Philippines
		Samsung Electro-Mechanics Pte Ltd.	Singapore

Listing	No. of affiliates	Name of affiliates	Country
		Samsung Electro-Mechanics Vietnam Co., Ltd.	Vietnam
		Samsung Electro-Mechanics Software India Bangalore Private Limited	India
		Dongguan Samsung Electro-Mechanics Co., Ltd.	China
		Tianjin Samsung Electro-Mechanics Co., Ltd.	China
		Samsung High-Tech Electro-Mechanics(Tianjin) Co., Ltd.	China
		Samsung Electro-Mechanics (Shenzhen) Co., Ltd.	China
		Kunshan Samsung Electro-Mechanics Co., Ltd.	China
		Batino Realty Corporation	Philippines
		Samsung Fire & Marine Management Corporation	USA
		SAMSUNG FIRE & MARINE INSURANCE COMPANY OF EUROPE LTD.	United Kingdom
		PT. Asuransi Samsung Tugu	Indonesia
		SAMSUNG VINA INSURANCE COMPANY LIMITED	Vietnam
		Samsung Reinsurance Pte. Ltd.	Singapore
		Samsung Property & Casualty Insurance Company(China), Ltd.	China
		Samsung Fire & Marine Insurance Management Middle East Limited	Utd.Arab Emir.
		Camellia Consulting Corporation	USA
		Samsung Heavy Industries India Pvt.Ltd.	India
		SAMSUNG HEAVY INDUSTRIES (M) SDN.BHD	Malaysia
		Samsung Heavy Industries(Rongcheng) Co., Ltd	China
		SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	Nigeria
		Samsung Heavy Industries Mozambique LDA	Mozambique
		Samsung Heavy Industries Rus LLC	Russian Fed.
		SHI - MCI FZE	Nigeria
		Samsung Life Insurance (Thailand) Public Co., Ltd	Thailand
		Beijing Samsung Real Estate Co.. Ltd	China
		Samsung Asset Management (New York), Inc.	USA
		Samsung Global SME Private Equity Manager Fund Co., Ltd.	Cayman Islands
		Samsung Asset Management U.S. Holdings, Inc.	USA
		Samsung Private Equity Fund 2022 GP, Ltd.	Cayman Islands
		Samsung Co-Investment 2021 GP, Ltd.	Cayman Islands
		Samsung Asset Management(London) Ltd.	United Kingdom
		Samsung Private Equity Manager I Co., Ltd.	Cayman Islands
		Samsung Asset Management (Hong Kong) Ltd.	Hong Kong
		Samsung Asset Management (Beijing) Ltd.	China
		Samsung C&T Japan Corporation	Japan
		Samsung C&T America Inc.	USA
		Samsung E&C America, INC.	USA
		Samsung Renewable Energy Inc.	Canada
		Samsung C&T Oil & Gas Parallel Corp.	USA
		Samsung C&T Lima S.A.C.	Peru
		Samsung C&T Deutschland GmbH	Germany
		Samsung C&T U.K. Ltd.	United Kingdom
		Samsung C&T ECUK Limited	United Kingdom
		Whesoe engineering Limited	United Kingdom
		SAM investment Manzanilo.B.V	Netherlands

Listing	No. of affiliates	Name of affiliates	Country
		Samsung C&T (KL) Sdn.,Bhd.	Malaysia
		Samsung C&T Malaysia SDN. BHD	Malaysia
		Erdsam Co., Ltd.	Hong Kong
		Samsung C&T India Private Limited	India
		Samsung C&T Corporation India Private Limited	India
		Samsung C&T Singapore Pte., Ltd.	Singapore
		SAMSUNG C&T Mongolia LLC.	Mongolia
		Samsung C&T Eng.&Const. Mongolia LLC.	Mongolia
		S&WOO CONSTRUCTION PHILIPPINES,INC.	Philippines
		VSSC STEEL CENTER LIMITED LIABILITY COMPANY	Vietnam
		Vista Contracting and Investment Global Pte. Ltd.	Singapore
		CHEIL HOLDING INC.	Philippines
		Samsung C&T Renewable Energy Australia Pty Ltd	Australia
		Samsung C&T Hongkong Ltd.	Hong Kong
		Samsung C&T Taiwan Co., Ltd.	Taiwan
		SAMSUNG C&T (SHANGHAI) CO., LTD.	China
		Samsung C&T (Xi'an) Co., Ltd.	China
		SAMSUNG C&T CORPORATION SAUDI ARABIA	Saudi Arabia
		SAM Gulf Investment Limited	Utd.Arab Emir.
		Samsung C&T Chile Copper SpA	Chile
		SCNT Power Kelar Inversiones Limitada	Chile
		Samsung C&T Corporation Rus LLC	Russian Fed.
		CHEIL INDUSTRIES ITALY SRL	Italy
		Samsung Fashion Trading Co. ,Ltd	China
		SAMSUNG C&T CORPORATION VIETNAM CO., LTD	Vietnam
		Samsung C&T Corporation UEM Construction JV Sdn Bhd	Malaysia
		WELSTORY VIETNAM COMPANY LIMITED	Vietnam
		Shanghai Ever-Hongjun Business Mgt Service Co.,LTD	China
		Shanghai Welstory Food Company Limited	China
		LANGUAGE TESTING INTERNATIONAL, INC.	USA
		PENGTAI CHINA CO.,LTD.	China
		PengTai Taiwan Co., Ltd.	Taiwan
		PENGTAI E-COMMERCE CO.,LTD	China
		PENGTAI MARKETING SERVICE CO.,LTD.	China
		Medialytics Inc.	China
		Beijing Pengtai Baozun E-commerce Co., Ltd.	China
		iMarket China Co., Ltd.	China
		Samsung Securities (America), Inc.	USA
		Samsung Securities (Europe) Limited.	United Kingdom
		Samsung Securities (Asia) Limited.	Hong Kong
		Samsung SDS America, Inc.	USA
		SAMSUNG SDS GSCL Canada., Ltd.	Canada
		Samsung SDS Europe, Ltd.	United Kingdom
		Samsung SDS Global SCL Hungary, Kft.	Hungary
		Samsung SDS Global SCL Slovakia, S.R.O.	Slovakia

Listing	No. of affiliates	Name of affiliates	Country
		Samsung SDS Global SCL Poland Sp. Z.o.o.	Poland
		Samsung GSCL Sweden AB	Sweden
		Samsung SDS Global SCL France SAS	France
		Samsung SDS Global SCL Italy S.R.L. A Socio Unico	Italy
		Samsung SDS Global Supply Chain Logistics Spain S.L.U	Spain
		Samsung SDS Global SCL Netherlands Cooperatief U.A.	Netherlands
		Samsung SDS Global SCL Germany GmbH	Germany
		Samsung SDS Global SCL Romania S.R.L	Romania
		Samsung SDS Asia Pacific Pte, Ltd.	Singapore
		Samsung Data Systems India Private Limited	India
		Samsung SDS Vietnam Co., Ltd.	Vietnam
		PT. Samsung SDS Global SCL Indonesia	Indonesia
		Samsung SDS Global SCL Philippines Co., Ltd.Inc.	Philippines
		Samsung SDS Global SCL Thailand Co.,Ltd	Thailand
		Samsung SDS Global SCL Malaysia SDN.BHD.	Malaysia
		SAMSUNG SDS Global SCL Australia Pty.,Ltd.	Australia
		SDS-ACUTECH CO., Ltd.	Thailand
		ALS SDS Joint Stock Company	Vietnam
		SDS-MP Logistics Joint Stock Company	Vietnam
		Samsung SDS China Co., Ltd.	China
		Samsung SDS Global SCL Hong Kong Co., Ltd.	Hong Kong
		SAMSUNG SDS Global SCL Egypt	Egypt
		Samsung SDS Global SCL South Africa (PTY) Ltd.	South Africa
		Samsung SDS Global SCL Nakliyat ve Lojistik Anonim Sirketi	Turkiye
		Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	Utd.Arab Emir.
		Samsung SDS Latin America Tecnologia E Logistica LTDA.	Brazil
		INTE-SDS Logistics S.A. de C.V.	Mexico
		Samsung SDS Rus Limited Liability Company	Russian Fed.
		Samsung SDS Mexico, S.A. DE C.V.	Mexico
		Samsung SDS Global SCL Panama S.A.	Panama
		Samsung SDS Global SCL Chile Limitada	Chile
		Samsung SDS Global SCL Peru S.A.C	Peru
		Samsung SDS Global SCL Colombia S.A.S	Colombia
		Samsung Engineering America Inc.	USA
		Samsung Project Management Inc.	Canada
		Samsung Engineering Hungary Ltd.	Hungary
		Samsung Engineering Italy S.R.L.	Italy
		Samsung Engineering (Malaysia) SDN. BHD.	Malaysia
		PT Samsung Engineering Indonesia Co., Ltd.	Indonesia
		Samsung Engineering (Thailand) Co., Ltd.	Thailand
		Samsung Engineering India Private Limited	India
		Samsung Engineering Vietnam Co., Ltd.	Vietnam
		Samsung Engineering Global Private Limited	India
		Samsung Engineering Construction(Shanghai) Co., Ltd	China
		Samsung Engineering Construction Xi' an Co., Ltd.	China

Listing	No. of affiliates	Name of affiliates	Country
		Samsung Saudi Arabia Co., Ltd.	Saudi Arabia
		Muharraq Wastewater Services Company W.L.L.	Bahrain
		Muharraq STP Company B.S.C.	Bahrain
		Muharraq Holding Company 1 Ltd.	Utd.Arab Emir.
		Samsung Ingenieria Mexico Construccion Y Operacion S.A. De C.V.	Mexico
		Samsung Engineering Trinidad Co., Ltd.	Trinidad,Tobago
		Samsung Ingenieria Manzanillo, S.A. De C.V.	Mexico
		Grupo Samsung Ingenieria Mexico, S.A. De C.V.	Mexico
		Samsung Ingenieria Energia S.A. De C.V.	Mexico
		Samsung Engineering Bolivia S.A	Bolivia
		Samsung Ingenieria DUBA S.A. de C.V.	Mexico
		Samsung Engineering Kazakhstan L.L.P.	Kazakhstan
		SEA Construction, LLC	USA
		SEA Louisiana Construction, L.L.C.	USA
		Samsung EPC Company Ltd.	Saudi Arabia
		Muharraq Holding Company 2 Ltd.	Utd.Arab Emir.
		Asociados Constructores DBNR, S.A. de C.V.	Mexico
		S-1 CORPORATION HUNGARY LLC	Hungary
		S-1 CORPORATION VIETNAM CO., LTD	Vietnam
		Samsung Beijing Security Systems	China
		Pengtai Greater China Company Limited	Hong Kong
		PENGTAI INTERACTIVE ADVERTISING CO.,LTD	China
		Cheil USA Inc.	USA
		Cheil Central America Inc.	USA
		Iris Worldwide Holdings Limited	United Kingdom
		CHEIL EUROPE LIMITED	United Kingdom
		Cheil Germany GmbH	Germany
		Cheil France SAS	France
		CHEIL SPAIN S.L	Spain
		Cheil Benelux B.V.	Netherlands
		Cheil Nordic AB	Sweden
		Cheil India Private Limited	India
		Cheil (Thailand) Ltd.	Thailand
		Cheil Singapore Pte. Ltd.	Singapore
		CHEIL VIETNAM COMPANY LIMITED	Vietnam
		Cheil Integrated Marketing Philippines, Inc.	Philippines
		CHEIL MALAYSIA SDN. BHD.	Malaysia
		Cheil New Zealand Limited	New Zealand
		Cheil Worldwide Australia Pty Ltd	Australia
		CHEIL CHINA	China
		Cheil Hong Kong Ltd.	Hong Kong
		Caishu (Shanghai) Business Consulting Co., Ltd	China
		Cheil MEA FZ-LLC	Utd.Arab Emir.
		Cheil South Africa (Pty) Ltd	South Africa
		CHEIL KENYA LIMITED	Kenya

Listing	No. of affiliates	Name of affiliates	Country
		Cheil Communications Nigeria Ltd.	Nigeria
		Cheil Worldwide Inc./Jordan LLC.	Jordan
		Cheil Ghana Limited	Ghana
		Cheil Egypt LLC	Egypt
		Cheil Maghreb LLC	Morocco
		Cheil Brasil Comunicacoes Ltda.	Brazil
		Cheil Mexico, S.A. de C.V.	Mexico
		Cheil Chile SpA.	Chile
		Cheil Peru S.A.C.	Peru
		CHEIL ARGENTINA S.A.	Argentina
		Cheil Rus LLC	Russian Fed.
		Cheil Ukraine LLC	Ukraine
		Cheil Kazakhstan LLC	Kazakhstan
		Samsung Hospitality America Inc.	USA
		Shilla Travel Retail Pte. Ltd.	Singapore
		Samsung Shilla Business Service Beijing Co., Ltd.	China
		Shilla Travel Retail Hong Kong Limited	Hong Kong
		HDC SHILLA (SHANGHAI) CO., LTD	China
		Samsung Hospitality U.K. Ltd.	United Kingdom
		Samsung Hospitality Europe GmbH	Germany
		SAMSUNG HOSPITALITY ROMANIA SRL	Romania
		Samsung Hospitality Vietnam Co., Ltd.	Vietnam
		Samsung Hospitality Philippines Inc.	Philippines
		Samsung Hospitality India Private Limited	India
		Samsung Venture Investment (Shanghai) Co., Ltd.	China
		Iris (USA) Inc.	USA
		Iris Atlanta, Inc.	USA
		89 Degrees, Inc.	USA
		The Barbarian Group LLC	USA
		McKinney Ventures LLC	USA
		Iris Nation Worldwide Limited	United Kingdom
		Iris Americas, Inc.	USA
		Irisnation Latina No.2, S. de R.L. de C.V.	Mexico
		Irisnation Latina, S. de R.L. de C.V.	Mexico
		Pricing Solutions Ltd	Canada
		Iris London Limited	United Kingdom
		Iris Promotional Marketing Ltd	United Kingdom
		Iris Ventures 1 Limited	United Kingdom
		Founded Partners Limited	United Kingdom
		Iris Digital Limited	United Kingdom
		Iris Amsterdam B.V.	Netherlands
		Iris Ventures (Worldwide) Limited	United Kingdom
		Concise Consultants Limited	United Kingdom
		WDMP Limited	United Kingdom
		Iris Services Limited Doel Skopje	Macedonia

Listing	No. of affiliates	Name of affiliates	Country
		Irisnation Singapore Pte. Ltd.	Singapore
		Iris Worldwide Integrated Marketing Private Limited	India
		Iris Sydney PTY Ltd	Australia
		Iris Worldwide (Thailand) Limited	Thailand
		Iris Partners LLP	United Kingdom
		Holdings BR185 Limited	Brit.Virgin Is.
		Iris Germany GmbH	Germany
		Founded, Inc.	USA
		Pepper NA, Inc.	USA
		Beattie McGuinness Bungay Limited	United Kingdom
		Cheil Italia S.r.l	Italy
		Cheil Austria GmbH	Austria
		Centrade Integrated SRL	Romania
		Centrade Cheil HU Kft.	Hungary
		Centrade Cheil Adriatic D.O.O.	Serbia/Monten.
		Experience Commerce Software Private Limited	India
		PT. CHEIL WORLDWIDE INDONESIA	Indonesia
		Cheil Philippines Inc.	Philippines
		Shilla Retail Plus Pte. Ltd.	Singapore
		Tianjin Samsung International Travel Service Co., Ltd	China
		Shilla Retail Limited	Macau
		BNY Trading Hong Kong Limited	Hong Kong
		One Agency FZ-LLC	Utd.Arab Emir.
		One RX Project Management Design and Production Limited Company	Turkiye
		Iris Korea Limited	United Kingdom
		One RX India Private Limited	India
		ONE RX INTERIOR DECORATION L.L.C	Utd.Arab Emir.
		ONE AGENCY PRINTING L.L.C	Utd.Arab Emir.
		Brazil 185 Participacoes Ltda	Brazil
		Iris Router Marketing Ltda	Brazil

3. Equity investments in other corporations (Details)

The total book value of equity investments in other corporations as of June 30, 2023 is KRW 59,090 billion (for the purpose of management participation, etc.).

[As of June 30, 2023]

(1,000 shares, KRW million, %)

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Listed	Samsung Electro-Mechanics	1977.01	Management Participation	250	17,693	23.7	445,244	-	-	-	17,693	23.7	445,244	10,997,171	993,519
Listed	Samsung SDI	1977.01	Management Participation	304	13,463	19.6	1,242,605	-	-	-	13,463	19.6	1,242,605	30,257,525	2,039,361
Listed	Samsung Heavy Industries	1977.09	Management Participation	125	134,027	15.2	684,879	-	-	209,083	134,027	15.2	893,962	14,491,679	-627,412
Listed	Hotel Shilla	1979.12	Management Participation	252	2,005	5.1	166,592	-	-	-19,446	2,005	5.1	147,146	2,938,545	-50,164
Listed	Cheil Worldwide	1988.09	Management Participation	185	29,038	25.2	491,599	-	-	-	29,038	25.2	491,599	2,751,445	195,834
Listed	Samsung SDS	1992.07	Management Participation	6,160	17,472	22.6	560,827	-	-	-	17,472	22.6	560,827	11,952,425	1,130,013
Listed	Samsung BioLogics	2011.04	Management Participation	30,000	22,217	31.2	1,595,892	-	-	-	22,217	31.2	1,595,892	16,582,050	798,056
Unlisted	Samsung Display	2012.04	Management Participation	16,009,547	221,969	84.8	18,509,307	-	-	-	221,969	84.8	18,509,307	59,206,888	2,404,779
Unlisted	STECO	1995.06	Management Participation	24,000	2,590	70.0	35,861	-	-	-	2,590	70.0	35,861	127,863	-798
Unlisted	SEMES	1992.12	Management Participation	1,000	2,173	91.5	71,906	-	-	-	2,173	91.5	71,906	2,068,180	185,838
Unlisted	Samsung Electronics Service	1998.01	Management Participation	30,000	6,000	99.3	48,121	-	-	-	6,000	99.3	48,121	831,245	11,319
Unlisted	Samsung Electronics Sales	2000.12	Management Participation	3,100	1,767	100.0	247,523	-	-	-	1,767	100.0	247,523	1,379,276	-15,688
Unlisted	Samsung Electronics Logitech	1999.04	Management Participation	76	1,011	100.0	46,669	-	-	-	1,011	100.0	46,669	423,508	9,722
Unlisted	Samsung Medison	2011.02	Management Participation	286,384	87,350	68.5	433,026	-	-	-	87,350	68.5	433,026	599,406	43,365
Unlisted	Samsung Global Research	1991.05	Management Participation	320	3,576	29.8	24,942	-	-	-	3,576	29.8	24,942	179,120	287
Unlisted	Samsung Venture Investment	1999.11	Management Participation	4,900	980	16.3	32,073	-	-	163	980	16.3	32,236	204,289	11,683

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SVIC #21	2011.11	Management Participation	19,800	0	99.0	970	-	-	-	0	99.0	970	96,117	4,016
Unlisted	SVIC #22	2011.11	Management Participation	19,800	0	99.0	49,520	-0	-34,650	-	0	99.0	14,870	54,415	-14,289
Unlisted	SVIC #26	2014.11	Management Participation	19,800	1	99.0	75,653	-0	-14,850	-	1	99.0	60,803	45,827	-4,049
Unlisted	SVIC #28	2015.02	Management Participation	7,425	0	99.0	35,486	0	-	-	0	99.0	35,486	395,545	-19,969
Unlisted	SVIC #32	2016.08	Management Participation	19,800	1	99.0	143,421	-0	-24,057	-	1	99.0	119,364	283,767	3,175
Unlisted	SVIC #33	2016.11	Management Participation	4,950	1	99.0	122,622	-	-	-	1	99.0	122,622	334,846	9,875
Unlisted	SVIC #42	2018.11	Management Participation	4,950	0	99.0	43,477	0	479	-	0	99.0	43,956	35,845	-1,443
Unlisted	SVIC #45	2019.05	Management Participation	19,800	2	99.0	191,323	0	-32,577	-	2	99.0	158,746	221,522	-3,064
Unlisted	SVIC #52	2021.05	Management Participation	9,900	0	99.0	49,599	-	-	-	0	99.0	49,599	46,829	-147
Unlisted	SVIC #56	2021.11	Management Participation	22,084	0	99.0	32,380	-	-	-	0	99.0	32,380	31,984	651
Unlisted	SVIC #57	2022.08	Management Participation	14,850	0	99.0	18,860	0	8,969	-	0	99.0	27,829	18,681	-320
Unlisted	Semiconductor Growth Fund	2017.03	Management Participation	500	50,000,000	66.7	50,000	-	-	-	50,000,000	66.7	50,000	73,879	4,398
Unlisted	System LSI Mutual benefit private equity trust	2020.04	Management Participation	25,000	50,000,000	62.5	50,000	-	-	-	50,000,000	62.5	50,000	79,351	20
Unlisted	Stellarforest	2022.12	Management Participation	900	180	100.0	900	-	-	-	180	100.0	900	895	-5
Listed	iMarket Korea	2000.12	Management Participation	1,900	647	1.9	6,538	-	-	-136	647	1.9	6,402	1,224,955	29,103
Listed	KT Skylife	2001.12	Simple Investment	3,344	240	0.5	1,954	-	-	-413	240	0.5	1,541	1,361,298	23,086
Listed	Yongpyong Resort	2007.05	Simple Investment	1,869	400	0.8	1,412	-	-	-184	400	0.8	1,228	868,286	-12,121
Listed	ATech Solution	2009.11	Simple Investment	26,348	1,592	15.9	12,879	-	-	6,575	1,592	15.9	19,454	242,734	4,716

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Listed	Wonik Holdings	2013.12	Management Participation	15,411	1,759	2.3	5,972	-	-	704	1,759	2.3	6,676	1,815,526	128,759
Listed	Wonik IPS	2016.04	Management Participation	16,214	1,851	3.8	45,811	-	-	14,900	1,851	3.8	60,711	1,121,671	89,438
Listed	Dongjin Semichem	2017.11	Management Participation	48,277	2,468	4.8	73,913	-	-	29,985	2,468	4.8	103,898	1,374,304	156,195
Listed	Soulbrain Holdings	2017.11	Management Participation	30,752	462	2.2	10,989	-	-	1,870	462	2.2	12,859	1,689,281	59,539
Listed	Soulbrain	2020.07	Management Participation	24,866	373	4.8	81,357	-	-	12,358	373	4.8	93,715	934,907	167,673
Listed	S&S Tech	2020.08	Management Participation	65,933	1,716	8.0	45,220	-	-	49,853	1,716	8.0	95,073	226,750	17,464
Listed	YIK Corp	2020.08	Management Participation	47,336	9,602	11.7	26,933	-	-	15,795	9,602	11.7	42,727	519,098	34,351
Listed	KCTech	2020.11	Management Participation	20,720	1,022	4.9	15,129	-	-	6,593	1,022	4.9	21,722	483,313	55,386
Listed	lotvacuum	2020.11	Management Participation	18,990	1,268	7.1	14,325	-	-	7,543	1,268	7.1	21,867	323,674	20,575
Listed	NEW POWER PLASMA	2020.11	Management Participation	12,739	2,141	4.9	7,579	-	-	5,823	2,141	4.9	13,402	635,198	22,076
Listed	FineSemitech	2021.03	Management Participation	43,009	1,523	7.0	23,758	-	-	9,442	1,523	7.0	33,201	394,760	40,839
Listed	DNF	2021.08	Management Participation	20,964	810	7.0	10,692	-	-	4,147	810	7.0	14,840	190,545	5,800
Listed	Marvell	2021.10	Simple Investment	11,705	173	0.0	8,130	-	-	5,462	173	0.0	13,592	28,542,257	-211,103
Unlisted	The Korea Economic Daily	1987.05	Simple Investment	150	72	0.4	365	-	-	-	72	0.4	365	491,553	47,153
Unlisted	Korea Business Banking	1995.01	Simple Investment	5,000	1,000	17.2	2,964	-	-	-	1,000	17.2	2,964	86,276	1,236
Unlisted	Cyber Bank	2000.12	Simple Investment	8,000	1,083	7.5	0	-	-	-	1,083	7.5	0	-	-
Unlisted	FineChips	2001.12	Simple Investment	10	2	3.3	10	-	-	-	2	3.3	10	15,919	3,878
Unlisted	Inkel	2006.11	Simple Investment	130	0	0.0	0	-	-	-	0	0.0	0	53,047	-8,636

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	Intellectual Discovery	2011.05	Simple Investment	5,000	357	10.7	1,922	-	-	-	357	10.7	1,922	79,972	14,984
Unlisted	Maltani Corp.	2012.04	Simple Investment	16,544	45	15.0	7,431	-	-	34	45	15.0	7,465	72,421	2,891
Unlisted	Pantech	2013.06	Simple Investment	53,000	53,000	10.0	0	-	-	-	53,000	10.0	0	8,114	-36
Unlisted	AI Research Institute	2016.07	Simple Investment	3,000	600	14.3	3,000	-	-	-	600	14.3	3,000	5,935	3,021
Unlisted	Mico Ceramics	2020.11	Management Participation	21,667	747	13.7	29,385	-	-	1,329	747	13.7	30,714	180,809	20,984
Unlisted	Shinsung Eng & Construction	2010.07	Simple Investment	1	0	0.0	0	-	-	-	0	0.0	0	147,706	-12,265
Unlisted	Woobang	2010.07	Simple Investment	0	1	0.0	0	-	-	-	1	0.0	0	493,942	4,378
Unlisted	Sambo Computer	2012.09	Simple Investment	0	0	0.0	0	-	-	-	0	0.0	0	55,884	-2,453
Unlisted	Daewoo Development	2012.12	Simple Investment	0	0	0.0	0	-	-	-	0	0.0	0	321,513	-3,342
Unlisted	Daewoo Songdo Development	2012.12	Simple Investment	0	9	0.0	0	-	-	-	9	0.0	0	19,369	-350
Unlisted	Zyle Motor Sales	2012.12	Simple Investment	0	1	0.0	0	-	-	-	1	0.0	0	385,419	-6,532
Unlisted	Sungwon Construction	2014.04	Simple Investment	0	1	0.0	0	-	-	-	1	0.0	0	27,744	-627
Unlisted	Inhee	2014.04	Simple Investment	0	0	0.1	0	-	-	-	0	0.1	0	2,753	211
Unlisted	Point Anybeam	2019.12	Simple Investment	61	12	3.5	61	-12	-61	-	0	-	0	-	-
Unlisted	JNT	2011.02	Simple Investment	1,800	0	24.0	1,758	-	-518	-	0	24.0	1,240	2,174	19
Unlisted	L&S	2012.07	Simple Investment	848	0	7.5	1	-	-	-	0	7.5	1	3,241	171
Unlisted	KTCNP-GC	2013.12	Simple Investment	960	0	3.6	222	-	-222	-	0	3.6	0	28,999	-4,695
Unlisted	POSCO Social Enterprise Fund	2013.12	Simple Investment	600	0	10.0	60	-	-	-	0	10.0	60	245	-481

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	Bearport Resort	2022.04	Simple Investment	-	51	0.5	0	-	0	-	51	0.5	0	121,507	5,206
Unlisted	SEA	1978.07	Management Participation	59,362	492	100.0	17,166,557	-	-	-	492	100.0	17,166,557	38,938,571	294,772
Unlisted	SECA	1992.08	Management Participation	3,823	0	100.0	90,922	-	-	-	0	100.0	90,922	1,076,485	-74,723
Unlisted	SEDA	1994.01	Management Participation	13,224	77,205,709	87.0	647,620	-	-	-	77,205,709	87.0	647,620	5,290,815	164,645
Unlisted	SEM	1995.07	Management Participation	3,032	3,837	63.6	165,638	-	-	-	3,837	63.6	165,638	2,251,383	83,052
Unlisted	SELA	1989.04	Management Participation	319	40	100.0	86,962	-	-	-	40	100.0	86,962	728,002	33,867
Unlisted	SEASA	1996.06	Management Participation	4,696	21,854	98.0	6,779	-	-	-	21,854	98.0	6,779	112,414	7,273
Unlisted	SECH	2002.12	Management Participation	597	0	4.1	597	-	-	-	0	4.1	597	567,145	6,492
Unlisted	SEUK	1995.07	Management Participation	33,908	109,546	100.0	433,202	-	-	-	109,546	100.0	433,202	2,552,143	72,364
Unlisted	SEL	1998.12	Management Participation	8,280	4,393	100.0	0	-	-	-	4,393	100.0	0	7,030	0
Unlisted	SEHG	1982.02	Management Participation	28,042	0	100.0	354,846	-	-	-	0	100.0	354,846	350,823	-20,973
Unlisted	SEF	1991.08	Management Participation	230	2,700	100.0	234,115	-	-	-	2,700	100.0	234,115	1,095,914	-24,405
Unlisted	SEI	1993.05	Management Participation	862	677	100.0	143,181	-	-	-	677	100.0	143,181	1,054,293	-3,077
Unlisted	SESA	1989.01	Management Participation	3,276	8,021	100.0	142,091	-	-	-	8,021	100.0	142,091	1,251,021	55,911
Unlisted	SEP	1982.09	Management Participation	204	1,751	100.0	37,616	-	-	-	1,751	100.0	37,616	306,661	7,360
Unlisted	SEH	1991.05	Management Participation	1,954	753	100.0	650,157	-	-	-	753	100.0	650,157	1,557,922	596,476
Unlisted	SELS	1991.05	Management Participation	18,314	1,306	100.0	24,288	-	-	-	1,306	100.0	24,288	2,438,051	226,763
Unlisted	SEBN	1995.07	Management Participation	236	539,138	100.0	914,751	-	-	-	539,138	100.0	914,751	1,782,683	132,672

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SEEH	2008.01	Management Participation	4,214	0	100.0	1,369,992	-	-	-	0	100.0	1,369,992	9,693,632	32,085
Unlisted	SENA	1992.03	Management Participation	392	1,000	100.0	69,372	-	-	-	1,000	100.0	69,372	565,956	-50,055
Unlisted	SESK	2002.06	Management Participation	8,976	0	55.7	263,767	-	-	-	0	55.7	263,767	884,500	68,197
Unlisted	SEPOL	1996.04	Management Participation	5,462	106	100.0	78,267	-	-	-	106	100.0	78,267	1,324,541	71,659
Unlisted	SEAG	2002.01	Management Participation	40	0	100.0	32,162	-	-	-	0	100.0	32,162	497,109	134,261
Unlisted	SERC	2006.01	Management Participation	24,877	0	100.0	188,290	-	-	-	0	100.0	188,290	1,010,248	107,123
Unlisted	SERK	2007.07	Management Participation	4,600	0	100.0	204,555	-	-	-	0	100.0	204,555	1,047,722	43,639
Unlisted	SEO	1997.01	Management Participation	120	0	100.0	-10,043	-	-	-	0	100.0	-10,043	1,937	11
Unlisted	SGE	1995.05	Management Participation	827	0	100.0	32,836	-	-	-	0	100.0	32,836	1,023,676	24,716
Unlisted	SEEG	2012.07	Management Participation	23	0	0.1	39	-	-	-	0	0.1	39	1,349,945	66,642
Unlisted	SSA	1998.12	Management Participation	263	2,000	100.0	32,622	-	-	-	2,000	100.0	32,622	458,345	-34,536
Unlisted	SAPL	2006.07	Management Participation	793	877,133	100.0	981,483	-	-	-	877,133	100.0	981,483	23,579,581	6,966,849
Unlisted	SME	2003.05	Management Participation	4,796	17,100	100.0	7,644	-	-	-	17,100	100.0	7,644	557,750	14,243
Unlisted	SDMA	1995.03	Management Participation	21,876	71,400	75.0	18,741	-	-	-	71,400	75.0	18,741	31,594	-247
Unlisted	SEMA	1989.09	Management Participation	4,378	16,247	100.0	103,402	-	-	-	16,247	100.0	103,402	326,332	44,203
Unlisted	SAVINA	1995.01	Management Participation	5,839	0	100.0	28,365	-	-	-	0	100.0	28,365	106,618	9,169
Unlisted	SEIN	1991.08	Management Participation	7,463	46	100.0	118,909	-	-	-	46	100.0	118,909	1,008,642	89,053
Unlisted	TSE	1988.01	Management Participation	1,390	11,020	91.8	279,163	-	-	-	11,020	91.8	279,163	2,918,991	185,939

Listing	Name of Company	Acquisition Date	Objective	Acquisition Cost	Beginning Balance			Increase/Decrease			Ending Balance			Current Financial Stats	
					Qty	Owner ship (%)	Book Value	Acquisition/Disposal		Valuation	Qty	Owner ship (%)	Book Value	Total Asset	Net Income (Loss)
								Qty	Amount						
Unlisted	SEAU	1987.11	Management Participation	392	53,200	100.0	111,964	-	-	-	53,200	100.0	111,964	465,246	-107,979
Unlisted	SIEL	1995.08	Management Participation	5,414	216,787	100.0	75,263	-	-	-	216,787	100.0	75,263	7,396,505	568,363
Unlisted	SRI-B	2005.05	Management Participation	7,358	17	100.0	31,787	-	-	-	17	100.0	31,787	376,713	36,185
Unlisted	SJC	1975.12	Management Participation	273	1,560	100.0	253,108	-	-	-	1,560	100.0	253,108	1,465,865	-611
Unlisted	SRJ	1992.08	Management Participation	3,120	122	100.0	117,257	-	-	-	122	100.0	117,257	132,868	1,000
Unlisted	SCIC	1996.03	Management Participation	23,253	0	100.0	640,452	-	-	-	0	100.0	640,452	9,821,955	177,969
Unlisted	SEHK	1988.09	Management Participation	349	274,250	100.0	79,033	-	-	-	274,250	100.0	79,033	1,006,894	-7,243
Unlisted	SET	1994.11	Management Participation	456	27,270	100.0	112,949	-	-	-	27,270	100.0	112,949	1,636,679	1,453
Unlisted	TSEC	1993.04	Management Participation	15,064	0	48.2	103,134	-	-	-	0	48.2	103,134	380,062	-2,589
Unlisted	SSEC	1995.04	Management Participation	32,128	0	69.1	130,551	-	-	-	0	69.1	130,551	763,037	104,775
Unlisted	SESC	2002.09	Management Participation	5,471	0	73.7	34,028	-	-	-	0	73.7	34,028	86,351	5,055
Unlisted	TSTC	2001.03	Management Participation	10,813	0	90.0	260,092	-	-	-	0	90.0	260,092	644,935	2,678
Unlisted	SSS	2001.01	Management Participation	1,200	0	100.0	19,189	-	-	-	0	100.0	19,189	3,785,339	114,934
Unlisted	SCS	2012.09	Management Participation	111,770	0	100.0	5,275,760	-	-	-	0	100.0	5,275,760	15,957,741	530,735
Unlisted	SSCX	2016.04	Management Participation	1,141	0	100.0	1,141	-	-	-	0	100.0	1,141	598,376	20,682
Unlisted	SESS	1994.12	Management Participation	18,875	0	100.0	504,313	-	-	-	0	100.0	504,313	854,292	51,842
Unlisted	TSLED	2012.04	Management Participation	119,519	0	100.0	119,519	-	-	-	0	100.0	119,519	253,668	16,619
Unlisted	SSCR	2006.09	Management Participation	3,405	0	100.0	9,332	-	-	-	0	100.0	9,332	74,089	7,868
Unlisted	TSST Japan	2004.03	Management Participation	1,639	30	49.0	0	-	-	-	30	49.0	0	159	-21

Unlisted	STE	1996.01	Management Participation	4,206	2	49.0	0	-	-	-	2	49.0	0	7,357	0
Unlisted	Semiconductor Portal	2002.12	Simple Investment	38	0	1.2	10	-	-	-	0	1.2	10	1,981	159
Unlisted	Nanosys	2010.08	Simple Investment	4,774	2,000	0.6	1,082	-	-	-	2,000	0.6	1,082	54	-163
Unlisted	One-Blue	2011.07	Management Participation	1,766	0	16.7	1,766	-	-	-	0	16.7	1,766	24,622	557
Unlisted	TidalScale	2013.08	Simple Investment	1,112	2,882	4.3	1,112	-	-	-1,112	2,882	4.3	0	8,146	-5,636
Unlisted	Sentiance	2012.12	Simple Investment	3,422	7	7.2	3,422	-	-	-	7	7.2	3,422	4,751	-10,292
Unlisted	Mantis Vision	2014.01	Simple Investment	1,594	355	2.1	1,980	-	-	-	355	2.1	1,980	19,901	-27,332
Unlisted	Leman	2014.08	Simple Investment	1,019	17	3.4	1,019	-	-	-	17	3.4	1,019	1,680	-2,891
Unlisted	Keyssa	2016.01	Simple Investment	3,332	1,235	1.9	3,332	-1,235	-3,332	-	-	-	-	-	-
Unlisted	SensiFree	2016.01	Simple Investment	2,111	666	9.5	2,111	-	-	-	666	9.5	2,111	795	-1,384
Unlisted	Unispectral	2016.02	Simple Investment	1,112	2,308	7.9	2,130	-	-	-	2,308	7.9	2,130	3,270	-3,578
Unlisted	Quobyte	2016.04	Simple Investment	2,865	729	11.8	2,865	-	-	-	729	11.8	2,865	1,909	-831
Unlisted	Afero	2016.05	Simple Investment	5,685	723	5.5	5,685	-	-	-	723	5.5	5,685	46	-14
Unlisted	Graphcore	2016.06	Simple Investment	3,494	12,000	1.4	3,494	-	-	-	12,000	1.4	3,494	279,496	-148,852
Listed	Soundhound	2016.12	Simple Investment	7,059	1,703	0.9	3,820	-	-	6,352	1,703	0.9	10,172	48,475	-148,964
Unlisted	Fasetto	2019.01	Simple Investment	6,701	475	5.2	12,554	-	-	-	475	5.1	12,554	1,973	-10,269
Listed	Rainbow Robotics	2023.01	Management Participation	-	-	-	-	2,854	58,982	-	2,854	14.8	58,982	76,159	5,774

※ Based on separate financial statements

※ Ownership percentage is calculated based on the number of common shares issued

※ The Company measures fairvalue of financial instruments (equity shares) in accordance with K-IFRS. The Company annually evaluates if there is indication of impairment that investment in subsidiaries or affiliates may be impaired, and estimates the recoverable amount of assets with indication of impairment.

※ Financial stats of Sungwon Construction is as of December 31 2016, financial stats of Daewoo Songdo Development is as of December 31 2017, financial stats of Mantis Vision is as of December 31 2020, financial stats of Unispectral is as of December 31 2021, financial stats of SensiFree is as of November 30 2022 due to difficulties in obtaining the most recent financial data.

4. R&D results (detailed)

DX Division	
Research project	Details
Visual Display	
Neo QLED 8K March 2021–March 2023	<ul style="list-style-type: none"> □ Ultra high-resolution, slim 8K TV based on Mini LED technology (65 · 75 · 85") <ul style="list-style-type: none"> - QN900 (65 · 75 · 85") / QN800 (65 · 75 · 85") / QN700 (55 · 65 · 75") - QLED 8K resolution offers real-life viewing experience with enhanced contrast of sophisticated Mini LED - Added the feature of OTS Pro (Object Tracking Sound Pro)
Neo QLED 4K March 2021–March 2023	<ul style="list-style-type: none"> □ Mini LED-based products come in 3 series and up to 7 sizes (43 · 50 · 55 · 65 · 75 · 85 · 98") □ Slim design by adopting Mini LED, premium look with bezel-less/metal design <ul style="list-style-type: none"> - New LED with Quantum Nano-Layer Multi-Cell structure, enabling slim design, high luminance efficiency, luminance profile control - Enhanced gradation by four times; expresses bright and dark areas more elaborately
QD-Display TV ~March 2023	<ul style="list-style-type: none"> □ Quantum-Dot-based self-emitting Display Flat 4K TV (55 · 65 · 77") <ul style="list-style-type: none"> - S95(55 · 65 · 77")/S90(55 · 65 · 77") - QD-Display TV that provides TV's true value with full applications from Quantum-Dot-based high-definition self-emitting Display and sleek Blade Slim Design to OTS and True Ch. ATMOS
QLED TV ~March 2023	<ul style="list-style-type: none"> □ Flat QLED 4K TV (43 · 50 · 55 · 60 · 65 · 70 · 75 · 82 · 85 · 98") □ Specs and features <ul style="list-style-type: none"> - Flagship QLED maximizes viewing experience with unrivaled picture quality within 4K (AI/brightness/viewing angle) and sound quality (OTS) - Maximizes immersive experience with ideal brightness contrast, free viewing angle, life-like color, and optimal brightness - Optimizes viewing experience by identifying user context based on voice recognition and AI technologies - Convenient calibration of picture quality with the touch of a button from a mobile device without expensive, professional equipment - Upgraded gaming experience for casual gamers through Game Bar 3.0
UHD TV ~March 2023	<ul style="list-style-type: none"> □ Flat UHD TV (43 · 50 · 55 · 58 · 65 · 70 · 75 · 82 · 85") □ Specs and features <ul style="list-style-type: none"> - UHD Smart TV with slim, bezel-less design provides colors close to real-life - UHD picture quality expresses picture quality of original content through Dynamic Crystal Color and Dual LED - Provides a multi-media screen experience, rich content, and complete smart experience via smart home experience - Enhanced Smart experiences with the addition of Game Home, IoT Hub, and Watch/Chat together functions
Lifestyle TV ~April 2023	<ul style="list-style-type: none"> □ The SERO (43") <ul style="list-style-type: none"> - Simple, modern vertical screen that rotates 360 degrees with flat-type speaker - Easily installed in any living space, mobile floor stand included - Significantly improved VoC compared to existing products with anti-glare/anti-reflective screen even for rotated form factor □ The Frame (32 · 43 · 50 · 55 · 65 · 75 · 85") <ul style="list-style-type: none"> - Design resembles a real picture frame; completes a picture frame experience - Exhibit various famous paintings and pictures; adopted lifestyle design which blends in with the interior - Additional introduction of 85" to meet the needs for ultra-large Lifestyle products - Completes the Real Frame experience with the anti-glare/anti-reflective screen that shows a paper-like image □ The Serif (43 · 49 · 55 · 65") <ul style="list-style-type: none"> - I-shaped serif font design; distinct from other products; works as beautiful interior design object - Additional introduction of 65" to expand the position of large screen products - Design that resembles a piece of furniture with the anti-glare/anti-reflective screen that shows a matte image □ The Terrace (55 · 65 · 75") <ul style="list-style-type: none"> - Differentiated product tailored to a lifestyle of relaxing and enjoying entertainment outdoors □ The Premiere (100–130") <ul style="list-style-type: none"> - Ultra-short-throw laser projector with high-resolution, providing a top-notch Smart UX/OTT experience - Complements any environment with blended design, can be placed directly in front of a wall and has an easily adjustable screen size. - Complete experience of our TV models including the differentiated picture quality and sound □ The Freestyle (30–100") <ul style="list-style-type: none"> - Movable Smart Screen that enables users to enjoy content anytime, anywhere - Easy to set up in various locations and provides an optimal viewing experience regardless of angle/distance (Auto Focus/Auto Keystone) - Added usability via the basic cradle, enabling easy placement in various locations; and the socket adapter expands usability.

DX Division

Research project	Details
Micro-LED TV ~June 2023	<ul style="list-style-type: none"> □ The Wall 2.0 (110") <ul style="list-style-type: none"> - Released completed version of Micro-LED to strengthen technology leadership and dominance of Micro-LED market - Ultra-large Home Screen that reproduces the real world on display - Micro-LED picture quality with a sense of space and depth that seems like the real thing without limitation on resolution □ Micro-LED Screen (89 · 101") <ul style="list-style-type: none"> - Next-generation flagship model that satisfies premium customer and distribution needs - Released completed version of TFT glass-based 12.7" module (pitch 0.51) microLED Screen - microLED Processor: creates vivid 3D picture quality based on AI scaling + HDR enhancing features
Sound Bar ~March 2022	<ul style="list-style-type: none"> □ Soundbar <ul style="list-style-type: none"> - Bar-shaped audio product well suited to TVs - Adopted AI solution enabling voice recognition - Adopted 3D surround system, creating enriching sounds close to first-hand experiences □ Sound Bar Q990B <ul style="list-style-type: none"> - Industry's first wireless ATMOS transmission from TV to soundbar - Provides the optimal Cinema True ATMOS just like in the cinema, utilizing all channels of TV and soundbar - Equipped with soundbar room-correction technology
Monitor January 2021–June 2023	<ul style="list-style-type: none"> □ Space monitor <ul style="list-style-type: none"> - Application of integrated arm stand that minimizes space needed for the monitor □ Neo QLED Gaming monitor (49") <ul style="list-style-type: none"> - Strengthened black gamut based on enhanced brightness contrast by applying Neo QLED - More immersive gaming experience with 1000R curvature—the world's highest □ High-resolution QHD monitor (34") <ul style="list-style-type: none"> - Offers picture solution comfortable to the eye with Intelligent Eye Care solution, etc. □ LCD Smart monitor <ul style="list-style-type: none"> - Enjoy VOD services without using a PC via Smart TV services (Netflix, YouTube, etc.) □ Smart monitor M80B (32") <ul style="list-style-type: none"> - Ultra-slim, flat back, lifestyle design that adopts Warm White color - Includes magnetic-mount webcam - Strengthened smart experiences (watching VOD/connecting mobile devices/PC-less function/IoT/communication/game) □ Gaming monitor G85NB (32") <ul style="list-style-type: none"> - World's first UHD 240Hz 1ms (GTG) gaming monitor with premium gaming performance features (1000R Curved) - Odyssey Neo that offers a new level of picture quality experience (Mini LED, Quantum HDR2000) □ World's first 1000R large game screen G97NB (55") <ul style="list-style-type: none"> - Offers top-notch immersive experience with a large screen-size without viewing-angle limitations—even near-field viewing angles—via 1000R, 16:9, 55" Big Curved Screen - Provides a new immersive experience, almost like sitting in the cockpit of a space shuttle, by allowing users to rotate the screen vertically and in any direction - Game-exclusive panel that offers a 4K 165Hz refresh rate and 1ms response time □ QD-OLED gaming monitor (G85SB 34") <ul style="list-style-type: none"> - Exquisite expression of various colors with the combination of True RGB self-luminous display and quantum dot technology - Can play games with an extremely fast response time of 0.1ms and clear screen with 175Hz refresh rate - Implemented an all-in-one game streaming discovery platform, including cloud gaming and consoles, with the adoption of the Samsung Gaming Hub □ 5K ultra-high resolution monitor (S90PC 27") <ul style="list-style-type: none"> - 5K (5120x2880) resolution that expresses more information, with at least 50% more pixels compared to a 4K monitor - Matte Display reduces glare without a monitor hood and eliminates distortion, thus protecting your eyesight - Equipped with thunderbolt 4 and miniDP, compatible with both MAC/Windows - "Smart Screen" can be customized to satisfy your work/daily life/space needs
Signage ~June 2023	<ul style="list-style-type: none"> □ LCD-based B2B Smart Signage (LFD, Video Wall, Outdoor, etc.) (13 · 24 · 32 · 43 · 49 · 50 · 55 · 65 · 75 · 85 · 98") □ Indoor/outdoor signage using LED □ All-in-one Kiosk (24"), all additional equipment embedded <ul style="list-style-type: none"> - Payment platform for developing Tizen payment module and ordering app, antibacterial finishing □ Flip-edu (75 · 85") interactive feature for education

DX Division

Research project	Details
Home appliances	
Refrigerators ~June 2023	<ul style="list-style-type: none"> □ New TMF in North/Latin America <ul style="list-style-type: none"> - Strengthened competitiveness and offered differentiation with large capacity (440L/480L), specialized storage compartments, and new design - Flex Zone (fridge 1°C / chilled -1°C / soft freezing) & Quick Chill Smart Alarm - Strengthened competitiveness with flat door & Bespoke CMF, capacity (20L more), and optimal size - Dual voltage, auto ice maker, water dispenser, Big Box, Hygienic □ 1-Door Premium Kitchen Fit Refrigerator (freezer/fridge/kimchi/wine) <ul style="list-style-type: none"> - Adopted premium Bespoke design and new CMF - Automatic door opening technology - Applied Water & Ice Solution: Auto Fill Pitcher, Dual Auto Ice Maker (cocktail ice, standard ice) □ 177cm one-door built-in fridge enters the European market <ul style="list-style-type: none"> - Expanded lineup of built-in packages - Highest energy rating based on new standards - Secured superior capacity of the indirect cooling system - Differentiated features of fresh storage of food (high-humidity refrigeration) and temperature flexibility (freezer→refrigerator) □ Address replacement demand and new demand for 48" refrigerators in the North American market <ul style="list-style-type: none"> - Large capacity of 27.4cf for a built-in refrigerator - Differentiated Ice & Water Solution (Auto Fill Water Pitcher, Dual Auto Ice Maker) - Soft-closing doors give the product an high-quality, luxurious ambience □ Introduced a super-gap energy model in Korea (achieved first-class rating for its ultra-energy-efficiency, 22% achieved the first-class) <ul style="list-style-type: none"> - Applies one of the world's most efficient compressor (W1, EER 9.3) - Reduced the SET heat load (with increased VIP Coverage) - Enhanced heat dissipation in machine room (additional side cooling on the comp side)
Washer ~January 2022	<ul style="list-style-type: none"> □ Bespoke washer & dryer <ul style="list-style-type: none"> - Bespoke flat design that perfectly fits into your space - Korea's highest capacity all-in-one Control UX design - AI clothing care (AI tailored washing and drying) from washing to drying - Hygiene management solution from 99.9% sterilization to dehumidification of laundry room □ Agitator washer <ul style="list-style-type: none"> - Entrance to the North American market for Agitator (occupied 50% of the Top Loader market) - Implementation of ActiveWave™ Agitator which enables heavy washing along with the reduction of noise, vibration, and entanglement - Implementation of Active Water Jet which enables pretreating of soiled or heavily stained clothes □ Eco-friendly dryer with new refrigerant for Europe <ul style="list-style-type: none"> - Eco-friendly refrigerant: applied environmentally friendly R290 to reduce GHG emissions - Energy label of A+++ : achieved the highest energy rating in Europe - Sensor Dry: senses the degree of dryness during the drying process, capable of automatically adjusting from additional drying to ending the process - Simple UX: improved product usability (delivery of detailed information on drying and customized panel setting) - Hygiene Care: eliminates over 99% of three common types of harmful bacteria (Bacillus pycocyanus, Escherichia coli, and Staphylococcus aureus) □ Grande AI 24kg washer <ul style="list-style-type: none"> - 24kg, Flat Design (glass type) - Features pet-care cycle (removes stains, smell, and allergens) - Applied auto door opening (door opens automatically after the washing cycle ends) □ BESPOKE Grande AI 20kg dryer <ul style="list-style-type: none"> - Largest available and first 20kg dryer in Korean market, flat design - Features pet-care cycle (specialized in removing fur) - Applied auto door opening (door opens automatically after the drying cycle ends) - Added temperature/humidity sensor to provide dehumidification solutions that sense humidity in the laundry room

DX Division

Research project	Details
Air conditioner ~May 2023	<ul style="list-style-type: none"> □ Wind-Free™ Gallery Floor-standing (56.9 · 62.6 · 75.5 · 81.8 · 92.5 m²) <ul style="list-style-type: none"> - Developed next-gen wind-free platform with exceptionally high energy efficiency (56.9 m² single duct model achieved energy efficiency grade 2) - Equipped with wind-free panel 1.5 times larger than previous model and strong booster wind - Booster purification: Filter with 99.95% dust collection efficiency, Design resembling that of furniture, fits comfortably into the surroundings □ Wind-Free™ Gallery Wide air conditioner (24.4 · 29.3 · 39.6 · 49.5 m²) <ul style="list-style-type: none"> - Secured cost competitiveness by developing new integrated QMD-based platform, strengthened product competitiveness - 12% larger fans cools air faster - Wind-free ultra-energy-efficient technology saves up to 77% on electricity - PM1.0 wind-free filtration system removing particles as small as ultra-fine dust □ Bespoke Window Fit air conditioner (17m², green/blue/pink/beige/gray) <ul style="list-style-type: none"> - Convenient self-installation with the integrated indoor/outdoor unit - Strong rotational cooling with double wings which quickly circulate cold air - Twin inverter compressor that enables low noise and vibration level of 37dB, as quiet as a library - Up to 70% lower power consumption in silent mode □ Increased revenue in the European market with an enhanced lineup that adopts the new the EHS platform <ul style="list-style-type: none"> - Low-frequency noise regulation: met limits for noise regulation of each European country, centering on Germany - Reinforced low-temperature performance: full heating performance at -25 °C - High-temperature discharged water: discharged water of up to 70 °C in a single heat pump cycle - Differentiated design: deep dark color 1 fan outdoor AC unit that harmoniously blends in with the living environment □ BESPOKE wind-free air conditioner WindowFit <ul style="list-style-type: none"> - Wind-free mode cools air without directly blowing wind into the room - Low-noise mode, with a 32dB level, reduces vibration and noise for better sleep - Selection of high efficient energy saving modes tailored to different situations - Enhanced cooling capabilities and larger fans enable stronger and more consistent cooling for a wider area - Safe and simple installation kit allows for a seamless installation □ Infinite Line 1Way BESPOKE wind-free built-in air conditioner <ul style="list-style-type: none"> - Ambient indirect edge lighting that creates a natural ambiance in the space - Wind-free on wider area with high-efficiency energy saving mode - 8-stage care system including for management of air quality and the inside of the air conditioner - AI energy mode for energy reduction tailored to different situations
Vacuums ~March 2023	<ul style="list-style-type: none"> □ Bespoke Jet Stick Vacuum (up to 210W suction) <ul style="list-style-type: none"> - Embedded auto-empty dustbin, smart display of information via LCD Display - Wet Brush dispenses water, thinner cotton-flannel brush □ Jet Bot AI Robot Vacuum <ul style="list-style-type: none"> - Seamless navigation with the realization of world's best object recognition capability (up to 1 cm³) by developing Active 3D sensor and applying it—a world's first - AI autonomous navigation that recognizes house structure and types of objects - Strong suction with jet cyclone and digital inverter motor - Integrated Clean Station which automatically empties dustbin when the Jet Bot starts charging - More convenient cleaning with SmartThings (AI Smart Control) □ Bespoke Slim Stick Vacuum <ul style="list-style-type: none"> - Up to 150W suction with a strong cyclone and digital inverter mode - Self-standing, convenient emptying of the dustbin without having to bend over (Pop & Shoot) - Easy cleaning without pressure on the wrist (ergonomic design) □ Bespoke Jet AI Vacuum (up to 280W suction) <ul style="list-style-type: none"> - Continued to enhance suction power and the original POD (Clean Station); increased market share - Enabled world's strongest suction power of up to 280W, which ensures powerful and hygienic cleaning - Auto setting of the optimal cleaning mode and provides maintenance guidance based on self-diagnosis
Cooking appliances March 2021	<ul style="list-style-type: none"> □ Bespoke Cooker <ul style="list-style-type: none"> - Multi-cook function allows cooking multiple dishes with different heat sources, temperatures, and cooking times. - Cook more than one dish and finish at the same time with Multi-cook mode - Collaborated with eight food companies to apply Cooker-exclusive algorithm - Easy automatic cooking with just one scan using SmartThings - Oven interior material changed from enamel to STS for more heat-efficient, sophisticated design.

DX Division	
Research project	Details
Range hoods February 2022	<ul style="list-style-type: none"> □ Expanded lineup of premium hoods for home <ul style="list-style-type: none"> - Unparalleled performance compared to existing products <ul style="list-style-type: none"> · Optimal air flow with a smart monitoring ventilation system equipped with Triple Air Sensor · Industry's strongest suction power of 780CMH; industry's lowest noise (29dB, Quiet Mark certification) - Improved user convenience by pairing with an electric range and by adopting stainless steel filters with easy-to-clean coatings - Design that reflects various needs of consumers (Bespoke colors) - Entered the B2C market with easy-to-install products and adoption of installment process
Water Purifier March 2021	<ul style="list-style-type: none"> □ Water Purifier for homes <ul style="list-style-type: none"> - Modularized water purifier upgradable and customizable to customer's lifestyle; includes auto-care feature - May be modularized to users' needs (ambient/cold/hot water) - Smart AI care, filter received highest number of NSF certification for tankless water purifier - Bespoke water purifier, customized to users' lifestyle and space
Clothing Care Machine ~May 2021	<ul style="list-style-type: none"> □ Shoe Dresser <ul style="list-style-type: none"> - Powerful odor elimination with Air Wash and UV odor decomposing filter - Low temperature, delicate drying to make your everyday shoes a pleasure to wear. - 99.9% sterilization with the application of a Xenon UVC disinfection system—a first for home appliances in Korea - Tailored care and management of various types of shoes with Jet Shoe Tree
Inverter dehumidifier May 2022	<ul style="list-style-type: none"> □ Ultra-quiet inverter dehumidifier with first-class energy efficiency rating in Korea <ul style="list-style-type: none"> - Fast and strong large-capacity dehumidifier with a wide blade - Smart space care that keeps spaces from bathroom to dressing room pleasant - Dries a wide range of clothing—even delicate items—with swing blade - Simple design and compact size that fits anywhere - Low-noise mode that remains quiet throughout extended hours of use
Dishwasher June 2022	<ul style="list-style-type: none"> □ In-house technology platform that has a competitive edge in the European/Korean markets <ul style="list-style-type: none"> - Fit for Tall Tubs for the European market - Secured competitiveness with top-notch energy/water/low-noise specifications - Strengthened premium experiences via differentiating features, such as an automatic dispenser (for Korean detergents) and a simple UX - Differentiated specifications of Z-wash, Smart, Flexible Basket
Gas oven (2023.04.)	<ul style="list-style-type: none"> □ Dacor 48" Pro-Range for North American market <ul style="list-style-type: none"> - Introduced Heritage Style all gas 48" Pro range - Incorporated healthier cooking POD features, such as air fry and air sous-vide - Equipped with a 7" pop-up display
Mobile eXperience	
Galaxy Foldable ~August 2022	<ul style="list-style-type: none"> □ Galaxy Z Fold 3 5G (August 2021) <ul style="list-style-type: none"> - Screen: Main display 7.6", cover display 6.2" - Size (W x H x D): (folded) 158.2mm x 67.1mm x 14.4~16.0mm (unfolded) 158.2mm x 128.1mm x 6.4mm - Platform (H/W, S/W): 5nm 64-bit octa-core processor, Android 11, One UI 3.1.1 - Supports IPX8 rating (water resistance with a depth of up to 1.5m of freshwater for up to thirty minutes), which is a first for a foldable smartphone - Strengthened durability with the application of Armor Aluminum and tempered glass of Corning Gorilla Glass Victus - Equipped with 7.6" Infinity Flex Display and applied Under Display Camera - Display screen approximately 29% brighter with the new Eco² technology - Main/cover display all support 120Hz screen refresh rate - Applied S-pen for the first time for foldables - Supports both top and bottom half of the screen at any angle with Flex mode panel feature even for apps that are not optimized - Supports Multi Active Window, which splits the screen and allows using up to three apps at once

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy Z Flip 3 5G (August 2021) <ul style="list-style-type: none"> - Screen: Main display 6.7", cover display 1.9" - Size (W x H x D): (folded) 72.2mm x 86.4mm x 15.9~17.1mm (unfolded) 72.2mm x 166mm x 6.9mm - Platform (H/W, S/W): 5nm 64-bit octa-core processor, Android 11, One UI 3.1.1 - Supports IPX8 rating (water resistance with a depth of up to 1.5m of freshwater for up to thirty minutes), which is a first for a foldable smartphone - Strengthened durability with the application of Armor Aluminum and tempered glass of Corning Gorilla Glass Victus - Enhanced usability of cover display: allows to scroll through up to 8 lines of notification/message and supports weather, daily step count, and Samsung Pay - Enhanced Flex mode: supports Auto Framing, which automatically adjusts the frame according to the number of people within the frame, and Dual Preview - Main display supports 120Hz screen refresh rate □ Galaxy Z Fold 4 (August 2022) <ul style="list-style-type: none"> - Screen: Main display 7.6", cover display 6.2" - Size (W x H x D): (folded) 155.1mm x 67.1mm x 14.2~15.8mm (unfolded) 155.1mm x 130.1mm x 6.3mm - Platform (H/W, S/W): SM8475, Android 12.0, One UI 4.1.1 - Improved camera experience via Nightography picture/video, high-resolution (50M/8K), Space Zoom (30X) lens - Easier and faster multi-tasking with the new Taskbar feature - Easy-to-use Multi window thanks to various entry points - AI-based recommendation of related features after recognition of text from an image □ Galaxy Z Flip 4 (August 2022) <ul style="list-style-type: none"> - Screen: Main display 6.7", cover display 1.9" - Size (W x H x D): (folded) 71.9mm x 84.9mm x 15.9~17.1mm (unfolded) 71.9mm x 165.2mm x 6.9mm - Platform (H/W, S/W): SM8475, Android 12.0, One UI 4.1.1 - Supports 25W charging and offers 3700mAh battery - Supports FlexCam, optimized for taking pictures/videos from various angles - Easy and quick switch to and manipulation of applications in Flex mode - Expanded the Cover screen function (simple reply, Samsung Wallet platform, increased Quick settings, etc.)
Galaxy S ~February 2022	<ul style="list-style-type: none"> □ Galaxy S21 5G · S21+ 5G · S21 Ultra 5G (January 2021) <ul style="list-style-type: none"> - Design: Iconic and premium full metal camera housing, bezel-less design - Screen: S21 5G 6.2", S21+ 5G 6.7", S21 Ultra 5G 6.8" - Size (W x H x D): S21 5G 71.2mm x 151.7mm x 7.9mm, S21+ 5G 75.6mm x 161.5mm x 7.8 mm, S21 Ultra 5G 75.6mm x 165.1mm x 8.9 mm - Platform (H/W, S/W): Exynos2100 SDM888, Android 11.0, One UI 3.1 - Supports ultra-high speed 5G, Wi-Fi 6E, high-resolution camera <ul style="list-style-type: none"> · Camera: S21 Ultra 108MP, S21 · S21+ 64MP, Multi Camera Recording function · Dynamic AMOLED 2X Infinity-O display with maximum adaptive frequency of 120Hz · Easy registration and finding objects synced with SmartTag · Supports Digital Car Key service (S21+ 5G · S21 Ultra 5G only) - Supports S Pen (S21 Ultra 5G only) □ Galaxy S22 · S22+ · S22 Ultra (February 2022) <ul style="list-style-type: none"> - Design: Enhanced Galaxy Design attractiveness with geometric bold design and integrity on quality - Screen: S22 6.1", S22+ 6.6", S22 Ultra 6.8" - Size (W x H x D): S22 70.6mm x 146.0mm x 7.6 mm, S22+ 75.8mm x 157.4mm x 7.6 mm, S22 Ultra 77.9mm x 163.3mm x 8.9 mm - Platform (H/W, S/W): SM8450 Exynos2200, Android 12.0, One UI 4.1 - Strengthened camera video filming and low-light function performance <ul style="list-style-type: none"> · Video: Improved HDR and OIS+AI Stabilizer performance to support rich colors and minimize shaking/jittering · Enhanced low-light performance: Applies Big Pixel sensor and On-device AI algorithm - Integrated Ultra/Note by equipping with S Pen* Optimized latency : 5.6ms (S21 Ultra) → 2.8ms (S22 Ultra) - Improved outdoor visibility of display* Peak brightness: 1,500nit (S21 Ultra) → 1,750nit (S22 Ultra) - Battery that can be used all-day and 45W ultra-fast charging speed (S22 Ultra/S22+) - Enhanced durability: Adopts Amor AL and Victus+ Glass with a 10% improvement in durability - Improved completion of Galaxy foundation experience <ul style="list-style-type: none"> · One UI 4.1: sophisticated, sensible interaction experience and personal experience of users · Galaxy Eco: improved end-to-end completion and enhanced convenient experience

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy S23 · S23+ · S23 Ultra (February 2023) <ul style="list-style-type: none"> - Design: Ultimate Premium Experience designed for today and beyond <ul style="list-style-type: none"> * Unrivalled Camera, Ultimate Gaming, Eco-conscious Design - Screen: S23 6.1", S23+ 6.6", S23 Ultra 6.8" - Size (W x H x D): S23 70.9 x 146.3 x 7.6 mm, 168g, S23+ 76.2 x 157.8 x 7.6 mm, 195g S23 Ultra 78.1 x 163.4 x 8.9 mm, 233g - Platform (H/W, S/W): SM8550 Snapdragon 8 Gen 2, Android 13, One UI 5.1 - Enhanced low-light performance based on AI and improved video experience <ul style="list-style-type: none"> · Capable of expressing precise color and tone in portrait mode even in the dark with improved color solutions leveraging AI-based scene optimization technology · Less camera shake for videos thanks to increased Optical Image Stabilization (OIS) correction angle (S22 Ultra 1.5° → S23 Ultra 3°) - Offers crisp and clear, high-resolution details and high-resolution camera experience <ul style="list-style-type: none"> · S23 Ultra adopted ultra-high-resolution 200MP camera · Provides optimal picture quality with auto adjustment of pixel size for sections with different lighting conditions - Improved basic performance, such as heat dissipation and durability against drops <ul style="list-style-type: none"> · Offers seamless gaming experience by enhancing heat dissipation performance, including improved power efficiency and revamped heat dissipation structure · Greater drop protection with adoption of Victus 2 Glass with durability enhanced by 21% - S23 Ultra offers top-notch productivity experience with S-pen <ul style="list-style-type: none"> · AI-based recommendation of related features after text recognition from an image/video - Improved connected experience with multiple devices (phone-PC) <ul style="list-style-type: none"> · Capable of mirroring the smartphone screen on a PC and continuing browsing on the same webpage - Adds to our sustainability story with the adoption of eco-friendly materials overall from dyes to the actual materials <ul style="list-style-type: none"> · Packaging box is 100% recycled paper · Adopts recycled PBT resin to bond metal (10%), recycled metal materials adopted in side keys (30%), etc. · Incorporated recycled glass into the front and back glass panels (25%), natural dyes when processing metals, recycled PET films, etc. - Strengthened privacy and security <ul style="list-style-type: none"> · Visualization of security status; notification of sensitive information when sharing images; and limiting access to private information when repairing products
<p>Galaxy Tab ~February 2022</p>	<ul style="list-style-type: none"> □ Galaxy Tab S7 FE (June 2021) <ul style="list-style-type: none"> - Screen: 12.4" WQXGA (2560x1600) - Size (W x H x D) & weight: 284.8mm x 185.0mm x 6.3mm, 608g (based on the LTE model) - Immersive display with 12.4" large-screen display and slim bezel - Long play time (10,090mAh, up to 13 hours of video play) - Rich sound with the application of Dolby Atmos - Enhanced usability of Samsung Note <ul style="list-style-type: none"> · Simple conversion of handwriting to text · Direct input with S Pen into the input box - Enhanced function of PENUP Drawing <ul style="list-style-type: none"> · Applies layer structure and provides coloring and live drawing - Lightweight keyboard cover (330g) - Delivery of clear voice with 50% reduction of background noise through 3 Mic - Stronger device connectivity <ul style="list-style-type: none"> · Second screen: using tablet as a supplementary monitor of PC · Hands off: sending and continuing what you were doing on your phone to your tablet (Internet, Samsung Notes) · Copy & paste: copy & paste of texts and images between Phone-Tablet - Auto switching: auto-buds switching between Phone-Tablet

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy Tab A8 (December 2021) <ul style="list-style-type: none"> - Screen: 10.5" WUXGA (1920 x 1200) - Size (W x H x D) & weight: 246.8mm x 161.9mm x 6.9mm, 508 g - Platform (H/W, S/W): UniSOC T618(12nm) processor, Android 11, One UI 3 - Memory : 3GB + 32GB / 4GB + 64GB / 4GB + 128GB, microSD up to 1TB Provides new options of RAM 4GB and ROM 128GB compared to previous model - Established and applied the Company's Tablet Design ID (Samsung Logo, shape and location of camera, symmetrical sides and front & back), same colors as the Tab S8 Flagship Family (Gray, Silver, Pink Gold) - Applies the Company's standard tablet display ratio of 16:10, provides immersive multimedia experience with 10.5" large-screen display and slim bezel - Supports Dolby Atmos and features Quad Speaker, free load of apps that specialize in contents such as Samsung TV Plus (offers free Live Streaming and VOD) - Supports 2 Split Windows and Pop-up view with Multi-Active Window, enhanced multi-tasking experience with the support of Drag & Split function—applied in Fold3—for the first time for tablets - Improved usability for online classes with the support of Screen Recorder for the first time among Tab A series <ul style="list-style-type: none"> · Wider support of One UI 3.1.1 Galaxy Experience (Copy&Paste, Auto Sync, Auto Switch) □ Galaxy Tab S8 · S8+ · S8 Ultra (February 2022) <ul style="list-style-type: none"> - Screen: Tab S8 11" WQXGA+ (2560 x 1600) Tab S8+ 12.4" WQXGA+ (2800 x 1752) Tab S8 Ultra 14.6" WQXGA+ (2960 x 1848) - Size (W x H x D) & weight: Tab S8 253.8mm x 165.3mm x 6.3mm, 503g Tab S8+ 285.0mm x 185.0mm x 5.7mm, 567g Tab S8 Ultra 326.4mm x 208.6mm x 5.5mm, 726g - Platform (H/W, S/W): SM8450 processor, Android 12, One UI 4.1 - Memory : 8GB+128GB / 8GB+256GB / 12GB+256GB / 16G+512G, microSD up to 1TB - Enhanced video call experienced [Tab S8 Ultra] Provides dual front cameras (12M 80-degrees, 12M 120-degrees) and Auto Framing function [Tab S8+ / Tab S8] Provides 12M 120-degree front camera and Auto Framing function - Enhanced AP Sustain performance by improving heat sink design (gpu 70%, cpu 25%↑ compared to previous model), enhanced gaming performance - Improved S pen latency (5.6ms → 2.65ms) and optimized prediction algorithm Provides seamless and precise writing experience when writing & drawing, just like a real pen, enhancements to lessen the parallax effect - Enhanced the audio experience of video calls by upgrading 3 MIC noise cancellation performance (3 types of noise cancellation mode) - Equipped with WiFi 6E function—a first for a tablet—and improved big data transmission time between devices - Reduced charging time of Phone Power Share by half compared to the previous model by adopting D2D 15W charging function
Galaxy A ~May 2023	<ul style="list-style-type: none"> □ Galaxy A52 LTE · 5G (March 2021) <ul style="list-style-type: none"> - Offers enhanced user experience and increased competitiveness via strengthened core features - Screen: 6.5" FHD+ sAMOLED HID (2,400 x 1,080) - Size (W x H x D): 75.1mm x 159.9mm x 8.4mm - Platform (H/W, S/W): SDM750G (5G)/SDM720G (LTE), Android 11, One UI 3.1 - Supreme smooth UX/Dynamic refresh rate and Brightest (6.5" sAMOLED with 120Hz (5G)/90Hz (LTE), 800nit) - High-resolution 64MP Quad Camera (64M OIS/12M UW/5M Depth/5M Macro) - Powerful AP with High Capacity Battery (4,500mAh) □ Galaxy A72 (March 2021) <ul style="list-style-type: none"> - Offers enhanced user experience and increase competitiveness via strengthened core features - Screen: 6.7" FHD+ sAMOLED HID (2,400 x 1,080) - Size (W x H x D): 77.4mm x 165.0mm x 8.4mm - Platform (H/W, S/W): SDM720G, Android 11, One UI 3.1 - High refresh Rate Brightest Display (6.7" FHD+ sAMOLED with 90Hz, 800nit) - Advanced High-res/Multi Camera, More detail with blur-less (64M OIS/12M UW/8M Tele/5M Macro) - Long-lasting Battery with bigger capacity (5,000mAh)

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy A32 LTE · 5G (LTE: March 2021; 5G: January 2021) <ul style="list-style-type: none"> - Offer enhanced user experience and increase competitiveness by strengthening core features - Screen: LTE 6.4" FHD+ sAMOLED (2,400 x 1,080)/5G 6.5" HD+ TFT (1,600 x 720) - Size (W x H x D): LTE 73.6mm x 158.9mm x 8.4mm/5G 76.1mm x 164.2mm x 9.1mm - Platform (H/W, S/W): LTE MT6769T/5G MT6853V, Android 11, One UI 3.1 - LTE <ul style="list-style-type: none"> · Brightest Display: 800nit Super AMOLED · High Resolution Camera: 64MP Quad (64M W/8M UW/5M Macro/5M Depth) · High Capacity Battery: 5,000mAh - 5G <ul style="list-style-type: none"> · Rich Camera Experience of 48MP Quad, Penta Mode Camera (48M W/8M UW/5M Macro/2M Depth) - High Capacity Battery: 5000mAh
	<ul style="list-style-type: none"> □ Galaxy Quantum2 A82 (April 2021) <ul style="list-style-type: none"> - Screen: 6.7" QHD+ (3,200 x 1,440) - Size (W x H x D) & weight: 161.9mm x 73.8mm x 8.1mm, 176g - Platform (H/W, S/W): SDM855+, Android 11, One UI 3.1 - Applied QRNG security chip set - Supports expansive large-screen and smooth screen transition of 120Hz <ul style="list-style-type: none"> · Powerful camera that enables photographing on a professional level (ultra-wide 12MP, main 64MP, close-up 5MP)
	<ul style="list-style-type: none"> □ Galaxy A03-Core (December 2021) <ul style="list-style-type: none"> - Screen: 6.5" HD+(1480 x 720) TFT 60Hz - Size (W x H x D) & weight: 164.2mm x 75.9mm x 9.1mm, 211g - Platform (H/W, S/W): 28nm octa-core processor, Android 11(Android GO) <ul style="list-style-type: none"> · Enhanced CPU performance compared to previous model A01-Core (28nm quad-core processor) - Highly price efficient product that applies large-screen/high-capacity battery to address the entry market - Enhanced display (5.3"→6.5" HD+) and battery (3,000→5,000mAh) compared to previous model A01-Core
	<ul style="list-style-type: none"> □ Galaxy A23 (March 2022) <ul style="list-style-type: none"> - Screen: 6.6" FHD+ (2408 x 1080) 90Hz - Size (W x H x D) & weight: 76.9mm x 165.4mm x 8.4mm, 195g - Platform (H/W, S/W):SDM680, Android 12, One UI 4.1 - 6.6" FHD+ display, supports 90Hz screen refresh rate (previous model: A22 6.4" HD+ 90Hz) - Vivid pictures in the dark without camera shake with the adoption of high-definition 50MP OIS camera <ul style="list-style-type: none"> · Adoption of high-capacity 5,000mAh battery and supports 25W ultra-fast charging
	<ul style="list-style-type: none"> □ Galaxy A13 5G (January 2022) <ul style="list-style-type: none"> - Screen: 6.5" HD+ (1600 x 720) 90Hz - Size (W x H x D) & weight: 76.5mm x 164.5mm x 8.8mm, 195g - 6.5" HD+ display, supports 90Hz screen refresh rate (previous model: A12 6.5" HD+ 60Hz) - Super-low priced 5G model for LTE user migration and expansion of the 5G market - Strengthened AP (5G) AP (MT6765 → MT6833v) to address entry market - Higher definition of pictures compared to the previous model (A12 16MP) with the application of 50MP camera
	<ul style="list-style-type: none"> □ Galaxy A13 LTE (March 2022) <ul style="list-style-type: none"> - Screen: 6.6" FHD+ (2400 x 1080) 60Hz - Size (W x H x D) & weight: 76.4mm x 165.1mm x 8.8mm, 195g - Platform (H/W, S/W): 8nm octa-core processor, Android 12, One UI Core 4.1 - Provides better large screen experience compared to the previous model (A12 6.5" HD+) by adopting 6.6" FHD+ display - Higher definition of pictures compared to the previous model (A12 48MP) by adopting 50MP camera - Able to use up to two days on a single charge by applying 5,000mAh high-capacity battery and AI Power mode
	<ul style="list-style-type: none"> □ Galaxy A73 5G (April 2022) <ul style="list-style-type: none"> - Screen: 6.7" FHD+ Super AMOLED+ (1080 x 2400) 120Hz - Size (W x H x D) & weight: 76.1mm x 163.7mm x 7.6mm, 181g - Platform (H/W, S/W): SDM778G, Android 12, One UI 4.1 - Vivid pictures in the dark without camera shake with the support of 108MP high-resolution picture quality and OIS - Soft and clear screen experience with the adoption of high refresh rate of 120Hz and sAMOLED display - Adopts 5,000mAh high-capacity battery (2-day battery life) and supports 25W ultra-fast charging speed - Offers strong durability with the adoption of Gorilla Glass 5 and IP67 rating - Provides the latest flagship experience with the support of One UI 4.1

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy A53 5G (April 2022) <ul style="list-style-type: none"> - Screen: 6.5" FHD+ Super AMOLED (1080 x 2400) 120Hz - Size (W x H x D) & weight: 74.8mm x 159.6mm x 8.1mm, 189g - Platform (H/W, S/W): Exynos1280, Android 12, One UI 4.1 - 8.1t slim design and 5,000 mAh high-capacity battery (0.3t↓, 500 mAh↑ compared to previous model) - Soft and clear screen experience provided by the combination of high refresh rate of 120Hz and fast response speed of sAMOLED - Enhanced glass durability with the adoption of Gorilla Glass 5 - Provides the latest flagship experience with the support of One UI 4.1
	<ul style="list-style-type: none"> □ Galaxy A33 5G (April 2022) <ul style="list-style-type: none"> - Screen: 6.4" FHD+ Super AMOLED (1080 x 2400) 90Hz - Size (W x H x D) & weight: 74.0mm x 159.7mm x 8.1mm, 186g - Platform (H/W, S/W): Exynos1280, Android 12, One UI 4.1 - Delivers enhanced screen experience with the support of 6.4" FHD+ display and 90Hz (previous model: A32-5G HD+ TFT 60Hz) - High-definition pictures without camera shake with the adoption of 48MP OIS camera - Enhanced durability with the adoption of Gorilla Glass 5 and support of IP67 rating for dust and water resistance - Adopts 5,000 mAh high-capacity battery (2-day battery) and supports 25W ultra-fast charging speed
	<ul style="list-style-type: none"> □ Galaxy A23 5G (September 2022) <ul style="list-style-type: none"> - Screen: 6.6" FHD+ TFT LCD (1080 x 2400) 120Hz - Size (W x H x D) & weight: 76.9mm x 165.4mm x 8.4mm, 197g - Platform (H/W, S/W): SDM695, Android 12, One UI 4.1 - Upgraded AP performance compared to previous model (A22-5G MT6833V) with the application of SDM695 - High-resolution pictures without camera shake with the adoption of 50MP OIS camera (OIS is not supported in the North America region) - Provides enhanced large-screen experience compared to previous model (A22-5G 6.6" HD+ 90Hz) by adopting 6.6" FHD+ - Applies 5,000mAh large-capacity battery (2-day battery) and supports 25W ultra-fast charging
	<ul style="list-style-type: none"> □ Galaxy A14 5G (January 2023) <ul style="list-style-type: none"> - Screen: 6.6" FHD+ TFT LCD (2408 x 1080) 90Hz - Size (W x H x D) & weight: 78.0 x 167.7 x 9.1mm, 205g - Platform(H/W, S/W) : MT6833V/Exynos1330, Android 13, One UI core 5.1 - High-resolution pictures (5MP → 13MP) with adoption of higher spec front camera compared to previous model (A13-5G) - Enhanced screen experience compared to previous model (A13-5G 6.5" HD+) with adoption of 6.6" FHD+ large-screen display - Applies 5,000mAh large-capacity battery
	<ul style="list-style-type: none"> □ Galaxy A54 5G (March 2023) <ul style="list-style-type: none"> - Screen: 6.4" FHD+ Super AMOLED (2340 x 1080) 19.5:9 120Hz - Size (W x H x D) & weight: 76.7 x 158.2 x 8.2mm, 202 g - Platform (H/W, S/W) : Exynos1380, Android 13, One UI 5.1 - Improved visibility through enhanced performance of AP picture quality, fine-tuning by light condition, and peak brightness of 1,000nit - Maximized performance by offering optimal refresh rate of 120Hz and boosted battery efficiency - Provides rich haptics experience thanks to elaborate adjustment of linear motor vibration - Enhanced balanced design and premium CMF (adopts 6.4", 19.5:9) - Offers the latest flagship experience with One UI 5.1
	<ul style="list-style-type: none"> □ Galaxy A34 5G (March 2023) <ul style="list-style-type: none"> - Screen: 6.6" FHD+ Super AMOLED (2340 x 1080) 120Hz - Size (W x H x D) & weight: 78.1 x 161.3 x 8.2mm, 199g - Platform (H/W, S/W) : MT6877V, Android 13, One UI 5.1 - Offers enhanced screen experience by featuring 6.6" FHD+, 1,000nit brightness, and 120Hz refresh rate - High-resolution pictures without camera shake with adoption of 48MP OIS camera - Equipped with a linear motor, which provides haptics experience of a flagship model

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy A14 (March 2023) <ul style="list-style-type: none"> - Screen: 6.6" FHD+ TFT LCD (2408 x 1080) 60Hz - Size (W x H x D) & weight: 78.0 x 167.7 x 9.1mm, 201g - Platform (H/W, S/W): Exynos 850/MT6769V, Android 13, One UI core 5.1 - Offers enhanced selfie experience (8MP → 13MP) with adoption of higher spec front camera compared to previous model (A13) - Applies 5,000mAh large-capacity battery □ Galaxy A24 (2023.05.) <ul style="list-style-type: none"> - Screen: 6.5" FHD+ sAMOLED U-Cut (1080 x 2340) 90Hz - Size (W x H x D) & weight: 77.6mm x 162.1mm x 8.3mm, 195g - Platform (H/W, S/W): MT6789V, Android 13, One UI core 5.1 - Enhanced selfie experience (8MP → 13MP) with adoption of higher spec front camera compared to A23 - Records videos without camera shake via the adoption of new VDIS in addition to the previous OIS feature - Offers improved outdoor visibility compared to the A23, with wider color gamut spectrum, providing a brighter and more convenient screen experience
Galaxy Book ~February 2023	<ul style="list-style-type: none"> □ Galaxy Book Go (April 2021) <ul style="list-style-type: none"> - Screen: 14" FHD (1920 x 1080) - Size (W x H x D) & weight: 323.9mm x 224.8mm x 14.9mm, 1,380g - Platform: 2nd-generation Snapdragon 7C, Windows 10 - Supports LTE that enables Internet anywhere anytime - Slim design optimized for portability (14.9mm thick) - Rich sound with the application of Dolby Atmos - Long play time (up to 18 hours of battery life) - Stronger connectivity between Tablet-Phone <ul style="list-style-type: none"> • Quick Share: easy share of files between phone and tablet • Second Screen: using tablet as a supplementary monitor of PC • Galaxy Book Smart Switch: simple sending of data from the previous notebook • SmartThings: syncing smart devices □ Galaxy Book2 Pro 360 (April 2022) <ul style="list-style-type: none"> - Screen: 15.6" FHD Super AMOLED (16:9), up to 500nit (HDR), Color Volume 120% 13.3" FHD Super AMOLED (16:9), up to 500nit (HDR), Color Volume 120% - Size (W x H x D) & weight: 15.6" 354.85 x 227.97 x 11.9mm, 1.41kg 13.3" 302.5 x 202 x 11.5 mm, 1.04kg - Platform, OS: 12th Gen Intel CPU (EVO Verified by Intel), Windows 11 - sAMOLED: Default 370nit/HDR 500nit, Color volume 120% - S Pen & Touchscreen support - 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen) - SSD: Gen4 SSD, Expendable SSD (M.2 2230) - Supports WiFi 6E - Battery: 15.6" 68Wh (21hrs), 13.3" 63Wh (21hrs) - Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, etc. <ul style="list-style-type: none"> • QR Sign-in: logs into Galaxy Book with a QR scan linked to the account on your phone • Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software □ Galaxy Book2 Pro (April 2022) <ul style="list-style-type: none"> - Screen: 15.6" FHD AMOLED (16:9), up to 500nit (HDR), Color Volume 120% 13.3" FHD AMOLED (16:9), up to 500nit (HDR), Color Volume 120% - Size (W x H x D) & weight: 15.6" 355.4 x 225.8 x 11.7mm, 1.11kg 13.3" 304.4 x 199.8 x 11.2mm, 0.87kg - Platform, OS: 12th Gen Intel CPU (EVO Verified by Intel), Windows 11 - AMOLED: Default 400nit/HDR 500nit, Color volume 120% - 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen) - SSD: Gen4 SSD, Expendable SSD (15.6" Only, M.2 2280) - Supports WiFi 6E, 5G Sub6 (15.6"Only) - Battery: 15.6" 68Wh (21hrs), 13.3" 63Wh (21hrs) - Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, etc. <ul style="list-style-type: none"> • QR Sign-in: logs into Galaxy Book with a QR scan linked to the account on your phone • Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy Book2 Go 5G (December 2022) <ul style="list-style-type: none"> - Screen: 14" IPS (1920 x 1080) - Size (W x H x D): 323.6mm x 224.8mm x 15.5mm - Platform: WoA 7C+ Gen3, Window 11 - Developed Mass WoA product adopting 7C+ Gen3 (CPU 63%↑, GPU 102%↑ compared to 7C Gen2) - Improved picture quality of display (TN →IPS) - Supports WiFi 6E, 5G Sub6 - Adopted 5G model for the mass market which supports ENDC/eSIM - Supports 45W charging - Completed eight tests from the MIL-STD-810H certification <ul style="list-style-type: none"> • Shock, high/low temperature, thermal shock, dust, vibration, low pressure, humidity
	<ul style="list-style-type: none"> □ Galaxy Book2 Pro 360 (2023) (December 2022) <ul style="list-style-type: none"> - Screen: 13.3" FHD AMOLED (16:9), Touch Screen, Color Volume (DCI-P3) 100%, S Pen - Size (W x H x D) & weight: 13.3" 302.5 x 202.0 x 11.5mm, 1.04kg - Platform, OS: Qualcomm Snapdragon 8cx Gen3, Windows 11 Home - AMOLED: 13.3" FHD Super AMOLED (16:9), Color Volume (DCI-P3) 100%, up to 370nit, S Pen - Speakers: Stereo 2 x 4W (Smart AMP), AKG, Dolby Atmos - SSD: eUFS on board, 256GB - WiFi 6E (802.11ax) - Battery: 63Wh (Video Play 35hrs↑) - Galaxy ecosystem: Smart Switch, Samsung Account, Samsung Apps, Keyboard & Touch Pad Sharing between Galaxy devices - Security: fingerprint recognition, Secured Core PC (Level 3, H/W & F/W Protection) - AI: Noise Reduction, Video Call with Neural Engine
	<ul style="list-style-type: none"> □ Galaxy Book3 Ultra (February 2023) <ul style="list-style-type: none"> - Screen: 16.0" OLED 120Hz, 370nit/500nit, 16:10 (2880 x 1800, 3K) - Size (W x D x H): 355.4 x 250.5 x 16.5mm, 1.79kg, - Intel RPL-H i7/i9, Win 11, LPDDR5, Nvidia® RTX 4050/4070, 76W Battery, FHD MIPI Camera, A/C/D AI, B Glass, TA 100W - Adopts 13th Gen Intel® Core™ H-series mobile processor and next-generation Nvidia® GeForce RTX™ 40 Series graphics - 3K high-resolution display that adopts WQXGA+; color volume 120% - Touch pad 39% larger in size (compared to Galaxy Book 2 Pro 33.7 cm / 39.6cm) - Fast charging speed of 100W; charges 55% of battery in 30 minutes - Quad Speaker: features AKG and Dolby Atmos - Supports Galaxy Ecosystem <ul style="list-style-type: none"> • Multi Control: capable of using keyboard and mouse on a smartphone and a tablet; can transfer files or copy and paste files and images between devices • Second Screen: using Galaxy Tab as a dual monitor; capable of extending or replicating PC screen • Quick Share: wireless file sharing between Galaxy devices, such as phone and tablet
	<ul style="list-style-type: none"> □ Galaxy Book3 Pro 360 (February 2023) <ul style="list-style-type: none"> - Screen: 16.0" WQXGA+ AMOLED (16:10) 2880 x 1800, Touch Screen, DCI-P3 100%, S Pen - Size (W x H x D) & weight: 16.0" 355.4 x 252.2 x 12.8mm, 1.69kg - Platform, OS: Intel 13th Gen CPU (EVO Verified by Intel), Windows 11 - Dynamic AMOLED 2X: 3K (2880x1800), 500nit (HDR), 120Hz, DCI-P3 120% - S Pen & Touchscreen support - 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen) - Quad SPK (AKG/Dolby, Max 5Wx2, 2Wx2), Studio Grade Dual Mic - SSD: Gen4 SSD - Supports WiFi 6E - Battery: 76Wh - Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, Samsung Pass, etc. - Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy Book3 Pro (February 2023) <ul style="list-style-type: none"> - Screen: 16" WQXGA+ AMOLED (16:10), up to 500nit(HDR), 120Hz, DCI-P3 120% 14" WQXGA+ AMOLED (16:10), up to 500nit(HDR), 120Hz, DCI-P3 120% - Size (W x H x D) & weight: 16" 355.4 x 250.4 x 12.5mm, 1.56kg 14" 313.3 x 223.8 x 11.3mm, 1.17kg - Platform, OS: Intel 13th Gen CPU (EVO Verified by Intel), Windows 11 - Dynamic AMOLED 2X: 3K (2880 x 1800), 500nit (HDR), 120Hz, DCI-P3 120% - 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen) - Quad SPK (AKG/Dolby, Max 5Wx2, 2Wx2), Studio Grade Dual Mic - SSD: Gen4 SSD, Expendable SSD (M.2 2280) - Supports WiFi 6E - Battery: 16" 76Wh, 14" 63Wh - Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, Samsung Pass, etc. - Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software
	<ul style="list-style-type: none"> □ Galaxy Book3 360 (February 2023) <ul style="list-style-type: none"> - Screen: 15.6" FHD Super AMOLED (16:9), up to 500nit (HDR), DCI-P3 120% 13.3" FHD Super AMOLED (16:9), up to 500nit (HDR), DCI-P3 120% - Size (W x H x D) & weight: 15.6" 355.4 x 228.0 x 13.7mm, 1.46kg 13.3" 304.4 x 202.0 x 12.9 mm, 1.16kg - Platform, OS: Intel 13th Gen CPU (EVO Verified by Intel), Windows 11 - sAMOLED: 1080p FHD, 500nit (HDR), 60Hz, DCI-P3 120% - S Pen & Touchscreen support - 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen) - Stereo SPK (Dolby, 2Wx2), Studio Grade Dual Mic - SSD: Gen4 DRAM-less SSD, Expendable SSD (15.6") - Supports WiFi 6E - Battery: 15.6" 68Wh, 13.3" 61.1Wh - Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, Samsung Pass, etc. - Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software
Galaxy Watch ~August 2022	<ul style="list-style-type: none"> □ Galaxy Watch4 & Galaxy Watch4 Classic (August 2021) <ul style="list-style-type: none"> - Display: Watch4: (44mm) 1.4" (450 x 450), (40mm) 1.2" (396 x 396); Watch4 Classic: (46mm) 1.4" (450 x 450), (42mm) 1.2" (396 x 396) - Size (W x H x D): Watch4: (44mm) 44.4 x 43.3 x 9.8mm, (40mm) 40.4 x 39.3 x 9.8mm; Watch4 Classic: (46mm) 45.5 x 45.5 x 11.0mm, (42mm) 41.5 x 41.5 x 11.2mm - Platform (H/W, S/W): AP Exynos W920 (5nm 64-bit Dual-Core), Wear OS Powered By Samsung, One UI Watch of Wear OS 3.0 - Memory: improved performance and increased storage with 1.5GB RAM + 16GB ROM - Higher resolution 330 ppi display - Pursuing differentiation by featuring body composition measurement for the first time and enhancing usability - Advanced sleep tracking, including blood oxygen level measurement and snore detection - Wider app ecosystem and enhanced sync experience based on Wear OS <ul style="list-style-type: none"> • Provides key services of Google, including Play Store/Google Map/YT Music • Supports specialized fitness apps and other various service apps

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy Watch5 & Galaxy Watch5 Pro (August 2022) <ul style="list-style-type: none"> - Display: Watch5 Pro (46mm) : 34.6mm AMOLED (450 x 450) 330PPI Watch5 (44mm) : 34.6mm AMOLED (450 x 450) 330PPI Watch5 (40mm) : 30.4mm AMOLED (396 x 396) 330PPI - Size (W x H x D) & weight: Watch5 Pro (46mm) → 45.4 x 45.4 x 10.5 mm, 46.5g Watch5 (44mm) → 44.4 x 43.3 x 9.8 mm, 33.5g Watch5 (40mm) → 40.4 x 39.3 x 9.8 mm, 28.7g - Platform (H/W, S/W): Exynos W920, Wear OS Powered by Samsung (Wear OS 3.5) - Signature circular design with adoption of sapphire crystal glass - Enhanced integrated health monitoring function equipped with the advanced BioActive Sensor <ul style="list-style-type: none"> • Improved accuracy of body composition, heart rate, blood pressure, and ECG; and advanced sleep monitoring function - Equipped with One UI Watch 4.5 based on Wear OS, which enables various Google mobile services and apps - Premium titanium body; optimized for outdoor activities with enhanced GPS tracking features (Watch5 Pro) <ul style="list-style-type: none"> • Enhanced performance and durability for better utilization in outdoor activities, such as hiking and cycling • Provides Magnetic D-Buckle Sport Band, which offers better durability, convenience, and style • Save and share workout journey using Route Workout and GPS Exchange Format (GPX) files • Provides turn-by-turn navigation along previous routes through the Track Back feature • Enables lengthy use for outdoor activities via the adoption of large-capacity battery (590mAh)
Galaxy buds ~August 2022	<ul style="list-style-type: none"> □ Galaxy Buds Pro (January 2021) <ul style="list-style-type: none"> - Design: Premium TWS, in-ear type with Intelligent ANC feature - Size (W x H x D): (earbuds) 20.5 x 19.5 x 20.8mm, (cradle) 50 x 50.2 x 27.8mm - Platform (H/W, S/W): BCM43015, RTOS - 2Way (woofer + tweeter) 11mm speaker offers enhanced sound quality <ul style="list-style-type: none"> • High-quality phone call sound with 3 mics and accelerometer (voice pickup sensor) • In-ear type, Intelligent ANC and voice detect function instantly switches from ANC to Ambient sound when it hears your voice • 3D Audio provides a truly immersive experience resembling that of a movie theater - IPx7-level water resistant □ Galaxy Buds 2 (August 2021) <ul style="list-style-type: none"> - Enhanced competitiveness of the Buds mass-market model by enhancing basic functions and adding ANC - Size (W x H x D): (earbuds) 17.0 x 20.9 x 21.1 mm, (cradle) 50.0 x 50.2 x 27.8 mm - BES2500 ZP-83 (BT + Codec + Flash) new low-power management solution* <ul style="list-style-type: none"> • Provides ANC • Play time of up to 29 hours (based on streaming, with ANC off) - Optimized RF frequency performance by applying integrated Touch + BT Antenna FPCB - Enhanced audio performance of canal-type wireless earbuds <ul style="list-style-type: none"> • Applied algorithm that maximizes noise cancelling performance by utilizing DNN (DNN + 3-Mic +VPU) * DNN: Deep Neural Network , VPU: Voice Pickup Unit • Improved latency of switching to Ambient Sound Mode (3.2ms→0.65ms) • Better low frequency sounds by applying new materials to the woofer cone • Better noise cancelling of the microphone with the adoption of flawless microphone • Enhanced ANC and sound quality by changing the density of the ventilation duct and improving the pipe conduit of feedback mic • Reduced wind noise by maximizing and optimizing the location of the chamber space of the microphone

DX Division

Research project	Details
	<ul style="list-style-type: none"> □ Galaxy Buds 2 Pro (August 2022) <ul style="list-style-type: none"> - Kernel-type premium TWS that offers high-quality 24bit Hi-Fi audio and comfortable fit - Size (W x H x D): Earbuds 21.6mm x 19.9mm x 18.7mm Cradle 50.2mm x 50.1mm x 27.7mm - Platform (H/W, S/W): BES2700YP 1Chip solution, RTOS <ul style="list-style-type: none"> • First Samsung Buds to apply 24bit/48kHz Hi-Fi technologies to offer a high-quality audio experience by minimizing loss of sound quality of the original recording; Intelligence ANC which adopts All High-SNR MIC, noise cancelling solution, and voice detect technology • Strengthened listening experience of the immersive 360 Audio feature via multi-channel audio and enhanced technology that tracks head movements • Provides clear and upgraded call quality through improved VPU and personalized beamforming technology - Offers comfortable and stable fit thanks to the ergonomic design <ul style="list-style-type: none"> • Improved fit through smaller size—15% size reduction compared to previous model—and enhanced structure of vent holes - Strengthened user experience via easy connection between Galaxy Devices <ul style="list-style-type: none"> • Expanded the Auto Switch feature from smartphones, tablets, and watches to TVs, and the transition between devices is made easier and faster
Network	
RAN S/W Package–June 2021	<ul style="list-style-type: none"> □ SVR21B NR vDU SW package (June 2021) <ul style="list-style-type: none"> - TDD-based C-Band vDU <ul style="list-style-type: none"> • Flexible base station upgrade without H/W change and resource allocation * vDU (virtual DU): realizing the function of 5G base station by developing commercial server-based S/W
Base stations February 2021–May 2023	<ul style="list-style-type: none"> □ Developed MMU Beam Forming SoC (February 2021) <ul style="list-style-type: none"> - SoC performs functions that Beam Forming FPGA, within MMU board, performs - 30% more power efficient than previous model (Maximum power consumption: less than 40W) □ Developed 5 types of ORAN* RU for the US (September 2021) <ul style="list-style-type: none"> - Defined DU-RU standard interface, which allows to connect any vendor DU to any vendor RU - AWS/PCS, two types of 700/850 4T4R 40W, two types of 320W, C-Band 8T8R 320W □ AWS/PCS Dual Band 16T16R FDD MMU for North America (October 2021) <ul style="list-style-type: none"> - The Company's first commercialized 16T16R FDD dual band MMU product that applies our in-house-developed chip □ Domestic 3.5GHz NR 32T32R TDD MMU (February 2022) <ul style="list-style-type: none"> - Applied Mechanical PSA (phase shift antenna) for the first time <ul style="list-style-type: none"> * Automatically controls the antenna angle (tilt 0-12°) inside the MMU with a motor □ Developed high-performance RFIC + DFE integrated chip (April 2022) <ul style="list-style-type: none"> * RFIC (Radio Frequency Integrated Circuit): high-frequency integrated circuit suitable for wireless communication * DFE (Digital Front End): last stage of digital signal processing for communication □ Two types of FDD RU for Dish (Dual Band/Tri Band RU) (September 2022) <ul style="list-style-type: none"> - Developed 5G FDD RU product that complies with the O-RAN standard and supports multiple frequency bands at the same time * frequency supported by RU: n71(600MHz), n29(700MHz), n66(AWS: 1.7GHz/2.1GHz), n70(AWS: 1.7GHz/1.9GHz) □ Gen.3 Dual Band NR 2T2R AU (October 2022) <ul style="list-style-type: none"> - Developed the world's first Dual Band (28GHz+39GHz) AU - Upgraded product performance by increasing output and capacity twofold with the same size compared to the existing 2nd generation AU □ Domestic 3.5GHz NR 64T64R MMU (November 2022) <ul style="list-style-type: none"> - Developed 64T64R Massive MIMO MMU, which was commercialized in the domestic market for the first time - Increased antenna elements twofold and output by 2.7 times compared to the existing 32T32R MMU (old model) for the domestic market □ 3.5GHz CBRS NR Strand Smallcell (March 2023) <ul style="list-style-type: none"> - Developed Strand Small Cell (small cell solution designed to be installed on cables) for the first commercial use - Cell solution that integrates baseband, radio, and antenna into a single form factor - Equipped with the Company's newest in-house chipset—2nd generation 5G modem SoC—and its small size enables installation on cables □ C-band NR 64T64R MMU (2023.05.) for North America <ul style="list-style-type: none"> - More compact and lightweight 64T64R MMU allows higher output with low-power mode compared to the 1st generation

DS Division

Research project	Details
Memory	
DRAM for mobile November 2021–October 2022	<ul style="list-style-type: none"> □ Development of LPDDR5X DRAM <ul style="list-style-type: none"> - Improved speed by over 30% and power efficiency by approximately 20% compared to previous model - Based on 14nm; expansion of application areas that use high performance, low power consumption memory from mobile to server and automotives, with expansion to up to 64GB per memory package - Verified the industry-leading operating speed (8.5Gbps) by mounting the 8GB LPDDR5X DRAM package on Qualcomm's Snapdragon mobile platform
DRAM for server March 2021–May 2023	<ul style="list-style-type: none"> □ Development of high-capacity DDR5 memory applying HKMG process—an industry first <ul style="list-style-type: none"> - Realization of 512GB DDR5 module with the application of High-K Metal Gate and 8-stack TSV - Reduced power consumption by around 13% and more than double performance compared to the existing process □ Planning to apply it in the next-generation computing, super computers, and high capacity data centers □ Mass production of the industry's most advanced 12nm-class DRAM (May 2023) <ul style="list-style-type: none"> - Enhanced productivity and improved low power consumption characteristics compared to 14-nano DRAM, improving productivity by approximately 20% and reducing power consumption by approximately 23%, which maximizes next-generation computing - Produced via our completed highly advanced node that applies cutting-edge technologies, such as a capacitor utilizing a new material with a high dielectric constant - Provide high-performance and high-density DRAM solutions to meet demand for the high-throughput computing market and expand 12nm-class DRAM lineup, which will be supplied to various applications
Graphic DRAM July 2022–November 2022	<ul style="list-style-type: none"> □ Development of GDDR6 DRAM, industry's one of the fastest graphic DRAMs <ul style="list-style-type: none"> - First in the industry to deliver speeds up to 24Gbps by applying 3rd generation 10nm-class (1z) process - Met customer needs by enhancing performance by more than 30% compared to the previous product, leading to processing speeds of up to 1.1TB per second; supporting operation voltage of 1.1V; and improving power efficiency by 20% - Secured compatibility by being fully compliant with specifications of JEDEC, an international semiconductor standardization body - Expanded applications, including next-generation graphics cards, AI, and HPC □ Development of GDDR6W, graphics memory that applies advanced packaging technology <ul style="list-style-type: none"> - GDDR6W is manufactured by introducing Fan-Out Wafer-Level Packaging (FOWLP) technology—a construction and stacking technology—without developing a new memory die - Increased performance (bandwidth) and capacity by twofold while maintaining the same packaging size of GDDR6
HBM DRAM February 2021–October 2022	<ul style="list-style-type: none"> □ Developed world's first AI HBM-PIM with an AI engine <ul style="list-style-type: none"> - More than two times the performance compared to previous HBM2, system energy reduced by approximately 70%. - Unveiled academic paper in Feb 2021 at conference held by ISSCC, a highly reputable organization in the semiconductor industry - Enables application without changing the system by using existing memory interface - Cooperate with data center and AI customers on standardization of PIM and establishing eco system. □ Expanded memory product lines that integrate an AI engine (performance evaluation of HBM-PIM and development of AXDIMM/LPDDR5-PIM) <ul style="list-style-type: none"> - Unveiled the case in which the HBM-PIM developed last February was incorporated in the system (integration with the Xilinx Alveo AI accelerator system boosts overall system performance by 2.5 times while reducing energy consumption by more than 60%) - AXDIMM, a DRAM module with an AI engine, offers twice the performance and a 40% decrease in energy usage - Unveiled LPDDR5-PIM that integrated mobile DRAM and PIM technology □ Developed AI-accelerator equipped with HBM-PIM and GPU <ul style="list-style-type: none"> - Materialized HBM-PIM Cluster by installing HBM-PIM memory in AMD's GPU accelerator - Compared to existing GPU accelerators, on average, the addition of HBM-PIM improved performance by more than double and reduced energy consumption by more than 50% - In preparation to provide software that supports accelerators equipped with HBM-PIM, so consumers are expected to be able to use PIM memory solutions in an integrated software environment

DS Division

Research project	Details
NAND November 2022	<ul style="list-style-type: none"> □ Mass production of 8th generation V-NAND <ul style="list-style-type: none"> - Mass production of 1Tb 8th generation V-NAND, which is among the highest capacities in the world - Significantly enhanced bit productivity per wafer and secured one of the industry's highest bit density - Enhanced performance by 1.2 times compared to existing model, featuring an input and output (I/O) speed of up to 2.4Gbps with the adoption of a next-generation interface - Expected to lead the trend of expanding storage capacity in next-generation enterprise servers and extend use into the automotive market, in which reliability is critical
eStorage –May 2022	<ul style="list-style-type: none"> □ Development of highly advanced UFS 4.0 <ul style="list-style-type: none"> - Improved reading/writing speed by approximately twofold compared to UFS 3.1 product - Enhanced power efficiency by approximately 46% for processing the same amount of data, which allows longer hours of use - Improved a function that reads and saves customer's important data by adopting the latest security technologies - Expected to expand into consumer devices, such as smartphones, automotives, and VR/AR
SSD for server February 2021–July 2022	<ul style="list-style-type: none"> □ Mass production of high-performance OCP SSD specialized for data centers <ul style="list-style-type: none"> - Mass production of OCP SSD, the first in the industry for 6th-generation V-NAND - Satisfies performance, power efficiency, reliability, and security demanded by the data center industry - Contributes to cost reduction and carbon emission reduction with industry's most power efficient feature □ Mass production of industry's highest performing SAS 24Gbps SSD for server <ul style="list-style-type: none"> - Supports speed that is around two times faster than the previous generation SSD - Provides high capacity from 800GB to 30.72TB based on 6th generation V-NAND - Expected to reduce server operation cost and carbon emission via a 40% improvement in power efficiency □ Industry's first mass production of next-generation ZNS SSD for company server <ul style="list-style-type: none"> - Applies ZNS technology, which categorizes and saves data by zone depending on characteristics - Lifespan and maximum utilization of SSD capacity increased compared to existing SSDs - Contributes to enhancing the efficiency of next-generation servers—in areas such as AI, big data, and IoT—as well as storage systems, while expanding the foundation for ZNS SSD through various open source projects □ Development of PCIe 5.0-based high-performance SSD PM1743 <ul style="list-style-type: none"> - Improved reading/writing speed by approximately twofold and power efficiency by approximately 30% compared to PCIe 4.0-based SSD - Stability of server operation guaranteed with the support of dual-port and application of latest security technologies □ Development of '2nd generation smart SSD' with upgraded processing functionality <ul style="list-style-type: none"> - Enhances processing functionality by twofold and cuts processing time by over 50%, energy consumption by up to 70%, and CPU utilization by up to 97% - Processes data directly, thereby improving system performance and energy efficiency at the same time - Actively address various market needs, including database and video transcoding - Lead standardization of computational storage and increase development of next-generation storage products
SSD for Client January 2023	<ul style="list-style-type: none"> □ Mass production of PM9C1a, a high-performance PC SSD equipped with a 5nm controller <ul style="list-style-type: none"> - Elevated performance with a new 5nm controller and 7th generation V-NAND - Enhanced speed by up to 1.8 times and power efficiency by up to 70% vs the previous generation - Supports device authentication and verification technology with strengthened security solutions such as the new adoption of the Device Identifier Composition Engine (DICE) security standard
Brand SSD January 2021–August 2022	<ul style="list-style-type: none"> □ Global launch of SATA SSD 870 EVO for consumers <ul style="list-style-type: none"> - Latest V-NAND and controller included, intelligent turbolight technology - Highest durability in the industry, run time enhanced by more than 30% - Five models in 250GB to 4TB range, introduced in steps in Korea, US, Germany, and China □ Launched NVMe SSD 980, which boasts high performance and is economical. <ul style="list-style-type: none"> - 6th-generation V-NAND, maximum 6 times the speed compared to SATA SSD - DRAM-less design to save cost, applied optimization technology for controllers and firmware - Heat-control feature, applied to high-end products - Power efficiency enhanced by 56%, compared to 970 EVO, allowing “good consumption” for consumers □ Released portable SSD 'T7 Shield' for experts that offers both performance and durability <ul style="list-style-type: none"> - Built with dust and water resistance and drop resistance up to 3m - Transmits data stably without performance degradation, including when recording and editing high-resolution videos □ Unveiled high-performance SSD '990 PRO' optimized for gaming <ul style="list-style-type: none"> - Offers unparalleled performance by featuring the latest V-NAND technology and a new proprietary controller - Enhanced speed by up to 55% and power efficiency by up to 50% compared to previous model - Offers optimal performance for an environment in which ultra-high speed data processing is required, such as high-performance graphic games and 4K/8K high-resolution videos

DS Division

Research project	Details
EUV ~October 2021	<ul style="list-style-type: none"> □ Mass production of 14nm EUV DDR5 DRAM <ul style="list-style-type: none"> - Enhanced productivity by approximately 20% with multilayer EUV implementation and realization of industry's highest DRAM bit density - Enhanced speed by twofold compared to DDR4 and improved power consumption by approximately 20% compared to previous process
CXL May 2021–May 2023	<ul style="list-style-type: none"> □ Development of industry's first CXL-based DRAM memory <ul style="list-style-type: none"> - Next-generation memory solution to meet the needs of high capacity data centers; overcomes physical limitations of DRAM modules, revolutionary expansion of capacity bandwidth becomes possible - Supports interface converting, error management, etc. through CXL controller - Development of controller and software technology optimized for CXL DRAM memory by collaborating with data centers and server and chipset companies □ Development of industry's first open-source software solution for CXL memory <ul style="list-style-type: none"> - Enables expansion of system memory's performance/capacity by enabling the main memory and the CXL memory to work seamlessly □ Development of industry's first high-capacity 512GB CXL DRAM <ul style="list-style-type: none"> - Enhanced capacity of CXL DRAM by four times, which allows expansion of over tens of terabytes per server - Equipped with CXL-exclusive controller, reducing data latency by 1/5 □ Development of CXL-based PNM solution for high-capacity AI models <ul style="list-style-type: none"> - PNM's (Processing-near-Memory) computational functions are performed closer to the memory to reduce the bottleneck between the CPU and memory data transference and to improve system performance - Enhanced performance by approximately twofold in applications, such as recommendation systems or in-memory databases, that require high memory bandwidth □ Development of industry's first CXL 2.0 DRAM <ul style="list-style-type: none"> - Overcomes limitations of DRAM modules, enabling expansion of bandwidth and capacity - Reduced server operation costs by supporting memory pooling, which assists splitting-use of CXL DRAM - Expands CXL ecosystem through continued collaboration with data centers and server and chipset companies; and become an industry leader by promptly addressing demand in the next-generation computing market
Multi-chip June 2021	<ul style="list-style-type: none"> □ Mass production of industry's best performing uMCP5 (LPDDR5 + UFS3.1) multi-chip package <ul style="list-style-type: none"> - Speed upgrade by 1.5 times compared to the existing LPDDR4X, 2 times compared to UFS2.2 - Spearhead popularization of 5G by installing them into low- to mid-priced 5G smartphones
Brand Card September 2021-May 2022	<ul style="list-style-type: none"> □ Released a new micro SD card product with enhanced performance and stability <ul style="list-style-type: none"> - 'PRO Plus' provides 1.6 times faster read speed and 1.3 times faster write speed than the previous generation - 'EVO Plus' provides 1.3 times faster read speed than the previous generation - With improved performance and a design that offers better protection against external shocks, not only general consumers, but also creators who make high-quality contents such as 4K UHD videos, are looking forward to it □ Released memory card 'PRO Endurance' with enhanced performance and durability <ul style="list-style-type: none"> - Adopts high-quality server-level NAND durability that allows up to 16 years of continuous recording time - Optimized for high-resolution (4K, Full HD) video recording equipment, such as surveillance video and black box - Keeps stable recording performance even in tough conditions, applies 6-proof protection - Supports speed of Class 10, UHS Class U3, and video speed of Class V30; can continuously record Full HD · 4K high-resolution videos
Automotives December 2021	<ul style="list-style-type: none"> □ Mass production of memory total solutions for automotives <ul style="list-style-type: none"> - 256GB SSD and 2GB DDR4/GDDR6 for IVI; 2GB GDDR6 and 128GB UFS for AD - Supplies high performance SSDs and graphics DRAM delivering server-level performance and capacity; and secures high stability that is required in the automotive semiconductor market (operation is guaranteed in the -40°C-105°C range)

DS Division

Research project	Details
System LSI	
Image Sensor January 2021–March 2023	<ul style="list-style-type: none"> □ Introduced ISOCELL HM3, 108MP premium image sensor (HM3, 0.8um/108Mp) <ul style="list-style-type: none"> - Concentrated 108 million 0.8 μm-size pixels in 1/1.33 inch - Minimizes afterimage with Smart ISO Pro, enabling bright, vivid images - Lens optimal for autofocus with Super PD Plus, enhanced phase detection ability by 50% - Optimal design saves approximately 6% of power under preview mode, compared to previous model □ Introduced image sensor ISOCELL GN2, operating similar to human eyes (GN2, 1.4um/50Mp) <ul style="list-style-type: none"> - Dual Pixel Pro splits pixels diagonally—a world's first - 1.4um pixel delivers brighter and more vivid images - Staggered HDR saves power by approximately 24% compared to previous model □ Introduced ISOCELL JN1 with the industry's first 0.64um pixel (JN1, 0.64um/50Mp) <ul style="list-style-type: none"> - Mass production of ultra-small pixel size, applies high-resolution mobile camera slim design - Applies the most advanced image sensor technology that enhances sensitivity in the dark - Cooperation with camera lens module manufacturers, establishes the ecosystem that is compatible with 1/2.8" products □ Released automotive image sensor ISOCELL Auto 4AC (4AC, 3.0um/1.2Mp) <ul style="list-style-type: none"> - Designed for surround view monitors or rear-view cameras - A safety solution that supports drivers even in tough conditions and minimizes blind spots □ Unveiled a new super-gap mobile image sensor technology (HP1, 0.64um/200Mp and GN5, 1.0um/50Mp) <ul style="list-style-type: none"> - Industry's first "200 million pixels" ISOCELL HP1 - Industry's smallest-sized dual pixel image cell ISOCELL GN5 □ Unveiled 200 million pixel image sensor, industry's smallest pixel size (HP3, 0.56um/200Mp) <ul style="list-style-type: none"> - Reduced camera module area by up to 20% with 12% smaller pixels compared to the previous HP1(0.64um) - With the Super Quad Phase Detection (QPD) technology, enables auto-focusing feature for all 200 megapixels - Utilizes Tetra2pixel technology, which offers vivid picture quality even in low-light environments □ Launched 200 million pixel image sensor combined with ultra-high resolution technologies (HP2, 0.6um/200Mp) <ul style="list-style-type: none"> - Applied Dual Vertical Transfer Gate technology—industry's first—and enhanced color expression and picture quality - Leveraged Tetra2pixel technology, offering vivid picture quality even in low-lit environments - Adopted Dual Slope Gain, creating an HDR image as high as 50MP—industry's first - Applied Super QPD, which allows the sensor to use all its pixels for auto-focusing

DS Division

Research project	Details
<p>Exynos January 2021–June 2023</p>	<ul style="list-style-type: none"> □ Launched Exynos 2100, 5G-integrated premium mobile AP <ul style="list-style-type: none"> - Applied state-of-the-art 5nm EUV process and the latest CPU/GPU, enhancing performance significantly - Optimal design improves performance compared to previous model: more than 30% for CPU, more than 40% for GPU - Enhanced on-device AI function, performs 26 trillion operations per second - Saves power consumption by maximum 20%, features its own power management solution AMIGO - Supports ultrahigh-frequency 5G network, operates maximum 6 image sensors □ Released Exynos W920 built on EUV process for wearable devices <ul style="list-style-type: none"> - Improved performance and power-efficiency by applying advanced 5nm EUV process and design technology - Comes in the smallest package currently available for wearables by applying the most advanced packaging technologies - Boasts 20% more efficient CPU performance and 10 times better graphics performance than its predecessor (Exynos 9110) with the application of the newest ARM cores - Improved power consumption of the processor by 97% under AOD (Always On Display) mode by applying low-power cores for display □ Released Exynos Auto T5123, communications chip for automotives that provide 5G communications service <ul style="list-style-type: none"> - Supports download speed of 5.1Gb/sec, enables seamless access high-capacity, high-definition content even while driving - Equipped with the latest 5G-based multi-mode communication chip that supports both 5G single net and LTE combined net □ Released Exynos Auto V7, processor for automotive infotainment <ul style="list-style-type: none"> - Applies the latest automotive technologies, including Neural Processing Unit (NPU), technology that corrects bad pixel and lens distortion of camera sensors, and image compression technology - GPU supports four independent displays, including digital dashboard, Center Information Display (CID), and Head Up Display (HUD), and up to 12 camera sensors - Equipped with security processor which offers technology that safely stores and prevents physical replication of key information of the car □ Released premium mobile AP 'Exynos 2200' <ul style="list-style-type: none"> - Adopted the next-generation GPU Xclipse jointly developed with AMD, maximized gaming performance and power efficiency - Enabled Ray Tracing technology based on hardware on mobile devices—a first in the industry - Strengthened performance and security by adopting the core based on the latest ARM CPU architecture 'ArmV9' - Enhanced NPU performance by more than twofold compared to the previous model, significantly enhanced machine learning performance □ Secured internationally standardized 5G non-terrestrial networks (NTN) modem technology for satellite communications <ul style="list-style-type: none"> - Reflects the latest standard (Release-17) of 3GPP, which unites telecommunications standard development organizations - Adopted technologies that accurately predict low Earth orbit satellite locations and minimize frequency offsets - Supports two-way transmission of large-capacity data, including text messaging and video sharing □ Unveiled Exynos Connect U100, an ultra-wideband (UWB) chipset for short-range wireless communications <ul style="list-style-type: none"> - Provides an accuracy of single-digit centimeters and 5-degrees and under - Low-power, one-chip solution optimized for various mobile, automotive, and IoT devices - Equipped with a scrambled timestamp sequence (STS) function and a secure hardware encryption engine to prevent external hacking - Certified by FiRa Consortium, an organization that certifies UWB products for conformity to interoperability standards
<p>LSI January 2021–March 2023</p>	<ul style="list-style-type: none"> □ Power management IC for DDR5 DRAM modules (S2FPD01, S2FPD02, S2FPC01) <ul style="list-style-type: none"> - Essential for the next-generation device performance improvement and power saving, three types of power management IC - Applies our own technology of reducing power consumption and overheating, improves operational efficiency up to 91% - Continued expansion of the lineup for power management IC for memory and strengthen technology leadership □ Power management IC for processor for automotive infotainment (S2VPS01) <ul style="list-style-type: none"> - Certified with ASIL-B, a safety standard for automotive systems, and strengthened functional safety - Strengthened stability of the system, including heat prevention and auto-diagnostic functions □ Released all-in-one fingerprint security IC for biometric payment cards (S3B512C) <ul style="list-style-type: none"> - Combines hardware security chip (SE, Secure Element), fingerprint sensor, and Secure Processor in one IC - Received globally accredited certifications in security, EAL6+ from Common Criteria (CC) and global online card payment technical standard (EMVCo) and proved security in line with Mastercard's Biometric Evaluation Plan Summary.
<p>Foundry</p>	

DS Division	
Research project	Details
2.5D packaging technology 'I-Cube4' May 2021	<ul style="list-style-type: none"> □ Realized logic chip and four HBM chips into one package to operate it like one semiconductor chip □ Supplied electricity stably and realized ultra-thin electrical wires applying silicon interposer <ul style="list-style-type: none"> - Applied semiconductor process/manufacturing knowhow that prevents the deformation of thin interposers 100μm thick □ Reduced production time and enhanced yield with our distinctive structure that has excellent thermal release performance
8nm RF process June 2021	<ul style="list-style-type: none"> □ Radio Frequency (RF) process for 5G communication that supports sub-6GHz and millimeter frequency <ul style="list-style-type: none"> - Provides small, low-power, high quality communication with one-chip solution that supports multi-channel and multi-antenna □ Improved performance of RF with the application of RF-exclusive semiconductor device 'RFFeFET (RF extremeFET)' that we developed in house <ul style="list-style-type: none"> - Maximized electrons' movement characteristics by physically stimulating the neighboring areas of channels, which are electrons' moving path □ Power efficiency increased by 35%, analogue circuit area decreased by 35% compared to the previous generation 14nm RF process <ul style="list-style-type: none"> - Total number of transistors of chips decreased with the drastic improvement of RFFeFET performance
2.5D packaging technology 'H-Cube' November 2021	<ul style="list-style-type: none"> □ 2.5D solution 'Hybrid Cube', which applies silicon interposer technology and hybrid-substrate structure <ul style="list-style-type: none"> - Logic chips and high-bandwidth memory (HBM) are placed on top of a silicon interposer, integrating up to 6HBMs - The hybrid substrate is a dual structure in which the high-end main substrate at the top connects logic/memory chips, and the subsidiary substrate at the bottom that is easy to implement in large-area connects the system board - Minimized the size of the substrate by decreasing the pitch of solder ball, which electrically connects two substrates - Applied chip analysis technology to stably supply power while minimizing signal distortion and loss - Specialized for semiconductors for data center, AI, and network products that require high-performance and large-area packaging technology
World's first 3nm process that adopts GAA technology June 2022	<ul style="list-style-type: none"> □ World's first mass production of 3nm process that adopts Gate-All-Around (GAA) transistor technology <ul style="list-style-type: none"> - Maximized power efficiency and performance by implementing 'MBCFET', our in-house GAA technology that utilizes nanosheets - 1st-generation 3nm process reduced power consumption by 45%, improved performance by 23%, and reduced surface area by 16% compared to 5nm □ GAA technology overcomes the performance limitations of FinFET, allowing to continue to make smaller chips <ul style="list-style-type: none"> - The gate surrounds all four faces of the channel, which enables finer control of current flow and reduces operating voltage and power consumption - The structure in which the channels are piled up vertically boosts performance as it increases channel width per unit area and allows greater amount of current to flow - The width of channels can be adjusted, giving better design flexibility □ Providing verified 3nm design infrastructure and services with ecosystem partners □ Planning to expand adoption into high-performance, low-power system semiconductors for HPC, mobile SoCs, etc.

SDC	
Research project	Details
Display panel	
Power-efficient OLED for Galaxy S21 January 2021	<ul style="list-style-type: none"> □ Mass production of innovative power-efficient, high-luminance OLED displays <ul style="list-style-type: none"> - S21: 6.24"/6.67"/6.81" QHD+(3,200×1,440) - New organic material improves luminance efficiency: improved power efficiency by 16% compared to previous model - Enhanced luminance and contrast offers good visibility outdoors (Max/HBM 420/800 → 500/1100nit, Peak 1,785nit) → Sunlight Visibility certification by UL (global safety solutions company)
Foldable OLED for Galaxy Z Fold3 August 2021	<ul style="list-style-type: none"> □ Application of various new technologies to foldables for the first time <ul style="list-style-type: none"> - 7.6" QXGA+7.55" (2,208×1,768) - Removed screen blind spots with the Under Panel Camera technology - Reduced battery consumption compared to its predecessor with the Eco² technology
55/65" QD-Display January 2022	<ul style="list-style-type: none"> □ World's first QD-Display for TV (55" UHD, 65" UHD) <ul style="list-style-type: none"> - Exceptional wide color gamut of BT2020 90% - Expresses outstanding brightness and color at any angle with QD display which emits light evenly across all directions - Excellent HDR performance, deep and detailed black expression
34" QD-Display March 2022	<ul style="list-style-type: none"> □ World's first QD-Display for monitor (34" QHD) <ul style="list-style-type: none"> - Provides superb gaming experience by supporting 175Hz, 0.1ms, 1800r, HDR True Black, and G-Sync - Outstanding color, viewing angle, and contrast ratio and minimized exposure to blue light

SDC

Research project	Details
Foldable OLED for Galaxy Z Fold 4 August 2022	<ul style="list-style-type: none"> □ Promoting additional improvements compared to previous model <ul style="list-style-type: none"> - Significantly improved display quality in the location of the Under Panel Camera while maintaining camera performance and emphasized large-screen experience - Enhanced energy efficiency with Eco2 OLED Plus with improved transmittance efficiency - Reduced costs and weight via integrated FRP-Digitizer panel
3.36" 850ppi ultra-high-resolution VR display February 2023	<ul style="list-style-type: none"> □ Ultra-high-resolution (850ppi) OLED display for VR <ul style="list-style-type: none"> - Adoption of a screen-door-effect-free solution makes users feel like the resolution is 1,100 ppi - Round shape enhances flexibility of set designs compared to the previous square shape
14/16" OLED for Galaxy Book 3 Pro February 2023	<ul style="list-style-type: none"> □ Development of the world's first large-sized (16") OCTA technology <ul style="list-style-type: none"> - Expanded the application of OCTA—touch-integrated technology—from smartphone OLED to middle-sized laptop OLED panels - Minimized the dead space of panels via development of new materials and process technologies - Reduced power consumption with the first adoption of OLED notebooks with refresh rate of 48–120Hz
16" OLED Development for HP Elitebook (2023.04.)	<ul style="list-style-type: none"> □ Achieves power-efficiency and durability through improvements in OLED organic materials <ul style="list-style-type: none"> - 16" WQ+ (2,880 x 1,800, 16:10) - Applied 48Hz–120Hz, VRR (Variable Refresh Rate) and received AMD Freesync Premium Pro certification; provides an optimal gaming environment