

SAMSUNG

SAMSUNG ELECTRONICS Co., Ltd.

2021 Interim Business Report

For the quarter ended September 30, 2021

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. Businesses Overview』.

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Certification

Letter of Certification


We, Ki-nam Kim and Yoon-ho Choi, as a CEO and the executive in charge of reporting, respectively, certify that we have thoroughly reviewed the interim business report of Samsung Electronics Co., Ltd. for the nine-month period ended September 30, 2021.

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: November 15, 2021

Ki-nam Kim 
Vice Chairman and CEO
Samsung Electronics Co., Ltd.

Executive responsible for reporting: Yoon-ho Choi 
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) consists of business divisions that operate independently: CE (Consumer Electronics); IM (Information Technology & Mobile Communications); DS (Device Solutions); and Harman (Harman International Industries, Inc. and its subsidiaries), which produces automotive electronics components.

SEC is a global electronics firm consisting of headquarters in Korea and 234 subsidiaries (collectively, “Samsung Electronics” or the “Company”) across the world, including 9 regional headquarters for the CE and IM Divisions, 5 regional headquarters for the DS Division, and the Harman Division’s subsidiaries.

Key products in each Division are presented below:

Division	Key products
CE	TVs, monitors, refrigerators, washing machines, air conditioners, etc.
IM	HHPs, network systems, computers, etc.
DS	DRAM, NAND flash, mobile APs, OLED panels for smartphones, etc.
Harman	Digital cockpits, telematics, speakers, etc.

[CE Division]

The CE Division manufactures TVs, monitors, refrigerators, washing machines and air conditioners, satisfying customer needs and leading the global digital era by continuously offering new products featuring innovative technology, unique designs, and enhanced value propositions.

TV is the core product of the CE division. The Company has maintained its position as the market leader for 15 consecutive years by leveraging competitive advantages in hardware such as LCD/LED TVs as well as in software driven product features within our Smart TV product portfolio. We will continue to expand our market leadership based on our competitive edge in the premium segment through our 8K QLED and ultra-large products to name a few.

[IM Division]

The IM Division manufactures and sells smart mobile devices, network systems, and computers. For smartphones, a key product of the business, we have developed a lineup ranging from low-end right through to premium models with the Galaxy series. We will lead growth of the smartphone market and deliver exceptional user experiences by continuing to invest in future growth drivers such as 5G, AI, Cloud, IoT, AR, and VR. At the same time, we will lead the global 5G market based on our end-to-end solutions, which encompass handsets, chipsets, as well as our commercialization experience in 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; the Foundry Business is in charge of consignment production of semiconductors; and the DP Business manufactures and sells display panels.

The Memory Business has maintained its position at the top of the global memory market by sustaining cost competitiveness and applying the latest advanced process technology in each technological iteration. The System LSI Business has not been complacent, expanding its focus from mobile to include automotive chips, and it is expanding its market power by offering differentiated products, such as APs and CISs, and strengthening competitiveness via its advanced manufacturing process technology. The Foundry Business is expanding by securing technology competitiveness via adopting enabling technologies and new structures, strengthening its manufacturing capacity in a timely manner to address demand, enhancing its IP and infrastructure for customer support, and diversifying its product portfolio using legacy processes.

In the Display division, the mobile panel business’s differentiated technology is a main factor behind the increased adoption of OLED panels, while its 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, QD TVs and is enhancing its competitiveness through continuous improvements in technology and productivity.

[Harman Division]

Harman designs and develops connected products and solutions for automakers, consumers, and companies worldwide and is a global leader in the market for connected car systems, audio and visual products, professional solutions, and connected services. Harman has established an internationally renowned brand and employs both internal development and strategic acquisitions to expand its lineup of quality products.

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

E. Subsidiaries subject to consolidated accounting (summary)

As of September 30, 2021, and in accordance with Korean International Financial Reporting Standards (K-IFRS) 1110, *Consolidated Financial Statements*, Samsung Electronics, the controlling company, had 234 consolidated subsidiaries, with the addition of 3 subsidiaries and reduction of 10 subsidiaries when compared to totals as of December 31, 2020.

Classification	Number of subsidiaries subject to consolidated accounting				Number of major subsidiaries
	As of January 1, 2021	Added	Removed	As of September 30, 2021	
Listed	-	-	-	-	-
Unlisted	241	3	10	234	136
Total	241	3	10	234	136

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

[3Q21 YTD: Changes in subsidiaries subject to consolidated accounting]

Classification	Subsidiary	Reason
Newly consolidated	Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Establishment
	SVIC 52 New Technology Investment Association	Establishment
	SVIC 55 New Technology Investment Association	Establishment
No longer consolidated	Viv Labs, Inc.	Merger
	Stellus Technologies, Inc.	Liquidation
	SigMast Communications Inc.	Liquidation
	Arcam Limited	Liquidation
	A&R Cambridge Limited	Liquidation
	Harman Connected Services Limited	Liquidation
	Samsung Electronics Huizhou Co., Ltd.(SEHZ)	Liquidation
	Shenzhen Samsung Electronics Telecommunication Co., Ltd.(SSET)	Liquidation
	Samsung Suzhou Module Co., Ltd. (SSM)	Sale
Samsung Suzhou LCD Co., Ltd. (SSL)	Sale	

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 September 30, 2021, SEC's credit ratings were Aa3 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)	May 2019	Aa3	Moody's	Annual review
	Jul 2019	AA-	S&P	
	Aug 2019	Aa3	Moody's	
	Jul 2020	AA-	S&P	
	Sep 2020	Aa3	Moody's	
	Jul 2021	AA-	S&P	
	Aug 2021	Aa3	Moody's	

Credit rating range: Moody's (Aaa-C), S&P (AAA-D)

[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

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
Aug 1, 1992	Developed 64M DRAM, a world's first
Mar 23, 2010	Unveiled Galaxy S
Sep 2, 2010	Unveiled Galaxy Tab
Feb 11, 2011	Launched Exynos, the first mobile AP brand
Sep 1, 2011	Unveiled Galaxy Note
Apr 1, 2012	Spun off the LCD division (established Samsung Display)
Jun 26, 2013	Launch of S4 LTE-A, the world's first LTE-A smartphone
Aug 6, 2013	Mass production of the world's first 3D V-NAND flash memory chips
Sep 24, 2013	Development of ISOCELL, an industry-first next generation CMOS image sensor technology
Mar 5, 2017	Released advanced Quantum dot-based QLED TV
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
Nov 1, 2017	Sold Printing Solution business
Aug 30, 2018	Launched QLED 8K TVs with Quantum Dot technology
Nov 7, 2018	Unveiled foldable display at the Samsung Developer Conference
Apr 3, 2019	Launched 5G smartphone, Galaxy S10 5G
Apr 24, 2019	Announced "Semiconductor Vision 2030"—a vision to invest KRW 133 trillion through 2030 in system semiconductor and employ 15,000 persons
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

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 September 30, 2021, SEC's Board consisted of five Executive Directors (Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, and Yoon-ho Choi) and six Independent Directors (Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, and Han-jo Kim).

Date of change	Type of shareholder meeting	Appointed		Terms expired or dismissed
		Newly appointed	Reappointed	
Mar 23, 2018	AGM	Executive Director Sang-hoon Lee Executive Director Ki-nam Kim Executive Director Hyun-suk Kim Executive Director Dong-jin Koh Independent Director Jeong Kim Independent Director Sun-uk Kim Independent Director Byung-gook Park	-	Executive Director Oh-hyun Kwon Executive Director Boo-keun Yoon (resigned) Executive Director Jong-kyun Shin (resigned) Independent Director Han-joong Kim Independent Director Byeong-gi Lee
Mar 23, 2018	-	CEO Ki-nam Kim CEO Hyun-suk Kim CEO Dong-jin Koh	-	-
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	-

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 September 30, 2021)

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 2017, Quietside LLC, New Net Communication Technologies (Canada), Inc., and Martin Professional ApS changed their names to Samsung HVAC America, LLC, SigMast Communications Inc., and Harman Professional Denmark ApS, respectively.

In 2018, Harman Connected Services Finland OY, and Harman Professional Singapore Pte. Ltd changed their names to Harman Finland Oy, and Harman Singapore Pte. Ltd., respectively.

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 2017, Samsung Electronics America, Inc. (SEA) acquired full ownership of Harman International Industries, Inc.

In 2018, Samsung Electronics America, Inc. merged with Samsung Pay, Inc.; and Harman Connected Services, Inc. merged with Harman Connected Services Holding Corp. In the same year, SEA sold its full stake in NexusDX, Inc.

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.

☞ 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. Changes in organizational structure

In March 2017, the Company acquired shares of Harman International Industries, Inc. and added the Harman Division. In June 2017, the System LSI business was divided into Foundry and System LSI businesses.

[As of June 2017]

	Before	After
Business organization	CE Division (Visual Display, Digital Appliances, Medical Devices)	CE Division (Visual Display, Digital Appliances, Medical Devices)
	IM Division (Mobile, Network)	IM Division (Mobile, Network)
	DS Division (Memory, System LSI, DP)	DS Division (Memory, System LSI, Foundry, DP)
	-	Harman Division
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)	Americas (DS), Europe (DS), China (DS), Southeast Asia (DS), Japan (DS)

Health & Medical Equipment Business was excluded from the CE Division in 1Q18 and included again from 1Q20.

3. Changes in paid-in capital

There were no changes in paid-in capital over the past five fiscal years.

Due to the retirement of shares, the total par value of the shares issued is KRW 679,267 million (KRW 596,978 million in common stock and KRW 82,289 million in preferred stock), which is not equivalent to paid-in capital of KRW 897,514 million.

(KRW, shares)

Type of stock	Classification	September 30, 2021
Common	Number of issued shares	5,969,782,550
	Par value	100
	Paid-in capital	596,978,255,000
Preferred	Number of issued shares	822,886,700
	Par value	100
	Paid-in capital	82,288,670,000
Total	Paid-in capital	679,266,925,000

4. Stock information

A. Total number of shares

As of September 30, 2021, 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 Sep 30, 2021]

(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.

B. Treasury shares

In 2018, SEC completed the cancellation of all shares held in treasury as a part of its shareholder return policy.

[As of Sep 30, 2021]

(Shares)

Acquisition method	Share type	Period-start	Change			Period-end
			Acquisition (+)	Disposal (-)	Cancellation (-)	
Intra-market direct acquisition (within dividend related capital gains limit)	Common	-	-	-	-	-
	Preferred	-	-	-	-	-
Acquisition from a trust agreement (within dividend related capital gains limit)	Common	-	-	-	-	-
	Preferred	-	-	-	-	-
Total	Common	-	-	-	-	-
	Preferred	-	-	-	-	-

C. Types of registered stock

SEC has two types of registered equity securities: 1) common stock; 2) non-voting and non-cumulative preferred stock.

The shareholders of preferred stock are entitled to dividend payments of an additional 1% of par value compared to shareholders of common stock.

As of September 30, 2021, the number of issued non-cumulative and non-voting preferred stock totaled 822,886,700.

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 2021 as of the disclosure date of the Korean version of this report.

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 the Company’s 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.

Uncertain events that could positively or negatively affect the Company’s management condition and financial performance include:

- *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.

1. Overview

In addition to our headquarters in Korea, Samsung Electronics consists of 234 subsidiaries across the world responsible for sales and production. There are 9 regional headquarters for CE and IM Divisions, 5 regional headquarters for the DS Division, and Harman Division’s subsidiaries.

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 CE and IM Divisions, and the component business consists of the Semiconductor and DP Business Units. The CE Division is responsible for the production and sales of TVs, monitors, refrigerators, washing machines, and air conditioners; and the IM Division focuses on the production and sales of HHPs, which includes smartphones, as well as network systems, and computers. The DS Division consists of the Semiconductor business which manufactures and sells DRAM, NAND flash, mobile APs, and other semiconductor-related products, and the DP Business, which manufactures and sells display panels, including mobile OLED panels and LCD panels for TVs and monitors. The Harman Division (acquired in 2017) manufactures and sells products such as Digital cockpit, telematics, and speakers.

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

The Company’s corporate headquarters—which oversees the CE and IM Divisions and the semiconductor business—as well as 31 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 31 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 203 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 52 subsidiaries in North America, 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 72 subsidiaries. These include SEUK (UK), SEG (Germany), SEF (France), SEI (Italy) for sales of finished products; SEH (Hungary) and SESK (Slovakia) 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 30 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 29 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.

☞ See 『1. Subsidiaries subject to consolidated accounting (detailed)』 in 『XII. Appendix』 for more details about subsidiaries.

The Company recorded total revenue of KRW 203,039.3 billion as of end-3Q, an increase of 16% year-on-year. Major customers (listed in alphabetical order) included Apple, Best Buy, Deutsche Telekom, Supreme Electronics 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.

Over the first three quarters of 2021, CE reported revenue of KRW 40,485.0 billion (19.9% of total net sales) and IM reported revenue of KRW 80,300.0 billion (39.5%). DS contributed approximately 44.5% of revenue, reporting KRW 90,365.4 billion. The Harman Division reported net sales of KRW 7,186.7 billion (3.5%).

(KRW 100 mil)

Division		Major products	Revenue	Portion
CE		TVs, monitors, refrigerators, washing machines, air conditioners, etc.	404,850	19.9%
IM		HHPs, network systems, computers, etc.	803,000	39.5%
DS	Semiconductor	DRAM, NAND flash, mobile APs, etc.	681,533	33.6%
	DP	OLED smartphone panels, LCD TV panels, LCD monitor panels, etc.	226,541	11.1%
	Others	Overlapping internal transactions within Division	(4,420)	(0.2%)
	DS total		903,654	44.5%
Harman		Digital cockpit, telematics, speakers, etc.	71,867	3.5%
Others		Overlapping internal transactions between Divisions	(152,978)	(7.5%)
Total			2,030,393	100.0%

Includes inter-divisional transactions.

☞ See 『4. Sales and long-term contracts』 for sales by each product.

B. Average selling price changes

Over the first three quarters of 2021, the ASP of TVs increased approximately 29% and that of HHPs increased approximately 5% year-on-year. The ASP of memory products fell by approximately 4% year-on-year, and display panel ASP decreased approximately 10%. The ASP of digital cockpits declined approximately 6% year-on-year.

3. Production materials and production facilities

A. Key production materials

For the CE Division, key materials include display panels, which are supplied by CSOT and other companies. For the IM Division, key materials include camera modules and mobile AP, which are supplied by Semco, Qualcomm and others. For the DS Division, key materials include Wafer, chemicals, FPCAs, windows with suppliers including SK Siltron, Soulbrain, BH, Apple, etc. For the Harman division, key materials include SoC (system-on-chip) products and memory products for in-vehicle solutions, which are supplied by Nvidia, Avnet, etc.

(KRW 100 mil)

Division	Type of purchase	Item	Specific usage	Purchase price	Portion ¹⁾	Main supplier(s)	
CE	Production materials	Display panel	Color picture signaler for TV, monitor	79,225	34.1%	CSOT, AUO, BOE, etc.	
	Production materials	Steel	Digital appliance outer-case	12,720	5.5%	Posco, Dongkuk Steel Mill, etc.	
	Production materials	Others	-	140,190	60.4%		
	Division total			232,135	100.0%		
IM	Production materials	Camera module	Camera for mobile	43,064	15.5%	Semco, Partron, etc.	
	Production materials	Mobile AP	CPU	41,032	14.8%	Qualcomm, MediaTek, etc.	
	Production materials	Display panel	Color picture signaler for mobile	17,705	6.4%	BOE, CSOT, etc.	
	Production materials	Others	-	175,811	63.3%		
	Division total			277,612	100.0%		
DS	Semiconductor	Production materials	Wafer	Semiconductor disk	16,441	8.4%	SK Siltron, Sumco etc.
		Production materials	Chemical	Disk processing	12,546	6.4%	Soulbrain, DongWoo Fine-Chem, etc.
		Production materials	Others	-	77,408	39.5%	
		Business total			106,395	54.2%	
	DP	Production materials	FPCA	Circuit	18,840	9.6%	BH, Union, etc.
		Production materials	Window	Tempered glass	15,860	8.1%	Apple, Biel, etc.
		Production materials	Others	-	53,191	27.1%	
		Business total			87,891	44.8%	
	Others	Production materials	-	-	1,905	1.0%	
	Division total			196,191	100.0%		
Harman	Production materials	SoC	Chips for vehicles	3,975	9.2%	Nvidia, Renesas, etc.	

Division	Type of purchase	Item	Specific usage	Purchase price	Portion ¹⁾	Main supplier(s)
	Production materials	Automotive memory chip	Chips for vehicles	3,239	7.5%	Avnet, Microchip, etc.
	Production materials	Others	-	36,138	83.3%	
	Division total			43,352	100.0%	
Others	Production materials	-	-	419		
Total				749,709	-	

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 the Division's raw materials.

B. Production material price trends

The price of TV and monitor display panels, which are the major production materials for the CE Division, increased approximately 68% year-on-year. For the IM Division, compared to last year, the price of camera modules and display panels for mobile decreased approximately 43% and 10% respectively. The price of mobile APs increased approximately 10%. For the DS Division, the price of wafers for semiconductor disks and FPCAs decreased approximately 1% and 4% year-on-year respectively. Prices of tempered glass windows decreased approximately 18% year-on-year. For the Harman division, the prices of SoCs and memory for vehicles decreased approximately 1% and 2% respectively.

C. Production capacity, output, utilization rate

(Capacity)

(1,000 units)

Division	Item	Capacity		
		3Q21 YTD	2020	2019
CE	Image devices	40,454	51,538	51,418
IM	HHP	236,470	321,600	346,960
DS	Memory	1,263,167,198	1,230,287,321	988,104,491
	Display panel	2,806	7,274	8,236
Harman	Digital cockpit	6,359	9,362	7,921

Production capacity for major product categories on a consolidated basis.

The CE and IM 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

Display panel production capacity is calculated as follows:

- the total producible panel surface area ÷ the dimensions of eighth generation glass (2200x2500mm)

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)

Over the first three quarters of 2021, the CE Division's output of image devices was 32,019 thousand units (major production sites: Mexico, Vietnam, Brazil, and Hungary). The IM Division's HHP output was 189,862 thousand units (major production sites: Korea [Gumi], Vietnam, India, and Brazil). The DS Division's memory output (1Gb equivalent) was 1,263,167 million (major production sites: Korea [Hwaseong, Pyeongtaek] and China). The DP Division's output of display panels was 2,151 thousand units (major production sites: Korea [Cheonan, Asan]). The Harman Division's Digital cockpit output was 5,011 thousand units.

(1,000 units)

Division	Item	Output		
		3Q21 YTD	2020	2019
CE	Image devices	32,019	48,244	43,964
IM	HHP	189,862	249,218	318,635
DS	Memory	1,263,167,198	1,230,287,321	988,104,491
	Display panel	2,151	5,977	6,567
Harman	Digital cockpit	5,011	6,116	6,459

Output for major product categories on a consolidated basis.

(Utilization rate)

Over the first three quarters of 2021, CE and IM utilization rates were calculated as actual output relative to production capacity. The utilization rates were 79.1% for Image devices and 80.3% for HHPs.

(1,000 units)

Division	Item	3Q21 YTD		
		Production capacity	Output	Utilization rate
CE	Image devices	40,454	32,019	79.1%
IM	HHP	236,470	189,862	80.3%

The DS Division operates memory and display panel production in three shifts (24 hours a day). Cumulative operating days including holidays were 273 days over the first three quarters of 2021. 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)

Division	Item	3Q21 YTD		
		Potential production time	Actual production time	Utilization rate
DS	Memory	58,968	58,968	100.0%
	Display Panel	36,696	36,696	100.0%

Over the first three quarters of 2021, Harman's utilization rate was 78.8% and was calculated as actual output relative to production capacity.

(1,000 units)

Division	Item	3Q21 YTD		
		Production capacity	Output	Utilization rate
Harman	Digital cockpit	6,359	5,011	78.8%

D. Production facilities and investment

(Key facilities for production and operation)

The Company's operational activities include manufacturing, 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 CE and IM Divisions, five regional headquarters under the DS Division, and Harman Division and its subsidiaries.

[Operations]

Region	Operations	Location
Korea (12)	Suwon	Suwon
	Seochon	Seoul
	Woomyeon	Seoul
	Giheung	Yongin
	Hwaseong	Hwaseong
	Pyeongtaek	Pyeongtaek
	Cheonan	Cheonan
	Onyang	Onyang
	Asan	Asan
	Gumi1	Gumi
	Gumi2	Gumi
	Gwangju	Gwangju
Overseas (CE and IM Divisions - nine 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 - five 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 September 30, 2021, the total book value was KRW 143,029.4 billion, which is an increase of KRW 14,076.5 billion from year-end 2020.

(KRW 100 mil)

Classification		Land	Buildings and structures	Machinery and equipment	Under construction	Other tangible assets	Total
Dec 31, 2020	Book value	97,722	345,520	609,941	201,759	34,587	1,289,529
	- Acquisition cost	98,509	550,264	2,330,565	201,759	104,966	3,286,063
	- Accumulated depreciation (including impairment loss)	(787)	(204,744)	(1,720,624)	-	(70,379)	(1,996,534)
Change	General acquisition and capital expenditure	809	35,694	285,568	9,673	10,982	342,726
	Depreciation ¹⁾	(352)	(23,255)	(189,491)	-	(11,108)	(224,206)
	Disposal/discard/impairment	(327)	(592)	(851)	-	(216)	(1,986)
	Others ²⁾	255	8,950	11,228	1,887	1,911	24,231
Sep 30, 2021	Book value	98,107	366,317	716,395	213,319	36,156	1,430,294
	- Acquisition cost	99,160	595,862	2,617,207	213,319	116,362	3,641,910
	- Accumulated depreciation (including impairment loss)	(1,053)	(229,545)	(1,900,812)	-	(80,206)	(2,211,616)

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 over the first three quarters of 2021 was KRW 33.5 trillion, which included establishing, adding, upgrading, etc., production lines of the semiconductor and DP businesses. Capex in 2021 will be flexibly managed in accordance with changes in the market and we will enhance competitiveness of our major businesses and address growing future demand by investing in areas such as infrastructure and memory node migration as well as capacity expansions in memory, system semiconductor, and display.

[Capex, by division]

(KRW 100 mil)

Business	Purpose	Period	Assets	Investment
Semiconductor	Establishment, addition, upgrade	January–September 2021	Buildings, facilities, etc.	299,900
DP	Establishment, addition, upgrade	January–September 2021	Buildings, facilities, etc.	20,724
Other	Establishment, addition, upgrade	January–September 2021	Buildings, facilities, etc.	14,302
Total				334,926

4. Sales and long-term contracts

A. Sales

Over the first three quarters of 2021, the Company recorded total revenue of KRW 203,039.3 billion, an increase of 16% year-on-year. By Division, when compared to the same period last year, revenue of the CE Division, IM Division, DS Division, and Harman Division increased by 17%, 4%, 20% and 15%, respectively.

(KRW 100 mil)

Division	Sales types	Product categories	3Q21 YTD	2020	2019
CE	Goods, products, services, other	TVs, monitors, refrigerators, washing machines, air conditioners, etc.	404,850	481,733	453,228
IM	Goods, products, services, other	HHPs, Network systems, computers, etc.	803,000	995,875	1,072,662
DS	Semiconductor	Goods, products, services, other DRAM, NAND flash, mobile APs, etc.	681,533	728,578	649,391
	DP	Goods, products, services, other OLED panels for smartphones, LCD panels for TVs and monitors	226,541	305,857	310,539
	Others	Overlapping internal transactions within Division	(4,420)	(4,074)	(4,750)
	DS total		903,654	1,030,361	955,180
Harman	Goods, products, services, other	Digital cockpit, telematics, speakers, etc.	71,867	91,837	100,771
Others	Overlapping internal transactions between Divisions		(152,978)	(231,736)	(277,832)
Total			2,030,393	2,368,070	2,304,009

Includes inter-divisional transactions.

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

(KRW 100 mil)

Classification	3Q21 YTD	2020	2019
Image devices	222,112	277,118	261,775
Mobile devices	769,777	960,217	1,023,318
Memory	531,480	555,442	502,163
Display panels	226,541	305,857	310,539

Includes inter-divisional transactions.

(2) Sales, by type

(KRW 100 mil)

Classification	3Q21 YTD	2020	2019
Products	1,918,966	2,235,963	2,188,604
Services and other sales	111,427	132,107	115,405
Total	2,030,393	2,368,070	2,304,009

Other sales consists of royalty income, etc.

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

(KRW 100 mil)

Classification	3Q21 YTD	2020	2019
Domestic	168,013	198,331	203,009
Export	Americas	420,135	437,434
	Europe	183,172	191,970
	Asia and Africa	238,533	329,705
	China	437,455	385,611
Total	1,447,308	1,663,112	1,547,729

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.)	
	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	17%	27%	51%	5%

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 such as smart devices
- Provide differentiated value to customers through brand, products, and services
- Strengthen marketing activities to boost demand from customer/market

E. Major customers

Over the first three quarters of 2021, major customers (listed alphabetically) included Apple, Best Buy, Deutsche Telekom, Supreme Electronics and Verizon. Sales to the five major customers accounted for approximately 15% of total sales.

F. Long-term contracts

As of September 30, 2021, 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 September 30, 2021, a price fluctuation of marketable equity securities (listed stocks) of 1% changes 'other comprehensive income' (before income tax) by KRW 108,497 million and 'profit before tax' by KRW 3,691 million. The figures as of the same date in 2020 were KRW 52,378 million and KRW 4,683 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 efficiently 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 there is a shortage of cash in a region. 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 a potential large-scale liquidity need.

(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 September 30, 2021, the Company has an AA- and Aa3 credit rating from S&P and Moody's, respectively, and the figures for total liabilities and total equity are as follows:

(KRW mil)

	Sep 30, 2021	Dec 31, 2020
Total liabilities	113,654,600	102,287,702
Total equity	296,766,118	275,948,016
Total liabilities to equity ratio	38.3%	37.1%

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 September 30, 2021, the Company had 2,505 currency forward contracts involving 35 foreign currencies including USD/EUR/JPY, and the book value of assets and liabilities as well as valuation gain and loss were as follows:

(KRW mil)

	Assets	Liabilities	Valuation gain	Valuation loss
Currency forwards	114,101	114,955	483,992	587,999

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.

Furthermore, 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 derivative instruments as of September 30, 2021 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	Jan 1, 2018–Dec 31, 2023
	Purpose and contents	Eliminate risk of patent disputes and lawsuits 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	Oct 19, 2018
	Purpose and contents	Eliminate risk of patent disputes and lawsuits 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
Google	Type	EMADA

Account	Contract information	Contents
	Date	Feb 27, 2019–Dec 31, 2021 (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	Feb 28, 2019
	Purpose and contents	Eliminate risk of patent disputes and lawsuits through 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 September 30, 2021, the Company's R&D expenses in 2021 were KRW 16,185.7 billion. Among this, KRW 15,933.0 billion was recognized as expenditures, excluding government subsidies and capitalized expenses.

(R&D expenses)

		(KRW mil)		
		3Q21 YTD	2020	2019
Total R&D expenditures		16,185,699	21,229,200	20,207,612
(Government subsidies)		(372)	(8,228)	(14,677)
R&D expenditures		16,185,327	21,220,972	20,192,935
Accounting	Capitalization of development expenses (intangible asset)	(252,377)	(109,482)	(285,699)
	R&D costs (expenses)	15,932,950	21,111,490	19,907,236
R&D expenses/sales ratio ¹⁾		8.0%	9.0%	8.8%

On a consolidated basis.

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

C. R&D organization and operations

(Domestic)

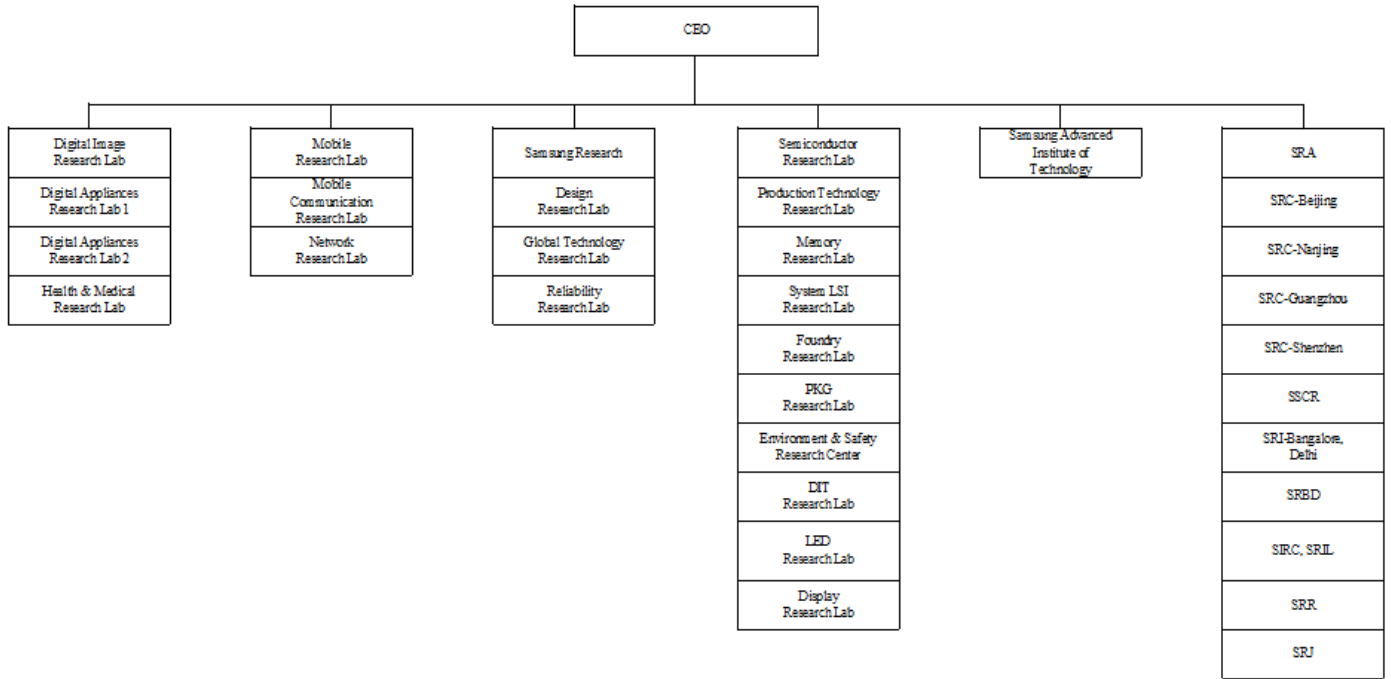
The Company operates three levels of R&D organizations; a business unit development team under each Division that develops market-ready technologies with a 1–2 year outlook, a research institute under each business unit that develops mid- to long-term technology with a 3–5 year outlook, and the Samsung Advanced Institute of Technology that 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), 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 September 30, 2021.

Refer to 「1. Subsidiaries subject to consolidated accounting (detailed)」 in 「XII. Appendix」 for more details about overseas R&D organizations.

D. R&D results

The Company's key R&D results by division over the first three quarters of 2021 are as follows:

CE Division	
Research project	Details
Neo QLED 8K	• Release of ultra-high-definition, slim 8K TV based on mini LED
Neo QLED 4K	• Rollout of three series and seven sizes based on mini LED
Clothing care machine	• Launch of Shoe Dresser
IM Division	
Research project	Details
Galaxy Foldable	• Rollout of Galaxy Z Fold 3 • Launch of Galaxy Z Flip 3
Galaxy S21	• Rollout of Galaxy S21 5G · S21+ 5G · S21 Ultra 5G
Galaxy Tab	• Release of Galaxy Tab S7 FE
Galaxy A	• Rollout of Galaxy A52 LTE · 5G • Launch of Galaxy A72 • Release of Galaxy A32 LTE · 5G • Rollout of Galaxy Quantum2 A82
Galaxy Book	• Launch of Galaxy Book Go
Wearable	• Rollout of Galaxy Watch 4 • Launch of Galaxy Buds Pro • Release of Galaxy Buds 2
Network	• Development of RAN (SVR21B NR vDU) S/W Package
DS Division	
Research project	Details
DRAM for server	• Development of the industry's first high-capacity DDR5 memory applying HKMG process
HBM DRAM	• Development world's first HBM-PIM with an AI engine
SSD for server	• Mass production of high-performing OCP SSD exclusive for data centers • Mass production of SAS 24Gbps SSD for server—highest performance in the industry • Industry's first mass production of the next-generation ZNS SSD for business servers
Brand SSD	• Global launch of SATA SSD 870 EVO for customers • Release of high-performing NVMe SSD 980 which satisfies needs for both performance and economic efficiency
CXL	• Development of the industry's first CXL-based DRAM memory technology
Multi-chip	• Mass production of uMCP5 multi-chip package—highest performance in the industry
Image sensor	• Release of 108MP premium image sensor ISOCELL HM3 • Rollout of image sensor ISOCELL GN2, which has become more similar to the human eye • Release of ISOCELL JN1 with 0.64um pixel—the industry's first • Launch of automotive image sensor ISOCELL Auto 4AC • Unveiling of ISOCELL HP1, industry's first 200 million pixel image sensor • Rollout of ISOCELL GN5, dual pixel image cell of industry's smallest size
Exynos	• Rollout of 5G-integrated premium mobile AP Exynos 2100 • Release of Exynos W920, a processor applying EUV process for wearables
LSI	• Development of power management IC for DDR5 DRAM modules
Foundry	• Development of 2.5D semiconductor packaging technology I-Cube4
	• Development of Radio Frequency (RF) process for 8-nano 5G communication
Low power consumption OLED	• Mass production of low power consumption, high-luminance innovation OLED Display for Galaxy S21 • Development of OLED display for Galaxy Z Fold 3

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 211,160 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 Sep 30, 2021]

(Unit: No. of patents)

	Korea	US	Europe	China	Japan	Others	Total
Number	46,030	82,437	40,192	19,463	9,571	13,467	211,160

Over the first three quarters of 2021, the Company invested KRW 16.2 trillion in R&D and registered 6,032 domestic and 6,418 US patents.

(Number of patent registrations per year)

(Unit: No. of patents)

	3Q21 YTD	2020	2019
Korea	6,032	6,648	5,075
US	6,418	8,520	8,729

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 signed licensing agreements with Cisco (signed in January 2014), Google (January 2014), Qualcomm (January 2018), Nokia (October 2018), 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. Over the first three quarters of 2021, the Company acquired 432 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.

☞ See 『4-D. Green Management』 of 『XI. Other Information』 for more details about Green Technology Certification.

(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 (eg, EU WEEE Directive)
2. limit on the use of harmful substances (eg, EU RoHS Directive, REACH Regulation)
3. regulation on energy efficiency (eg, 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)

	2020	2019	2018
Greenhouse gas (tCO ₂ -eq)	17,230,018	15,998,397	15,890,234
Energy (TJ)	255,934	242,345	237,762

On a consolidated basis. See 『4-D. Green Management』 of 『XI. Other Information』 for results on a 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 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

[CE Division]

□ Industry overview

Since the first public demonstration of a true television system in 1926 and later mass production of color TVs, technological 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 CRT TV business 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 a sharp decline in prices.

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 MicroLED TVs.

□ Market condition

In 2020, market players continued to strive for innovations in picture quality, sound, and form factor to create demand for premium TVs. In addition, TV demand in 2020 increased slightly to 225.47 million, despite the global spread of COVID-19, due to the stay-at-home trend and 2H release of pent-up demand. In 2021, TV demand is projected at approximately 219.14 million units (Source: Omdia; 2Q21 data).

< Market share of the CE Division’s key product >

Product	End-3Q21	2020	2019
TV	30.8%	31.9%	30.9%

Global market share in revenue; data from research firm Omdia. (3Q21 market share is Company estimate.)

□ Business condition

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

In 2019, 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 are enhancing 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 is increasing, and a rising number of companies are participating in various smart ecosystems, including TV plus, home training, and games. We are 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.

[IM Division]

□ Industry overview

Mobile phones are the key product of the IM Division, and the mobile phone industry started with first generation analogue devices in the early 1980s 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 59% of phones sold in 2020 (*Strategy Analytics*, October 2021). Fifth generation mobile communication services, which will lead innovation alongside the fourth industrial revolution, were successfully commercialized in Korea and the US and are expanding to Europe and Australia. As a result, sales of 5G smart phones are projected to increase sharply to 650 million units in 2021 from 270 million units in 2020 (*Strategy Analytics*, September 2021).

The smartphone industry has grown significantly since 2007. In 2021, the smartphone portion of total HHPs is projected to be approximately 77%, and the feature phone portion of the total is expected to be approximately 23%, with the latter related to demand in developing nations (*Strategy Analytics*, September 2021). In 2021, the penetration rate of smartphones will reach 52%, slightly increasing from 50% in 2020 (*Strategy Analytics*, July 2021).

Also, as the smartphone market shows high saturation, the importance of competitive software—such as applications, UX, games, media, advertisements, mobile payments, AI, and AR—is rising alongside that of competitive hardware, which includes high-performance APs, AMOLED displays, foldable form factors, multiple cameras, sensors, waterproof & dustproof features, biometric recognition, and more.

□ Market Condition

With the acceleration of 5G expansion, the smartphone market is projected to grow from 1.30 billion units in 2020 to 1.41 billion units in 2021 (*Strategy Analytics*; September 2021). Meanwhile, the tablet market, which experienced a contraction due to weak replacement demand, increased from 160 million units in 2019 to 190 million in 2020 due to an increase of contactless demand triggered by COVID-19, and it is expected to be approximately 190 million units in 2021 (*Strategy Analytics*; September 2021).

< Market share of the IM Division's key product >

Product	End-3Q21	2020	2019
Smartphone	20.4%	19.6%	20.9%

Global market share in sales volume; data from research firm *Strategy Analytics*.

Market share for 2019 and 2020 changed as key product of the IM Division changed from HHP to smartphone in 2021.

□ Business condition

SEC has always been at forefront of the HHP market, and for smartphones in particular, we have maintained leadership in the global market for ten consecutive years since 2011. To solidify our status in the overall mobile market, we are striving to improve our current products—including tablets, wearables, and accessories—while growing businesses in areas with high potential, such as the service, online, and B2B sectors.

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 and innovative Contour Cut designs as well as large-screen Infinity 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 camera with AI technology, 8k video recording, among others. 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 mainstreaming of foldable phones 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. Galaxy Z Fold 3 and Galaxy Z Flip 3 provide the ultimate user experience by offering increased convenience and more innovative technologies, including IPX8 water resistance—a first for a foldable smartphone—enhanced display durability of up to 80% compared to the previous generation, verified folding durability to withstand folding 200,000 times, an under display camera, multitasking, Multi Active Window, auto framing, and Dual Preview.

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.

We provide our smartphone users with a wider and more convenient experience via our other products, which include premium tablets that feature multitasking of large-screen display, wearable devices, including smart watches equipped with numerous innovative fitness and wellness functions, wireless earphones that provide rich and quality sound, and other various Galaxy Eco products, including wireless quick charging stands.

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. As always, we will continue to invest in any field that has growth potential, with current targets including but not limited to 5G, AI, IoT, cloud, AR, blockchain, and mobile B2B, while also leveraging our superior R&D capabilities to keep delivering new value to customers.

[DS Division]

- Semiconductor

□ 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, with SoCs for mobile devices forming the largest market. It includes CPUs, GPUs, ISPs (image signal

processors), and modems. 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

The memory market is showing solid fundamental demand for server due to rising penetration of a new CPU and continued investments mainly by datacenters, but there are persisting uncertainties, including a limited supply of key IC (integrated circuit) components and forecast decline in CPU shipments.

In 3Q21, we achieved solid results by actively addressing strong server demand via preemptive product mix transitions, despite delayed production at some customers due to limited component supply and shift to weakening demand for consumer PCs. The Company is endeavoring to bolster market competitiveness with differentiated, high-capacity products utilizing our leading product competitiveness; and to preemptively identify various issues, including supply chain conditions that may affect customer demand, to respond to uncertain market conditions.

< Market share of the Semiconductor Business's key product >

Product	End-3Q21	2020	2019
DRAM	43.3%	42.7%	43.7%

Global market share in revenue; data from research firm *DRAMeXchange*.

□ Business condition

In the memory business, we continue to maintain cost competitiveness via our leadership in technology and strengthen product competitiveness and our capabilities to supply products that customers want in a timely manner. Furthermore, the Company has the capabilities to provide timely and stable supply via highly accurate forecasting of market demand by analyzing big data, even in times of rapidly changing customer demand. We are pursuing a strategy to secure a core position in promising growth sectors, such as 5G and AI, by preemptively establishing the mass-production system for next-generation DRAM featuring the world's first full-fledged application of multi-step EUV; and by securing product and cost competitiveness by establishing a lineup of advanced products—including SSDs with 7th-generation V-NAND—that will fully enter the solution market in 2022. We will expand our differentiated product line featuring technology from our advanced nodes and utilize a wide range of products to optimize responses for each application area and lead the market as the top memory company.

System LSI currently has limited foundry supply compared to component demand from key customers due to the sales growth of mobile-use products, so the Company is growing revenue by increasing ASP while addressing rising demand via expanding supply by strengthening the supply chain and diversifying suppliers. Furthermore, we are identifying new business opportunities by bolstering our lineup of flagship products, ramping up the production capabilities and production diversity of our fabs, and developing new technologies to expand markets and customers.

In the Foundry business, we expect a continued recovery as societies return to daily life with rising vaccination rates. Positives from the mobile business include growing penetration of 5G smartphones and increased requirement for wafers as a result of bigger chip size compared to LTE. Foundry market growth is expected to stay solid, aided by growing demand for PCs for education, remote working, and gaming, as contactless services became a new normal, as well as increased adoption of datacenters, IoT, and electric vehicles.

In 3Q21, the Company shipped the first set of mass-produced products from the new lines in Pyeongtaek amid strong market demand, and it focused on improving profitability by pursuing cost efficiency and winning orders for high margin products based on activities to boost productivity and yield of the overall production lines. Moreover, we are concentrating on maximizing our manufacturing competitiveness, including production, production capacity, and yield, as demand is expected to remain strong. We are also working to improve our competitiveness to address market changes based on technology leadership for future growth and applications centered on emerging growth businesses, such as 5G, HPC, AI, data centers, and automotives.

For advanced nodes, as we are competing with Taiwan's TSMC as the two strongest players in the industry, Samsung in

3Q21 produced prototypes that apply 2nd-generation 5-nano and 4-nano processes, with mass production of those products slated to begin in 4Q21. Furthermore, we are developing 3-nano products that apply gate all around (GAA) technology, a world's first, aiming for mass production by the end of 2022; and we are working on strengthening our technology leadership, winning orders for our large customers' next products, and diversifying applications. As demand for legacy processes is also projected to stay strong, we are: increasing our supply capacity, targeting maximum production; continually enhancing process technology and cost competitiveness to increase profitability; pursuing improvements in our business structure for HPC, finished products, networks, and automotives; and seeking portfolio diversification. Furthermore, we are striving to secure cost competitiveness by forecasting mid- to long-term demand and utilizing legacy process capacity in the long-term through the development of derivative processes. The 8-inch foundry will secure upgraded revenue and profitability via maximizing production and operating an optimal product mix.

- DP

□ Industry overview

Display refers to screens in electronic devices. Active matrix technology is most commonly used in displays, including OLED (organic light emitting diode) panels 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 adopted in other applications such as foldable, rollable, and automotive. Growth of the OLED market is widely expected to keep accelerating.

A TFT-LCD panel is a liquid crystal based display that features a thinner and lighter profile while offering high resolution. It has a wide range of potential applications in devices of all sizes and functionality, from portable mobile devices to large-size TVs featuring bright, high-resolution images. The market for large-panel TFT-LCD grew rapidly as their use moved from laptops initially to monitors and then to TVs. Recently however, high saturation has caused growth to slow.

□ Market condition

In 2021, the smartphone display panel market is expected to be approximately 1.72 billion units (1.11 billion LCD and 0.61 OLED), an increase year-on-year from the base effect of weak demand in 2020 caused by COVID-19 as well as rising replacement demand induced by 5G models. The OLED portion of smartphone panels is expected to increase from 30% in 2020 to 36% in 2021. (Omdia, October 2021).

In the large display market, demand for IT products is projected to increase sharply year-on-year due to growing demand for ultra-large, ultra-high resolution TVs, as contactless services expand due to COVID-19.

< Market share of the DP Business's key product >

Product	End-3Q21	2020	2019
Smartphone panels	49.0%	44.8%	43.6%

Global market share in revenue; data from research firm Omdia (data for 3Q21 is an estimate).

□ 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 2021, smartphone demand, which had been weakened by the pandemic, is expected to recover gradually due to an acceleration of 5G services. However, we expect uncertainties to linger due to shifting dynamics among players in the finished smartphone market, changes in competition between panel manufacturers, and component supply issues in the IT industry. We will apply new technologies, such as UPC (under panel camera), high refresh rate, and tech related to energy efficiency and performance, in line with the needs of our customers while also enhancing cost competitiveness to increase adoption of OLED panels. In addition, we will fortify our leadership by diversifying our product portfolio in the mobile panel business, which is currently concentrates on smartphones, by including foldables and IT devices.

In the large panel business, we will ensure a timely transition to QD display with differentiated technology and secure a strong foothold in the premium product group.

[Harman Division]

□ Industry overview

The Harman Division competes in the automotive and lifestyle audio industries.

As consumers want cutting-edge technologies for automotive components (digital cockpit, telematics, car audio, etc.), car makers demand latest technologies in areas such as car sharing and autonomous driving. As a result, competition is particularly fierce in the connectivity and entertainment solution markets between dominant players (eg, Alpine, Aptiv, Continental, Mitsubishi, and Panasonic).

The car audio business 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 (eg, 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 Bluetooth headsets, 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

In 2020, global automobile production, which directly influences the automotive component business, decreased by 16% compared to 2019. Although production volume in 1H20 declined due to the pandemic, it rebounded slightly in 2H20.

Short supply of semiconductors disrupted automobile production in 2021, and as a result, Harman saw its revenue decrease and inventory increase. Limits to production stemming from the Covid-19 pandemic are expected to fade gradually, but the supply shortage of components is likely to continue until the end of 2022, and production of automobiles are projected to increase in 4Q22.

Automobile production in 2022 is forecast to increase by 12% year-on-year (2022 LMC Global Production Forecast). With the supply imbalance of semiconductors changing by month and uncertainties remaining high, revenue growth is likely to be limited despite high demand.

< Market share of Harman Business's key product >

Product	End-3Q21	2020	2019
Digital cockpits	24.9%	27.5%	24.8%

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

□ Business condition

Harman is positioned to stay atop the automotive market and plans to continue to leverage its wide variety of brands to outfit vehicles ranging from mass-market thorough to luxury models, while also maintaining the quality that is synonymous with Harman brands. Additionally, Harman's relentless pursuit of innovation in the audio and connectivity spaces will help ensure the development of thriving relationships with automakers.

Additionally, Harman has continued to develop its Connected Services business with industry leading OTA (Over the Air) and software servicing products.

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.

In 2020, the COVID-19 pandemic created a challenging business environment, marked by halt in automobile production, a decline in daily travel and thus potential consumers, the closing of retailers, etc. The professional audio solution business, in particular, has felt adverse impacts of a reduction in the number of large-scale gatherings and events. We have adopted various ways to reduce costs from the onset of the COVID-19 pandemic, and we will redirect savings to other investments to compete more effectively in the market.

The results of the Harman Division are affected by factors outside of the Company's control, such as the prolonged Covid-19 pandemic and the pace of normalization of economic activities. Moreover, further restrictions by governments around the world may add negatives, and even if effects of the pandemic dissipate, headwinds such as a global economic slowdown may continue to deteriorate Harman's results.

D. Financial summary, by Division

Over the first three quarters of 2021 by Division, CE reported net sales of KRW 40,485.0 billion (19.9% of total net sales) and IM reported net sales of KRW 80,300.0 billion (39.5%). DS contributed approximately 44.5% of net sales: KRW 68,153.3 billion (33.6%) by the semiconductor sub-division and KRW 22,654.1 billion (11.2%) by the DP Business Unit. The Harman Division reported net sales of KRW 7,186.7 billion (3.5%).

Over the first three quarters of 2021, the CE Division accounted for 7.8% of total operating profit with an operating profit of KRW 2,943.3 billion; the IM Division accounted for 29.1% with KRW 10,983.2 billion; and the DS Division accounted for 62.4% with KRW 23,563.0 billion. The Harman Division posted an operating profit of KRW 374.3 billion (1.0%).

(KRW 100 mil)

Division	Classification	3Q21 YTD		2020		2019		
		Amount	Portion of corresponding total	Amount	Portion of corresponding total	Amount	Portion of corresponding total	
CE	Sales	404,850	19.9%	481,733	20.3%	453,228	19.7%	
	Operating profit	29,433	7.8%	35,615	9.9%	25,090	9.0%	
	Total asset	876,158	15.2%	602,487	11.4%	680,244	13.5%	
IM	Sales	803,000	39.5%	995,875	42.1%	1,072,662	46.6%	
	Operating profit	109,832	29.1%	114,727	31.9%	92,725	33.4%	
	Total asset	1,654,728	28.7%	1,682,692	31.8%	1,432,804	28.5%	
DS	Semi-conductor	Sales	681,533	33.6%	728,578	30.8%	649,391	28.2%
		Operating profit	203,551	53.9%	188,050	52.2%	140,163	50.5%
		Total asset	2,052,493	35.6%	1,863,977	35.3%	1,791,177	35.6%
	DP	Sales	226,541	11.2%	305,857	12.9%	310,539	13.5%
		Operating profit	31,381	8.3%	22,369	6.2%	15,813	5.7%
		Total asset	678,000	11.8%	661,929	12.5%	642,264	12.8%
	Total	Sales	903,654	44.5%	1,030,361	43.5%	955,180	41.5%
		Operating profit	235,630	62.4%	211,202	58.7%	155,817	56.1%
		Total asset	2,951,529	51.2%	2,741,270	51.9%	2,451,438	48.8%
Harman	Sales	71,867	3.5%	91,837	3.9%	100,771	4.4%	
	Operating profit	3,743	1.0%	555	0.2%	3,223	1.2%	
	Total asset	156,552	2.7%	147,020	2.8%	156,091	3.1%	

Sales for each business unit includes intersegment sales.

□ 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 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-sales 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-sales ratio, pre-tax profit, etc.).

III. Financial Affairs

1. Financial statements

A. Consolidated financial statements

(KRW mil)

Classification	Third quarter of the 53rd	52nd	51st
	September 30, 2021	December 31, 2020	December 31, 2019
Current assets	212,793,019	198,215,579	181,385,260
- Cash and cash equivalents	32,675,040	29,382,578	26,885,999
- Short-term financial instruments	85,077,401	92,441,703	76,252,052
- Other current financial assets	2,488,534	2,828,562	5,641,652
- Trade receivables	42,369,691	30,965,058	35,131,343
- Inventories	37,801,695	32,043,145	26,766,464
- Others	12,380,658	10,554,533	10,707,750
Non-current assets	197,627,699	180,020,139	171,179,237
- Other non-current financial assets	14,308,420	13,778,185	9,969,716
- Investment in associates and joint ventures	8,869,476	8,076,779	7,591,612
- Property, plant, and equipment	143,029,384	128,952,892	119,825,474
- Intangible assets	20,753,637	18,468,502	20,703,504
- Others	10,666,782	10,743,781	13,088,931
Total assets	410,420,718	378,235,718	352,564,497
Current liabilities	81,871,964	75,604,351	63,782,764
Non-current liabilities	31,782,636	26,683,351	25,901,312
Total liabilities	113,654,600	102,287,702	89,684,076
Equity attributable to owners of the parent company	288,331,208	267,670,331	254,915,472
- Capital stock	897,514	897,514	897,514
- Share premium	4,403,893	4,403,893	4,403,893
- Retained earnings	284,826,992	271,068,211	254,582,894
- Others	-1,797,191	-8,699,287	-4,968,829
Non-controlling interests	8,434,910	8,277,685	7,964,949
Total Equity	296,766,118	275,948,016	262,880,421
	Jan-Sep 2021	Jan-Dec 2020	Jan-Dec 2019
Revenue	203,039,275	236,806,988	230,400,881
Operating profit	37,767,144	35,993,876	27,768,509
Profit for the period	29,069,502	26,407,832	21,738,865
- Owners of the parent company	28,600,669	26,090,846	21,505,054
- Non-controlling interests	468,833	316,986	233,811
Basic earnings per share (KRW)	4,211	3,841	3,166
Diluted earnings per share (KRW)	4,211	3,841	3,166
Number of companies subject to consolidation accounting	235	242	241

Data shown in conformity with K-IFRS.

Please refer to the footnotes of the 51st-52nd Consolidated Audit Report and the 53rd Interim Consolidated Review Report for the calculation of basic earnings per share (ordinary shares).

B. Separate financial statements

(KRW mil)

Classification	Third quarter of the 53rd	52nd	51st
	September 30, 2021	December 31, 2020	December 31, 2019
Current assets	73,253,025	73,798,549	72,659,080
- Cash and cash equivalents	3,928,457	989,045	2,081,917
- Short-term financial instruments	16,755,002	29,101,284	26,501,392
- Trade receivables	33,602,367	24,736,740	26,255,438
- Inventories	13,499,961	13,831,372	12,201,712
- Others	5,467,238	5,140,108	5,618,621
Non-current assets	167,431,393	155,865,878	143,521,840
- Other non-current financial assets	1,475,993	1,542,766	1,209,261
- Subsidiary, associate, and joint venture investments	56,343,040	56,587,548	56,571,252
- Property, plant and equipment	96,420,021	86,166,924	74,090,275
- Intangible assets	8,989,979	7,002,648	8,008,653
- Others	4,202,360	4,565,992	3,642,399
Total assets	240,684,418	229,664,427	216,180,920
Current liabilities	49,597,918	44,412,904	36,237,164
Non-current liabilities	3,696,390	1,934,799	2,073,509
Total liabilities	53,294,308	46,347,703	38,310,673
- Capital stock	897,514	897,514	897,514
- Share premium	4,403,893	4,403,893	4,403,893
- Retained earnings	182,526,994	178,284,102	172,288,326
- Others	-438,291	-268,785	280,514
Total Equity	187,390,110	183,316,724	177,870,247
Evaluation method of subsidiary, associate, and joint venture investment securities	Cost methods	Cost methods	Cost methods
	Jan-Sep 2021	Jan-Dec 2020	Jan-Dec 2019
Revenue	144,730,836	166,311,191	154,772,859
Operating profit	22,745,411	20,518,974	14,115,067
Profit for the period	22,271,460	15,615,018	15,353,323
Basic earnings per share (KRW)	3,279	2,299	2,260
Diluted earnings per share (KRW)	3,279	2,299	2,260

Data shown in conformity with K-IFRS.

Please refer to the footnotes of the 51st-52nd Consolidated Audit Report and the 53rd Interim Consolidated Review 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	September 30,	December 31,	September 30,	December 31,
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Assets					
Current assets					
Cash and cash equivalents	3, 25	32,675,040	29,382,578	28,890,548	25,979,426
Short-term financial instruments	3, 25	85,077,401	92,441,703	75,223,557	81,734,910
Short-term financial assets at amortized cost	3, 25	2,427,925	2,757,111	2,146,718	2,437,777
Short-term financial assets at fair value through profit or loss	3, 4, 25	60,609	71,451	53,589	63,175
Trade receivables	3, 25	42,369,691	30,965,058	37,462,344	27,378,620
Non-trade receivables	3, 25	4,730,935	3,604,539	4,182,988	3,187,054
Prepaid expenses		2,916,308	2,266,100	2,578,535	2,003,636
Inventories	5	37,801,695	32,043,145	33,423,423	28,331,840
Other current assets	3, 25	4,733,415	3,754,462	4,185,180	3,319,611
Assets held-for-sale	28	-	929,432	-	821,783
		212,793,019	198,215,579	188,146,882	175,257,832
Non-current assets					
Financial assets at fair value through other comprehensive income	3, 4, 25	13,178,869	12,575,216	11,652,465	11,118,728
Financial assets at fair value through profit or loss	3, 4, 25	1,129,551	1,202,969	998,724	1,063,639
Investment in associates and joint ventures	6	8,869,476	8,076,779	7,842,195	7,141,309
Property, plant and equipment	7	143,029,384	128,952,892	126,463,419	114,017,296
Intangible assets	8	20,753,637	18,468,502	18,349,907	16,329,441
Net defined benefit assets	11	476,750	1,355,502	421,532	1,198,505
Deferred income tax assets		3,928,050	4,275,000	3,473,095	3,779,860
Other non-current assets	3, 25	6,261,982	5,113,279	5,536,705	4,521,048
		197,627,699	180,020,139	174,738,042	159,169,826
Total assets		410,420,718	378,235,718	362,884,924	334,427,658

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	September 30,	December 31,	September 30,	December 31,
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Liabilities and Equity					
Current liabilities					
Trade payables	3, 25	13,865,671	9,739,222	12,259,720	8,611,205
Short-term borrowings	3, 9, 25	15,117,140	16,553,429	13,366,241	14,636,176
Other payables	3, 25	12,992,399	11,899,022	11,487,592	10,520,852
Advances received	14	1,153,429	1,145,423	1,019,836	1,012,758
Withholdings	3, 25	1,010,159	974,521	893,160	861,650
Accrued expenses	3, 14, 25	25,182,366	24,330,339	22,265,691	21,512,348
Current income tax liabilities		4,380,143	4,430,272	3,872,826	3,917,149
Current portion of long-term liabilities	3, 9, 10, 25	1,271,589	716,099	1,124,311	633,159
Provisions	12	5,589,907	4,349,563	4,942,472	3,845,787
Other current liabilities	3, 14, 25	1,309,161	1,127,719	1,157,532	997,103
Liabilities held-for-sale	28	-	338,742	-	299,508
		81,871,964	75,604,351	72,389,381	66,847,695
Non-current liabilities					
Debentures	3, 10, 25	514,096	948,137	454,552	838,322
Long-term borrowings	3, 9, 25	2,166,741	1,999,716	1,915,784	1,768,105
Long-term other payables	3, 25	3,182,591	1,682,910	2,813,977	1,487,992
Net defined benefit liabilities	11	558,019	464,458	493,388	410,663
Deferred income tax liabilities		22,487,982	18,810,845	19,883,376	16,632,133
Long-term provisions	12	1,527,024	1,051,428	1,350,161	929,649
Other non-current liabilities	3, 14, 25	1,346,183	1,725,857	1,190,266	1,525,965
		31,782,636	26,683,351	28,101,504	23,592,829
Total liabilities		113,654,600	102,287,702	100,490,885	90,440,524

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	September 30, 2021 KRW	December 31, 2020 KRW	September 30, 2021 USD	December 31, 2020 USD
Equity attributable to owners of the Company					
Preference shares	15	119,467	119,467	105,630	105,630
Ordinary shares	15	778,047	778,047	687,932	687,932
Share premium		4,403,893	4,403,893	3,893,825	3,893,825
Retained earnings	16	284,826,992	271,068,211	251,837,728	239,672,518
Other components of equity	17	(1,797,191)	(8,687,155)	(1,589,037)	(7,680,990)
Accumulated other comprehensive income attributable to assets held-for-sale	28	-	(12,132)	-	(10,727)
		288,331,208	267,670,331	254,936,078	236,668,188
Non-controlling interests		8,434,910	8,277,685	7,457,961	7,318,946
Total equity		296,766,118	275,948,016	262,394,039	243,987,134
Total liabilities and equity		410,420,718	378,235,718	362,884,924	334,427,658

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 September 30,				For the nine-month periods ended September 30,			
		2021	2020	2021	2020	2021	2020	2021	2020
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Revenue	26	73,979,187	66,964,160	65,410,761	59,208,229	203,039,275	175,255,480	179,522,837	154,957,020
Cost of sales	18	42,898,871	39,970,476	37,930,233	35,341,011	121,464,787	106,683,368	107,396,479	94,327,075
Gross profit		31,080,316	26,993,684	27,480,528	23,867,218	81,574,488	68,572,112	72,126,358	60,629,945
Selling and administrative expenses	18, 19	15,262,785	14,640,446	13,495,017	12,944,758	43,807,344	41,625,237	38,733,485	36,804,114
Operating profit	26	15,817,531	12,353,238	13,985,511	10,922,460	37,767,144	26,946,875	33,392,873	23,825,831
Other non-operating income	20	425,152	495,382	375,910	438,006	1,465,562	1,101,167	1,295,818	973,628
Other non-operating expense	20	322,794	436,883	285,407	386,282	1,523,930	1,861,777	1,347,425	1,646,142
Share of net profit of associates and joint ventures	6	265,746	225,585	234,967	199,457	600,752	372,451	531,172	329,313
Financial income	21	2,660,880	2,328,991	2,352,691	2,059,242	6,686,661	7,889,952	5,912,198	6,976,121
Financial expense	21	2,490,646	2,122,207	2,202,174	1,876,409	6,007,245	7,078,013	5,311,473	6,258,223
Profit before income tax		16,355,869	12,844,106	14,461,498	11,356,474	38,988,944	27,370,655	34,473,163	24,200,528
Income tax expense	22	4,062,538	3,483,413	3,592,006	3,079,956	9,919,442	7,569,953	8,770,552	6,693,185
Profit for the period		12,293,331	9,360,693	10,869,492	8,276,518	29,069,502	19,800,702	25,702,611	17,507,343
Profit attributable to:									
Owners of the parent company		12,057,207	9,266,814	10,660,716	8,193,512	28,600,669	19,645,377	25,288,079	17,370,008
Non-controlling interests		236,124	93,879	208,776	83,006	468,833	155,325	414,532	137,335
Earnings per share (in Korean won, in US dollars)	23								
- Basic		1,776	1,364	1.57	1.21	4,211	2,892	3.72	2.56
- Diluted		1,776	1,364	1.57	1.21	4,211	2,892	3.72	2.56

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 September 30,				For the nine-month periods ended September 30,			
		2021	2020	2021	2020	2021	2020	2021	2020
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Profit for the period		12,293,331	9,360,693	10,869,492	8,276,518	29,069,502	19,800,702	25,702,611	17,507,343
Other comprehensive income (loss)									
Items that will not be subsequently reclassified to profit or loss:									
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	356,100	773,032	314,856	683,498	2,455,704	1,162,371	2,171,279	1,027,743
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	21,872	(6,345)	19,339	(5,610)	87,503	(31,496)	77,368	(27,848)
Remeasurement of net defined benefit liabilities (assets), net of tax	17	(14,911)	(7,987)	(13,184)	(7,062)	(68,841)	(45,439)	(60,868)	(40,176)
Items that may be subsequently reclassified to profit or loss:									
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	84,498	(15,349)	74,711	(13,571)	126,157	8,934	111,545	7,899
Foreign currency translation, net of tax	17	4,159,164	(1,329,770)	3,677,441	(1,175,753)	7,629,416	(360,459)	6,745,761	(318,710)
Gain (loss) on valuation of cash flow hedge derivatives	17	14,285	(2,096)	12,630	(1,853)	41,761	(27,224)	36,924	(24,071)
Other comprehensive income (loss) for the period, net of tax		4,621,008	(588,515)	4,085,793	(520,351)	10,271,700	706,687	9,082,009	624,837
Total comprehensive income for the period		16,914,339	8,772,178	14,955,285	7,756,167	39,341,202	20,507,389	34,784,620	18,132,180
Comprehensive income attributable to:									
Owners of the parent company		16,622,836	8,601,269	14,697,544	7,605,053	38,689,388	20,245,874	34,208,300	17,900,954
Non-controlling interests		291,503	170,909	257,741	151,114	651,814	261,515	576,320	231,226

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)

2020 KRW	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Accumulated other comprehensive income attributable to assets held-for-sale	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2020		119,467	778,047	4,403,893	254,582,894	(4,968,829)	-	254,915,472	7,964,949	262,880,421
Profit for the period		-	-	-	19,645,377	-	-	19,645,377	155,325	19,800,702
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	11,279	1,082,495	-	1,093,774	68,597	1,162,371
Share of other comprehensive income of associates and joint ventures, net of tax	17	-	-	-	-	(22,820)	-	(22,820)	258	(22,562)
Gain (loss) on overseas business translation, net of tax	17	-	-	-	-	(398,487)	-	(398,487)	38,028	(360,459)
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(44,746)	-	(44,746)	(693)	(45,439)
Loss on valuation of cash flow hedge derivatives	17	-	-	-	-	(27,224)	-	(27,224)	-	(27,224)
Reclassification to assets held-for-sale	28	-	-	-	-	(14,646)	14,646	-	-	-
Total comprehensive income for the period		-	-	-	19,656,656	574,572	14,646	20,245,874	261,515	20,507,389
Dividends	16	-	-	-	(7,214,638)	-	-	(7,214,638)	(51,411)	(7,266,049)
Capital transaction under common control		-	-	-	-	(842)	-	(842)	110	(732)
Changes in consolidated entities		-	-	-	-	-	-	-	17,838	17,838
Other		-	-	-	-	(3,726)	-	(3,726)	1,047	(2,679)
Total transactions with owners		-	-	-	(7,214,638)	(4,568)	-	(7,219,206)	(32,416)	(7,251,622)
Balance as of September 30, 2020		119,467	778,047	4,403,893	267,024,912	(4,398,825)	14,646	267,942,140	8,194,048	276,136,188

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))

2020 USD	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Accumulated other comprehensive income attributable to assets held- for-sale	Equity attributable to owners of the parent company	Non- controlling interests	Total
Balance as of January 1, 2020		105,630	687,932	3,893,825	225,096,565	(4,393,329)	-	225,390,623	7,042,432	232,433,055
Profit for the period		-	-	-	17,370,008	-	-	17,370,008	137,335	17,507,343
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	9,973	957,118	-	967,091	60,652	1,027,743
Share of other comprehensive income of associates and joint ventures, net of tax	17	-	-	-	-	(20,177)	-	(20,177)	228	(19,949)
Gain (loss) on overseas business translation, net of tax	17	-	-	-	-	(352,334)	-	(352,334)	33,624	(318,710)
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(39,563)	-	(39,563)	(613)	(40,176)
Loss on valuation of cash flow hedge derivatives	17	-	-	-	-	(24,071)	-	(24,071)	-	(24,071)
Reclassification to assets held-for-sale	28	-	-	-	-	(12,950)	12,950	-	-	-
Total comprehensive income for the period		-	-	-	17,379,981	508,023	12,950	17,900,954	231,226	18,132,180
Dividends	16	-	-	-	(6,379,023)	-	-	(6,379,023)	(45,456)	(6,424,479)
Capital transaction under common control		-	-	-	-	(745)	-	(745)	97	(648)
Changes in consolidated entities		-	-	-	-	-	-	-	15,772	15,772
Other		-	-	-	-	(3,294)	-	(3,294)	926	(2,368)
Total transactions with owners		-	-	-	(6,379,023)	(4,039)	-	(6,383,062)	(28,661)	(6,411,723)
Balance as of September 30, 2020		105,630	687,932	3,893,825	236,097,523	(3,889,345)	12,950	236,908,515	7,244,997	244,153,512

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)

2021 KRW	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Accumulated other comprehensive income attributable to assets held-for-sale	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2021		119,467	778,047	4,403,893	271,068,211	(8,687,155)	(12,132)	267,670,331	8,277,685	275,948,016
Profit for the period		-	-	-	28,600,669	-	-	28,600,669	468,833	29,069,502
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	3,186,679	(823,789)	-	2,362,890	92,814	2,455,704
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	-	-	-	-	227,096	-	227,096	(13,436)	213,660
Gain on overseas business translation, net of tax	17	-	-	-	-	7,525,926	-	7,525,926	103,490	7,629,416
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(68,954)	-	(68,954)	113	(68,841)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	41,761	-	41,761	-	41,761
Reclassification to assets held-for-sale		-	-	-	-	(12,132)	12,132	-	-	-
Total comprehensive income for the period		-	-	-	31,787,348	6,889,908	12,132	38,689,388	651,814	39,341,202
Dividends		-	-	-	(18,028,567)	-	-	(18,028,567)	(26,542)	(18,055,109)
Capital transaction under common control		-	-	-	-	-	-	-	(4,117)	(4,117)
Changes in consolidated entities		-	-	-	-	-	-	-	(477,146)	(477,146)
Other		-	-	-	-	56	-	56	13,216	13,272
Total transactions with owners		-	-	-	(18,028,567)	56	-	(18,028,511)	(494,589)	(18,523,100)
Balance as of September 30, 2021		119,467	778,047	4,403,893	284,826,992	(1,797,191)	-	288,331,208	8,434,910	296,766,118

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))

2021 USD	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Accumulated other comprehensive income attributable to assets held-for-sale	Equity attributable to owners of the parent company	Non-controlling interests	Total
Balance as of January 1, 2021		105,630	687,932	3,893,825	239,672,518	(7,680,990)	(10,727)	236,668,188	7,318,946	243,987,134
Profit for the period		-	-	-	25,288,079	-	-	25,288,079	414,532	25,702,611
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	2,817,591	(728,376)	-	2,089,215	82,064	2,171,279
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	-	-	-	-	200,793	-	200,793	(11,880)	188,913
Gain on overseas business translation, net of tax	17	-	-	-	-	6,654,257	-	6,654,257	91,504	6,745,761
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(60,968)	-	(60,968)	100	(60,868)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	36,924	-	36,924	-	36,924
Reclassification to assets held-for-sale		-	-	-	-	(10,727)	10,727	-	-	-
Total comprehensive income for the period		-	-	-	28,105,670	6,091,903	10,727	34,208,300	576,320	34,784,620
Dividends		-	-	-	(15,940,460)	-	-	(15,940,460)	(23,468)	(15,963,928)
Capital transaction under common control		-	-	-	-	-	-	-	(3,640)	(3,640)
Changes in consolidated entities		-	-	-	-	-	-	-	(421,882)	(421,882)
Other		-	-	-	-	50	-	50	11,685	11,735
Total transactions with owners		-	-	-	(15,940,460)	50	-	(15,940,410)	(437,305)	(16,377,715)
Balance as of September 30, 2021		105,630	687,932	3,893,825	251,837,728	(1,589,037)	-	254,936,078	7,457,961	262,394,039

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 nine-month periods ended September 30,			
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Operating activities					
Profit for the period		29,069,502	19,800,702	25,702,611	17,507,343
Adjustments	24	35,304,532	31,439,071	31,215,487	27,797,731
Changes in assets and liabilities arising from operating activities	24	(13,710,203)	(8,421,768)	(12,122,259)	(7,446,341)
Cash generated from operations		50,663,831	42,818,005	44,795,839	37,858,733
Interest received		1,039,116	1,539,740	918,763	1,361,404
Interest paid		(281,533)	(296,614)	(248,925)	(262,260)
Dividends received		260,836	203,899	230,625	180,283
Income tax paid		(7,211,263)	(3,492,605)	(6,376,039)	(3,088,084)
Net cash from operating activities		44,470,987	40,772,425	39,320,263	36,050,076
Investing activities					
Net decrease (increase) in short-term financial instruments		8,422,308	(12,967,852)	7,446,818	(11,465,888)
Net decrease in short-term financial assets at amortized cost		555,334	1,714,405	491,014	1,515,839
Net decrease in short-term financial assets at fair value through profit or loss		10,842	1,192,630	9,586	1,054,497
Disposal of long-term financial instruments		8,143,179	8,259,277	7,200,019	7,302,670
Acquisition of long-term financial instruments		(5,877,846)	(5,256,013)	(5,197,061)	(4,647,250)
Disposal of financial assets at amortized cost		-	906,108	-	801,161
Disposal of financial assets at fair value through other comprehensive income		2,890,042	32,100	2,555,311	28,382
Acquisition of financial assets at fair value through other comprehensive income		(941,705)	(161,161)	(832,635)	(142,495)
Disposal of financial assets at fair value through profit or loss		202,875	28,597	179,378	25,285
Acquisition of financial assets at fair value through profit or loss		(92,699)	(74,730)	(81,962)	(66,075)
Disposal of investment in associates and joint ventures		916	-	810	-
Acquisition of investment in associates and joint ventures		(33,523)	(76,980)	(29,640)	(68,064)
Disposal of property, plant and equipment		358,776	276,143	317,222	244,160
Acquisition of property, plant and equipment		(34,749,466)	(26,979,206)	(30,724,709)	(23,854,417)
Disposal of intangible assets		1,752	7,027	1,549	6,213
Acquisition of intangible assets		(2,214,048)	(1,891,145)	(1,957,612)	(1,672,109)
Cash outflow from business combinations		(5,926)	(49,420)	(5,240)	(43,696)
Cash inflow from sale of assets-held-for-sale		661,168	-	584,590	-
Cash inflow (outflow) from other investing activities		(28,421)	110,697	(25,129)	97,876
Net cash used in investing activities		(22,696,442)	(34,929,523)	(20,067,691)	(30,883,911)

The above interim consolidated statements of cash flows 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 nine-month period ended September 30,			
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Financing activities					
Net increase (decrease) in short-term borrowings		(1,534,219)	1,551,624	(1,356,523)	1,371,912
Increase in long-term borrowings		34,324	-	30,349	-
Repayment of debentures and long-term borrowings		(622,115)	(672,755)	(550,060)	(594,835)
Dividends paid		(18,053,070)	(7,221,135)	(15,962,125)	(6,384,768)
Net increase (decrease) in non-controlling interests		(15,622)	8,987	(13,813)	7,946
Net cash used in financing activities		(20,190,702)	(6,333,279)	(17,852,172)	(5,599,745)
Reclassification as held-for-sale	28	139	(44,710)	122	(39,532)
Effect of foreign exchange rate changes		1,708,480	215,185	1,510,600	190,262
Net increase (decrease) in cash and cash equivalents		3,292,462	(319,902)	2,911,122	(282,850)
Cash and cash equivalents					
Beginning of the period		29,382,578	26,885,999	25,979,426	23,772,006
End of the period		32,675,040	26,566,097	28,890,548	23,489,156

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: Consumer Electronics (“CE”), Information technology & Mobile communications (“IM”), Device Solutions (“DS”) and Harman. CE division includes digital TVs, monitors, air conditioners and refrigerators and IM division includes mobile phones, communication systems, and computers. DS division includes semiconductor products such as memory, foundry, and system LSI (“Semiconductor”), and display products such as LCD and OLED panels (“DP”). Harman division includes connected car systems, audio and visual products, enterprise automation solutions and connected services. The Company 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 234 subsidiaries, including Samsung Display and Samsung Electronics America. The Company also applies the equity method of accounting for its 43 associates and joint ventures, including Samsung Electro-Mechanics Co., Ltd.

1.2 Consolidated Subsidiaries

The consolidated subsidiaries as of September 30, 2021 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
	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
America	Prismview, LLC	Manufacture and sale of LED displays	100.0
	Joyent, Inc.	Cloud services	100.0
	Dacor Holdings, Inc.	Management of overseas subsidiaries	100.0
	Dacor, Inc.	Manufacture and sale of home appliances	100.0
	Dacor Canada Co.	Sale of home appliances	100.0
	SmartThings, Inc.	Sale of smart home electronics	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
	TWS LATAM B, LLC	Management of overseas subsidiaries	100.0
	TWS LATAM S, LLC	Management of overseas subsidiaries	100.0
	SNB Technologies, Inc. Mexico, S.A. de C.V	Installation of network devices	100.0
	Zhilabs Inc.	Sale of network solutions	100.0

¹ Ownership represents the Company’s ownership of the voting rights in each entity, including subsidiaries’ ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	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
	Samsung Electronics Canada, Inc. (SECA)	Sale of electronic devices	100.0
	AdGear Technologies Inc.	Digital advertising platforms	100.0
	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
America	Samsung Electronics Venezuela, C.A. (SEVEN)	Marketing and services	100.0
	Samsung Electronics Panama. S.A. (SEPA)	Consulting	100.0
	Harman International Industries, Inc.	Holding company	100.0
	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
	RT SV CO-INVEST, LP	Venture capital investments	99.9
	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

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
Europe/CIS	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. (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
	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
	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 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	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
Europe/CIS	AKG Acoustics GmbH	Manufacture and sale of audio products	100.0
	AMX UK Limited	Sale of audio products	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
	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 International s.r.o	Manufacture of audio products	100.0
	Harman Management GmbH	Management of overseas subsidiaries	100.0
	Harman Professional Kft	Manufacture of audio products, R&D	100.0
	Martin Manufacturing (UK) Ltd.	Manufacture of audio products	100.0
	Harman Professional Denmark ApS	Sale of audio products, R&D	100.0
	Red Bend Software Ltd.	Software design	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	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
Middle East & Africa	Samsung Gulf Electronics Co., Ltd. (SGE)	Sale of electronic devices	100.0
	Samsung Electronics Turkey (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
	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
	Samsung Display Noida Private Limited (SDN)	Manufacture of display panels	100.0
	Samsung R&D Institute India-Bangalore Private Limited (SRI-B)	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	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
Asia (Excluding China)	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)	Manufacture of electronic devices, 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
	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

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
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
	Mirero System Co., Ltd.	Development and supply of semiconductor process defect and quality control software	99.9
	Dowooinsys Co., Ltd.	Manufacture of display components	66.4
	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 #27	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
	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

¹ 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) 2021

<i>(In millions of Korean won)</i>	September 30, 2021					
	As of September 30, 2021		For the three months period ended		For the nine months period ended	
Major subsidiaries ¹	Assets	Liabilities	Sales	Profit (loss)	Sales	Profit (loss)
Samsung Display	52,795,254	7,688,710	7,917,232	1,042,861	20,330,564	2,060,429
Samsung Electronics America, Inc. (SEA)	43,011,379	18,930,923	11,757,766	462,045	30,670,994	1,190,907
Samsung (China) Semiconductor Co., Ltd. (SCS)	18,941,784	5,814,827	1,989,071	423,789	5,133,829	1,190,440
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	18,164,405	3,440,698	9,103,728	642,850	23,209,952	1,748,794
Harman and its subsidiaries ²	15,655,217	5,924,725	2,393,890	101,321	7,163,897	221,985
Samsung Electronics Vietnam Co., Ltd. (SEV)	14,618,938	2,631,676	6,323,682	448,500	15,771,417	1,325,939
Samsung (CHINA) Investment Co., Ltd. (SCIC)	13,604,279	9,853,374	588,950	25,505	1,875,771	354,890
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	13,485,190	8,031,320	-	1,160	-	11,849
Samsung Semiconductor, Inc. (SSI)	13,316,185	7,484,857	9,744,867	81,479	23,360,849	118,973
Samsung Asia Pte. Ltd. (SAPL)	12,293,971	62,160	-	11,953	-	2,285,858
Samsung Austin Semiconductor LLC. (SAS)	8,575,104	864,115	933,222	163,181	2,886,476	727,622
Samsung India Electronics Private Ltd. (SIEL)	8,121,556	3,692,438	3,486,645	212,592	8,891,192	419,329
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	8,043,550	6,208,349	8,559,676	59,299	23,668,307	234,372
Samsung Display Vietnam Co., Ltd. (SDV)	7,557,981	3,418,425	6,408,900	368,676	14,462,510	789,001
Samsung Elettronica da Amazonia Ltda. (SEDA)	5,622,951	1,489,585	1,581,752	113,506	4,515,792	395,698
Samsung Electronics (UK) Ltd. (SEUK)	2,970,693	2,249,286	1,385,896	38,699	4,019,379	38,728
Samsung International, Inc. (SII)	2,884,619	1,612,106	2,738,108	181,473	5,771,434	291,781
Thai Samsung Electronics Co., Ltd. (TSE)	2,835,177	476,096	1,103,637	33,585	3,284,198	2,989
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	2,613,695	668,673	1,157,839	10,517	4,743,970	209,845
Samsung Electronics Taiwan Co., Ltd. (SET)	2,599,301	2,042,563	1,648,295	24,906	4,368,580	36,443
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	2,552,218	743,204	942,188	47,431	2,832,670	14,979
Samsung Electronics Europe Logistics B.V. (SELS)	2,380,785	1,721,815	3,287,702	(103,552)	10,674,923	494,105
Samsung Electronics Benelux B.V. (SEBN)	2,361,330	641,268	581,381	11,692	1,849,654	148,338
Samsung Electronics Hong Kong Co., Ltd. (SEHK)	2,258,205	1,763,664	212,466	11,570	567,577	23,852
Samsung Display Dongguan Co., Ltd. (SDD)	2,135,121	387,050	1,060,293	38,592	3,017,170	132,933

¹ Summary of financial information is based on separate financial statements of each subsidiary.

² Consolidated financial data of an intermediate company that includes Harman International Industries, Inc. and its subsidiaries.

(2) 2020

September 30, 2020

(In millions of Korean won)

Major subsidiaries ¹	As of December 31, 2020		For the three months period ended		For the nine months period ended	
	Assets	Liabilities	Sales	Profit (loss)	Sales	Profit (loss)
Samsung Display	50,039,755	7,612,332	6,298,432	471,314	17,863,793	529,027
Samsung Electronics America, Inc. (SEA)	36,765,070	15,828,083	11,045,985	556,645	26,701,591	1,638,163
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	15,500,024	2,574,442	9,304,265	963,172	23,308,112	2,205,292
Samsung (CHINA) Investment Co., Ltd. (SCIC)	15,438,819	12,358,881	683,738	44,515	1,888,648	152,856
Harman and its subsidiaries ²	14,702,005	5,776,884	2,611,693	70,189	6,237,798	(863,808)
Samsung (China) Semiconductor Co., Ltd. (SCS)	14,348,735	3,511,003	1,499,934	326,382	3,756,653	720,409
Samsung Electronics Vietnam Co., Ltd. (SEV)	12,623,956	1,805,326	6,283,130	534,860	15,183,776	1,187,101
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	11,495,430	7,641,709	-	59	-	9,602
Samsung Semiconductor, Inc. (SSI)	9,669,349	4,427,701	6,178,253	80,968	17,244,045	171,476
Samsung Asia Pte. Ltd. (SAPL)	9,552,755	523,402	493,186	34,703	1,286,593	149,350
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	7,678,989	5,010,041	6,492,341	74,787	19,575,756	221,754
Samsung Display Vietnam Co., Ltd. (SDV)	7,400,563	4,354,887	4,835,624	246,229	11,829,011	240,524
Samsung Austin Semiconductor LLC. (SAS)	6,912,610	538,288	863,350	135,042	3,005,216	719,922
Samsung Eletronica da Amazonia Ltda. (SEDA)	6,280,131	1,556,057	1,884,292	283,413	4,701,052	633,851
Samsung India Electronics Private Ltd. (SIEL)	6,250,492	2,523,027	3,747,637	293,271	8,183,467	530,330
Thai Samsung Electronics Co., Ltd. (TSE)	2,920,299	451,055	1,154,582	32,289	2,894,432	97,265
Samsung Electronics (UK) Ltd. (SEUK)	2,767,563	1,886,447	1,405,074	(3,838)	3,512,707	41,584
Samsung Electronics GmbH (SEG)	2,687,535	2,626,979	1,660,307	644	4,384,506	53,229
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	2,609,150	1,026,901	1,888,917	117,232	4,527,427	322,103
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	2,230,457	504,952	1,079,548	73,664	2,542,946	162,746
Samsung Electronics Benelux B.V. (SEBN)	2,145,488	736,480	619,384	(1,654)	1,719,950	32,074
Samsung Display Dongguan Co., Ltd. (SDD)	1,767,663	300,080	605,415	6,337	2,182,251	90,720
Samsung Electronics Europe Logistics B.V. (SELS)	1,700,033	1,550,350	3,907,671	389,690	9,602,797	741,007
Samsung Electronics France S.A.S (SEF)	1,688,580	1,207,359	1,013,640	(18,084)	2,474,760	3,880
Samsung Japan Corporation (SJC)	1,668,902	1,381,443	1,123,039	4,117	2,439,851	7,032

¹ Summary of financial information is based on separate financial statements of each subsidiary.

² 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 nine month period ended September 30, 2021 are as follows:

Change	Area	Subsidiary	Description
Included	Middle East & Africa	Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Establishment
	Domestic	Samsung Venture Capital Union #52	Establishment
		Samsung Venture Capital Union #55	Establishment
Excluded	America	Viv Labs, Inc.	Merger
		Stellus Technologies, Inc.	Liquidation
		SigMast Communications Inc.	Liquidation
	Europe / CIS	Arcam Limited	Liquidation
		A&R Cambridge Limited	Liquidation
		Harman Connected Services Limited	Liquidation
	China	Samsung Suzhou Module Co., Ltd. (SSM)	Sale of business
		Samsung Suzhou LCD Co., Ltd. (SSL)	Sale of business
		Samsung Electronics Huizhou Co., Ltd.(SEHZ)	Liquidation
Shenzhen Samsung Electronics Telecommunication Co., Ltd.(SSET)		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 Korean financial statements.

The interim consolidated financial statements for the nine-month period ended September 30, 2021, 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 September 30, 2021.

(A) New or amended standards adopted by the Company

The Company applied the following amended and enacted standards for the first time for the annual reporting period commencing January 1, 2021:

Amendments to Korean IFRS 1116, Lease

The amendments introduced a practical expedient that simplifies the lessee’s accounting treatments for COVID-19 related rent concessions, and through such expedient a lessee may elect not to assess whether the rent concessions granted as a direct consequence of the COVID-19 pandemic are lease modification. A lessee that makes this election shall account for any changes in lease payments resulting from the rent concessions the same way as prescribed by this standard if the changes were not considered as lease modifications. The application of amendments does not have a significant impact on the Company’s interim consolidated financial statements.

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

The new or amended standards, being effective as of annual reporting period commencing January 1, 2021, that are enacted or pronounced but not yet adopted by the Company are as follows:

Amendments to Korean IFRS 1016 Property, Plant and Equipment

The amendments prohibit deducting any proceeds from selling items produced while making the asset available for its intended use from the cost of an item of property, plant and equipment, and instead, an entity would recognize such sales and corresponding cost of production directly in profit or loss. Such amendment is effective as of the annual reporting periods beginning on or after January 1, 2022, with early adoption permitted.

2.2 Accounting Policies

Significant accounting policies and method of calculation 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, 2020, except for the changes due to the application of amendments and enactments of standards described in Note 2.1 and as described below.

(A) Income tax expense

Income tax expense for the interim period is recognized based on the 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 Company operates primarily in Korean won and its official accounting records are maintained in Korean won. 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 ₩ 1,131.0 to \$1, the average exchange rate for the nine-month period ended September 30, 2021. 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 Critical Accounting Estimates and Assumptions

In preparation of the interim consolidated financial statements, the management of the Company makes judgements, estimates and assumptions that 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 may be different from the related actual results. Especially, the recent spread of COVID-19 may affect the Company's assumptions and estimates, but its potential financial impact cannot be reasonably estimated as of the reporting date.

Critical accounting estimates and assumptions made in the preparation of the interim consolidated financial statements are consistent with those made in the preparation of the annual consolidated financial statements for the year ended December 31, 2020, 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 September 30, 2021 and December 31, 2020 are as follows:

(1) As of September 30, 2021

<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 ¹	Total
Financial assets					
Cash and cash equivalents	32,675,040	-	-	-	32,675,040
Short-term financial instruments	85,077,401	-	-	-	85,077,401
Short-term financial assets at amortized cost	2,427,925	-	-	-	2,427,925
Short-term financial assets at fair value through profit or loss	-	-	60,609	-	60,609
Trade receivables	42,369,691	-	-	-	42,369,691
Financial assets at fair value through other comprehensive income	-	13,178,869	-	-	13,178,869
Financial assets at fair value through profit or loss	-	-	1,129,551	-	1,129,551
Other	8,705,104	-	313,034	35,731	9,053,869
Total	171,255,161	13,178,869	1,503,194	35,731	185,972,955

¹ 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 ¹	Total
Financial liabilities				
Trade payables	13,865,671	-	-	13,865,671
Short-term borrowings	1,995,835	-	13,121,305	15,117,140
Other payables	11,402,487	-	-	11,402,487
Current portion of long-term liabilities	536,606	-	734,983	1,271,589
Debentures	514,096	-	-	514,096
Long-term borrowings	-	-	2,166,741	2,166,741
Long-term other payables	2,768,818	-	-	2,768,818
Other	9,660,446	333,457	9,805	10,003,708
Total	40,743,959	333,457	16,032,834	57,110,250

¹ 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, 2020

<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 assets¹	Total
Financial assets					
Cash and cash equivalents	29,382,578	-	-	-	29,382,578
Short-term financial instruments	92,441,703	-	-	-	92,441,703
Short-term financial assets at amortized cost	2,757,111	-	-	-	2,757,111
Short-term financial assets at fair value through profit or loss	-	-	71,451	-	71,451
Trade receivables	30,965,058	-	-	-	30,965,058
Financial assets at fair value through other comprehensive income	-	12,575,216	-	-	12,575,216
Financial assets at fair value through profit or loss	-	-	1,202,969	-	1,202,969
Other	6,395,766	-	215,797	23,310	6,634,873
Total	161,942,216	12,575,216	1,490,217	23,310	176,030,959

¹ 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 liabilities¹	Total
Financial liabilities				
Trade payables	9,739,222	-	-	9,739,222
Short-term borrowings	2,278,386	-	14,275,043	16,553,429
Other payables	10,645,637	-	-	10,645,637
Current portion of long-term liabilities	5,318	-	710,781	716,099
Debentures	948,137	-	-	948,137
Long-term borrowings	-	-	1,999,716	1,999,716
Long-term other payables	1,272,128	2,176	-	1,274,304
Others	9,354,624	242,698	41,930	9,639,252
Total	34,243,452	244,874	17,027,470	51,515,796

¹ 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 September 30, 2021 and December 31, 2020 are as follows:

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

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Non-current portion		
Equity instruments	13,178,869	12,575,216

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

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Current portion		
Debt instruments	60,609	71,451
Non-current portion		
Equity instruments	710,855	819,144
Debt instruments	418,696	383,825
Subtotal	1,129,551	1,202,969
Total	1,190,160	1,274,420

(B) Details of listed equity securities in financial assets at fair value as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won, number of shares and percentages)</i>	September 30, 2021			December 31, 2020	
	Number of shares owned	Percentage of ownership ¹ (%)	Acquisition cost	Carrying amount (Market value)	Carrying amount (Market value)
Samsung Heavy Industries	100,693,398	16.0	735,488	624,299	708,882
Hotel Shilla	2,004,717	5.1	13,957	173,608	164,988
iMarket Korea	647,320	1.9	324	7,671	5,658
SFA	3,644,000	10.2	38,262	135,739	140,658
Wonik Holdings	3,518,342	4.6	30,821	18,436	22,306
Wonik IPS	3,701,872	7.5	32,428	148,260	163,808
ASML Holding N.V	6,297,787	1.5	363,012	5,590,337	3,350,532
Wacom Co., Ltd.	8,398,400	5.0	62,013	63,453	76,589
BYD Company Limited	7,814,919	0.3	79,049	108,694	1,695,488
Corning Incorporated	80,000,000	9.4	3,980,636	3,458,960	-
Other			471,044	889,396	1,012,825
Total			5,807,034	11,218,853	7,341,734

¹ Ownership percentages represent the Company's ownership of the total ordinary shares issued by each entity.

5. Inventories

Inventories as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021			December 31, 2020		
	Gross amount	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	10,030,937	(572,184)	9,458,753	9,711,668	(323,782)	9,387,886
Work in process	12,424,188	(377,041)	12,047,147	12,144,887	(326,797)	11,818,090
Raw materials and supplies	15,334,961	(650,842)	14,684,119	10,464,679	(673,913)	9,790,766
Materials in transit	1,611,676	-	1,611,676	1,046,403	-	1,046,403
Total	39,401,762	(1,600,067)	37,801,695	33,367,637	(1,324,492)	32,043,145

6. Investments in Associates and Joint Ventures

(A) Changes in investments in associates and joint ventures for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Balance as of January 1	8,076,779	7,591,612
Acquisition	33,523	76,980
Disposal	(4,519)	-
Share of profit	600,752	372,451
Other ¹	162,941	(58,581)
Balance as of September 30	8,869,476	7,982,462

¹ Other consists of dividends, impairment, and reclassification.

(B) Major investments in associates and joint ventures as of September 30, 2021 are as follows:

(1) Investments in associates

Investee	Nature of relationship with associate	Percentage of ownership (%) ¹	Principal business location	Fiscal period-end
Samsung Electro-Mechanics	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
Samsung SDS	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
Samsung Biologics	New business investment	31.5	Korea	December
Samsung SDI ²	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide	Advertising agency	25.2	Korea	December

¹ Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

² 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 (%) ¹	Principal business location	Fiscal period-end
Samsung Corning Advanced Glass	Manufacture and supply industrial glass devices	50.0	Korea	December

¹ 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 September 30, 2021 and December 31, 2020 are as follows:

(1) Investments in associates

<i>(In millions of Korean won)</i>				
September 30, 2021				
Investee	Acquisition cost	Net asset value of equity shares ¹	Carrying amount	
Samsung Electro-Mechanics	359,237	1,566,663	1,556,678	
Samsung SDS	147,963	1,618,141	1,637,503	
Samsung Biologics	443,193	1,547,221	1,564,762	
Samsung SDI	1,242,605	2,905,548	2,509,225	
Cheil Worldwide	506,162	313,474	612,393	
Other	642,083	538,058	789,607	
Total	3,341,243	8,489,105	8,670,168	

¹ The Company's portion of net asset value of associates is based on the Company's percentage of ownership.

<i>(In millions of Korean won)</i>				
December 31, 2020				

Investee	Acquisition cost	Net asset value of equity shares ¹	Carrying amount
Samsung Electro-Mechanics	359,237	1,351,864	1,333,819
Samsung SDS	147,963	1,506,421	1,525,857
Samsung Biologics	443,193	1,448,259	1,453,012
Samsung SDI	1,242,605	2,612,629	2,326,037
Cheil Worldwide	506,162	288,877	586,057
Other	620,233	458,182	666,506
Total	3,319,393	7,666,232	7,891,288

¹ 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)

September 30, 2021

Investee	Acquisition cost	Net asset value of equity shares ¹	Carrying amount
Samsung Corning Advanced Glass	215,000	133,079	133,074
Other	259,994	68,775	66,234
Total	474,994	201,854	199,308

¹ 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, 2020

Investee	Acquisition cost	Net asset value of equity shares ¹	Carrying amount
Samsung Corning Advanced Glass	215,000	123,360	123,356
Other	259,994	68,875	62,135
Total	474,994	192,235	185,491

¹ The Company's portion of net asset value of joint ventures is based on the Company's percentage of ownership.

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

(1) For the nine-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	Balance as of January 1	Share of profit	Share of other comprehensive income	Other¹	Balance as of September 30
Samsung Electro-Mechanics	1,333,819	195,223	52,406	(24,770)	1,556,678
Samsung SDS	1,525,857	114,634	38,946	(41,934)	1,637,503
Samsung Biologics	1,453,012	111,687	63	-	1,564,762
Samsung SDI	2,326,037	85,577	111,075	(13,464)	2,509,225
Cheil Worldwide	586,057	39,684	11,044	(24,392)	612,393
Samsung Corning Advanced Glass	123,356	9,718	-	-	133,074
Other	728,641	44,229	126	82,845	855,841
Total	8,076,779	600,752	213,660	(21,715)	8,869,476

¹ Other consists of acquisitions, disposals, dividends, impairment and reclassification.

(2) For the nine-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	Balance as of January 1	Share of profit	Share of other comprehensive income	Other¹	Balance as of September 30
Samsung Electro-Mechanics	1,152,734	154,588	5,966	(19,462)	1,293,826
Samsung SDS	1,499,571	61,416	1,960	(37,888)	1,525,059
Samsung Biologics	1,377,043	44,380	223	-	1,421,646
Samsung SDI	2,233,516	41,152	(11,379)	(13,463)	2,249,826
Cheil Worldwide	570,215	29,433	48	(23,811)	575,885
Samsung Corning Advanced Glass	173,742	3,713	-	-	177,455
Other	584,791	37,769	(19,380)	135,585	738,765
Total	7,591,612	372,451	(22,562)	40,961	7,982,462

¹ 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 September 30, 2021 and December 31, 2020, and for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021				
	Samsung Electro- Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	4,800,920	7,390,211	2,608,318	6,912,906	1,879,544
Non-current assets	5,288,250	2,782,736	4,985,986	17,608,321	492,756
Current liabilities	2,392,582	2,167,019	886,479	5,114,463	1,106,747
Non-current liabilities	833,628	637,678	1,794,801	4,532,215	162,761
Non-controlling interests	173,506	204,634	-	441,926	9,461
Condensed statements of comprehensive income:					
Revenue	7,536,153	9,693,443	1,123,693	9,737,273	2,340,517
Profit from continuing operations, net of tax ¹	847,274	507,814	314,272	858,758	137,201
Loss from discontinued operation, net of tax ¹	(16,509)	-	-	-	-
Other comprehensive income (loss) ¹	227,688	172,415	(31)	728,652	33,765
Total comprehensive income ¹	1,058,453	680,229	314,241	1,587,410	170,966
2. Dividends from associates					
Dividends	24,770	41,933	-	13,463	24,392

¹ Profit attributable to owners of the investee

<i>(In millions of Korean won)</i>	2020				
	Samsung Electro- Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
1. Condensed financial information					
Condensed statements of financial position:					
Current assets	4,150,303	6,581,153	1,751,347	5,657,405	1,742,270
Non-current assets	5,075,196	2,573,766	4,672,854	15,876,827	500,194
Current liabilities	1,914,880	1,720,757	589,301	4,983,633	1,046,224
Non-current liabilities	1,400,223	575,054	1,236,117	3,191,672	180,710
Non-controlling interests	138,107	190,081	-	381,311	7,988
Condensed statements of comprehensive income:					
Revenue	6,324,574	7,970,885	789,470	8,043,385	2,010,887
Profit from continuing operations, net of tax ¹	392,141	271,688	144,753	289,113	99,347
Profit from discontinued operation, net of tax ¹	9,287	-	-	-	-
Other comprehensive income (loss) ¹	19,630	(11,097)	(371)	81,981	(1,612)
Total comprehensive income ¹	421,058	260,591	144,382	371,094	97,735
2. Dividends from associates					
Dividends	19,462	41,933	-	13,463	23,811

¹ Profit attributable to owners of the investee.

- (2) Summary of financial information of major joint ventures and dividends received from joint ventures as of September 30, 2021 and December 31, 2020, and for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	Samsung Corning Advanced Glass	
	2021	2020
Condensed financial information		
Condensed statements of financial position:		
Current assets	151,478	133,896
Non-current assets	144,320	153,792
Current liabilities	27,584	39,151
Non-current liabilities	2,056	1,817
Condensed statements of comprehensive income¹:		
Revenue	152,593	99,886
Profit from continuing operations, net of tax ¹	19,437	4,259
Profit from discontinued operations, net of tax ¹	-	3,166
Other comprehensive income ¹	-	-
Total comprehensive income ¹	19,437	7,425
Dividends from joint ventures		
Dividends	-	-

¹ Profit for the nine-month periods ended September 30, 2021 and 2020.

- (3) Profit (loss) attributable to owners of the parent company from associates and joint ventures which are not individually material for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021		2020	
	Associates	Joint ventures	Associates	Joint ventures
Profit from continuing operations	42,899	1,330	36,664	1,105
Other comprehensive income (loss)	(1,816)	1,942	(19,595)	215
Total comprehensive income (loss)	41,083	3,272	17,069	1,320

- (F) Fair value of marketable securities of associates as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won and number of shares)</i>	September 30, 2021		December 31, 2020
	Number of shares held	Market value	Market value
Samsung Electro-Mechanics	17,693,084	3,140,522	3,149,369
Samsung SDS	17,472,110	2,804,274	3,118,772
Samsung Biologics	20,836,832	18,211,391	17,211,223
Samsung SDI	13,462,673	9,666,199	8,454,559
Cheil Worldwide	29,038,075	662,068	598,184

(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 the appeal. On October 16, 2020, the Korea Securities and Futures Commission appealed 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 measure, 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 September 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 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 nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Balance as of January 1	128,952,892	119,825,474
Acquisition and capital expenditures	34,272,622	26,210,741
Depreciation	(22,420,639)	(20,034,922)
Disposals/scrap/impairment	(198,702)	(625,014)
Assets held-for-sale	-	(868,485)
Other ¹	2,423,211	269,614
Balance as of September 30	143,029,384	124,777,408

¹ 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 nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Cost of sales	19,881,506	17,579,889
Selling and administrative expenses and other	2,539,133	2,455,033
Total	22,420,639	20,034,922

(C) Right-of-use assets as of September 30, 2021 amount to ₩ 3,193,012 million (December 31, 2020: ₩ 2,969,873 million). During the nine-month periods ended September 30, 2021 and 2020, newly recognized right-of-use assets amount to ₩ 780,021 million and ₩ 671,271 million, respectively, with relevant depreciation of ₩ 613,707 million and ₩ 631,446 million, respectively.

8. Intangible Assets

(A) Changes in intangible assets for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Balance as of January 1	18,468,502	20,703,504
External acquisitions	3,604,686	1,039,953
Internally generated (development costs)	252,377	-
Amortization	(2,224,890)	(2,424,446)
Disposals/scrap/impairment	(20,780)	(927,047)
Assets held-for-sale	-	(1,785)
Other ¹	673,742	590,620
Balance as of September 30	20,753,637	18,980,799

¹ Other includes the cumulative effect of changes in foreign currency exchange rates and business combinations.

(B) Details of amortization of intangible assets in each account for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Cost of sales	1,607,106	1,724,178
Selling and administrative expenses and other	617,784	700,268
Total	2,224,890	2,424,446

9. Borrowings

Details of the carrying amount of borrowings as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	Financial institutions	Interest rates (%)		
		as of		
		September 30, 2021	September 30, 2021	December 31, 2020
Short-term borrowings				
Collateralized borrowings ¹	Woori Bank and others	0.0~13.3	13,121,305	14,275,043
Non-collateralized borrowings	Citibank and others	0.0~19.8	1,995,835	2,278,386
Total			15,117,140	16,553,429
Current portion of long-term borrowings				
Bank borrowings	BNP Paribas	14.8~18.3	46,470	-
Lease liabilities ²	CSSD and others	3.7	734,982	710,781
Total			781,452	710,781
Long-term borrowings				
Lease liabilities ²	CSSD and others	3.7	2,166,741	1,999,716

¹ Collateralized borrowings are secured by trade receivables.

² Interest expenses arising from the lease liabilities for the nine-month periods ended September 30, 2021 and 2020 amounted to ₩ 77,844 million and ₩ 83,720 million, respectively, which were determined using the weighted average incremental borrowing rate. The right-of-use assets are pledged as a collateral to the lessor in the event of default.

10. Debentures

Details of the carrying amount of debentures as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	Issue date	Due date	Interest rates (%)		
			as of		
			September 30, 2021	September 30, 2021	December 31, 2020
US dollar denominated straight bonds ¹	1997.10.2	2027.10.1	7.7	41,472 (US \$ 35 million)	38,080 (US \$ 35 million)
US dollar denominated debenture bonds ²	2015.5.11	2025.5.15	4.2	473,960 (US \$ 400 million)	435,200 (US \$ 400 million)
EURO denominated debenture bonds ³	2015.5.27	2022.5.27	2.0	481,007 (EUR € 350 million)	468,383 (EUR € 350 million)
Less: Discounts				(757)	(853)
Add: Premium				8,551	12,645
Less: Current portion				(490,137)	(5,318)
Total				514,096	948,137

¹ 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.

² Harman International Industries, Inc. issued US dollar denominated debenture bonds. These debentures are repaid on the date of 10 years maturity and interest is paid semi-annually.

³ Harman Finance International, SCA issued Euro denominated debenture bonds. These debentures are repaid on the date of 7 years maturity and interest is paid annually.

11. Net Defined Benefit Liabilities (Assets)

(A) Details of net defined benefit liabilities (assets) recognized in the statements of financial position as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Present value of funded defined benefit obligations	13,585,464	12,400,964
Present value of unfunded defined benefit obligations	363,858	548,035
Subtotal	13,949,322	12,948,999
Fair value of plan assets	(13,868,053)	(13,840,043)
Total	81,269	(891,044)

(B) Details of defined benefit costs recognized in profit or loss for the nine-month periods ended September 30, 2021 and 2020 relating to defined benefit plans are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Current service cost	937,177	853,219
Net interest income	(28,673)	(7,652)
Past service cost	1,736	1,087
Other	3,225	(4,905)
Total	913,465	841,749

- (C) The expenses related to defined benefit plans recognized in each account in the statements of profit or loss for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Cost of sales	382,869	376,825
Selling and administrative expenses and other	530,596	464,924
Total	913,465	841,749

12. Provisions

Changes in the provisions for the nine-month period ended September 30, 2021 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	1,765,882	1,304,091	651,298	1,679,720	5,400,991
Charged to profit or loss	1,137,194	1,175,610	212,586	2,081,892	4,607,282
Payment	(1,084,651)	(1,175,185)	(210,866)	(719,724)	(3,190,426)
Other ¹	67,204	118,026	3,225	110,629	299,084
Balance as of September 30	1,885,629	1,422,542	656,243	3,152,517	7,116,931

¹ Other includes effects of changes in foreign currency exchange rates.

- (A) The Company accrues warranty provision for estimated costs of quality assurance, exchanges, repairs, recalls, and future services based on the historical experience and terms of warranty programs.
- (B) The Company recognizes provisions for estimated royalty expenses for technologies that are under negotiation with its counterparties. The timing and amount of payment depend on the settlement of the negotiation.
- (C) The Company has a long-term incentive plan for its executives based on the managements' performance for three years, and recognizes provision for the estimated incentive cost for the accrued period.
- (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 carrying amounts of emission rights held by the Company and the emission in excess of the emission rights for the applicable years. Details of emission rights and liabilities as of September 30, 2021 are as follows:

- (1) The amount of emission rights allocated free of charge and the estimated amount of emission as of September 30, 2021 are as follows:

<i>(In ten thousand metric tons)</i>	September 30, 2021
Allocated emission permits	1,689
Estimated volume of emission	1,909

- (2) Changes in the emission rights for the nine-month period ended September 30, 2021 are as follows:

<i>(In millions of Korean won)</i>	2021
Balance as of January 1	44,865
Credits	110
Usage	(213)
Balance as of September 30	44,762

- (3) Changes in emissions liabilities for the nine-month period ended September 30, 2021 are as follows:

<i>(In millions of Korean won)</i>	2021
Balance as of January 1	31,876
Charged to the statement of profit or loss	(12,465)
Use of emission rights	(201)
Balance as of September 30	19,210

13. Commitments and Contingencies

(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.

14. Contract Liabilities

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

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Contract liabilities ¹	12,398,633	11,902,130

¹ Contract liabilities include advances received, accrued expenses, other current liabilities and etc.

15. Share Capital

As of September 30, 2021, the Company's total number of authorized shares is 25,000,000,000 shares (₩ 100 per share) and the number of ordinary shares and preference shares issued by the Company are 5,969,782,550 and 822,886,700 shares respectively (excluding retired shares). As of September 30, 2021, 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 nine-month period ended September 30, 2021 and the year ended December 31, 2020. 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 is different with paid-in capital of ₩ 897,514 million.

16. Retained Earnings

(A) Retained earnings as of September 30, 2021 and December 31, 2020 consist of the following:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Discretionary reserve, etc.	170,188,717	174,739,565
Unappropriated retained earnings	114,638,275	96,328,646
Total	284,826,992	271,068,211

(B) Details of interim dividends are as follows:

(1) Interim dividends (Record date: March 31, June 30, and September 30, 2021 and 2020)

<i>(In millions of Korean won and number of shares)</i>		2021	2020	
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)	361%	354%	
	Dividend amount	Ordinary shares	2,155,092	2,113,303
		Preference shares	297,062	291,302
	Total	2,452,154	2,404,605	
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)	361%	354%	
	Dividend amount	Ordinary shares	2,155,092	2,113,303
		Preference shares	297,062	291,302
	Total	2,452,154	2,404,605	
3 rd 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)	361%	354%	
	Dividend amount	Ordinary shares	2,155,092	2,113,303
		Preference shares	297,062	291,302
	Total	2,452,154	2,404,605	

17. Other Components of Equity

Other components of equity as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Gain on valuation of financial assets at fair value through other comprehensive income	4,151,967	4,975,756
Share of other comprehensive income of associates and joint ventures	168,467	(58,629)
Loss on foreign currency translation	(3,463,789)	(10,977,583)
Remeasurement of net defined benefit liabilities (assets)	(2,722,379)	(2,653,425)
Other	68,543	26,726
Total	(1,797,191)	(8,687,155)

18. Expenses by Nature

Expenses by nature for the three and nine-month periods ended September 30, 2021 and 2020 consist of the following:

<i>(In millions of Korean won)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Changes in finished goods and work in process	(2,029,764)	(269,263)	(2,575,658)	(1,970,066)
Raw materials used and merchandise purchased	25,709,486	67,927,507	25,784,270	60,285,764
Wages and salaries	6,799,632	20,100,802	5,918,696	18,075,115
Post-employment benefit	333,055	1,009,111	324,696	939,597
Depreciation	8,059,814	22,420,639	6,835,367	20,034,922
Amortization	753,035	2,224,890	800,067	2,424,446
Welfare	1,200,908	3,759,278	1,154,944	3,467,427
Utilities	1,282,584	3,625,450	1,247,206	3,506,964
Outsourcing	1,268,780	4,051,953	1,385,715	4,081,852
Advertising	1,537,692	3,767,052	1,122,115	2,716,195
Sales promotion expenses	1,583,780	4,450,109	1,640,058	4,337,633
Other	11,662,654	32,204,603	10,973,446	30,408,756
Total¹	58,161,656	165,272,131	54,610,922	148,308,605

¹ 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 nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Selling and administrative expenses				
Wages and salaries	1,783,447	5,228,009	1,622,838	4,978,177
Post-employment benefit	79,985	235,379	69,450	191,971
Commissions and service charges	1,445,461	4,375,091	1,455,904	4,267,023
Depreciation	383,499	1,144,110	394,780	1,210,503
Amortization	135,876	406,347	148,683	442,075
Advertising	1,537,692	3,767,052	1,122,115	2,716,195
Sales promotion expenses	1,583,780	4,450,109	1,640,058	4,337,633
Transportation	749,128	2,068,477	604,834	1,560,468
Warranty	1,229,908	2,744,011	1,113,725	2,480,864
Other	1,224,119	3,455,809	1,156,298	3,550,931
Subtotal	10,152,895	27,874,394	9,328,685	25,735,840
Research and development expenses				
Total expenses	5,191,590	16,185,327	5,311,761	15,889,397
Capitalized expenses	(81,700)	(252,377)	-	-
Subtotal	5,109,890	15,932,950	5,311,761	15,889,397
Total	15,262,785	43,807,344	14,640,446	41,625,237

20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three and nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Other non-operating income				
Dividend income	21,669	98,738	30,911	112,549
Rental income	32,617	99,402	38,918	111,248
Gain on disposal of property, plant and equipment	113,599	319,620	52,252	114,031
Other ¹	257,267	947,802	373,301	763,339
Total	425,152	1,465,562	495,382	1,101,167

<i>(In millions of Korean won)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Other non-operating expenses				
Loss on disposal of property, plant and equipment	19,127	69,596	70,766	119,803
Donations	53,148	187,786	78,676	239,372
Other	250,519	1,266,548	287,441	1,502,602
Total	322,794	1,523,930	436,883	1,861,777

¹ Other includes gain on disposal of assets held-for-sale.

21. Financial Income and Expenses

Details of financial income and expenses for the three and nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Financial income				
Interest income:	337,315	923,996	420,145	1,470,076
Interest income from financial assets measured at amortized cost	337,269	923,820	420,058	1,469,794
Interest income from financial assets measured at fair value through profit or loss	46	176	87	282
Foreign exchange differences	2,140,670	5,257,709	1,699,797	5,587,361
Gains from derivatives	182,895	504,956	209,049	832,515
Total	2,660,880	6,686,661	2,328,991	7,889,952

<i>(In millions of Korean won)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Financial expenses				
Interest expenses:	137,010	307,684	100,776	341,305
Interest expense from financial liabilities measured at amortized cost	77,082	145,305	35,122	116,224
Other financial liabilities	59,928	162,379	65,654	225,081
Foreign exchange differences	2,184,373	5,105,451	1,823,122	6,099,697
Losses from derivatives	169,263	594,110	198,309	637,011
Total	2,490,646	6,007,245	2,122,207	7,078,013

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 September 30, 2021 to be effective for the year ended December 31, 2021 is 25.4%.

23. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the three and nine-month periods ended September 30, 2021 and 2020 are calculated as follows:

(1) Ordinary shares

<i>(In millions of Korean won, thousands of number of shares)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Profit for the period attributable to owners of the parent company	12,057,207	28,600,669	9,266,814	19,645,377
Profit for the period available for ordinary shares	10,596,557	25,135,888	8,144,201	17,265,470
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)	1,776	4,211	1,364	2,892

(2) Preference shares

<i>(In millions of Korean won, thousands of number of shares)</i>	September 30, 2021		September 30, 2020	
	3 Months	9 months	3 Months	9 months
Profit for the period attributable to owners of the parent company	12,057,207	28,600,669	9,266,814	19,645,377
Profit for the period available for preference shares	1,460,650	3,464,781	1,122,613	2,379,907
Weighted-average number of preference shares outstanding	822,887	822,887	822,887	822,887
Basic earnings per preference share (in Korean won)	1,776	4,211	1,364	2,892

(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 nine-month periods ended September 30, 2021 and 2020.

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 nine-month periods ended September 30, 2021 and 2020 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2021	2020
Adjustments:		
Income tax expense	9,919,442	7,569,953
Financial income	(2,208,660)	(2,857,929)
Financial expenses	1,824,505	1,859,118
Post-employment benefits	1,009,111	939,597
Depreciation	22,420,639	20,034,922
Amortization	2,224,890	2,424,446
Bad debt expenses	4,864	61,073
Dividend income	(98,738)	(112,549)
Share of profit of associates and joint ventures	(600,752)	(372,451)
Gain on disposal of property, plant and equipment	(319,620)	(114,031)
Loss on disposal of property, plant and equipment	69,596	119,803
Loss on valuation of inventories	1,264,259	1,183,776
Others	(205,004)	703,343
Total	35,304,532	31,439,071

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2021	2020
Changes in assets and liabilities:		
Decrease (increase) in trade receivables	(8,635,783)	(5,877,533)
Decrease (increase) in other receivables	(280,576)	657,998
Decrease (increase) in prepaid expenses	(601,768)	(447,365)
Decrease (increase) in inventories	(5,668,287)	(7,302,182)
Increase (decrease) in trade payables	1,421,342	3,355,220
Increase (decrease) in other payables	143,310	93,851
Increase (decrease) in advances received	(59,086)	76,151
Increase (decrease) in withholdings	(19,242)	34,960
Increase (decrease) in accrued expenses	439,807	2,601,050
Increase (decrease) in provisions	1,382,851	771,434
Payment of post-employment benefits	(373,902)	(424,665)
Other	(1,458,869)	(1,960,687)
Total	(13,710,203)	(8,421,768)

For the nine-month periods ended September 30, 2021 and 2020, cash outflows from principal repayment (financial activities) amount to ₩ 622,115 million and ₩ 631,742 million, respectively, and cash outflows due to interest expenses (operating activities) in relation to the lease liabilities amount to ₩ 86,129 million and ₩ 83,720 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 and also establishes and implements the global financial risk management policy.

The Company also manages foreign exchange risk by monitoring foreign exchange rate fluctuations at local finance centers across major regions (United States, United Kingdom, Singapore, China, Brazil, and Russia) and acting as an agent of foreign exchange transactions. In addition, the Company manages liquidity risk by utilizing 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, 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 are 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 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. 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 implemented policies and operates 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 September 30, 2021 and 2020, price fluctuation of marketable equity securities (listed stocks) by 1% would result in changes in other comprehensive income (before income tax) of ₩ 108,497 million and ₩ 52,378 million, respectively, and changes in profit before tax of ₩ 3,691 million and ₩ 4,683 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 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, 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 center. 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 risk is critical. The Company strives to achieve this goal by periodically forecasting its capital balance, estimating required cash levels, and managing income and expenses.

The Company manages its liquidity risk by periodically forecasting projected cash flows. If abnormal signs are identified, the Company works with the local finance center and provides liquidity support by utilizing a globally integrated finance structure, such as Cash Pooling. In addition, 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 capital operation expenses and financial expenses.

For the need of large scale of liquidity, the Company secures credit limit for the overseas subsidiaries through 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- and Aa3 credit rating from S&P and Moody's, respectively.

The total liabilities to equity ratios as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Total liabilities	113,654,600	102,287,702
Total equity	296,766,118	275,948,016
Debt ratio	38.3%	37.1%

(E) Fair value estimation

(1) Carrying amounts and fair values of financial instruments by category as of September 30, 2021 and December 31, 2020 are as follows:

(In millions of Korean won)	September 30, 2021		December 31, 2020	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	32,675,040	(*)	29,382,578	(*)
Short-term financial instruments	85,077,401	(*)	92,441,703	(*)
Short-term financial assets at amortized cost	2,427,925	(*)	2,757,111	(*)
Short-term financial assets at fair value through profit or loss	60,609	60,609	71,451	71,451
Trade receivables	42,369,691	(*)	30,965,058	(*)
Financial assets at fair value through other comprehensive income	13,178,869	13,178,869	12,575,216	12,575,216
Financial assets at fair value through profit or loss	1,129,551	1,129,551	1,202,969	1,202,969
Other ^(*)	9,053,869	348,765	6,634,873	239,107
Total financial assets	185,972,955		176,030,959	
Financial liabilities				
Trade payables	13,865,671	(*)	9,739,222	(*)
Short-term borrowings	15,117,140	(*)	16,553,429	(*)
Other payables	11,402,487	(*)	10,645,637	(*)
Current portion of long-term liabilities	1,271,589	573,710	716,099	5,318
- Current portion of long-term borrowing	781,452	(*)(*)	710,781	(*)
- Current portion of debentures	490,137	573,710	5,318	5,318
Debentures	514,096	557,163	948,137	997,101
Long-term borrowings	2,166,741	(*)	1,999,716	(*)
Long-term other payables ^(*)	2,768,818	(*)	1,274,304	2,176
Other ^(*)	10,003,708	343,262	9,639,252	284,628
Total financial liabilities	57,110,250		51,515,796	

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

(*) Assets measured at the cost of ₩ 8,705,104 million (December 31, 2020: ₩ 6,395,766 million) and liabilities measured at the cost of ₩ 12,429,264 million (December 31, 2020: ₩ 10,626,752 million) are excluded as the carrying amount is a reasonable estimation of fair value.

(*) 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 September 30, 2021 and December 31, 2020 are as follows:

September 30, 2021				
<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	-	45,746	14,863	60,609
Financial assets at fair value through other comprehensive income	10,849,744	-	2,329,125	13,178,869
Financial assets at fair value through profit or loss	369,109	-	760,442	1,129,551
Other	-	328,749	20,016	348,765
2) Liabilities				
Current portion of debentures	-	573,710	-	573,710
Debentures	-	557,163	-	557,163
Other	-	336,190	7,072	343,262
December 31, 2020				
<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	-	58,763	12,688	71,451
Financial assets at fair value through other comprehensive income	6,910,108	-	5,665,108	12,575,216
Financial assets at fair value through profit or loss	431,626	-	771,343	1,202,969
Other	-	239,107	-	239,107
2) Liabilities				
Current portion of debentures	-	5,318	-	5,318
Debentures	-	997,101	-	997,101
Long-term other payables	-	-	2,176	2,176
Other	-	277,556	7,072	284,628

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 statement of financial position 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. The quoted market price used for financial assets held by the Company is the current bid price. 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 (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity-specific estimates. If all significant inputs required to 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 at least once every quarter in line with the Company's quarterly reporting dates. 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 statement of financial position date, with the resulting value discounted back 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 a 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 September 30, 2021.

(In millions of Korean won and percentage)

Classification	Fair value	Valuation technique	Level 3 inputs	Input range (Weighted average)
Financial assets at fair value through other comprehensive income				
Samsung Venture Investment	22,244	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0.0%)
			Weighted average cost of capital	19.6%~21.6%(20.6%)
MiCo Ceramics Co., Ltd.	21,909	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0.0%)
			Weighted average cost of capital	14.2%~16.2%(15.2%)
TCL China Star Optoelectronics Technology Co., Ltd. (CSOT)	1,276,945	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0.0%)
			Weighted average cost of capital	11.3%~13.3%(12.3%)
China Star Optoelectronics Semiconductor Display Technology Ltd. (CSOSDT)	396,797	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0.0%)
			Weighted average cost of capital	11.3%~13.3%(12.3%)
Others				
Put option on equity instruments	20,016	Binomial model	Risk-free discount rate	0.5%~1.2%, 2.7%
			Price volatility	16.2%~26.2%(21.2%), 23.9%~33.9%(28.9%)

(4) Changes in Level 3 instruments for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Financial assets		
Balance as of January 1	6,449,139	7,407,684
Acquisitions	1,008,015	839,459
Disposals	(2,202,615)	(2,012,446)
Amount recognized in profit or loss	105,859	(6,552)
Amount recognized in other comprehensive income	2,890,676	667,860
Others	(5,126,628)	(26,322)
Balance as of September 30	3,124,446	6,869,683

<i>(In millions of Korean won)</i>	2021	2020
Financial liabilities		
Balance as of January 1	9,248	2,316
Repayment	-	-
Amount recognized in profit or loss	-	-
Others	(2,176)	31
Balance as of September 30	7,072	2,347

(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 profit or loss (before tax amount for other comprehensive income or loss) 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	-	153,240	-	(112,293)
Others ²	3,024	-	(4,904)	-

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

² Changes were calculated based on correlation between fair value and price volatility (-5%~5%), a significant unobservable input.

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 the 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 CE, IM, DS (Semiconductor and DP), Harman, and others.

The segment information for each reporting period is prepared after allocating intercompany reconciliations to depreciation, amortization of intangible assets and operating profits. 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 nine-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	CE	IM	DS				Total ¹
			Total ¹	Semi-conductor	DP	Harman	
Net revenue	40,484,993	80,299,988	90,365,362	68,153,285	22,654,106	7,186,666	203,039,275
Depreciation	496,729	548,046	20,219,657	16,124,433	4,078,471	231,314	22,420,639
Amortization	55,627	914,391	924,404	737,179	179,730	170,987	2,224,890
Operating profit	2,943,273	10,983,226	23,563,032	20,355,129	3,138,072	374,296	37,767,144

¹ Other operating segments are not separately disclosed.

(2) For the three-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	CE	IM	DS				Total ¹
			Total ¹	Semi-conductor	DP	Harman	
Net revenue	14,101,821	28,420,036	35,085,502	26,406,946	8,863,189	2,399,993	73,979,187
Depreciation	171,572	184,670	7,264,834	5,975,268	1,283,944	78,176	8,059,814
Amortization	17,230	349,020	274,363	211,716	60,145	58,207	753,035
Operating profit	764,819	3,355,644	11,584,481	10,061,315	1,491,780	154,438	15,817,531

¹ Other operating segments are not separately disclosed.

(3) For the nine-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	CE	IM	DS				Total ¹
			Total ¹	Semi-conductor	DP	Harman	
Net revenue	34,562,253	77,247,075	75,113,131	54,674,556	20,625,742	6,259,882	175,255,480
Depreciation	432,913	676,965	17,904,897	13,197,014	4,690,159	231,127	20,034,922
Amortization	56,586	1,047,257	1,000,037	796,934	195,638	177,233	2,424,446
Operating profit	2,743,568	9,053,556	15,491,102	14,956,680	483,883	(129,083)	26,946,875

¹ Other operating segments are not separately disclosed.

(4) For the three-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	CE	IM	DS				Total ¹
			Total ¹	Semi-conductor	DP	Harman	
Net revenue	14,091,867	30,490,281	25,931,616	18,799,299	7,315,416	2,616,090	66,964,160
Depreciation	145,379	194,330	6,162,359	4,618,313	1,538,368	57,505	6,835,367
Amortization	19,567	346,275	326,886	260,120	64,264	58,426	800,067
Operating profit	1,558,923	4,453,933	6,035,391	5,536,917	472,381	151,915	12,353,238

¹ Other operating segments are not separately disclosed.

(B) Regional information

The regional segment information provided to the Management Committee for the reportable segments as of and for the nine-month periods ended September 30, 2021 and 2020 are as follows:

(1) As of and for the nine-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Net segment revenue	32,213,447	69,751,366	35,944,274	30,862,532	34,267,656	-	203,039,275
Non-current assets ¹	120,787,431	10,524,433	6,144,294	9,349,516	17,960,740	(983,393)	163,783,021

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

(2) As of and for the three-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Net segment revenue	11,850,181	27,071,172	11,866,789	11,107,366	12,083,679	-	73,979,187
Non-current assets ¹	120,787,431	10,524,433	6,144,294	9,349,516	17,960,740	(983,393)	163,783,021

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

(3) As of and for the nine-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Net segment revenue	26,975,543	57,684,387	32,755,873	29,053,329	28,786,348	-	175,255,480
Non-current assets ¹	104,235,013	9,891,782	6,262,485	10,084,648	14,030,831	(746,552)	143,758,207

¹ Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

(4) As of and for the three-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	Korea	America	Europe	Asia and Africa	China	Intercompany elimination	Total
Net segment revenue	9,694,069	22,927,702	13,227,470	11,771,219	9,343,700	-	66,964,160
Non-current assets ¹	104,235,013	9,891,782	6,262,485	10,084,648	14,030,831	(746,552)	143,758,207

¹ 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 nine-month periods ended September 30, 2021 and 2020 are as follows:

		2021			
(In millions of Korean won)	Name of company ¹	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS	96,869	-	1,248,511	391,940
	Samsung Electro-Mechanics	39,898	-	1,118,017	-
	Samsung SDI	49,075	269	482,710	27,687
	Cheil Worldwide	26,636	-	501,989	17
	Other	854,556	68	8,735,187	81,229
	Total	1,067,034	337	12,086,414	500,873
Other related parties	Samsung C&T	66,255	32,705	252,222	2,592,803
	Other	282,398	-	1,242,366	408,215
	Total	348,653	32,705	1,494,588	3,001,018
Other ²	Samsung Engineering	464	-	28,979	1,198,426
	S-1	10,235	-	349,674	28,708
	Other	90,312	2,371	371,157	77,047
	Total	101,011	2,371	749,810	1,304,181

¹ Transactions with separate entities that are related parties of the Company.

² 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.

		2020			
(In millions of Korean won)	Name of company ¹	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS	70,786	-	1,299,933	355,481
	Samsung Electro-Mechanics	33,372	-	1,353,983	-
	Samsung SDI	57,190	272	457,890	71,925
	Cheil Worldwide	26,192	-	477,579	-
	Other	771,394	29	7,365,431	112,379
	Total	958,934	301	10,954,816	539,785
Other related parties	Samsung C&T	76,590	2,492	251,349	2,171,334
	Other	230,571	-	829,506	327,678
	Total	307,161	2,492	1,080,855	2,499,012
Other ²	Samsung Engineering	3,642	-	46,191	937,120
	S-1	14,129	-	322,592	26,642
	Other	69,705	-	335,390	135,044
	Total	87,476	-	704,173	1,098,806

¹ Transactions with separate entities that are related parties of the Company.

² 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 September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>		Name of company ¹	September 30, 2021	
			Receivables	Payables ²
Associates and joint ventures		Samsung SDS	8,575	550,347
		Samsung Electro-Mechanics	2,149	200,629
		Samsung SDI	105,469	108,379
		Cheil Worldwide	163	335,153
		Other	309,099	1,080,326
		Total	425,455	2,274,834
Other related parties		Samsung C&T	228,585	1,244,091
		Other	23,808	209,342
		Total	252,393	1,453,433
Other ³		Samsung Engineering	139	288,827
		S-1	3,301	36,909
		Other	8,333	57,711
		Total	11,773	383,447

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.

<i>(In millions of Korean won)</i>		Name of company ¹	December 31, 2020	
			Receivables	Payables ²
Associates and joint ventures		Samsung SDS	36,905	543,388
		Samsung Electro-Mechanics	379	120,407
		Samsung SDI	108,561	89,178
		Cheil Worldwide	195	398,836
		Other	253,921	1,154,549
		Total	399,961	2,306,358
Other related parties		Samsung C&T	245,138	2,327,126
		Other	20,484	172,726
		Total	265,622	2,499,852
Other ³		Samsung Engineering	492	538,853
		S-1	2,091	45,257
		Other	11,344	55,053
		Total	13,927	639,163

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 nine-month periods ended September 30, 2021 and 2020, the Company invested ₩ 33,523 million and ₩ 76,980 million, respectively, in associates and joint ventures. In addition, the Company recovered ₩ 916 million of investments in associates and joint ventures during the nine-month period ended September 30, 2021, and there was no return of investments in associates and joint ventures during the nine-month period ended September 30, 2020.
- (D) For the nine-month period ended September 30, 2021, the Company declared ₩ 3,105,595 million of dividends (₩ 1,245,236 million for the nine-month period ended September 30, 2020) to related parties. In addition, for the nine-month period ended September 30, 2021, the Company declared ₩ 235,681 million (₩ 94,308 million for the nine-month period ended September 30, 2020) of dividends 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 September 30, 2021 and December 31, 2020, there is no dividend payables to the entities that are not in scope of Korean IFRS 1024.
- (E) For the nine-month period ended September 30, 2021, the Company entered into lease agreements of ₩ 12,602 million with its related parties, while the Company did not enter into any lease agreement during the nine-month period ended September 30, 2020. Lease payments made to the related parties for the nine-month periods ended September 30, 2021 and 2020 amounted to ₩ 25,233 million and ₩ 40,669 million, respectively.
- (F) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the nine-month periods ended September 30, 2021 and 2020 consists of:

<i>(In millions of Korean won)</i>	2021	2020
Short-term employee benefits	7,304	6,077
Post-employment benefits	665	735
Other long-term employee benefits	6,069	5,430

28. Assets and Liabilities Held-for-Sale (Disposal Groups)

(A) Sales of ownership interest in SSM and SSL

For the year ended December 31, 2020, the Company 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 Opto-electronics Technologies Co., Ltd. (“CSOT”). The Company entered into the sales agreement on August 28, 2020, and the sales were completed on April 1, 2021.

(B) Details of assets and liabilities classified as held-for-sale as of December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	December 31, 2020
Assets held-for-sale	
Cash and cash equivalents	139
Inventories	53,157
Other current assets	26,474
Property, plant and equipment	766,614
Intangible assets	1,421
Other non-current assets	81,627
Total	929,432
Liabilities held-for-sale	
Current liabilities	337,032
Non-current liabilities	1,710
Total	338,742

(C) Details of accumulated other comprehensive income attributable to assets held-for-sale are as follows:

<i>(In millions of Korean won)</i>	December 31, 2020
Foreign currency translation, net of tax	(12,132)

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))

		September 30,	December 31,	September 30,	December 31,
	Notes	2021	2020	2021	2020
		KRW	KRW	USD	USD
Assets					
Current assets					
Cash and cash equivalents	3, 25	3,928,457	989,045	3,473,455	874,492
Short-term financial instruments	3, 25	16,755,002	29,101,284	14,814,402	25,730,712
Trade receivables	3, 25	33,602,367	24,736,740	29,710,470	21,871,678
Non-trade receivables	3, 25	1,572,847	1,898,583	1,390,677	1,678,685
Prepaid expenses		1,306,873	890,680	1,155,508	787,520
Inventories	5	13,499,961	13,831,372	11,936,367	12,229,393
Other current assets	3, 25	2,587,518	2,350,845	2,287,825	2,078,565
		73,253,025	73,798,549	64,768,704	65,251,045
Non-current assets					
Financial assets at fair value through other comprehensive income	3, 4, 25	1,473,096	1,539,659	1,302,479	1,361,332
Financial assets at fair value through profit or loss	3, 4, 25	2,897	3,107	2,561	2,747
Investments in subsidiaries, associates and joint ventures	6	56,343,040	56,587,548	49,817,270	50,033,458
Property, plant and equipment	7	96,420,021	86,166,924	85,252,450	76,186,888
Intangible assets	8	8,989,979	7,002,648	7,948,741	6,191,586
Net defined benefit assets	11	422,130	1,162,456	373,238	1,027,818
Deferred income tax assets		769,527	992,385	680,399	877,445
Other non-current assets	3, 25	3,010,703	2,411,151	2,661,996	2,131,887
		167,431,393	155,865,878	148,039,134	137,813,161
Total assets		240,684,418	229,664,427	212,807,838	203,064,206

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	September 30,	December 31,	September 30,	December 31,
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Liabilities and Equity					
Current liabilities					
Trade payables	3, 25	12,127,951	6,599,025	10,723,266	5,834,712
Short-term borrowings	3, 9, 25	10,963,466	12,520,367	9,693,654	11,070,232
Other payables	3, 25	10,485,266	9,829,541	9,270,840	8,691,063
Advances received	14	433,259	424,368	383,078	375,217
Withholdings	3, 25	434,561	432,714	384,229	382,596
Accrued expenses	3, 14, 25	7,328,937	7,927,017	6,480,084	7,008,893
Current income tax liabilities		3,438,845	3,556,146	3,040,551	3,144,266
Current portion of long-term liabilities	3, 9, 10, 25	99,609	87,571	88,072	77,428
Provisions	12	4,034,006	2,932,468	3,566,779	2,592,823
Other current liabilities	14	252,018	103,687	222,829	91,677
		49,597,918	44,412,904	43,853,382	39,268,907
Non-current liabilities					
Debentures	3, 10, 25	34,898	31,909	30,856	28,213
Long-term borrowings	3, 9, 25	129,243	150,397	114,274	132,978
Long-term other payables	3, 25	2,814,192	1,247,752	2,488,246	1,103,235
Long-term provisions	12	631,993	503,035	558,794	444,772
Other non-current liabilities		86,064	1,706	76,096	1,509
		3,696,390	1,934,799	3,268,266	1,710,707
Total liabilities		53,294,308	46,347,703	47,121,648	40,979,614

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	September 30, 2021 KRW	December 31, 2020 KRW	September 30, 2021 USD	December 31, 2020 USD
Equity					
Preference shares	15	119,467	119,467	105,630	105,630
Ordinary shares	15	778,047	778,047	687,932	687,932
Share premium		4,403,893	4,403,893	3,893,825	3,893,825
Retained earnings	16	182,526,994	178,284,102	161,386,330	157,634,859
Other components of equity	17	(438,291)	(268,785)	(387,527)	(237,654)
Total equity		187,390,110	183,316,724	165,686,190	162,084,592
Total liabilities and equity		240,684,418	229,664,427	212,807,838	203,064,206

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 period ended September 30,				For the nine-month period ended September 30,			
		2021	2020	2021	2020	2021	2020	2021	2020
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Revenue	26	53,919,812	47,801,234	47,674,705	42,264,794	144,730,836	125,793,273	127,967,803	111,223,630
Cost of sales	18	35,634,079	33,462,592	31,506,864	29,586,884	99,774,229	89,436,139	88,218,166	79,077,456
Gross profit		18,285,733	14,338,642	16,167,841	12,677,910	44,956,607	36,357,134	39,749,637	32,146,174
Selling and administrative expenses	18,	7,704,552	7,302,292	6,812,195	6,456,525	22,211,196	21,640,467	19,638,648	19,134,023
Operating profit	26	10,581,181	7,036,350	9,355,646	6,221,385	22,745,411	14,716,667	20,110,989	13,012,151
Other non-operating income	20	169,854	135,317	150,181	119,644	5,809,028	601,880	5,136,214	532,169
Other non-operating expense	20	51,511	234,086	45,545	206,974	649,508	635,077	574,281	561,521
Financial income	21	1,408,263	911,152	1,245,155	805,620	3,086,941	3,330,513	2,729,405	2,944,766
Financial expense	21	1,438,900	923,386	1,272,244	816,437	2,999,762	3,317,428	2,652,323	2,933,196
Profit before income tax		10,668,887	6,925,347	9,433,193	6,123,238	27,992,110	14,696,555	24,750,004	12,994,369
Income tax expense	22	2,074,221	1,655,252	1,833,979	1,463,537	5,720,650	3,598,288	5,058,072	3,181,527
Profit for the period		8,594,666	5,270,095	7,599,214	4,659,701	22,271,460	11,098,267	19,691,932	9,812,842
Earnings per share (in Korean won, in US dollars)	23								
- Basic		1,265	776	1.12	0.69	3,279	1,634	2.90	1.44
- Diluted		1,265	776	1.12	0.69	3,279	1,634	2.90	1.44

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 period ended September 30,				For the nine-month period ended September 30,			
		2021	2020	2021	2020	2021	2020	2021	2020
		KRW	KRW	USD	USD	KRW	KRW	USD	USD
Profit for the period		8,594,666	5,270,095	7,599,214	4,659,701	22,271,460	11,098,267	19,691,932	9,812,842
Other comprehensive income (loss)									
Items that will not be subsequently reclassified to profit or loss:									
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax	17	(87,069)	(18,268)	(76,984)	(16,152)	(94,671)	(119,641)	(83,706)	(105,784)
Remeasurement of net defined benefit assets, net of tax	17	(18,214)	(10,030)	(16,104)	(8,868)	(74,835)	(46,598)	(66,167)	(41,201)
Items that may be subsequently reclassified to profit or loss:		-	-	-	-	-	-	-	-
Other comprehensive income (loss) for the period, net of tax		(105,283)	(28,298)	(93,088)	(25,020)	(169,506)	(166,239)	(149,873)	(146,985)
Total comprehensive income for the period		8,489,383	5,241,797	7,506,126	4,634,681	22,101,954	10,932,028	19,542,059	9,665,857

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)

2020 KRW	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2020		119,467	778,047	4,403,893	172,288,326	280,514	177,870,247
Profit for the period		-	-	-	11,098,267	-	11,098,267
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	-	(119,641)	(119,641)
Remeasurement of net defined benefit assets, net of tax		-	-	-	-	(46,598)	(46,598)
Total comprehensive income (loss) for the period		-	-	-	11,098,267	(166,239)	10,932,028
Dividends declared		-	-	-	(7,214,638)	-	(7,214,638)
Total transactions with owners		-	-	-	(7,214,638)	-	(7,214,638)
Balance as of September 30, 2020		119,467	778,047	4,403,893	176,171,955	114,275	181,587,637

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))

2020 USD	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2020		105,630	687,932	3,893,825	152,333,527	248,024	157,268,938
Profit for the period		-	-	-	9,812,842	-	9,812,842
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	-	(105,784)	(105,784)
Remeasurement of net defined benefit assets, net of tax		-	-	-	-	(41,201)	(41,201)
Total comprehensive income (loss) for the period		-	-	-	9,812,842	(146,985)	9,665,857
Dividends declared		-	-	-	(6,379,023)	-	(6,379,023)
Total transactions with owners		-	-	-	(6,379,023)	-	(6,379,023)
Balance as of September 30, 2020		105,630	687,932	3,893,825	155,767,346	101,039	160,555,772

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)

2021 KRW	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2021		119,467	778,047	4,403,893	178,284,102	(268,785)	183,316,724
Profit for the period		-	-	-	22,271,460	-	22,271,460
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	-	(94,671)	(94,671)
Remeasurement of net defined benefit assets, net of tax	17	-	-	-	-	(74,835)	(74,835)
Total comprehensive income (loss) for the period		-	-	-	22,271,460	(169,506)	22,101,954
Dividends declared		-	-	-	(18,028,568)	-	(18,028,568)
Total transactions with owners		-	-	-	(18,028,568)	-	(18,028,568)
Balance as of September 30, 2021		119,467	778,047	4,403,893	182,526,994	(438,291)	187,390,110

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))

2021 USD	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
Balance as of January 1, 2021		105,630	687,932	3,893,825	157,634,859	(237,654)	162,084,592
Profit for the period		-	-	-	19,691,932	-	19,691,932
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	-	(83,706)	(83,706)
Remeasurement of net defined benefit assets, net of tax	17	-	-	-	-	(66,167)	(66,167)
Total comprehensive income (loss) for the period		-	-	-	19,691,932	(149,873)	19,542,059
Dividends declared		-	-	-	(15,940,461)	-	(15,940,461)
Total transactions with owners		-	-	-	(15,940,461)	-	(15,940,461)
Balance as of September 30, 2021		105,630	687,932	3,893,825	161,386,330	(387,527)	165,686,190

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 nine-month period ended September 30,			
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Operating activities					
Profit for the period		22,271,460	11,098,267	19,691,932	9,812,842
Adjustments	24	17,625,041	18,290,978	15,583,671	16,172,478
Changes in assets and liabilities arising from operating activities	24	(2,485,975)	(3,133,534)	(2,198,043)	(2,770,601)
Cash generated from operations		37,410,526	26,255,711	33,077,560	23,214,719
Interest received		225,993	356,569	199,818	315,270
Interest paid		(79,260)	(124,292)	(70,080)	(109,896)
Dividends received		5,218,777	102,402	4,614,327	90,542
Income tax paid		(4,785,843)	(1,787,857)	(4,231,537)	(1,580,784)
Net cash from operating activities		37,990,193	24,802,533	33,590,088	21,929,851
Investing activities					
Net decrease in short-term financial instruments		11,846,282	1,295,398	10,474,221	1,145,362
Disposal of financial assets at fair value through other comprehensive income		-	503	-	445
Acquisition of financial assets at fair value through other comprehensive income		(63,972)	(130,827)	(56,563)	(115,674)
Disposal of financial assets at fair value through profit or loss		150	-	133	-
Disposal of investments in subsidiaries, associates and joint ventures		351,720	22,057	310,983	19,502
Acquisition of investments in subsidiaries, associates and joint ventures		(83,974)	(145,358)	(74,248)	(128,522)
Disposal of property, plant and equipment		390,249	356,094	345,050	314,850
Acquisition of property, plant and equipment		(25,648,685)	(19,150,071)	(22,678,000)	(16,932,069)
Disposal of intangible assets		986	1,054	872	932
Acquisition of intangible assets		(2,012,016)	(1,711,090)	(1,778,980)	(1,512,908)
Cash inflow (outflow) from other investing activities		(108,339)	32,074	(95,791)	28,359
Net cash used in investing activities		(15,327,599)	(19,430,166)	(13,552,323)	(17,179,723)

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))

	Notes	For the nine-month period ended September 30,			
		2021	2020	2021	2020
		KRW	KRW	USD	USD
Financing activities					
Net increase (decrease) in short-term borrowings		(1,615,074)	2,562,797	(1,428,013)	2,265,968
Repayment of debentures and long-term borrowings		(81,711)	(102,813)	(72,247)	(90,905)
Dividends paid		(18,026,415)	(7,214,015)	(15,938,557)	(6,378,472)
Net cash used in financing activities		(19,723,200)	(4,754,031)	(17,438,817)	(4,203,409)
Effect of foreign exchange rate changes		18	376	15	332
Net increase in cash and cash equivalents		2,939,412	618,712	2,598,963	547,051
Cash and cash equivalents					
Beginning of the period		989,045	2,081,917	874,492	1,840,785
End of the period		3,928,457	2,700,629	3,473,455	2,387,836

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

5. Notes to non-consolidated financial statements

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 three business divisions: Consumer Electronics (“CE”), Information technology & Mobile communications (“IM”), and Device Solutions (“DS”). CE division includes digital TVs, monitors, air conditioners and refrigerators and IM division includes mobile phones, communication systems, and computers. DS division includes 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 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 Korean financial statements.

The interim financial statements for the nine-month period ended September 30, 2021, have been prepared in accordance with *Korean IFRS 1034, Interim Financial Reporting*. These interim financial statements have been prepared in accordance with the Korean IFRS which is effective as of September 30, 2021.

(A) New or amended standards adopted by the Company

The Company applied the following amended and enacted standards for the first time for the annual reporting period commencing January 1, 2021:

Amendments to Korean IFRS 1116, Lease

The amendments introduced a practical expedient that simplifies the lessee’s accounting treatments for COVID-19 related rent concessions, and through such expedient a lessee may elect not to assess whether the rent concessions granted as a direct consequence of the COVID-19 pandemic are lease modifications. A lessee that makes this election shall account for any changes in lease payments resulting from the rent concessions the same way as prescribed by this standard if the changes were not considered as lease modifications. The application of the amendments does not have a significant impact on the Company’s interim separate financial statements.

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

The new or amended accounting standards, being effective as of annual reporting period commencing January 1, 2021, that are enacted or pronounced but not yet adopted by the Company are as follows:

Amendments to Korean IFRS 1016 Property, Plant and Equipment

The amendments prohibit deducting any proceeds from selling items produced while making the asset available for its intended use from the cost of an item of property, plant and equipment, and instead, an entity would recognize such sales and corresponding cost of production directly in profit or loss. Such amendment is effective as of the annual reporting periods beginning on or after January 1, 2022, with early adoption permitted.

2.2 Accounting Policies

Significant accounting policies and method of calculation used in the preparation of the interim financial statements are consistent with those of the annual financial statements for the year ended December 31, 2020, except for the changes due to the application of amendments and enactments of standards described in Note 2.1 and as described below.

(A) Income tax expense

Income tax expense for the interim period is recognized based on the 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 Company operates primarily in Korean won and its official accounting records are maintained in Korean won. 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 ₩ 1,131.0 to \$1, the average exchange rate for the nine-month period ended September 30, 2021. 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 Critical Accounting Estimates and Assumptions

In preparation of the interim financial statements, the management of the Company makes judgements, estimates and assumptions that 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 can be different from related actual results. Especially, the recent spread of COVID-19 may affect the Company's assumptions and estimates, but its potential financial impact cannot be reasonably estimated as of the reporting date.

Critical accounting estimates and assumptions made in the preparation of the interim financial statements are consistent with those made applied in the preparation of the annual financial statements for the year ended December 31, 2020, 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 September 30, 2021 and December 31, 2020 are as follows:

(1) As of September 30, 2021

<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	3,928,457	-	-	3,928,457
Short-term financial instruments	16,755,002	-	-	16,755,002
Trade receivables	33,602,367	-	-	33,602,367
Financial assets at fair value through other comprehensive income	-	1,473,096	-	1,473,096
Financial assets at fair value through profit or loss	-	-	2,897	2,897
Other	4,362,296	-	-	4,362,296
Total	58,648,122	1,473,096	2,897	60,124,115

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Other financial liabilities ¹	Total
Financial liabilities			
Trade payables	12,127,951	-	12,127,951
Short-term borrowings	-	10,963,466	10,963,466
Other payables	10,342,270	-	10,342,270
Current portion of long-term liabilities	5,817	93,792	99,609
Debentures	34,898	-	34,898
Long-term borrowings	-	129,243	129,243
Long-term other payables	2,497,952	-	2,497,952
Other	2,985,843	-	2,985,843
Total	27,994,731	11,186,501	39,181,232

¹ Other financial liabilities include collateralized borrowings and lease liabilities not subject to categorizations.

(2) As of December 31, 2020

<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	989,045	-	-	989,045
Short-term financial instruments	29,101,284	-	-	29,101,284
Trade receivables	24,736,740	-	-	24,736,740
Financial assets at fair value through other comprehensive income	-	1,539,659	-	1,539,659
Financial assets at fair value through profit or loss	-	-	3,107	3,107
Other	4,149,950	-	-	4,149,950
Total	58,977,019	1,539,659	3,107	60,519,785

<i>(In millions of Korean won)</i>	Financial liabilities measured at amortized cost	Other financial liabilities¹	Total
Financial liabilities			
Trade payables	6,599,025	-	6,599,025
Short-term borrowings	-	12,520,367	12,520,367
Other payables	9,671,280	-	9,671,280
Current portion of long-term liabilities	5,318	82,253	87,571
Debentures	31,909	-	31,909
Long-term borrowings	-	150,397	150,397
Long-term other payables	935,038	-	935,038
Others	3,423,251	-	3,423,251
Total	20,665,821	12,753,017	33,418,838

¹ Other financial liabilities include collateralized borrowings and lease liabilities not subject to categorizations.

4. Financial Assets at Fair Value

(A) Details of financial assets at fair value as of September 30, 2021 and December 31, 2020 are as follows:

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

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Equity instruments	1,473,096	1,539,659

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

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Debt instruments	2,897	3,107

(B) Details of listed equity securities in financial assets at fair value as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won, number of shares and percentages)</i>	September 30, 2021			December 31, 2020	
	Number of shares owned	Percentage of ownership ¹ (%)	Acquisition cost	Carrying amount (Market value)	Carrying amount (Market value)
Samsung Heavy Industries	100,693,398	16.0	735,488	624,299	708,882
Hotel Shilla	2,004,717	5.1	13,957	173,608	164,988
iMarket Korea	647,320	1.9	324	7,671	5,658
Skylife	240,000	0.5	3,344	2,388	2,114
Yongpyong Resort	400,000	0.8	1,869	2,360	1,702
A-Tech Solution	1,592,000	15.9	26,348	24,039	19,263
Wonik Holdings	1,759,171	2.3	15,410	9,218	11,153
Wonik IPS	1,850,936	3.8	16,214	74,130	81,904
Dongjin Semichem	2,467,894	4.8	48,277	77,615	90,078
Soulbrain Holdings	461,741	2.2	30,752	18,285	20,825
Soulbrain	373,368	4.8	24,866	102,004	101,668
S&S Tech	1,716,116	8.0	65,933	58,863	74,651
YIK Corp	9,601,617	11.7	47,336	52,329	60,010
Kctech	1,022,216	4.9	20,720	24,789	31,433
Lotvacuum	1,267,668	7.1	18,990	17,431	24,086
Newpower	2,140,939	4.9	12,739	18,241	14,109
Fine Semitech	1,522,975	7.0	43,009	40,663	-
DNF	810,030	7.0	20,964	18,023	-
Total			1,146,540	1,345,956	1,412,524

¹ Ownership percentages represent the Company's ownership of the total ordinary shares issued by each entity.

5. Inventories

Inventories as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021			December 31, 2020		
	Gross amount	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	2,487,070	(334,665)	2,152,405	2,535,410	(118,007)	2,417,403
Work in process	8,297,139	(104,229)	8,192,910	8,904,968	(65,773)	8,839,195
Raw materials and supplies	3,038,265	(262,841)	2,775,424	2,544,706	(379,326)	2,165,380
Materials in transit	379,222	-	379,222	409,394	-	409,394
Total	14,201,696	(701,735)	13,499,961	14,394,478	(563,106)	13,831,372

6. Investments in Subsidiaries, Associates and Joint Ventures

(A) Changes in investments in subsidiaries, associates and joint ventures for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Balance as of January 1	56,587,548	56,571,252
Acquisition	83,974	145,358
Disposal	(328,482)	(22,057)
Balance as of September 30	56,343,040	56,694,553

(B) Major investments in associates as of September 30, 2021 are as follows (refer to Note 27 for the list of subsidiaries):

Investee	Nature of relationship with associate	Percentage of ownership (%) ¹	Main 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.	New business investment	31.5	Korea	December
Samsung SDI Co., Ltd. ²	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide, Inc.	Advertising agency	25.2	Korea	December

¹ Ownership percentages represent the Company's ownership of the total ordinary shares issued by each entity.

² The Company's ownership of outstanding ordinary shares outstanding is 20.6%.

(C) Fair value of marketable securities of associates as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won and number of shares)</i>	September 30, 2021		December 31, 2020		
	Number of shares held	Market value	Carrying amount	Market value	Carrying amount
Samsung Electro-Mechanics Co., Ltd.	17,693,084	3,140,522	445,244	3,149,369	445,244
Samsung SDS Co., Ltd.	17,472,110	2,804,274	560,827	3,118,772	560,827
Samsung Biologics Co., Ltd.	20,836,832	18,211,391	443,193	17,211,223	443,193
Samsung SDI Co., Ltd.	13,462,673	9,666,199	1,242,605	8,454,559	1,242,605
Cheil Worldwide, Inc.	29,038,075	662,068	491,599	598,184	491,599

7. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Balance as of January 1	86,166,924	74,090,275
Acquisition and capital expenditures	24,756,461	17,875,386
Depreciation	(14,356,840)	(11,714,658)
Disposals/scrap/impairment	(132,302)	(212,995)
Other	(14,222)	(49,103)
Balance as of September 30	96,420,021	79,988,905

(B) Details of depreciation of property, plant and equipment in each account for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Cost of sales	13,101,230	10,532,946
Selling and administrative expenses and other	1,255,610	1,181,712
Total	14,356,840	11,714,658

(C) Right-of-use assets as of September 30, 2021 amount to ₩ 392,559 million (December 31, 2020: ₩ 405,873 million). During the nine-month periods ended September 30, 2021 and 2020, newly recognized right-of-use assets amount to ₩ 75,967 million (September 30, 2020: ₩ 101,172 million) and the depreciation of right-of-use assets amount to ₩ 89,256 million (September 30, 2020: ₩ 102,962 million).

8. Intangible Assets

(A) Changes in intangible assets for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Balance as of January 1	7,002,648	8,008,653
Internally generated /developed	252,377	-
External acquisitions	3,552,439	973,843
Amortization	(1,797,979)	(1,965,832)
Disposals/scrap/impairment	(19,419)	(229,974)
Other	(87)	147,196
Balance as of September 30	8,989,979	6,933,886

(B) Details of amortization of intangible assets in each account for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Cost of sales	1,453,160	1,561,410
Selling and administrative expenses and other	344,819	404,422
Total	1,797,979	1,965,832

9. Borrowings

Details of the carrying amount of borrowings as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	Financial institutions	Interest rate (%) as of September 30, 2021	September 30, 2021	December 31, 2020
Short-term borrowings				
Collateralized borrowings ¹	Woori Bank and other	0.0 ~ 8.4	10,963,466	12,520,367
Current portion of long-term borrowings				
Lease liabilities ²	-	1.8	93,792	82,253
Long-term borrowings				
Lease liabilities ²	-	1.8	129,243	150,397

¹ Collateralized borrowings are secured by trade receivables.

² Interest expenses arising from the lease liabilities for the nine-month periods ended September 30, 2021 and 2020 amounted to ₩ 3,087 million and ₩ 3,568 million, respectively, which were determined using the weighted average incremental borrowing rate. The right-of-use assets are pledged as a collateral to lessors in the event of default.

10. Debentures

Details of the carrying amount of debentures as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	Issue date	Due date	Interest rate (%) as of September 30, 2021	September 30, 2021	December 31, 2020
US dollar denominated straight bonds ¹	Oct 2, 1997	Oct 1, 2027	7.7	41,472 (USD 35 million)	38,080 (USD 35 million)
Less: Discounts				(757)	(853)
Less: Current Portion				(5,817)	(5,318)
Total				34,898	31,909

¹ 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 September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Present value of funded defined benefit obligations	10,457,489	9,740,095
Present value of unfunded defined benefit obligations	15,017	13,987
Subtotal	10,472,506	9,754,082
Fair value of plan assets	(10,894,636)	(10,916,538)
Total	(422,130)	(1,162,456)

(B) Details of defined benefit costs recognized in profit or loss for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Current service cost	680,587	601,525
Net interest income	(30,078)	(11,921)
Total	650,509	589,604

- (C) The amount of defined benefit costs recognized in each account in the statements of profit or loss for the nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021	2020
Cost of sales	255,739	237,613
Selling and administrative expenses and other	394,770	351,991
Total	650,509	589,604

12. Provisions

Changes in the provisions for the nine-month period ended September 30, 2021 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	340,818	1,304,018	567,004	1,223,663	3,435,503
Charged to profit or loss	328,860	1,118,211	139,694	1,827,987	3,414,752
Payment	(307,515)	(1,175,185)	(194,281)	(657,512)	(2,334,493)
Other	-	118,027	-	32,210	150,237
Balance as of September 30	362,163	1,365,071	512,417	2,426,348	4,665,999

- (A) The Company accrues warranty provision 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 on technologies that are under negotiation with its counterparties. The timing and amount of payment depend on the settlement of the negotiation.
- (C) The Company has a long-term incentive plan for its executives based on the managements' performance for three years, and recognizes a provision for the estimated incentive cost for the accrued period.
- (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 carrying amounts of emission rights held by the Company and the emission in excess of the emission rights for the applicable years. Details of emission rights and liabilities as of September 30, 2021 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 September 30, 2021 are as follows:

<i>(In ten thousand metric tons)</i>	September 30, 2021
Emission rights allocated free of charge	1,126
Estimated volume of emission	1,419

- (2) Changes in the emission rights for the nine-month period ended September 30, 2021 are as follows:

<i>(In millions of Korean won)</i>	2021
Balance as of January 1	44,865
Usage	(104)
Balance as of September 30	44,761

- (3) Changes in the emission liabilities for the nine-month period ended September 30, 2021 are as follows:

<i>(In millions of Korean won)</i>	2021
Balance as of January 1	31,777
Charged to the statement of profit or loss	(12,463)
Use of emission rights	(104)
Balance as of September 30	19,210

13. Commitments and Contingencies

(A) Guarantees

- (1) Debt guarantees provided by the Company for overseas subsidiaries as of September 30, 2021 are as follows:

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

Debtor	Creditor	Period	Actual indebtedness	Guaranteed amount
SETK	BNP Paribas and others	June 13, 2022	92,939	991,761
SETK-P	BNP Paribas and others	Dec 16, 2021	47,797	118,490
SEIL	Citibank	Dec 16, 2021	12,517	18,484
Other	Others	-	-	8,676,224
Total			153,253	9,804,959
			USD 129,399	USD 8,274,926

- (2) The ceiling amount of guarantees provided by the Company for the execution of contracts by overseas subsidiaries is ₩ 413,328 million as of September 30, 2021.
- (3) The Company has not been provided any collateral or guarantees from its related parties as of September 30, 2021.

(B) Litigation

As of September 30, 2021, 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 that were incurred prior to Samsung Display Co., Ltd.'s divestiture.

14. Contract Liabilities

The Company has recognized the following contract liabilities related to revenue from contracts with customers:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Contract liabilities ¹	1,071,796	1,065,465

¹ Contract liabilities include advances received, accrued expenses, other current liabilities and etc.

15. Share Capital

As of September 30, 2021, the Company's total number of authorized shares is 25,000,000,000 shares (₩ 100 per share) and the number of ordinary shares and preference shares issued by the Company is 5,969,782,550 and 822,886,700 shares respectively (excluding retired shares). As of September 30, 2021, 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 nine-month period ended September 30, 2021 and the year ended December 31, 2020. 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 is different with paid-in capital of ₩ 897,514 million.

16. Retained Earnings

(A) Retained earnings as of September 30, 2021 and December 31, 2020 consist of the following:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Legal reserves	450,789	450,789
Discretionary reserves, etc.	182,076,205	177,833,313
Total	182,526,994	178,284,102

(B) Details of interim dividends are as follows (Record date: March 31, June 30, and September 30, 2021 and 2020)

<i>(In millions of Korean won and number of shares)</i>		2021	2020	
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)	361%	354%	
	Dividend amount	Ordinary shares	2,155,092	2,113,303
		Preference shares	297,062	291,302
	Total	2,452,154	2,404,605	
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)	361%	354%	
	Dividend amount	Ordinary shares	2,155,092	2,113,303
		Preference shares	297,062	291,302
	Total	2,452,154	2,404,605	
3 rd 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)	361%	354%	
	Dividend amount	Ordinary shares	2,155,092	2,113,303
		Preference shares	297,062	291,302
	Total	2,452,154	2,404,605	

17. Other Components of Equity

Other components of equity as of September 30, 2021 and December 31, 2020 consist of the following:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Gain on valuation of financial assets at fair value through other comprehensive income	95,824	190,495
Remeasurement of net defined benefit liabilities (assets)	(2,294,523)	(2,219,688)
Others	1,760,408	1,760,408
Total	(438,291)	(268,785)

18. Expenses by Nature

Expenses by nature for the three and nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021		2020	
	3 Months	9 Months	3 Months	9 Months
Changes in finished goods and work in process	(528,220)	911,283	(544,641)	(238,907)
Raw materials used and merchandise purchased	24,184,301	65,586,430	24,262,009	61,342,059
Wages and salaries	3,513,030	10,477,524	2,802,927	8,870,617
Post-employment benefit	218,659	656,629	198,588	595,440
Depreciation	5,189,144	14,356,840	4,056,503	11,714,658
Amortization	609,454	1,797,979	649,007	1,965,832
Welfare	621,339	1,968,415	581,747	1,733,573
Utilities	763,683	2,118,408	682,948	1,931,723
Outsourcing	639,745	2,230,684	760,509	2,309,144
Advertising	637,642	1,227,678	199,415	694,199
Sales promotion expenses	191,542	637,587	216,069	636,749
Other	7,298,312	20,015,968	6,899,803	19,521,519
Total¹	43,338,631	121,985,425	40,764,884	111,076,606

¹ Equal to sum of cost of sales and selling and administrative expenses in the separate statements of profit or loss.

19. Selling and Administrative Expenses

Selling and administrative expenses for the three and nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021		2020	
	3 Months	9 Months	3 Months	9 Months
1) Selling and administrative expenses				
Wages and salaries	561,979	1,687,033	457,408	1,629,128
Post-employment benefit	39,934	118,903	32,786	99,332
Commissions and service charges	485,633	1,616,475	545,163	1,721,025
Depreciation	98,512	298,376	104,207	327,226
Amortization	55,050	164,802	74,094	215,780
Advertising	637,642	1,227,678	199,415	694,199
Sales promotion expenses	191,542	637,587	216,069	636,749
Transportation	243,627	687,002	211,369	554,876
Service fee	641,944	1,093,306	552,460	1,083,439
Other	488,035	1,326,300	434,351	1,334,308
Subtotal	3,443,898	8,857,462	2,827,322	8,296,062
2) Research and development expenses				
Total expenses	4,342,354	13,606,111	4,474,970	13,344,405
Capitalized expenses	(81,700)	(252,377)	-	-
Subtotal	4,260,654	13,353,734	4,474,970	13,344,405
Total	7,704,552	22,211,196	7,302,292	21,640,467

20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three and nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021		2020	
	3 Months	9 Months	3 Months	9 Months
Other non-operating income				
Dividend income	194	5,218,777	-	102,402
Rental income	40,836	122,726	42,078	125,225
Gain on disposal of property, plant and equipment	54,311	268,580	34,647	242,906
Other	74,513	198,945	58,592	131,347
Total	169,854	5,809,028	135,317	601,880

<i>(In millions of Korean won)</i>	2021		2020	
	3 Months	9 Months	3 Months	9 Months
Other non-operating expenses				
Loss on disposal of property, plant and equipment	2,775	11,280	1,254	5,218
Donations	23,251	132,607	69,132	201,422
Other	25,485	505,621	163,700	428,437
Total	51,511	649,508	234,086	635,077

21. Financial Income and Expenses

Details of financial income and expenses for the three and nine-month periods ended September 30, 2021 and 2020 are as follows:

<i>(In millions of Korean won)</i>	2021		2020	
	3 Months	9 Months	3 Months	9 Months
Financial income				
Interest income:	53,156	187,371	119,749	412,149
- Interest income from financial assets measured at amortized cost	53,156	187,371	119,749	412,149
Foreign exchange differences	1,355,107	2,899,570	791,403	2,918,364
Total	1,408,263	3,086,941	911,152	3,330,513

<i>(In millions of Korean won)</i>	2021		2020	
	3 Months	9 Months	3 Months	9 Months
Financial expenses				
Interest expenses:	48,046	114,413	45,215	155,642
- Interest expense from financial liabilities measured at amortized cost	14,189	36,679	10,674	35,036
- Other financial liabilities	33,857	77,734	34,541	120,606
Foreign exchange differences	1,390,854	2,832,919	878,171	3,161,786
Loss from derivatives	-	52,430	-	-
Total	1,438,900	2,999,762	923,386	3,317,428

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 September 30, 2021 to be effective for the year ended December 31, 2021 is 20.4%.

23. Earnings per Share

(A) Basic earnings per share

Basic earnings per share for the three and nine-month periods ended September 30, 2021 and 2020 are calculated as follows:

(1) Ordinary shares

<i>(In millions of Korean won and thousands of number of shares)</i>	2021		2020	
	3 Month	9 Month	3 Month	9 Month
Profit for the period	8,594,666	22,271,460	5,270,095	11,098,267
Profit for the period available for ordinary shares	7,553,479	19,573,420	4,631,658	9,753,786
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)	1,265	3,279	776	1,634

(2) Preference shares

<i>(In millions of Korean won and thousands of number of shares)</i>	2021		2020	
	3 Month	9 Month	3 Month	9 Month
Profit for the period	8,594,666	22,271,460	5,270,095	11,098,267
Profit for the period available for preference shares	1,041,187	2,698,040	638,437	1,344,481
Weighted-average number of preference shares outstanding	822,887	822,887	822,887	822,887
Basic earnings per preference share (in Korean won)	1,265	3,279	776	1,634

(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 nine-month periods ended September 30, 2021 and 2020.

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 nine-month periods ended September 30, 2021 and 2020 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2021	2020
Adjustments:		
Income tax expense	5,720,650	3,598,288
Financial income	(662,939)	(731,048)
Financial expenses	766,829	738,681
Post-employment benefits	656,629	595,440
Depreciation	14,356,840	11,714,658
Amortization	1,797,979	1,965,832
Bad debt expenses	14,716	12,413
Dividends income	(5,218,777)	(102,402)
Gain on disposal of property, plant and equipment	(268,580)	(242,906)
Loss on disposal of property, plant and equipment	11,280	5,218
Loss on valuation of inventories	441,342	495,853
Others	9,072	240,951
Total	17,625,041	18,290,978

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2021	2020
Changes in assets and liabilities:		
Increase in trade receivables	(8,397,541)	(7,328,557)
Decrease in other receivables	337,063	1,096,042
Increase in prepaid expenses	(432,292)	(306,436)
Increase in inventories	(49,737)	(1,062,383)
Increase in trade payables	5,367,634	3,813,364
Decrease in other payables	(344,238)	(718,650)
Increase in advances received	8,891	73,000
Increase in withholdings	1,847	11,559
Increase (decrease) in accrued expenses	(43,467)	1,185,437
Increase in provisions	1,080,258	1,107,906
Payment of post-employment benefits	(193,468)	(261,615)
Other	179,075	(743,201)
Total	(2,485,975)	(3,133,534)

(B) For the nine-month periods ended September 30, 2021 and 2020, cash outflows from repayment of the principal (financial activities) were ₩ 81,711 million and ₩ 96,946 million, respectively, while cash outflows due to interest expenses (operating activities) in relation to the lease liabilities amount to ₩ 3,087 million and ₩ 2,347 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 and also establishes and implements the global financial risk management policy.

The Company also manages foreign exchange risk by monitoring foreign exchange rate fluctuations at local finance centers across major regions (United States, United Kingdom, Singapore, China, Brazil, and Russia) and acting as an agent of foreign exchange transactions. In addition, the Company manages liquidity risk by utilizing 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 that are 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 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. 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 implemented policies and operates to minimize uncertainty arising from changes in interest rates and finance 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 September 30, 2021 and 2020, price fluctuation of marketable equity securities (listed stocks) by 1% would result in changes in other comprehensive income (before income tax) of ₩ 13,460 million and ₩ 10,741 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 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, 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. 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 risk is critical. The Company strives to achieve this goal by periodically forecasting its capital balance, estimating required cash levels, and managing income and expenses.

The Company manages its liquidity risk by periodically forecasting projected cash flows. If abnormal signs are identified, the Company works with the local finance center and provides liquidity support by utilizing a globally integrated finance structure, such as Cash Pooling. In addition, 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 capital operation expenses and financial expenses.

For the need of large scale of liquidity, the Company secures credit limit for the overseas subsidiaries through 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- and Aa3 credit rating from S&P and Moody's, respectively.

The debt ratio as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021	December 31, 2020
Total liabilities	53,294,308	46,347,703
Total equity	187,390,110	183,316,724
Debt ratio	28.4%	25.3%

(E) Fair value estimation

(1) Carrying amounts and fair value of financial instruments by category as of September 30, 2021 and December 31, 2020 are as follows:

<i>(In millions of Korean won)</i>	September 30, 2021		December 31, 2020	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	3,928,457	(*)	989,045	(*)
Short-term financial instruments	16,755,002	(*)	29,101,284	(*)
Trade receivables	33,602,367	(*)	24,736,740	(*)
Financial assets at fair value through other comprehensive income	1,473,096	1,473,096	1,539,659	1,539,659
Financial assets at fair value through profit or loss	2,897	2,897	3,107	3,107
Other	4,362,296	(*)	4,149,950	(*)
Total financial assets	60,124,115		60,519,785	
Financial liabilities				
Trade payables	12,127,951	(*)	6,599,025	(*)
Short-term borrowings	10,963,466	(*)	12,520,367	(*)
Other payables	10,342,270	(*)	9,671,280	(*)
Current portion of long-term liabilities	99,609	6,380	87,571	5,318
- Current portion of long-term borrowings	93,792	(*)	82,253	(*)
- Current portion of debentures	5,817	6,380	5,318	5,318
Debentures	34,898	39,077	31,909	36,507
Long-term borrowings	129,243	(*)	150,397	(*)
Long-term other payables	2,497,952	(*)	935,038	(*)
Other	2,985,843	(*)	3,423,251	(*)
Total financial liabilities	39,181,232		33,418,838	

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

(*) 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 at fair value or its fair value disclosed as of September 30, 2021 and December 31, 2020 are as follows:

September 30, 2021				
<i>(In millions of Korean won)</i>	Level 1	Level 2	Level 3	Total balance
1) Assets				
Financial assets at fair value through other comprehensive income	1,345,956	-	127,140	1,473,096
Financial assets at fair value through profit or loss	-	-	2,897	2,897
2) Liabilities				
Current portion of debentures	-	6,380	-	6,380
Debentures	-	39,077	-	39,077

December 31, 2020				
<i>(In millions of Korean won)</i>	Level 1	Level 2	Level 3	Total balance
1) Assets				
Financial assets at fair value through other comprehensive income	1,412,524	-	127,135	1,539,659
Financial assets at fair value through profit or loss	-	-	3,107	3,107
2) Liabilities				
Current portion of debentures	-	5,318	-	5,318
Debentures	-	36,507	-	36,507

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 statement of financial position 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. The quoted market price used for financial assets held by the Company is the current bid price. 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 (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity-specific estimates. If all significant inputs required to 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 at least once every quarter in line with the Company's quarterly reporting dates. 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 statement of financial position date, with the resulting value discounted back 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 a 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.

(In millions of Korean won)

Classification	Fair value	Valuation technique	Level 3 inputs	Input range (Weighted average)
Financial assets at fair value through other comprehensive income				
Samsung Venture Investment	22,244	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0.0%)
			Weighted average cost of capital	19.6%~21.6%(20.6%)
MiCo Ceramics Co., Ltd.	21,909	Discounted cash flow	Permanent growth rate	-1.0%~1.0%(0.0%)
			Weighted average cost of capital	14.2%~16.2%(15.2%)

(4) Changes in Level 3 instruments:

(In millions of Korean won)

	2021	2020
Financial assets		
Balance as of January 1	130,242	84,536
Acquisitions	-	17,557
Disposals	(150)	-
Amount recognized in other comprehensive income	(40)	(1,119)
Other	(15)	-
Balance as of September 30	130,037	100,974

(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 amount for other comprehensive income or loss) from changes in inputs for major financial instruments which are categorized within Level 3 and subject to sensitivity analysis are as follows:

(In millions of Korean won)

Classification	Favorable changes		Unfavorable changes	
	Profit or loss	Equity	Profit or loss	Equity
Financial assets at fair value through other comprehensive income ¹	-	1,807	-	(1,444)

¹ 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.

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 the 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 CE, IM, DS (Semiconductor), 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 nine-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	CE	IM	DS	Total ¹
Sales	24,285,564	53,498,193	68,350,783	144,730,836
Depreciation	72,470	153,926	13,829,817	14,356,840
Amortization	43,388	904,328	708,965	1,797,979
Operating profit (loss)	(650,807)	5,871,574	17,527,371	22,745,411

¹ Other operating segments are not separately disclosed.

(2) For the three-month period ended September 30, 2021

<i>(In millions of Korean won)</i>	CE	IM	DS	Total ¹
Sales	8,549,828	19,289,917	26,538,213	53,919,812
Depreciation	24,413	51,473	5,011,724	5,189,144
Amortization	13,991	345,973	201,409	609,454
Operating profit (loss)	(483,219)	1,906,691	9,164,199	10,581,181

¹ Other operating segments are not separately disclosed.

(3) For the nine-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	CE	IM	DS	Total ¹
Sales	22,170,921	50,192,429	53,204,269	125,793,273
Depreciation	73,847	151,090	11,180,053	11,714,658
Amortization	37,444	1,031,532	772,917	1,965,832
Operating profit (loss)	(216,777)	2,329,285	12,607,722	14,716,667

¹ Other operating segments are not separately disclosed.

(4) For the three-month period ended September 30, 2020

<i>(In millions of Korean won)</i>	CE	IM	DS	Total ¹
Sales	9,358,663	20,053,989	18,249,442	47,801,235
Depreciation	24,173	51,670	3,878,428	4,056,503
Amortization	13,190	341,391	251,752	649,007
Operating profit (loss)	182,884	2,056,504	4,787,966	7,036,350

¹ Other operating segments are not separately disclosed.

27. Related Party Transactions

(A) Subsidiaries

List of subsidiaries as of September 30, 2021 are as follows:

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
America	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
	Prismview, LLC	Manufacture and sale of LED displays	100.0
	Joyent, Inc.	Cloud services	100.0
	Dacor Holdings, Inc.	Management of overseas subsidiaries	100.0
	Dacor, Inc.	Manufacture and sale of home appliances	100.0
	Dacor Canada Co.	Sale of home appliances	100.0
	SmartThings, Inc.	Sale of smart home electronics	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
	TWS LATAM B, LLC	Management of overseas subsidiaries	100.0
	TWS LATAM S, LLC	Management of overseas subsidiaries	100.0
	SNB Technologies, Inc. Mexico, S.A. de C.V	Installation of network devices	100.0
	Zhilabs Inc.	Sale of network solutions	100.0
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	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
	Samsung Electronics Canada, Inc. (SECA)	Sale of electronic devices	100.0
	AdGear Technologies Inc.	Digital advertising platforms	100.0
	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, 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.	Holding company	100.0
	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	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
America	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
	RT SV CO-INVEST, LP	Venture capital investments	99.9
	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
Europe & CIS	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. (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
	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
	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 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	
AKG Acoustics GmbH	Manufacture and sale of audio products	100.0	
AMX UK Limited	Sale of audio products	100.0	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
Europe & CIS	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
	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 International s.r.o	Manufacture of audio products	100.0
	Harman Management GmbH	Management of overseas subsidiaries	100.0
	Harman Professional Kft	Manufacture of audio products, R&D	100.0
	Martin Manufacturing (UK) Ltd.	Manufacture of audio products	100.0
	Harman Professional Denmark ApS	Sale of audio products, R&D	100.0
	Red Bend Software Ltd.	Software design	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	
Middle East & Africa	Samsung Gulf Electronics Co., Ltd. (SGE)	Sale of electronic devices	100.0
	Samsung Electronics Turkey (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	

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
	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
	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
	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
Asia (Excluding China)	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
	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

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
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)	Manufacture of electronic devices, 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
	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

¹ Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) ¹
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
	Mirero System Co., Ltd.	Development and supply of semiconductor process defect and quality control software	99.9
	Dowooinsys Co., Ltd.	Manufacture of display components	66.4
	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 #27	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
	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	

¹ 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 nine-month periods ended September 30, 2021 and 2020 are as follows:

		2021			
<i>(In millions of Korean won)</i>	Name of company¹	Sales and other	Disposal of non-current assets	Purchases and other	Purchase of non-current assets
Subsidiaries	Samsung Display Co., Ltd.	165,270	2,475	639,892	-
	Samsung Electronics America, Inc. (SEA)	23,867,200	-	121,055	-
	Samsung (China) Semiconductor Co., Ltd. (SCS)	118,624	184,325	5,132,896	9,857
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	4,340,949	686	15,147,274	1,055
	Harman and its subsidiaries ²	-	-	34,983	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	2,462,844	1,456	11,454,057	280
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	1,118,466	-	6,499	-
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	-	-	-	-
	Samsung Semiconductor, Inc. (SSI)	21,747,657	-	313,474	-
	Samsung Asia Pte. Ltd. (SAPL)	4	-	15,477	-
	Samsung Austin Semiconductor LLC. (SAS)	409	1,183	2,886,476	7,511
	Samsung India Electronics Private Ltd. (SIEL)	3,078,356	2,609	2,218,252	-
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	19,769,013	-	3,366	-
	Samsung Display Vietnam Co., Ltd. (SDV)	862,857	-	-	-
	Samsung Eletronica da Amazonia Ltda. (SEDA)	1,717,265	403	7,552	-
	Samsung Electronics (UK) Ltd. (SEUK)	1,206,893	-	72,787	-
	Samsung International, Inc. (SII)	326,231	-	5,629,913	-
	Thai Samsung Electronics Co., Ltd. (TSE)	1,046,794	-	1,848,678	-
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	468,556	2,209	3,859,459	-
	Samsung Electronics Taiwan Co., Ltd. (SET)	3,842,883	-	454	-
	Samsung Electronics Hungarian Private Co. Ltd. (SEH)	423,305	-	498	-
	Samsung Electronics Europe Logistics B.V. (SELS)	2,937,311	-	6,145	-
	Samsung Electronics Benelux B.V. (SEBN)	264,567	-	2,021	-
	Samsung Electronics Hong Kong Co., Ltd. (SEHK)	423,613	-	2,158	-
	Samsung Display Dongguan Co., Ltd. (SDD)	224,631	-	-	-
	Other	40,497,593	10,393	11,283,518	3,784
Total		130,911,291	205,739	60,686,884	22,487
Associates and joint ventures	Samsung SDS Co., Ltd.	95,885	-	1,106,011	366,703
	Samsung Electro-Mechanics Co., Ltd.	38,666	-	749,309	-
	Samsung SDI Co., Ltd.	41,026	269	259,262	22,352
	Cheil Worldwide Inc.	26,161	-	470,936	17
	Other	376,796	68	509,401	6,000
Total		578,534	337	3,094,919	395,072
Other related parties	Samsung C&T Corporation	57,251	-	52,065	2,512,394
	Other	244,953	-	427,365	68,408
	Total		302,204	-	479,430
Other ³	Samsung Engineering Co., Ltd.	319	-	25,793	938,274
	S-1 Corporation	5,007	-	298,025	21,649
	Other	74,482	2,371	179,403	25,373
Total		79,808	2,371	503,221	985,296

¹ Transactions with separate entities that are related parties of the Company.

² Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

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 according to the Monopoly Regulation and Fair Trade Act.

		2020			
(In millions of Korean won)	Name of company ¹	Sales and other	Disposal of non-current assets	Purchases and other	Purchase of non-current assets
	Samsung Display Co., Ltd.	142,555	-	792,743	99
	Samsung Electronics America, Inc. (SEA)	20,563,502	-	127,789	-
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	4,503,771	83	14,804,828	1,101
	Harman and its subsidiaries ²	-	-	78,956	-
	Samsung (China) Semiconductor Co., Ltd. (SCS)	119,561	227,957	3,756,510	5,912
	Samsung Electronics Vietnam Co., Ltd. (SEV)	2,963,528	2,592	10,581,501	1,197
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	871,490	-	13,241	-
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	-	-	-	-
	Samsung Semiconductor, Inc. (SSI)	15,091,350	-	325,627	29
	Samsung Asia Private Ltd. (SAPL)	1,310,340	-	22,790	-
	Samsung Display Vietnam Co., Ltd. (SDV)	764,599	-	-	-
	Samsung India Electronics Private Ltd. (SIEL)	3,066,106	-	1,638,787	-
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	14,833,361	-	205,564	-
Subsidiaries	Samsung Austin Semiconductor LLC. (SAS)	768	62,423	3,005,216	1,863
	Samsung Electronica da Amazonia Ltda. (SEDA)	809,307	-	4,229	-
	Thai Samsung Electronics Co., Ltd. (TSE)	1,070,203	-	1,475,863	-
	Samsung Electronics (UK) Ltd. (SEUK)	538,357	-	84,740	-
	Samsung Electronics Europe Logistics B.V. (SELS)	2,188,250	-	6,651	-
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	512,833	-	3,764,072	31
	Samsung Electronics Hungarian Private Co. Ltd. (SEH)	634,691	-	1,828	-
	Samsung International, Inc. (SII)	370,402	77	5,202,056	-
	Samsung Electronics GmbH (SEG)	2,548,281	-	6,374	-
	Samsung Electronics Benelux B.V. (SEBN)	63,594	-	1,939	-
	Samsung Electronics France S.A.S (SEF)	1,538,390	-	3,800	-
	Samsung Display Dongguan Co., Ltd. (SDD)	44,929	-	-	-
	Other	33,194,614	13,282	9,870,429	13,900
	Total	107,744,782	306,414	55,775,533	24,132
	Samsung SDS Co., Ltd.	69,319	-	1,159,051	328,189
Associates and joint ventures	Samsung Electro-Mechanics Co., Ltd.	32,426	-	872,522	-
	Samsung SDI Co., Ltd.	41,282	272	240,185	49,595
	Cheil Worldwide Inc.	25,601	-	458,257	-
	Other	427,068	29	396,889	2,595
	Total	595,696	301	3,126,904	380,379
Other related parties	Samsung C&T Corporation	71,520	-	120,560	1,619,838
	Other	196,349	-	398,879	64,357
	Total	267,869	-	519,439	1,684,195
Other ³	Samsung Engineering Co., Ltd.	3,490	-	21,034	656,702
	S-1 Corporation	9,343	-	276,496	23,284
	Other	55,555	-	180,832	468
	Total	68,388	-	478,362	680,454

¹ Transactions with separate entities that are related parties of the Company.

² Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

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 according to the Monopoly Regulation and Fair Trade Act.

(C) Balances of receivables and payables

Balances of receivables and payables arising from sales and purchases of goods and services as of September 30, 2021 and December 31, 2020 are as follows:

(In millions of Korean won)	Name of company ¹	September 30, 2021	
		Receivables and other ²	Payables and other ³
	Samsung Display Co., Ltd.	16,523	141,604
	Samsung Electronics America, Inc. (SEA)	5,243,638	146,995
	Samsung (China) Semiconductor Co., Ltd. (SCS)	80,868	689,861
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	885,729	4,108,592
	Harman and its subsidiaries ⁴	-	7,654
	Samsung Electronics Vietnam Co., Ltd. (SEV)	486,607	3,221,557
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	182,433	1,561
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	183	-
	Samsung Semiconductor, Inc. (SSI)	6,669,667	153,575
	Samsung Asia Pte. Ltd. (SAPL)	759	2,061
	Samsung Austin Semiconductor LLC. (SAS)	1,605	279,997
	Samsung India Electronics Private Ltd. (SIEL)	1,334,314	167,062
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	5,084,101	518
Subsidiaries	Samsung Display Vietnam Co., Ltd. (SDV)	133,364	-
	Samsung Eletronica da Amazonia Ltda. (SEDA)	198,724	624
	Samsung Electronics (UK) Ltd. (SEUK)	173,775	21,646
	Samsung International, Inc. (SII)	70,702	566,808
	Thai Samsung Electronics Co., Ltd. (TSE)	125,564	171,444
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	58,359	300,377
	Samsung Electronics Taiwan Co., Ltd. (SET)	569,154	38,056
	Samsung Electronics Hungarian Private Co. Ltd. (SEH)	30,661	35
	Samsung Electronics Europe Logistics B.V. (SELS)	322,634	1,417
	Samsung Electronics Benelux B.V. (SEBN)	25,067	3,950
	Samsung Electronics Hong Kong Co., Ltd. (SEHK)	75,527	50,113
	Samsung Display Dongguan Co., Ltd. (SDD)	30,506	-
	Other	8,429,604	2,017,445
	Total	30,230,068	12,092,952
	Samsung SDS Co., Ltd.	8,369	506,743
	Samsung Electro-Mechanics Co., Ltd.	778	112,387
Associates and joint ventures	Samsung SDI Co., Ltd.	105,330	45,453
	Cheil Worldwide Inc.	13	331,175
	Other	116,095	99,250
	Total	230,585	1,095,008
Other related parties	Samsung C&T Corporation	204,067	1,181,850
	Other	17,696	125,403
	Total	221,763	1,307,253
Other ⁵	Samsung Engineering Co., Ltd.	92	279,157
	S-1 Corporation	2,891	27,107
	Other	423	51,516
	Total	3,406	357,780

¹ Transactions with separate entities that are related parties of the Company.

² The Company has not recognized bad debt allowance in relation to the receivables due from subsidiaries as of September 30, 2021.

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 according to the Monopoly Regulation and Fair Trade Act.

(In millions of Korean won)		Name of Company ¹	December 31, 2020	
			Receivables and other ²	Payables and other ³
Subsidiaries		Samsung Display Co., Ltd.	8,791	110,590
		Samsung Electronics America, Inc. (SEA)	4,386,729	109,808
		Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	573,990	1,475,012
		Samsung (CHINA) Investment Co., Ltd. (SCIC)	114,209	63,247
		Harman and its subsidiaries ⁴	-	11,649
		Samsung (China) Semiconductor Co., Ltd. (SCS)	58,124	503,142
		Samsung Electronics Vietnam Co., Ltd. (SEV)	479,330	1,642,273
		Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	348	-
		Samsung Semiconductor, Inc. (SSI)	3,904,314	119,569
		Samsung Asia Pte. Ltd. (SAPL)	92,692	38,434
		Shanghai Samsung Semiconductor Co., Ltd. (SSS)	3,310,319	202
		Samsung Display Vietnam Co., Ltd. (SDV)	118,106	-
		Samsung Austin Semiconductor LLC. (SAS)	6,634	297,169
		Samsung Eletronica da Amazonia Ltda. (SEDA)	368,591	938
		Samsung India Electronics Private Ltd. (SIEL)	825,400	283,091
		Thai Samsung Electronics Co., Ltd. (TSE)	76,754	219,580
		Samsung Electronics (UK) Ltd. (SEUK)	250,169	27,984
		Samsung Electronics GmbH (SEG)	674,888	1,999
		Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	127,677	502,978
		Samsung Electronics Hungarian Private Co. Ltd. (SEH)	83,227	229
		Samsung Electronics Benelux B.V. (SEBN)	114,569	3,363
		Samsung Display Dongguan Co., Ltd. (SDD)	14,237	-
		Samsung Electronics Europe Logistics B.V. (SELS)	939,206	1,651
		Samsung Electronics France S.A.S (SEF)	313,893	340
		Samsung Japan Corporation (SJC)	227,020	57,762
		Other	6,543,308	2,253,734
	Total	23,612,525	7,724,744	
Associates and joint ventures		Samsung SDS Co., Ltd.	36,752	493,346
		Samsung Electro-Mechanics Co., Ltd.	310	71,041
		Samsung SDI Co., Ltd.	107,201	58,274
		Cheil Worldwide Inc.	76	393,348
		Other	103,652	161,686
	Total	247,991	1,177,695	
Other related parties		Samsung C&T Corporation	212,894	2,300,740
		Other	16,065	111,425
		Total	228,959	2,412,165
Other ⁵		Samsung Engineering Co., Ltd.	441	523,140
		S-1 Corporation	1,619	32,165
		Other	3,133	20,697
		Total	5,193	576,002

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, 2020.

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 according to the Monopoly Regulation and Fair Trade Act.

- (D) For the nine-month periods ended September 30, 2021 and 2020, the Company invested ₩ 83,974 million and ₩ 145,358 million, respectively, in subsidiaries, and received ₩ 353,309 million and ₩ 22,057 million in return of investments, respectively. In addition, there were no additional investments in associates and joint ventures or return of those investments for the nine-month periods ended September 30, 2021 and 2020, respectively.
- (E) For the nine-month periods ended September 30, 2021 and 2020, the Company declared dividend of ₩ 3,105,595 million and ₩ 1,245,236 million, respectively, to related parties. In addition, for the nine-month periods ended September 30, 2021 and 2020, the Company declared dividends of ₩ 235,681 million and ₩ 94,308 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 September 30, 2021 and December 31, 2020, no dividends declared remains unpaid.
- (F) For the nine-month periods ended September 30, 2021 and 2020, assets leased from related parties amounted to ₩ 63,887 million and ₩ 131 million, respectively, and lease payments made to the related parties amounted to ₩ 39,726 million and ₩ 51,063 million, respectively.
- (G) As of September 30, 2021, the Company provides guarantees in relation to borrowings of the related parties (refer to Note 13).
- (H) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the nine-month periods ended September 30, 2021 and 2020 consists of:

<i>(In millions of Korean won)</i>	2021	2020
Short-term employee benefits	7,304	6,077
Post-employment benefits	665	735
Other long-term employee benefits	6,069	5,430

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		3Q21 YTD	2020	2019
Par value per share (KRW)		100	100	100
Consolidated net profit ¹⁾ (KRW mil)		28,600,669	26,090,846	21,505,054
Separate net profit (KRW mil)		22,271,460	15,615,018	15,353,323
EPS ²⁾ (KRW)		4,211	3,841	3,166
Total cash dividend (KRW mil)		7,356,462	20,338,075	9,619,243
Total stock dividend (KRW mil)		-	-	-
Dividend payout ratio (%)		25.7	78.0	44.7
Cash dividend yield (%)	Common	1.4	4.0	2.6
	Preferred	1.5	4.2	3.1
Stock dividend yield (%)	Common	-	-	-
	Preferred	-	-	-
Cash dividend per share (KRW)	Common	1,083	2,994	1,416
	Preferred	1,083	2,995	1,417
Stock dividend per share (share)	Common	-	-	-
	Preferred	-	-	-

Dividends were KRW 2,452,154 million or KRW 361 per share in the first three quarters of 2021, and KRW 2,404,605 million or KRW 354 per share in each of the first three quarters of 2019 and 2020. 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』 .

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
33	40	3.4%	2.7%

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 4.0% and 3.2% respectively.

The “past 3 years” refers to the period from 2018 to 2020, and the “past 5 years” refers to the period from 2016 to 2020. For the dividend yield of 3Q21, please refer to the table of key dividends above (common shares at 1.4%, preferred shares at 1.5%).

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 September 30, 2021)

(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	118,490	7.7	Aa3 (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	473,960	4.2	Baa1 (Moody's), A-(S&P)	May 15, 2025	Unredeemed	JPMorgan et al.
Harman Finance International, SCA	Corporate bonds	Public offering	May 27, 2015	481,007	2.0	Baa1 (Moody's), A-(S&P)	May 27, 2022	Unredeemed	HSBC et al.
Dowinsys Co., Ltd	Corporate bonds	Private placement	Feb 28, 2020	23,000	0.5	-	Feb 28, 2025	Unredeemed	-
SEMES	Commercial paper	Private placement	Jan 13, 2021	70,000	1.2	A1	Apr 13, 2021	Redeemed	-
SEMES	Commercial paper	Private placement	Jan 20, 2021	15,000	1.3	A1	Apr 20, 2021	Redeemed	-
SEMES	Commercial paper	Private placement	Jan 28, 2021	115,000	1.3	A1	Apr 28, 2021	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 16, 2021	120,000	1.2	A1	May 17, 2021	Redeemed	-
SEMES	Commercial paper	Private placement	Apr 20, 2021	30,000	1.2	A1	Jul 19, 2021	Redeemed	-
SEMES	Commercial paper	Private placement	Apr 28, 2021	170,000	1.2	A1	Jul 27, 2021	Redeemed	-
SEMES	Commercial paper	Private placement	May 17, 2021	120,000	1.2	A1	Aug 17, 2021	Redeemed	-
Total	-	-	-	1,736,457	-	-	-	-	-

The exchange rate as of the reporting date has been applied.

The rating institutions of Commercial paper are NICE Investors Service and Korea Ratings Corporation.

B. Commercial paper balance

Not Applicable

(Reporting Date: September 30, 2021)

(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
Balance	Public	-	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-

C. Short term bond unredeemed balance

Not Applicable

(Reporting Date: September 30, 2021)

(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
Balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

D. Corporate bond unredeemed balance

(Reporting Date: September 30, 2021)

(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
Balance	Public	486,932	5,925	5,925	479,885	5,925	11,847	-	996,439
	Private	-	-	-	23,000	-	-	-	23,000
	Total	486,932	5,925	5,925	502,885	5,925	11,847	-	1,019,439

Based on consolidated financial statements

The exchange rate as of the reporting date has been applied.

- Corporate Bond Unredeemed Balance (Samsung Electronics)

(Reporting Date: September 30, 2021)

(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	5,925	5,925	5,925	5,925	5,925	11,847	-	41,472
	Total	5,925	5,925	5,925	5,925	5,925	11,847	-	41,472

The exchange rate as of the reporting date has been applied.

- Corporate Bond Unredeemed Balance (Harman)

(Reporting Date: September 30, 2021)

(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	481,007	-	-	473,960	-	-	-	954,967
	Total	481,007	-	-	473,960	-	-	-	954,967

The exchange rate as of the reporting date has been applied.

- Corporate Bond Unredeemed Balance (Dowinsys)

(Reporting Date: September 30, 2021)

(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	-	-	-	23,000
	Total	-	-	-	23,000	-	-	-	23,000

Outstanding balance of corporate bonds are intercompany balances eliminated in consolidated financial statements

E. Hybrid bond outstanding balance

Not Applicable

(Reporting Date: September 30, 2021)

(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 outstanding balance

Not Applicable

(Reporting Date: September 30, 2021)

(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 6 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: September 30, 2021)

(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	118,490	Oct 2, 1997	The Bank of New York Mellon Trust Company, N.A.

(Reporting Date: September 30, 2021)

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 0.2% of the total assets during 2021 3Q YTD)
Constraint on governance	Contract Details	Not applicable
	Implementation Status	Not applicable
Submission of implementation report	Implementation status	Not applicable

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 exchange rate as of the base date has been applied.

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, the Company 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 Opto-electronics Technologies Co. Ltd. (“CSOT”). The sales were completed on April 1, 2021.

For information about the effect of the sales to the financial statements, please refer to Note 28 “Assets held-for-sale (Disposal group)” in “3. Notes to the consolidated financial statements”.

[PLP Business]

- Details of acquisition

In accordance with the resolution of the Board of Directors on April 30, 2019, the Company acquired PLP business from Samsung Electro-Mechanics Co., Ltd. (location: South Korea; CEO: Kye Hyun Kyung) at a price of KRW 785,000 million on June 1, 2019 to strengthen its semiconductor competitiveness through securing next-generation packaging technology.

- Details of the above statement can be found in the “Business Acquisition from Related Parties”, published in DART (<http://dart.fss.or.kr/>) on April 30, 2019.

(KRW 100 mil)

	Account	Forecast		Actual			
		1st Year	2nd Year	1st Year		2nd Year	
				Actual	Difference	Actual	Difference
PLP Business	Sales	101	219	-	-	-	-
	Operating Income	-1,273	-2,155	-1,095	14%	-44	98%
	Net Income	-1,273	-2,155	-1,095	14%	-2,146	0%

No third-party sales is recognized from PLP business as its products are internally transferred within the Company’s manufacturing process. Actual operating income and net income for first year of acquisition (seven month period ended December 31, 2019) differs by 14% from the forecast due to several factors such as reduction in wages.

Actual operating income for the second year (the year ended December 31, 2020) of acquisition differs by 98% from the forecast due to several factors such as reduction in wages.

[Corephotonics Ltd.]

- Samsung Electronics Benelux B.V. (SEBN), the Company’s subsidiary, acquired 83.9% of the equity shares of Corephotonics Ltd. (location: Tel Aviv, Israel; CEO: David Mendlovic) on January 28, 2019 and additional 8.5% on March 4, 2019 to secure CIS optical technology and talent.

(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	Relation-ship	Creditor	Guarantee Expiry date	Transactions				Limit of guarantee
				Beginning of period	Increase	Decrease	End of period	
SEA	Subsidiary	BOA etc.	Jun 13, 2022	-	-	-	-	1,328,000
SEM	Subsidiary	BBVA etc.	Aug 19, 2022	-	-	-	-	906,000
SAMCOL	Subsidiary	Citibank etc.	Jun 13, 2022	117,109	-	-117,109	-	310,000
SEDA	Subsidiary	BRADESCO etc.	Sep 30, 2022	-	-	-	-	409,000
SECH	Subsidiary	Citibank etc.	Jun 13, 2022	-	-	-	-	62,000
SEPR	Subsidiary	BBVA etc.	Jun 13, 2022	-	-	-	-	150,000
SSA	Subsidiary	SCB etc.	Jun 13, 2022	-	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	Dec 16, 2021	-	-	-	-	110,000
SETK	Subsidiary	BNP etc.	Jun 13, 2022	169,280	-	-90,843	78,437	837,000
SETK-P	Subsidiary	BNP etc.	Dec 16, 2021	-	40,339	-	40,339	100,000
SECE	Subsidiary	Citibank etc.	Jul 19, 2022	-	-	-	-	74,099
SEEG	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	Jun 13, 2022	-	-	-	-	70,000
SJC	Subsidiary	Mizuho Bank etc.	May 31, 2022	-	-	-	-	886,827
SEUC	Subsidiary	Credit Agricole etc.	Jun 13, 2022	-	-	-	-	150,000
SEDAM	Subsidiary	Citibank etc.	Jun 13, 2022	-	-	-	-	141,000
SECA	Subsidiary	BoA	Nov 08, 2021	-	-	-	-	70,000
SELA	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	120,000
SEEH	Subsidiary	HSBC etc.	Sep 05, 2022	-	-	-	-	712,400
SERK	Subsidiary	SOCGEN etc.	Jul 12, 2022	-	-	-	-	290,000
SELV	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	10,000
SEIL	Subsidiary	Citibank	Dec 16, 2021	-	10,563	-	10,563	15,600
SAPL	Subsidiary	BOA etc.	Jun 13, 2022	-	-	-	-	345,000
SEV	Subsidiary	SCB	Feb 28, 2021	-	-	-	-	-
SAVINA	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	51,000
SET	Subsidiary	SCB	Feb 28, 2021	-	-	-	-	-
SCIC	Subsidiary	HSBC etc.	Jun 13, 2022	-	-	-	-	300,000
SME	Subsidiary	SCB	Nov 08, 2021	-	-	-	-	110,000
SAMEX	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	5,000
SEASA	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	2,000
SSAP	Subsidiary	SCB	Nov 08, 2021	-	-	-	-	35,000
SEPM	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	35,000
SESAR	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	50,000
AdGear Technologies Inc.	Subsidiary	BOA	Nov 08, 2021	-	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	Jun 13, 2022	-	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Nov 08, 2021	-	-	-	-	25,000
Harman RUS CIS LLC	Subsidiary	SocGen	Nov 08, 2021	-	-	-	-	15,000
Harman Holding Limited	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Nov 08, 2021	-	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.								
Harman Finance International, SCA	Subsidiary	JP Morgan etc.	May 27, 2022	430,499	-	-24,551	405,948	405,948
SDN	Subsidiary	SIEL	Feb 17, 2023	273,243	197,833	-	471,076	471,076
Total				990,131	248,735	-232,503	1,006,363	9,151,950

Information above are prepared in consolidated basis. Debt guarantees for Harman Finance International, SCA, and SDN are provided by Harman International Industries, Inc. and Samsung Display Co., Ltd., 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 2020, the Company claimed approximately USD 345,000 as guarantee fee and, as of the reporting date, has collected the amount.

In 2020, Samsung Display Co., Ltd. claimed approximately USD 69,000 as guarantee fee to SDN and, as of the reporting date, has collected the amount.

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
3Q21	Not applicable	Not applicable
2020	Not applicable	(Consolidated financial statement) 1. Sales deduction related to the Sales promotion activities of products 2. Impairment of goodwill and intangible assets with indefinite useful lives (Separate financial statement) 1. Sales deduction related to the Sales promotion activities of products
2019	Not applicable	(Consolidated financial statement) 1. Sales promotion activities related to the sales of products 2. Impairment of goodwill and intangible assets with indefinite useful lives 3. Appropriateness of depreciation expense cut-off on property, plant and equipment (Separate financial statement) 1. Sales promotion activities related to the sales of products 2. Appropriateness of depreciation expense cut-off on property, plant and equipment

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 (%)
3Q21	Trade receivables	42,675,592	305,901	0.7%
	Short-term loans	17,824	73	0.4%
	Other receivables	4,803,720	72,785	1.5%
	Advances	1,011,064	2,957	0.3%
	Trade receivables (long-term)	195,216	-	0.0%
	Other receivables (long-term)	984,681	181	0.0%
	Advances (long-term)	1,490,259	5,623	0.4%
	Long-term loans	205,155	963	0.5%
	Total	51,383,511	388,483	0.8%
2020	Trade receivables	31,283,789	318,731	1.0%
	Short-term loans	7,813	73	0.9%
	Other receivables	3,663,822	59,283	1.6%
	Advances	890,413	3,371	0.4%
	Trade receivables (long-term)	85,575	-	0.0%
	Other receivables (long-term)	401,582	204	0.1%
	Advances (long-term)	1,397,698	5,972	0.4%
	Long-term loans	113,944	1,309	1.1%
	Total	37,844,636	388,943	1.0%
2019	Trade receivables	35,471,674	340,331	1.0%
	Short-term loans	8,744	82	0.9%
	Other receivables	4,237,479	58,359	1.4%
	Advances	1,430,317	3,484	0.2%
	Trade receivables (long-term)	411,229	79	0.0%
	Other receivables (long-term)	346,780	307	0.1%
	Advances (long-term)	774,472	7,333	0.9%
	Long-term loans	120,540	1,335	1.1%
	Total	42,801,235	411,310	1.0%

Based on consolidated financial statements

Receivables amount represents the value after deducting present value discount account

Allowance for bad debt by year

(KRW mil)

	3Q21	2020	2019
1. Allowance for bad debt (beginning balance)	388,943	411,310	614,882
2. Net bad debt expense (① - ②+③)	16,196	65,575	16,715
① Bad debt expense, etc. (Write-off)	18,309	40,487	6,579
② Bad debt recovered	-	745	11,294
③ Others	-2,113	25,833	21,430
3. Bad debts expense	15,736	43,208	-186,857
4. Allowance for bad debts (Ending balance)	388,483	388,943	411,310

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: September 30, 2021)

(KRW mil)

	Less than 6 months	6 months – 1 year	1 year – 3 years	More than 3 years	Total
Amount	42,667,611	27,986	114,066	61,145	42,870,808
Ratio	99.5%	0.1%	0.3%	0.1%	100.0%

Base on consolidated financial statements

Receivables amount in net present value

C. Inventory

- The inventory status by Division over the last three years is as follows:

(KRW mil)

Division		Category	3Q21	2020	2019	Note
CE		Finished goods	5,117,118	2,351,619	1,554,116	
		Work in process	264,341	136,255	146,387	
		Raw material	5,084,450	3,503,321	2,012,159	
		Material in transit	1,202,930	1,335,111	1,895,387	
		Total	11,668,839	7,326,306	5,608,049	
IM		Finished goods	2,124,366	3,968,844	2,426,034	
		Work in process	519,885	458,318	420,664	
		Raw material	6,846,026	3,726,192	3,228,906	
		Material in transit	289,881	824,662	810,599	
		Total	9,780,158	8,978,016	6,886,203	
DS	Semi-conductor	Finished goods	1,419,227	1,639,523	1,740,881	
		Work in process	10,322,689	10,586,921	8,772,850	
		Raw material	1,907,244	1,636,803	1,332,267	
		Material in transit	40,550	43,564	66,033	
		Total	13,689,710	13,906,811	11,912,031	
	DP	Finished goods	98,244	134,963	345,940	
		Work in process	825,548	650,762	488,468	
		Raw Material	939,207	603,779	634,990	
		Material in transit	26,967	33,271	22,214	
		Total	1,889,966	1,422,775	1,491,612	
	DS total	Finished goods	1,600,503	1,861,756	2,130,587	
		Work in process	11,229,736	11,298,157	9,302,907	
		Raw material	2,845,202	2,254,591	1,991,422	
		Material in transit	71,531	73,688	89,044	
		Total	15,746,972	15,488,192	13,513,960	
Harman	Finished goods	525,246	502,117	746,742		
	Work in process	129,473	80,237	90,249		
	Raw material	717,180	337,386	372,231		
	Material in transit	328,633	224,961	145,329		
	Total	1,700,532	1,144,701	1,354,551		
Total	Finished goods	9,458,753	9,387,886	8,115,116		
	Work in process	12,047,147	11,818,090	9,886,634		
	Raw material	14,684,119	9,790,766	7,747,110		
	Material in transit	1,611,676	1,046,403	1,017,604		
	Total	37,801,695	32,043,145	26,766,464		
Inventory ratio (%) [Inventory ÷ Total Assets] × 100			9.2%	8.5%	7.6%	
Inventory turnover (x) [Yearly COGS ÷ {(Beginning of inventory + End of inventory)÷2}]			4.6	4.9	5.3	

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 30 to June 1, 2021. The subsidiaries flexibly conducted the inventory inspection during the same period as HQ, considering restrictions in movements by local governments due to recent spread of COVID-19.

Inventory aging and valuation

Inventories are stated at the lower of cost or net realizable value. Inventory as of September 30, 2021 are as follows:

(KRW mil)

Category	Acquisition cost	Inventory valuation reserve	Balance	Note
Finished goods	10,030,937	-572,184	9,458,753	
Work in process	12,424,188	-377,041	12,047,147	
Raw material	15,334,961	-650,842	14,684,119	
Material in transit	1,611,676	-	1,611,676	
Total	39,401,762	-1,600,067	37,801,695	

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 *Financial Supervisory Service* of South Korea, the Management Discussion and Analysis section, reported in the annual Business Report, is not included in quarterly and half year reports.

V. Auditor's Report

1. Introduction

Deloitte Anjin conducted review and audit on the consolidated/separate financial statements of financial position of the Company as of September 30, 2021 and December 31, 2020, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the periods then ended. Deloitte Anjin expressed unqualified opinion on the financial statements for the year ended December 31, 2020, and the consolidated/separate financial statements for the period ended September 30, 2021, are presented fairly, in all material respects, in accordance with Korean IFRS 1034 Interim Financial Reporting.

Samil PwC conducted audits on the Company's consolidated/separate statements of financial position as of December 31, 2019, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the year then ended and expressed an unqualified opinion on those financial statements.

All of the Company's subsidiaries were expressed unqualified opinion for the years ended December 31, 2020, and 2019.

Period end	Company auditor	Audit opinion	Emphasis of matter	Key Audit matter(s)
Sep 30, 2021	Deloitte Anjin	Not applicable	Not applicable	Not applicable
Dec 31, 2020	Deloitte Anjin	Unqualified	Not applicable	(Consolidated) 1. Sales deduction related to the sales promotion activities of products 2. Impairment of goodwill and intangible assets with indefinite useful lives (Separate) 1. Sales deduction related to the sales promotion activities of products
Dec 31, 2019	Samil PwC	Unqualified	Not applicable	(Consolidated) 1. Sales promotion activities related to the sale of products. 2. Impairment of goodwill and intangible assets with indefinite useful lives. 3. Appropriateness of depreciation expense cut-off on property, plant and equipment. (Separate) 1. Sales promotion activities related to the sale of products. 2. Appropriateness of depreciation expense cut-off on property, plant and equipment.

Audit opinion on both separate and consolidated financial statements.

[Review plan for the period ended March 31, 2021]

Review period		Planned dates
1Q21	Pre-review	Mar 8, 2021–Mar 25, 2021
	Review	Apr 5, 2021–May 14, 2021
2Q21	Pre-review	Jun 7, 2021–Jun 25, 2021
	Review	Jul 5, 2021–Aug 13, 2021
3Q21	Pre-review	Sep 6, 2021–Sep 24, 2021
	Review	Oct 4, 2021–Nov 12, 2021

Above schedule is for the review of separate and consolidated financial statements

[Audit Contract Description]

(KRW mil)

Fiscal Period	Auditor	Description	Contract		Actual	
			Audit fee	Total hours	Fee claimed	Hours spent
Quarter ended Sep 30, 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	4,553	44,225
Year ended Dec 31, 2020	Deloitte Anjin	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	8,400	85,721	8,400	86,128
Year ended Dec 31, 2019	Samil PwC	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	6,481	69,685	6,481	69,021

[Non-Audit Service Contract Description]

(KRW mil)

Fiscal Period	Contract date	Non-audit service description	Period for service	Compensation	Note
Quarter ended Sep 30, 2021	Jun 2017	E-discovery advisory services	Jan – Sep 2021	394	Deloitte Anjin
Year ended Dec 31, 2020	Jun 2017	E-discovery advisory services	Jan – Dec 2020	59	Deloitte Anjin
Year ended Dec 31, 2019	Feb 2019	SOC 2 certification and other advisory services	Feb – Sep 2019	258	Samil PwC
	Oct 2019	Custom tax and other advisory services	Oct – Dec 2019	127	
	Subtotal			385	

[Details of internal audit committee’s discussion with auditors]

No.	Date	Participants	Method	Details of discussion
1	Jan 26, 2021	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	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 27, 2021	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	Face-to-face meeting	- Yearly plan for communication with those charged with governance - Audit plan for the year ending December 31, 2021 - Discussion of quarterly review focus areas and independence of non-audit services
3	Jul 27, 2021	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	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
4	Oct 26, 2021	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 1 other	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

There are 234 subsidiaries as of September 30, 2021. The newly established entities, Samsung Electronics Singapore Pte. Ltd. (SESP) and Samsung Electronics Industry and Commerce Ltd (SETK-P) appointed Deloitte as the external auditor. Appointment of auditor was decided at the newly established entities’ own discretion.

During the year ended December 31, 2020, upon termination of the contract with previous auditor, Samil PwC, Deloitte Anjin has been designated as the Company’s external auditor for three years ending December 31, 2022, in accordance with periodic designation regulation of Article 11 (1) and (2) of the “Act on External Audit of Stock Companies, Etc.”, Article 17 of the “Enforcement Decree of the Act on External Audit of Stock Companies, Etc.”, and Article 10 and Article 15 (1) of “Regulations on External Audit and Accounting”

There are 241 subsidiaries as of December 31, 2020. For the year ending December 31, 2020, 6 domestic subsidiaries, including Samsung Display Co., Ltd., changed external auditor from Samil PwC to Deloitte Anjin, 24 overseas subsidiaries, including Samsung Electronics America, Inc. (SEA), changed PwC to Deloitte, and 2 overseas subsidiaries, Samsung Eletronica da Amazonia Ltda. (SEDA) and Samsung Gulf Electronics Co., Ltd. (SGE), changed KPMG to Deloitte. These changes in external auditors were to improve efficiency in audit of consolidated financial statements due to designation of the Company’s external auditor.

Details of change in subsidiaries’ external auditors are as follows:

Subsidiaries	Previous auditor	Current auditor
Samsung Display Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Service Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Service CS Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Sales Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics Logitech Co., Ltd.	Samil PwC	Deloitte Anjin
Mirero System Co., Ltd.	Samil PwC	Deloitte Anjin
Samsung Electronics America, Inc. (SEA)	PwC	Deloitte
Samsung Semiconductor, Inc. (SSI)	PwC	Deloitte
Samsung Mexicana S.A. de C.V (SAMEX)	PwC	Deloitte
Samsung International, Inc. (SII)	PwC	Deloitte

Subsidiaries	Previous auditor	Current auditor
Samsung Austin Semiconductor LLC. (SAS)	PwC	Deloitte
Samsung Electronics Mexico S.A. De C.V. (SEM)	PwC	Deloitte
Samsung Electronics (UK) Ltd. (SEUK)	PwC	Deloitte
Samsung Electronics Holding GmbH (SEHG)	PwC	Deloitte
Samsung Semiconductor Europe GmbH (SSEG)	PwC	Deloitte
Samsung Electronics GmbH (SEG)	PwC	Deloitte
Samsung Electronics Benelux B.V. (SEBN)	PwC	Deloitte
Samsung Vina Electronics Co., Ltd. (SAVINA)	PwC	Deloitte
Samsung Asia Private Ltd. (SAPL)	PwC	Deloitte
Samsung Electronics Australia Pty. Ltd. (SEAU)	PwC	Deloitte
Thai Samsung Electronics Co., Ltd. (TSE)	PwC	Deloitte
Samsung Display Vietnam Co., Ltd. (SDV)	PwC	Deloitte
Samsung Electronics Vietnam Co., Ltd. (SEV)	PwC	Deloitte
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	PwC	Deloitte
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	PwC	Deloitte
Samsung (CHINA) Investment Co., Ltd. (SCIC)	PwC	Deloitte
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	PwC	Deloitte
Samsung Electronics Saudi Arabia Ltd. (SESAR)	PwC	Deloitte
Samsung Electronics Turkey (SETK)	PwC	Deloitte
Samsung Electronics Rus Company LLC (SERC)	PwC	Deloitte
Samsung Eletronica da Amazonia Ltda. (SEDA)	KPMG	Deloitte
Samsung Gulf Electronics Co., Ltd. (SGE)	KPMG	Deloitte

The newly acquired subsidiary during 2020, TeleWorld Solutions, Inc. (TWS), appointed PwC as their external auditor.

There were 240 subsidiaries as at December 31, 2019. The newly acquired entities during 2019, FOODIENT LTD. and Corephotonics Ltd. appointed PwC and E&Y, respectively, as the external auditor. The newly incorporated entities during 2019, Samsung Display Noida Private Limited (SDN) and Samsung Venture Capital Union SVIC No. 45 and No. 48 appointed PwC and KPMG, respectively, as the external auditor.

Appointment of auditors were decided at each newly acquired subsidiary's own discretion.

3. Regarding Internal Control

[Audit opinion of Internal Control over Financial Reporting (ICFR)]

Fiscal period	Group auditor	Opinion	Remarks
Quarter ended Sep 30, 2021	Deloitte Anjin	Not applicable	Not applicable
Year ended Dec 31, 2020	Deloitte Anjin	[Audit Opinion] The Company maintained, in all material respects, effective internal control over financial reporting As of December 31, 2020, based on <i>Conceptual Framework for Designing and Operating Internal Control over Financial Reporting</i> .	Not applicable
Year ended Dec 31, 2019	Samil PwC	[Audit Opinion] The Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, 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 (Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, and Yoon-ho Choi) and 6 Independent Directors (Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, and Han-jo Kim). The Board has appointed Jae-wan Bahk 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 (formerly Governance Committee).

[As of September 30, 2021]

Classification	Composition	Members	Head	Role
Board of Directors	5 Executive Directors	Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, Yoon-ho Choi	Jae-wan Bahk (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	Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim		
Management Committee	5 Executive Directors	Ki-nam Kim, Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, Yoon-ho Choi	Ki-nam Kim (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	Jae-wan Bahk Sun-uk Kim Han-jo Kim	Jae-wan Bahk (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 Directors	Byung-gook Park Jeong Kim Curie Ahn	-	<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 Jae-wan Bahk Han-jo 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	Jae-wan Bahk Byung-gook Park Jeong Kim	-	<ul style="list-style-type: none"> - Ensure the objectivity and transparency of the decision-making process for Director compensation.
Sustainability Committee (formerly Governance Committee)	6 Independent Directors	Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim	Jae-wan Bahk (Independent)	<ul style="list-style-type: none"> - Promote sustainability management in ESG areas and enhance shareholder value.

Mar 17, 2021: At the 2020 AGM, Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh were reappointed as Executive Directors; Byung-gook Park and Jeong Kim as Independent Directors; and Sun-uk Kim as Independent Director for Audit Committee member.

Apr 9, 2021: Executive Director Ki-nam Kim was appointed as the Head of Management Committee

Apr 27, 2021: Independent Director Sun-uk Kim was appointed as the Head of Related Party Transactions Committee.

Jul 29, 2021: The Board approved the reorganization of the Governance Committee into the Sustainability Committee.

Heads of Independent Director Recommendation Committee and Compensation Committee will be appointed at upcoming meetings, respectively.

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	3	-	-

Mar 17, 2021: At the 2020 AGM, Byung-gook Park and Jeong Kim were reappointed as Independent Directors; and Sun-uk Kim as Independent Director for Audit Committee member.

B. Agendas considered and voting results (2021)

Date	Agenda	Results	Executive Directors (attendance)					Independent Directors (attendance)							
			Ki-nam Kim (100%)	Hyun-suk Kim (100%)	Dong-jin Koh (100%)	Jong-hee Han (100%)	Yoon-ho Choi (100%)	Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Byung-gook Park (100%)	Jeong Kim (100%)	Curie Ahn (100%)	Han-jo Kim (100%)		
Jan 28	① Approval of 2020 financial statements and annual business report	Approved	For	For	For	For	For	For	For	For	For	For	For	For	
	② Approval of shareholder return policy for 2021 to 2023	Approved	For	For	For	For	For	For	For	For	For	For	For	For	
	※ Reported items: 1) Report on 2020 internal accounting management system activities 2) Report on evaluation of 2020 internal accounting management system activities														
Feb 16	① Decision to convene the 52nd AGM	Approved	For	For	For	For	For	For	For	For	For	For	For	For	
	② Decisions on the 52nd AGM agenda items	Approved	For	For	For	For	For	For	For	For	For	For	For	For	
	※ Reported Items: 1) 2020 annual audit report, 2) 2020 annual business report, 3) Report on 2020 internal accounting management system activities														
	※ Agenda item 1: Approval of 2020 financial statements, including balance sheet, income statement, and the statement of appropriation of retained earnings, etc. ※ Agenda item 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 Independent Director 2-2-2: Appointment of Hyun-suk Kim as Executive Director 2-2-3: Appointment of Dong-jin Koh as Executive Director														
	※ Agenda item 3: Appointment of Sun-uk Kim as Independent Director for Audit Committee Member ※ Agenda item 4: Approval of remuneration limit for Directors														
	③ Approval of 2021 social contribution matching fund	Approved	For	For	For	For	For	For	For	For	For	For	For	For	

Date	Agenda	Results	Executive Directors (attendance)					Independent Directors (attendance)						
			Ki-nam Kim (100%)	Hyun-suk Kim (100%)	Dong-jin Koh (100%)	Jong-hee Han (100%)	Yoon-ho Choi (100%)	Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Byung-gook Park (100%)	Jeong Kim (100%)	Curie Ahn (100%)	Han-jo Kim (100%)	
	④ Agreement on establishment and operation of SCC and revision of regulation	Approved	For	For	For	For	For	For	For	For	For	For	For	
	⑤ Donation to Chung-nam Samsung Institute	Approved	For	For	For	For	For	For	For	For	For	For	For	
	⑥ Contract with Samsung Biologics and Samsung Bioepis for use of Samsung CI	Approved	For	For	For	For	For	For	For	For	For	For	For	
Mar 17	① Appointment of CEO	Approved	For	For	For	For	For	For	For	For	For	For	For	
	② Appointment of Board committee members	Approved	For	For	For	For	For	For	For	For	For	For	For	
	③ Remuneration limit of Directors	Approved	For	For	For	For	For	For	For	For	For	For	For	
	④ Appointment of SCC member	Approved	For	For	For	For	For	For	For	For	For	For	For	
	⑤ Application for product liability insurance	Approved	For	For	For	For	For	For	For	For	For	For	For	
Apr 29	① Approval of 1Q21 interim business report and quarterly dividend	Approved	For	For	For	For	For	For	For	For	For	For	For	
	② Charitable contributions	Approved	For	For	For	For	For	For	For	For	For	For	For	
	③ Joining of the New Technology Investment Association	Approved	For	For	For	For	For	For	For	For	For	For	For	
	④ Donation to incentive fund for DS Division's suppliers	Approved	For	For	For	For	For	For	For	For	For	For	For	
Jul 29	① Approval of 2021 Half-year business report and quarterly dividend of 2Q21	Approved	For	For	For	For	For	For	For	For	For	For	For	
	② Revision of Governance Committee regulations	Approved	For	For	For	For	For	For	For	For	For	For	For	
	③ Package insurance policy for Domestic operations	Approved	For	For	For	For	For	For	For	For	For	For	For	
	④ Establishment of plans on safety and health	Approved	For	For	For	For	For	For	For	For	For	For	For	

Mar 17, 2021: At the 2020 AGM, Byung-gook Park and Jeong Kim were reappointed as Independent Directors; and Sun-uk Kim as Independent Director for Audit Committee member.

*CEO Ki-nam Kim did not vote for the agenda for February 16, 2021 meeting '⑤ Donation to Chung-nam Samsung Institute', as it is a transaction between a Director and the Company in accordance with the Commercial Act and Ki-nam Kim has a special interest in the agenda item did not vote.

C. Committees

(1) Composition of Board Committees

[As of September 30, 2021]

Committee	Composition	Members	Responsibilities and authorities	Note
Management	5 Executive Directors	Ki-nam Kim (head), Hyun-suk Kim, Dong-jin Koh, Jong-hee Han, Yoon-ho Choi	See below	Appointment of Executive Director Ki-Nam Kim as the Head (April 9, 2021)
Related Party Transactions	3 Independent Directors	Sun-uk Kim (head), Jae-wan Bahk, Han-jo Kim		Appointment of Independent Director Sun-Uk Kim as the Head (April 27, 2021)
Compensation	3 Independent Directors	Jae-wan Bahk, Byung-gook Park, Jeong Kim		-
Sustainability (formerly Governance)	6 Independent Directors	Jae-wan Bahk (head), Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim		-

The Audit Committee and Independent Director Recommendation Committee were excluded according to Corporate Disclosure Guidelines.

The head of the Compensation Committee will be appointed at the upcoming committee meeting.

The Board approved the reorganization of the Governance Committee into the Sustainability Committee on July 29, 2021.

(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 matters
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 (eg, 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 (eg, 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 (2021)

Date	Agenda	Voting results	Director (attendance)				
			Ki-nam Kim (100%)	Hyun-suk Kim (100%)	Dong-jin Koh (100%)	Jong-hee Han (100%)	Yoon-ho Choi (100%)
Jan 6	① Investment in memory business	Approved	For	For	For	For	For
Feb 5	① Investment in memory business	Approved	For	For	For	For	For
	② Investment in R&D	Approved	For	For	For	For	For
	③ Establishment of overseas subsidiary	Approved	For	For	For	For	For
	④ Contract agreement for using Samsung CI	Approved	For	For	For	For	For
Mar 5	① Investment in memory business	Approved	For	For	For	For	For
	② Investment in foundry business	Approved	For	For	For	For	For
Apr 9	① Appointment of the Head of Management Committee	Approved	For	For	For	For	For
	② Investment in memory business	Approved	For	For	For	For	For
May 7	① Investment in foundry business	Approved	For	For	For	For	For
	② Licensing agreement	Approved	For	For	For	For	For
Jun 18	① Investment in memory business (Pyeongtaek)	Approved	For	For	For	For	For
	② Investment in memory business	Approved	For	For	For	For	For
	③ Investment in foundry business (Hwaseong)	Approved	For	For	For	For	For
	④ Investment in foundry business (Pyeongtaek)	Approved	For	For	For	For	For
	⑤ Investment in foundry business	Approved	For	For	For	For	For
	⑥ Change of trademark royalty	Approved	For	For	For	For	For
Jul 29	① Investment in DS division	Approved	For	For	For	For	For

□ The Related Party Transactions Committee (2021)

Date	Agenda	Voting results	Directors (attendance)		
			Sun-uk Kim (100%)	Jae-wan Bahk (100%)	Han-jo Kim (100%)
Jan 26	① Report on 4Q20 related party transactions	-	-	-	-
Feb 10	① Prior review on large-scale related party transactions	-	-	-	-
	1) Contract agreement with Samsung Biologics and Samsung Bioepis for using Samsung CI				
Mar 12	① Prior review on large-scale related party transactions	-	-	-	-
	1) Application for product liability insurance				
Apr 27	① Appointment of the Head of Related Party Transactions Committee	Approved	For	For	For
	② Prior review on large-scale related party transactions	-	-	-	-
	1) Charitable contribution 2) Application for New Technology Investment Association				

Date	Agenda	Voting results	Directors (attendance)		
			Sun-uk Kim (100%)	Jae-wan Bahk (100%)	Han-jo Kim (100%)
	③ Report on 1Q21 related party transactions	-	-	-	-
Jul 27	① Prior review on large-scale related party transactions	-	-	-	-
	1) Package insurance policy for Domestic operations ② Report on 2Q21 related party transactions	-	-	-	-

□ The Compensation Committee (2021)

Date	Agenda	Voting results	Directors (attendance)		
			Byung-gook Park (100%)	Jae-wan Bahk (100%)	Jeong Kim (100%)
Feb 10	① Review of fixed annual income for each Executive Director in 2021	Approved	For	For	For
	② Review on 2021 remuneration limit for Directors	Approved	For	For	For

□ The Sustainability Committee (2021)

Date	Agenda	Voting results	Directors (attendance)					
			Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Byung-gook Park (100%)	Jeong Kim (100%)	Curie Ahn (100%)	Han-jo Kim (100%)
Jan 26	① Prior review on the shareholder return policy for 2021 to 2023 ※ Reporting Item 1) Reporting on current status of IR	Approved	For	For	For	For	For	For
Apr 29	※ Reporting Item 1) Reporting on current status of IR 2) Report on plans for publishing Sustainability Report	-	-	-	-	-	-	-
Jul 29	※ Reporting Item 1) Reporting on current status of IR 2) Operation of the Sustainability Committee	-	-	-	-	-	-	-

The Board approved the reorganization of the Governance Committee into the Sustainability Committee on July 29, 2021.

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 IT, accounting, finance, law, economics, EHS, 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 September 30, 2021]

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)	Ki-nam Kim	Mar 2018 – Mar 2024 (1)	Director Ki-nam Kim has built expertise based on his experience as the president of Samsung Advanced Institute of Technology, head of the memory business, and president of the semiconductor business. He will play a critical role in solidifying leadership of the component business despite growing external uncertainty.	The Board	Head of DS Division	N/A	Related party
Executive Director (CEO)	Hyun-suk Kim	Mar 2018 – Mar 2024 (1)	Director Hyun-suk Kim is an expert in display R&D and played a crucial role in positioning the company as the leader in the global TV market. He will use this successful experience in other businesses such as the home appliance business to create synergies within the CE division.	The Board	Head of CE Division	N/A	Related party
Executive Director (CEO)	Dong-jin Koh	Mar 2018 – Mar 2024 (1)	Director Dong-jin Koh is an expert in mobile R&D and has contributed in advancing our mobile business with the galaxy lineup. He will play a critical role in becoming a first mover in the stagnant yet competitive smartphone market.	The Board	Head of IM Division	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	Jong-hee Han	Mar 2020 – Mar 2023 (None)	Director Jong-hee Han is an expert in display R&D and played a leading role in continuously achieving the top position in global TV market. He will contribute to further solidifying leadership in TV market amid intensifying competition by using his excellent business capabilities.	The Board	Head of Visual Display Business	N/A	Related party
Executive Director	Yoon-ho Choi	Mar 2020 – Mar 2023 (None)	Director Yoon-ho Choi is a finance expert and contributed to enhancing synergy among businesses in SEC. He will contribute to efficient and stable management of the Company by capitalizing on his capabilities in risk management amid uncertain global economy.	The Board	General management	N/A	Related party
Independent Director	Jae-wan Bahk	Mar 2016 – Mar 2022 (1)	Director Jae-wan Bahk is an expert in finance and public sector with abundant experience relative to state affairs and policy design. He can contribute to objective supervision of the management and the Board's strategic decisions.	Independent Director Recommendation Committee	Chairman of the Board	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	Byung-gook Park	Mar 2018–Mar 2024 (1)	Director Byung-gook Park is a professor at electrical engineering and an expert in flash memory. He will play a crucial role in strengthening expertise of the Board.	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	Curie Ahn	Mar 2019 – Mar 2022 (None)	Director Curie Ahn is a medical expert who has been working for the marginalized and public good. Director Ahn will help address the increasingly important EHS issues, improving social communication and achieving sustainable growth.	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	Han-jo Kim	Mar 2019 – Mar 2022 (None)	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

Relationship with Company's major shareholders is in accordance with Article 542-8 of the Commercial Act.

Mar 17, 2021: At the 2020 AGM, Byung-gook Park and Jeong Kim were reappointed as Independent Directors; and Sun-uk Kim as Independent Director for Audit Committee member.

(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 annual general meeting of shareholders. As of the reporting date (September 30, 2021), the committee is composed of three Independent Directors (Byung-gook Park, Jeong Kim, and Curie Ahn) based on related laws that states more than a majority of members should be independent directors in accordance with clause 4 of Article 542-8 of the Commercial Law.

Date	Agenda	Voting results	Directors (attendance)		
			Jeong Kim (100%)	Byung-gook Park (100%)	Curie Ahn (100%)
Jan 28	① Decision on date of Independent Director candidate recommendation	Approved	For	For	For
Feb 10	① Recommendation of Independent Director candidate	Approved	For	For	For
	② Recommendation of Independent Director for Audit Committee candidate	Approved	For	For	For

(3) Expertise of Independent Directors

1) Support team for Independent Directors

[As of September 30, 2021]

Team	Number of employees	Position (total years served/ years in support team)	Key activities
HR	5	Executive Vice President: 1 person (30 years and 10 months / 2 years and 9 months) Vice President: 1 person (27 years and 7 month / 1 year and 8 months) Principal Professional: 1 person (18 years and 8 months / 2 year and 2 months) Senior Professional: 2 persons (average: 12 years and 5 months / 2 years and 9 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 for resolution process to each Directors 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
Aug 16, 2019 – Aug 23, 2019	HR team and management team of the region where the inspection takes place	Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim	N/A	On-site inspection to check business operations

② Orientation for newly appointed Independent Directors

Date	Organizer	Participants	Reasons for absence	Education contents
Mar 20, 2019	HR team	Curie Ahn, Han-jo Kim	N/A	Key issues regarding Board activities and management
Apr 30, 2019	HR team and relevant management team	Curie Ahn, Han-jo Kim	N/A	Key issues regarding Board activities and management
Jul 30, 2019	HR team and relevant management team	Curie Ahn, Han-jo Kim	N/A	Key issues regarding Board activities and management

③ Orientation for Independent Directors

Date	Organizer	Participants	Reasons for absence	Education contents
Jan 30, 2019	Support Team	In-ho Lee, Kwang-soo Song, Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim	N/A	Business plans for 2019
Jan 31, 2019	Network business	In-ho Lee, Kwang-soo Song, Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim	N/A	Briefing on 5G technology and tour of production lines
Nov 27, 2020	Planning Team	Jae-wan Bahk, Sun-uk Kim, Byung-gook Park, Jeong Kim, Curie Ahn, Han-jo Kim	N/A	Changing environment in post-COVID-19 era and mid- to long-term strategy

2. Audit System

A. Profiles of Audit Committee members

As of September 30, 2021, SEC operates an Audit Committee consisting of three Independent Directors. Directors Jae-wan Bahk (head) and Han-jo Kim qualify as experts in finance in accordance with relevant regulations.

Name	Major experience	Accounting/financial expertise ¹⁾	
		Classification	Relevant experience
Jae-wan Bahk (Head)	<ul style="list-style-type: none"> • 2020–present: Professor Emeritus, Department of Public Administration Graduate School of Governance at Sungkyunkwan University • 1996–2020: Professor, Department of Public Administration & Graduate School of Governance, Sungkyunkwan University • 2016–present: Independent Director, Lotte Shopping • 2014–present: Chief Director, Hansun Foundation • 2011–2013: Minister of Strategy and Finance • 2010–2011: Minister of Employment and Labor • 2004–2008: Member of the 17th National Assembly 	Type 2 ²⁾	<ul style="list-style-type: none"> • 1996–2020: Professor of Public Administration, Sungkyunkwan University • 1992: Gained Ph.D. in Financial Administration
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 	–	–
Han-jo Kim	<ul style="list-style-type: none"> • 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 ³⁾	<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

1) Defined in Public Disclosure Guideline and Article 37-2 of the Enforcement Decree of the Commercial Act

2) Holds at least a master's degree in accounting or finance and who has worked for a research institute or university at least as a researcher or an assistant professor in accounting or finance for an aggregate of at least five years

3) 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 experts Jae-wan Bahk (head) and 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 (eg, 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: Jae-wan Bahk; 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 Jae-wan Bahk	
Other conditions (related party of the major shareholder, etc.)	Satisfied (n/a)	Article 542-11 (3) of the Commercial Act

[As of September 30, 2021]

Name	Term (No. of reappointments)	Reasons for appointment	Nominator	Relationship with the Company	Relationship with the Company's major shareholders	Concurrent positions
Jae-wan Bahk (Head)	Mar 2019–Mar 2022 (-)	Expertise in finance and public sector and abundant experience in state affairs and policy design. He can contribute to the committee's activities by offering an objective perspective.	Independent Director Recommendation Committee	N/A	N/A	Independent Director Lotte Shopping, Co., Ltd 2016~
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	-
Han-jo Kim	Mar 2019–Mar 2022 (-)	An expert in finance with broad experience, he offers impartial judgement on overall management activities while carrying out his duties	Independent Director Recommendation Committee	N/A	N/A	-

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 (2021)

Date	Agenda	Voting results	Directors (attendance)		
			Jae-wan Bahk (100%)	Sun-uk Kim (100%)	Han-jo Kim (100%)
Jan 26	- Report on 2020 internal accounting management system activities	-	-	-	-
	- Report on evaluation of 2020 internal accounting management system activities	-	-	-	-
	- Communication between external auditor and audit committee	-	-	-	-
	- Report on 2020 financial statement and business report	-	-	-	-
	- Report on 4Q20 non-audit activities	-	-	-	-
	- Report on 4Q20 external contributions	-	-	-	-
	- Report on 2020 audit activities	-	-	-	-
Feb 10	- Review of the 52nd AGM agenda	-	-	-	-
	- Report on activities of internal compliance system in 2020	-	-	-	-
Apr 27	- Communication between external auditor and audit committee	-	-	-	-
	- Decision on the terms and conditions of the audit contract with the designated external auditor	Approved	For	For	For
	- Report on 1Q21 interim business report	-	-	-	-
	- Report on 1Q21 non-audit activities	-	-	-	-
	- Report on plans for reviewing 2021 internal accounting management system activities	-	-	-	-
	- Report on 1Q21 external contributions	-	-	-	-
	- Report on plans for evaluating 2020 internal accounting management system activities	-	-	-	-
Jul 27	- Communication between external auditor and audit committee	-	-	-	-
	- Report on 2021 half-year business report	-	-	-	-
	- Report on 2Q21 non-audit activities	-	-	-	-
	- Interim report on 2021 internal accounting management system activities	-	-	-	-
	- Report on 2Q21 external contributions	-	-	-	-
	- Report on 1H21 audit activities	-	-	-	-
	- Interim report on evaluation of 2021 internal accounting management system activities	-	-	-	-
	- Report on evaluation of 2020 external audit 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
Apr 29, 2019	Audit team Finance team HR team External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Introduction materials
Jul 30, 2019	External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Internal accounting management system
Jul 28, 2020	External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Internal accounting management system
Jul 27, 2021	External experts	Jae-wan Bahk Sun-uk Kim Han-jo Kim	N/A	Internal accounting management system

F. Support team for the Audit Committee

[As of September 30, 2021]

Team	Composition	Service years on team	Major tasks
Audit team	1 Executive Vice President, 2 Principal Professionals 1 Senior Professional	Executive Vice President: 1 Year and 9 months Principal professional: 3 years 7 months (average) Senior Professionals: 2 years 6 months	Support the Audit Committee
Internal accounting assessment support group	1 Vice President, 1 Lawyer, 1 Senior Professional	Vice President: 2 years and 9 months Lawyer: 6 months Senior Professional: 8 months	Support assessment of the internal accounting management system

G. Compliance Officer

[As of September 30, 2021]

1. Personal information and major career	Name	Duk-ho Ahn
	Date of birth	July 1968
	Sex	Male
	Current position	Corporate Compliance Team leader at Samsung Electronics (Jan 2020–present)
	Career	- Jan 2020: Head of Compliance Team, SEC (Executive Vice President) - Nov 2017: Head of Legal Support Team, SEC DS Division (Executive Vice President) - Apr 2017: Head of Legal Support Team, SEC DS Division (Senior Vice President) - Dec 2010: Office of Compliance Management, SEC (Senior Vice President) - Mar 2006: Office of Legal Affairs, SEC (Vice President) - Mar 2005: Office of Legal Affairs, Samsung Restructuring Head Office (Vice President) - 1997–2005: Judge at the Seoul District Court, Seoul Administration Court
	Academic background	Bachelor's Degree in Law (Seoul National University)
2. Date of Board resolution		Jan 30, 2020
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
Feb 2021	Violation of competitors' business secrets	Business secrets	Overall result was satisfactory. Internal policies were followed in areas where there was room for improvement.
	Industrial health and safety risk	Environment & safety	
Mar 2021	Compliance of domestic and overseas third-party production customers	Technology leak, product liability, etc.	
Apr 2021	Monitoring external contributions and related party transaction risks	Anti-corruption, fair transaction	
Jun 2021	Voluntary compliance of overseas subsidiaries	Status of compliance program	
	Online compliance of overseas sales subsidiaries	Fair transaction, business secrets, etc.	
	Compliance of domestic and overseas third-party production customers	Technology leak, product liability, etc.	
Aug 2021	Monitoring external contributions and related party transaction risks	Anti-corruption, fair transaction	
	Compliance of subsidiaries	Business secrets, personal information, etc.	
Sep 2021	Compliance of domestic sales & marketing organizations	Fair transaction, business secrets, etc.	
	Online compliance of overseas sales subsidiaries	Fair transaction, business 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 September 30, 2021]

Team	Composition	Service years (average)	Major tasks
Compliance team, etc.	3 Vice Presidents 14 Principal Professionals 11 Lawyers 33 Senior Professionals 7 Professionals (Total: 68)	Vice Presidents (5 years) Principal Professionals (7 years 6 months) Lawyers (4 years and 3 months) Senior Professionals (4 years and 10 months) Professionals (1 year and 4 months)	Supports activities of the Compliance Officer

Service years refer to time performing work relevant to support activity.

3. General meeting of shareholders

A. Voting method

As of September 30, 2021, the Company has not adopted cumulative voting or paper voting and has adopted electronic voting, which was used at the 52nd AGM on March 17, 2021.

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 51st 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 September 30, 2021]

Classification	Cumulative voting	Paper voting	Electronic voting
Adoption	Excluded	Not adopted	Adopted
Implementation	-	-	52nd AGM (2020)

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. Minority shareholder rights

No minority shareholder rights were exercised during the reporting period.

C. Competition over management rights

No competition over management rights occurred during the reporting period.

D. Voting shares

As of September 30, 2021, 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 597,492,059 shares of common stock with limited voting rights under relevant laws. Thus, the total number of shares with full voting rights is 5,372,290,491.

[As of September 30, 2021]

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	-	-

Classification	Share type	Number of shares	Note
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
	Preferred	532,859	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	5,372,290,491	-
	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.

E. Stock affairs

Preemptive rights in the Articles of Incorporation
<p>1. New shares to be issued by the Company shall be allocated to the shareholders in proportion to their respective shareholdings in accordance with Paragraph 6, Article 8. If shares are not subscribed for as a result of waiver or loss of the preemptive right of the shareholders to subscribe for new shares, or if fractional shares remain at the time of allocation of new shares, such shares may be disposed of by a resolution of the Board of Directors in accordance with applicable laws and regulations.</p> <p>2. Notwithstanding the above Paragraph 1, new shares may be allocated to persons other than shareholders in the following cases:</p> <p>a. If the Company issues new shares or causes underwriters to underwrite new shares by a resolution of the Board of Directors in accordance with applicable laws and regulations including the Financial Investment Services and Capital Markets Act;</p> <p>b. If the Company allocates new shares preferentially to members of the Employee Stock Ownership Association by a resolution of the Board of Directors in accordance with applicable laws and regulations including the Financial Investment Services and Capital Markets Act;</p> <p>c. If the Company issues new shares for the issuance of depositary receipts (DR) by a resolution of the Board of Directors in accordance with the applicable laws and regulations including the Financial Investment Services and Capital Markets Act;</p> <p>d. If the Company issues new shares by public offering in accordance with Article 11-3;</p> <p>e. If new shares are issued by the exercise of stock options in accordance with Article 11-4;</p> <p>f. If the Company issues new shares to the extent of 20% of the total issued and outstanding shares to domestic or foreign financial institutions for the purpose of obtaining financing urgently or to the relevant partner company for the purpose of inducing technology therefrom, etc., by a resolution of the Board of Directors; provided that the issue price of the new shares shall not be less than the price prescribed by the Financial Investment Services and Capital Markets Act and other applicable laws and regulations.</p> <p>☞ (Note) Paragraph 6, Article 8</p> <p>In the case of rights issue, bonus issue or stock dividend, the holders of common shares shall be entitled to common shares, and the holders of preferred shares shall be entitled to preferred shares, in proportion to their respective shareholdings; provided that in the case of rights issue and stock dividend the Company may, if necessary, issue only one kind of shares, where all the shareholders shall be entitled to such kind of shares to be issued.</p> <p>☞ (Note) Article 11-3 (Public Offering)</p> <p>1. The Company may issue new shares by public offering to the extent that the new shares do not exceed 20% of the total number of issued and outstanding shares by a resolution of the Board of Directors, pursuant to Article 165-6, Paragraph 1, Item 3 of the Financial Investment Services and Capital Markets Act.</p>

2. If the Company issues new shares by public offering, the type, quantity and issue price of the shares to be newly issued shall be determined by a resolution of the Board of Directors; provided that the issue price of such new shares shall not be less than the price prescribed by the Financial Investment Services and Capital Markets Act and other applicable laws and regulations.

☞ (Note) Article 11-4 (Stock Options)

1. The Company may grant stock options to its officers and employees (including officers and employees of the related companies as set forth in Article 542-3, Paragraph 1 of the Commercial Code; the same shall apply for the purpose of this Article) by a special resolution of the general meeting of shareholders pursuant to Article 542-3 of the Commercial Code, to the extent permitted by the Commercial Code; provided, however, that the Company may grant the stock options to its officers and employees (except for the directors of the Company) by a resolution of the Board of Directors to the extent determined by the relevant laws and regulations.
2. The person to whom stock options may be granted are the officers and employees who have contributed or have the capacity to contribute to the establishment, management, overseas business, technical innovation, etc. of the Company; provided, however, that the officers and employees who may not be entitled to stock options under the relevant laws and regulations shall be excluded.
3. The shares to be issued to the officers or employees by the exercise of their stock options (in case the Company pays, either in cash or treasury shares, the difference between the exercise price of stock options and the market price, they refer to the shares which are the basis for such calculation) shall be common shares in registered form or preferred shares in registered form.
4. Total number of shares to be delivered in accordance with the exercise of stock options shall be up to the extent permitted by the relevant laws and regulations.
5. The stock options may be exercised until an expiry date determined by a resolution of the general meeting of shareholders or the Board of Directors and such expiry date shall be determined within a period not exceeding eight (8) years from the date when two (2) years have elapsed from the date of the general meeting of shareholders or the date of the Board of Directors' meeting at which a resolution to grant such stock options is adopted; provided, however, that the person to whom a stock option is granted should serve the Company for at least two (2) years after the date of such resolution in order to exercise such stock option, unless otherwise set forth by relevant laws and regulations.
6. The terms and conditions for stock options, such as the contents and exercise price thereof shall be determined by a special resolution of the general meeting of shareholders or by a resolution of the Board of Directors in accordance with the relevant laws and regulations and the Articles of Incorporation; provided, however, that such matters which are not provided for as matters reserved for resolutions of the general meeting of shareholders or the Board of Directors' meeting under the relevant laws and regulations or the Articles of Incorporation may be determined by the Board of Directors or a committee authorized by the Board of Directors.
7. The Company may cancel the grant of stock options by a resolution of the Board of Directors in any of the following cases:
 - a. In case the relevant officer or employee voluntarily retires from his/her office or leaves the Company after the grant of stock options;
 - b. In case the relevant officer or employee causes substantial damages to the Company due to his/her willful misconduct or negligence;
 - c. In case any of the causes for cancellation set forth in the stock option agreement occurs.

Settlement date	Dec 31	Annual General Meetings of Shareholders	Within 3 months after the end of every business year
Record date (closing period)		Last day of fiscal year (One month from Jan 1)	
Transfer agent	Korea Securities Depository (T: +82-51-519-1500): 40 Munhyeongeumyung-ro, Nam-gu, Busan, Korea		
Shareholder benefit	n/a	Published on	Joongang Daily

With Act on Electronic Registration of Stocks, Bonds, etc. ("Electronic Securities Act") taking effect Sep 16, 2019, rights specified on stocks and subscription warrants are subject to mandatory electronic registration, therefore, "Stock types" are no longer applicable. Related information is published on Joongang Daily in pursuant to our Articles of Incorporation, as well as on our website (<http://www.samsung.com/sec/ir>).

F. Results of shareholder meetings

[As of September 30, 2021]

Date	Agenda	Results
The 52nd 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: Byung-gook Park 2.1.2: Jeong Kim 2.2: Appointment of Executive Directors 2.2.1: Ki-nam Kim 2.2.2: Hyun-suk Kim 2.2.3: Dong-jin Koh 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
The 51st AGM (Mar 18, 2020)	1. Approval of Balance Sheet, Income Statement, and Statement of Appropriation of Retained Earnings (draft), etc. for 2019 2. Appointment of Executive Directors 2.1: Jong-hee Han 2.2: Yoon-ho Choi 3. Approval of remuneration limit for Directors	Approved Approved Approved Approved
The 50th AGM (Mar 20, 2019)	1. Approval of Balance Sheet, Income Statement, and Statement of Appropriation of Retained Earnings (draft), etc. for 2018 2. Appointment of Directors/Committee Members 2.1: Independent Directors 2.1.1: Jae-wan Bahk 2.1.2: Han-jo Kim 2.1.3: Curie Ahn 2.2: Audit Committee 2.2.1: Jae-wan Bahk 2.2.2: Han-jo Kim 3. Approval of remuneration limit for Directors	Approved Approved Approved Approved Approved Approved

An extraordinary meeting of shareholders was not held during the reporting period.

VII. Information on Shareholders

1. Ownership of shares by the major shareholder(s) and related parties

[As of September 30, 2021]

Name	Relationship ¹⁾	Type of share	Ownership				Notes
			Period start		Period end		
			Shares	Stake (%)	Shares	Stake (%)	
Kun-hee Lee	-	Common	249,273,200	4.18	0	0.00	Bequest
		Preferred	619,900	0.08	0	0.00	Bequest
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	16,284,877	0.27	14,559,665	0.24	Open market transactions
		Preferred	772,567	0.09	521,359	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	54,153,600	0.91	137,244,666	2.30	Inheritance
		Preferred	0	0.00	206,633	0.03	Inheritance
Jae-yong Lee	Related party of the major shareholder	Common	42,020,150	0.70	97,414,196	1.63	Inheritance
		Preferred	0	0.00	137,757	0.02	Inheritance
Boo-jin Lee	Executive member of affiliate	Common	0	0.00	55,394,044	0.93	Inheritance
		Preferred	0	0.00	137,755	0.02	Inheritance
Seo-hyun Lee	Related party of the major shareholder	Common	0	0.00	55,394,044	0.93	Inheritance
		Preferred	0	0.00	137,755	0.02	Inheritance
Ki-nam Kim	Executive member of affiliate	Common	200,000	0.00	210,000	0.00	Open market transactions
Hyun-suk Kim	Executive member of affiliate	Common	99,750	0.00	99,750	0.00	-
Dong-jin Koh	Executive member of affiliate	Common	75,000	0.00	75,000	0.00	-
Jong-hee Han	Executive member of affiliate	Common	5,000	0.00	5,000	0.00	-
Yoon-ho Choi	Executive member of affiliate	Common	0	0.00	5,000	0.00	Open market transactions
Byung-gook Park	Executive member of affiliate	Common	0	0.00	1,000	0.00	Open market transactions

Name	Relationship ¹⁾	Type of share	Ownership				Notes
			Period start		Period end		
			Shares	Stake (%)	Shares	Stake (%)	
Curie Ahn	Executive member of affiliate	Common	2,600	0.00	3,500	0.00	Open market transactions
Han-jo Kim	Executive member of affiliate	Common	2,175	0.00	2,175	0.00	-
Total		Common	1,264,258,552	21.18	1,262,550,240	21.15	-
		Preferred	1,436,417	0.17	1,185,209	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 information on voting rights, please refer to 『VI. Corporate Governance-D. Voting shares』).

The major shareholder changed to Samsung Life Insurance as the shares of the previous major shareholder (Kun-hee Lee, who passed away on October 25, 2020) were inherited by Jae-yong Lee and three others during the reporting period. For detailed information, please refer to 3) Change of the major shareholder.

For changes after September 30, please refer to ‘Ownership status of securities, etc. of executives and major shareholder’ published in Korean in DART (<http://dart.fss.or.kr>).

Parts of shares owned by the related party of the major shareholder (Ra-hee Hong) have been signed to the trust contract of disposal of securities on October 5, 2021. For detailed information, please refer to the “Report on Mass Holding of Securities (General)” disclosed on DART (<http://dart.fss.or.kr>) on October 8, 2021.

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	107,474	Young-muk Jeon	0.00	Samsung C&T	19.34

The number of investors is as of December 31, 2020, which was the recent closing date of shareholder register, and the share ratios of the CEO and major shareholder are as of September 30, 2021, the Reporting Date.

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 21, 2018	Chang-soo Kim	-	-	-
Mar 21, 2018	Sung-chul Hyun	-	-	-
Mar 27, 2018	Sung-chul Hyun	0.00	-	-

Date of change	CEO		Major shareholder	
	Name	Share ratio (%)	Name	Share ratio (%)
Mar 19, 2020	Sung-chul Hyun	0.00	-	-
Mar 19, 2020	Young-muk Jeon	-	-	-
Mar 23, 2020	Young-muk Jeon	0.00	-	-
Mar 24, 2020	Young-muk Jeon	0.00	-	-
Mar 16, 2021	Young-muk Jeon	0.00	-	-
Apr 29, 2021	-	-	Kun-hee Lee	-
Apr 29, 2021	-	-	Samsung C&T	19.34

Mar 21, 2018: Chang-soo Kim resigned from his position as CEO, and Executive Director Sung-chul Hyun was appointed as CEO.

Mar 19, 2020: Sung-chul Hyun resigned from his position as CEO, and Executive Director Young-muk Jeon was appointed as CEO.

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	336,261,585
Total liabilities	297,123,005
Total equity	39,138,580
Revenue	27,300,191
Operating profit	1,501,600
Profit for the period	1,391,503

The financial status is as of September 30, 2021, 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 (<http://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	196,026	Jung-suk Koh	0.00	Jae-yong Lee	18.13
		Se-chul Oh	0.00		
		Seung-hwan Han	0.00		

As of September 30, 2021 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 22, 2018	Chi-hun Choi	-	-	-
Mar 22, 2018	Shin Kim	-	-	-
Mar 22, 2018	Bong-yung Kim	-	-	-
Mar 22, 2018	Young-ho Lee	-	-	-
Mar 22, 2018	Jung-suk Koh	-	-	-
Mar 22, 2018	Keum-yong Chung	-	-	-
Mar 19, 2021	Young-ho Lee	-	-	-
Mar 19, 2021	Keum-yong Chung	-	-	-
Mar 19, 2021	Se-chul Oh	0.00	-	-
Mar 19, 2021	Seung-hwan Han	0.00	-	-
Mar 19, 2021	Jung-suk Koh	0.00	-	-
Apr 29, 2021	-	-	Jae-yong Lee	18.13

Mar 22, 2018: Chi-hun Choi, Shin Kim, and Bong-yung Kim resigned from their positions as CEO, and Executive Directors Young-ho Lee, Jung-suk Koh, and Keum-yong Chung were appointed as CEOs.

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%→18.13%) as the shares were inherited (by Jae-yong Lee and three others).

(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	53,863,170
Total liabilities	21,283,852
Total equity	32,579,318
Revenue	24,690,249
Operating profit	868,783
Profit for the period	1,595,668

The financial status is as of September 30, 2021, 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 (<http://dart.fss.or.kr>) for more details of the major shareholder of the major shareholder.

3. Change of the major shareholder

[As of September 30, 2021]

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 September 30, 2021]

Classification	Name	Number of shares owned	Share ratio (%)	Note
Shareholders with over 5% voting shares ¹⁾	National Pension Service	526,796,979	8.82	-
	Samsung Life Insurance	522,716,813	8.76	Including special accounts
	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-D. Voting shares.』

B. Minority shareholders

[As of September 30, 2021]

Classification	Shareholder			Shares owned ¹⁾			Note
	Number of shareholders	Total shareholders	Portion (%)	Number of shares	Total number of shares	Portion (%)	
Minority shareholder	5,188,804	5,188,924	99.99	3,834,408,221	5,969,782,550	64.23	-

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		Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	
Common stock	Stock price (KRW)	High	86,000	83,200	82,800	81,200	82,900	77,700
		Low	81,500	78,500	79,900	78,500	72,700	74,100
		Average	83,586	80,521	81,105	79,577	77,024	76,305
	Volume (shares)	High (day)	22,997,538	35,812,268	29,546,007	22,720,577	61,270,643	23,992,458
		Low (day)	12,915,282	11,984,359	10,075,685	8,330,969	11,739,124	10,103,212
		Month	372,938,171	352,211,074	333,099,465	275,886,253	499,862,582	281,233,337
Preferred stock	Stock price (KRW)	High	76,400	74,900	74,900	73,900	75,200	72,000
		Low	73,300	72,200	72,800	72,100	68,400	69,600
		Average	74,891	73,463	74,055	72,823	71,519	71,289
	Volume (shares)	High (day)	2,847,452	2,736,026	1,967,125	3,508,267	5,559,423	3,027,961
		Low (day)	1,039,054	820,313	732,813	547,300	840,355	735,939
		Month	34,586,881	27,367,737	25,743,046	26,730,895	38,317,492	25,648,892

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			Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	
Common stock	Price per GDR	High	USD	1,924.50	1,855.00	1,864.50	1,799.00	1,813.50	1,670.00
			KRW	2,170,451	2,080,197	2,072,951	2,033,410	2,086,794	1,931,188
		Low	USD	1,821.00	1,741.00	1,758.50	1,691.00	1,538.50	1,562.50
			KRW	2,016,575	1,956,014	1,991,325	1,950,061	1,806,968	1,851,406
		Average	USD	1,869.85	1,791.68	1,808.48	1,740.55	1,658.19	1,621.86
			KRW	2,093,627	2,012,587	2,028,671	1,990,712	1,923,683	1,897,029
	Volume (shares)	High (day)		41,216	28,183	41,550	25,250	55,101	26,156
		Low (day)		8,090	6,488	7,389	2,806	8,611	5,250
		Month		309,705	297,807	396,046	368,357	428,743	286,572

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			Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	
Preferred stock	Price per GDR	High	USD	1,702.00	1,694.00	1,678.00	1,628.00	1,648.00	1,564.00
			KRW	1,919,516	1,906,597	1,865,600	1,840,128	1,896,354	1,808,610
		Low	USD	1,644.00	1,598.00	1,614.00	1,566.00	1,454.00	1,458.00
			KRW	1,861,994	1,795,353	1,823,013	1,786,963	1,707,723	1,727,584
		Average	USD	1,676.00	1,632.53	1,646.64	1,588.55	1,538.57	1,509.82
			KRW	1,876,578	1,833,806	1,847,125	1,816,866	1,784,912	1,765,974
	Volume (shares)	High (day)		1,165	2,559	2,488	2,062	2,766	3,479
		Low (day)		145	226	277	182	460	161
		Month		12,213	16,775	17,728	20,152	25,190	26,451

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 Sep 30, 2021]

(Shares)

Name	Gender	Date of birth	Position	Registered Executive	Full/part-time	Responsibility	Major career	Number of shares owned		Relationship with the major shareholder ¹⁾	Length of service (months)	Term expiration
								Common	Preferred			
Ki-nam Kim	M	Apr 1958	Vice Chairman	Executive Director	Full	CEO (Head of DS Division)	- Doctor's degree in Electrical Engineering from UCLA - Head of DS Division	210,000	-	Executive Member of an Affiliate	43	Mar 22, 2024
Hyun-suk Kim	M	Jan 1961	President	Executive Director	Full	CEO (Head of CE Division)	- Master's degree in Electrical Engineering from Portland State University - Head of CE Division	99,750	-	Executive Member of an Affiliate	43	Mar 22, 2024
Dong-jin Koh	M	Mar 1961	President	Executive Director	Full	CEO (Head of IM Division)	- Master's degree in Technology Policy from University of Sussex - Head of IM Division	75,000	-	Executive member of an Affiliate	43	Mar 22, 2024
Jong-hee Han	M	Mar 1962	President	Executive Director	Full	Head of Visual Display Business	- Bachelor's degree in Electronic Engineering from Inha University - Head of Visual Display Business	5,000	-	Executive member of an Affiliate	19	Mar 17, 2023
Yoon-ho Choi	M	Jan 1963	President	Executive Director	Full	Head of Corporate Management Office	- Bachelor's degree in Business Management from Sungkyunkwan University - Head of Corporate Management Office	5,000	-	Executive member of an Affiliate	19	Mar 17, 2023
Jae-wan Bahk	M	Jan 1955	Director	Independent Director	Part	- Chairman of the Board - Head of the Audit Committee - Related Party Transactions Committee Member - Compensation Committee Member - Head of the Sustainability Committee	- Doctor's degree in Public Policy from Harvard University - Professor Emeritus of Graduate School of Public Administration at Sungkyunkwan University	-	-	Executive member of an Affiliate	67	Mar 10, 2022
Sun-uk Kim	F	Dec 1952	Director	Independent Director	Part	- Audit Committee Member - Head of the Related Party Transactions Committee - Sustainability Committee Member	- Doctor's degree in Administrative Law from University of Konstanz - Professor Emeritus at Ewha Womans University	-	-	Executive member of an Affiliate	43	Mar 22, 2024
Byung-gook Park	M	Apr 1959	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Compensation Committee Member	- Doctor's degree in Electrical Engineering from Stanford University - Professor of Electrical Engineering at Seoul National University	1,000	-	Executive member of an Affiliate	43	Mar 22, 2024

						- Sustainability Committee Member						
Jeong Kim	M	Aug 1960	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Compensation Committee Member - Sustainability Committee Member	- Doctor's degree in Reliability Engineering from the University of Maryland - President of Kiswe Mobile	-	-	Executive member of an Affiliate	43	Mar 22, 2024
Curie Ahn	F	Mar 1955	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Sustainability Committee Member	- Doctor's degree in Medicine from Seoul National University - Professor Emeritus at the Division of Nephrology of Seoul National University	3,500	-	Executive member of an Affiliate	31	Mar 19, 2022
Han-jo Kim	M	Jul 1956	Director	Independent Director	Part	- Audit Committee Member - Related Party Transactions Committee Member - Sustainability Committee Member	- Bachelor's degree in French language and Literature from Yonsei University - Chairman of Hana Foundation	2,175	-	Executive member of an Affiliate	31	Mar 19, 2022

Mar 17, 2021: At the 2020 AGM, Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh were reappointed as Executive Directors; Byung-gook Park and Jeong Kim as Independent Directors; and Sun-uk Kim as Independent Director for Audit Committee member.

1) In accordance with Article 3 Paragraph 1 of the Enforcement Decree of the Act on Corporate Governance of Financial Companies.

B. Registered Executives with concurrent positions

[As of Sep 30, 2021]

Concurrent office holder		Company		
Name	Position	Name of company	Position	Period
Jae-wan Bahk	Independent Director	Lotte Shopping Co., Ltd	Independent director	2016–present
Jeong Kim	Independent Director	Kiswe Mobile	Chairman	2013–present

C. Employees

[As of Sep 30, 2021]

(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
CE	M	10,255	57	-	10,312	16.5					
	F	2,165	16	-	2,181	11.7	-	-			
IM	M	19,565	164	-	19,729	14.8	-	-			
	F	7,059	24	-	7,083	12.6	-	-			
DS	M	45,980	145	-	46,125	10.6	-	-	-	-	-
	F	18,071	19	-	18,090	10.6	-	-			
Others	M	8,261	148	-	8,409	15.3	-	-			
	F	2,397	47	-	2,444	11.5	-	-			
Gender total	M	84,061	514	-	84,575	12.8	6,563,627	80			
	F	29,692	106	-	29,798	11.3	1,606,366	59			
Total		113,753	620	-	114,373	12.4	8,169,993	75			

Total compensation for 3Q21 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: 108,985 employees (male: 81,724, female: 27,261).

3) Non-affiliated employees are not included in the interim or half-year business reports, as per Public Disclosure Guideline (to be included in the annual business report)

D. Remuneration of non-registered Executives

[As of Sep 30, 2021]

(KRW mil)

Classification	Number of employees ¹⁾	Total compensation	Average compensation per employee	Note
Non-registered Executives	886	408,256	455	-

Total compensation for 3Q21 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 3Q21 includes incentives, and timing of the incentives being paid differ every year.

Average compensation per employee is calculated based on the average of the 897 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	41,000	-

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 17, 2021, 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	14,642	1,331	-

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) 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 ³⁾
Registered Directors (excluding Independent Directors and Audit Committee members)	5	13,996	2,800
Independent Directors (excluding Audit Committee members)	3	401	134
Audit Committee members	3	245	82
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) 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 bonus: 100% of monthly wage Target achievement incentive: Paid 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: When performance exceeds the Company's goal; CEO decides the amount based on 20% profit. Paid once a year within 0–50% of salary. (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

No bonus based on performance for Independent Directors including members of the audit committee.

B. Stock options granted and exercised

(1) Status of stock options granted to registered Directors

As of September 30, 2021, there were no accumulated-basis unexercised stock options granted to registered Directors.

(KRW mil)

Type	Number ¹⁾	Total fair value of stock options	Note
Registered Director	5	-	-
Independent Director	3	-	-
Audit Committee member or Auditor	3	-	-
Total	11	-	-

1) As of the reporting date.

(2) Status of stock options granted to non-registered Executives

As of September 30, 2021, there were no accumulated-basis unexercised stock options granted to non-registered Executives.

IX. Affiliates and Subsidiaries

1. Affiliates & subsidiaries

A. Affiliates

As of September 30, 2021, Samsung Group is consisted of 59 domestic affiliates. Among the Samsung Group's 59 domestic affiliates, sixteen (16) affiliates including Samsung Electronics are listed, and forty-four (43) affiliates are unlisted.

[As of September 30, 2021]

Name of affiliated group	No. of affiliates		
	Listed	Unlisted	Total
Samsung	16	43	59

B. Ownership status of affiliates and subsidiaries

1) Domestic

Investee Investor	Samsung C&T Corp	Samsung BioLogics	Samsung Life Insurance	Samsung SDI	Samsung SDS	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		43.4	19.3		17.1	7.0		5.0	0.1						
Samsung BioLogics															
Samsung Life Insurance	0.1	0.1		0.1	0.0	0.1	0.1	8.8	3.1	29.6	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									2.2						
Samsung Electronics		31.5		19.6	22.6		23.7		16.0						25.2
Samsung Heavy Industries															
Samsung Securities.														1.3	
Samsung Card														1.9	3.0
Samsung Fire & Marine Insurance						0.2		1.5						1.0	
S1 Corporation															
Cheil Worldwide									0.1						
Hotel Shilla															
SDC															
Samsung Asset Management															
Samsung Electronics Service															
Miracom															
SERI													15.2		
Harman International Industries, Inc.															
Total	0.1	75.0	19.3	19.7	39.7	19.0	23.8	15.3	21.9	29.6	71.9	15.0	62.4	20.7	28.6

Percent of ownership as of September 30, 2021 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	Service CS	Samsung Electronics Sales
Samsung C&T Corporation					16.7					100.0					
Samsung BioLogics				50.0											
Samsung Life Insurance	7.5					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														
Samsung Fire & Marine Insurance															
S1 Corporation															
Cheil Worldwide															
Hotel Shilla															
SDC															
Samsung Asset Management								100.0							
Samsung Electronics Service														100.0	
Miracom															
SERI															
Harman International Industries, Inc.															
Total	17.1	100.0	68.5	50.0	100.0	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.3	100.0	100.0

Percent of ownership as of September 30, 2021 based on common shares

Investee Investor	Samsung Card Customer Service	Samsung Corning Advanced Glass	Samsung Hedge Asset Management	Samsung Fire & Marine Insurance Service	Samsung Claim Adjustment Service	SEMES	Suwon Samsung Bluewings FC	STECO	Shilla Stay	SD Flex	SBTM	S-1CRM	SU Materials	S-Core	STM
Samsung C&T Corporation															
Samsung BioLogics															
Samsung Life Insurance															
Samsung SDI										50.0					100.0
Samsung SDS														81.8	
Samsung Electro-mechanics															
Samsung Electronics						91.5		70.0							
Samsung Heavy Industries															
Samsung Securities.															
Samsung Card	100.0														
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				
SDC		50.0											50.0		
Samsung Asset Management			100.0												
Samsung Electronics Service															
Miracom														0.5	
SERI															
Harman International Industries, Inc.															
Total	100.0	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

Percent of ownership as of September 30, 2021 based on common shares

Investee Investor	HDC Shilla Duty Free LTD	Open Hands	Cheil Fashion Retail	Miracom	SERI	Samsung Lions	Samsung Life Financial Service	Samsung Fire & Marine Financial Service	Samwoo Architects & Engineers	Seoul Lakeside CC	SECUI	CVnet	Harman International Korea	Human TSS
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		100.0		83.6							56.5	9.4		
Samsung Electro-mechanics					23.8									
Samsung Electronics					29.8									
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	50.0													
SDC														
Samsung Asset Management														
Samsung Electronics Service														
Miracom														
SERI														
Harman International Industries, Inc.													100.0	
Total	50.0	100.0	100.0	89.6	100.0	67.5	100.0	100.0	100.0	100.0	65.2	49.5	100.0	100.0

Percent of ownership as of September 30, 2021 based on common shares

2) Overseas

Investor	Investee	Ownership
Samwoo Architects & Engineers	SAMOO HU Designer and Engineering Services Limited	100.00
Samwoo Architects & Engineers	SAMOO DESIGNERS & ENGINEERS INDIA PRIVATE LIMITED	100.00
Samwoo Architects & Engineers	SAMOO (KL) SDN. BHD.	100.00
Samsung C&T America Inc.	Meadowland Distribution	100.00
Samsung C&T America Inc.	Samsung Green repower, LLC	100.00
Samsung C&T America Inc.	Samsung Solar Construction Inc.	100.00
Samsung C&T America Inc.	QSSC, S.A. de C.V.	20.00
Samsung C&T America Inc.	Samsung Solar Energy LLC	100.00
Samsung C&T America Inc.	Equipment Trading Solutions Group, LLC	70.00
Samsung C&T America Inc.	FLOWFY COMMERCE SERVICE LLC	100.00
Samsung Renewable Energy Inc.	SP Armow Wind Ontario LP	50.00
Samsung Renewable Energy Inc.	SRE GRW EPC GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE GRW EPC LP	100.00
Samsung Renewable Energy Inc.	SRE SKW EPC GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE SKW EPC LP	100.00
Samsung Renewable Energy Inc.	SRE WIND PA GP INC.	100.00
Samsung Renewable Energy Inc.	SRE WIND PA LP	100.00
Samsung Renewable Energy Inc.	SRE GRS Holdings GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE GRS Holdings LP	100.00
Samsung Renewable Energy Inc.	SRE K2 EPC GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE K2 EPC LP	100.00
Samsung Renewable Energy Inc.	SRE KS HOLDINGS GP INC.	100.00
Samsung Renewable Energy Inc.	SRE KS HOLDINGS LP	100.00
Samsung Renewable Energy Inc.	SP Belle River Wind LP	42.50
Samsung Renewable Energy Inc.	SRE Armow EPC GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE Armow EPC LP	100.00
Samsung Renewable Energy Inc.	North Kent Wind 1 LP	35.00
Samsung Renewable Energy Inc.	SRE Wind GP Holding Inc.	100.00
Samsung Renewable Energy Inc.	South Kent Wind LP Inc.	50.00
Samsung Renewable Energy Inc.	Grand Renewable Wind LP Inc.	45.00
Samsung Renewable Energy Inc.	SRE North Kent 2 LP Holdings LP	100.00
Samsung Renewable Energy Inc.	SRE Solar Development GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE Solar Development LP	100.00
Samsung Renewable Energy Inc.	SRE Windsor Holdings GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE Southgate Holdings GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE Solar Construction Management GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE Solar Construction Management LP	100.00
Samsung Renewable Energy Inc.	SRE DEVELOPMENT GP INC.	100.00
Samsung Renewable Energy Inc.	SRE BRW EPC GP INC.	100.00
Samsung Renewable Energy Inc.	SRE BRW EPC LP	100.00
Samsung Renewable Energy Inc.	SRE North Kent 1 GP Holdings Inc	100.00
Samsung Renewable Energy Inc.	SRE North Kent 2 GP Holdings Inc	100.00
Samsung Renewable Energy Inc.	SRE Belle River GP Holdings Inc	100.00
Samsung Renewable Energy Inc.	SRE NK1 EPC GP Inc	100.00
Samsung Renewable Energy Inc.	SRE NK1 EPC LP	100.00
Samsung Renewable Energy Inc.	SRE Summerside Construction GP Inc.	100.00
Samsung Renewable Energy Inc.	SRE Summerside Construction LP	100.00
Samsung Green repower, LLC	Monument Power, LLC	100.00
SP Armow Wind Ontario GP Inc	SP Armow Wind Ontario LP	0.00
Samsung C&T Oil & Gas Parallel Corp.	PLL Holdings LLC	83.60
Samsung C&T Oil & Gas Parallel Corp.	PLL E&P LLC	90.00
SRE GRW EPC GP Inc.	SRE GRW EPC LP	0.00
SRE SKW EPC GP Inc.	SRE SKW EPC LP	0.00
PLL Holdings LLC	Parallel Petroleum LLC	61.00

Investor	Investee	Ownership
SRE WIND PA GP INC.	SRE WIND PA LP	0.00
SRE GRS Holdings GP Inc.	Grand Renewable Solar GP Inc.	50.00
SRE GRS Holdings GP Inc.	SRE GRS Holdings LP	0.00
SRE K2 EPC GP Inc.	SRE K2 EPC LP	0.00
SRE KS HOLDINGS GP INC.	KINGSTON SOLAR GP INC.	50.00
SRE KS HOLDINGS GP INC.	SRE KS HOLDINGS LP	0.00
SP Belle River Wind GP Inc	SP Belle River Wind LP	0.00
SRE Armow EPC GP Inc.	SRE Armow EPC LP	0.00
SRE Wind GP Holding Inc.	SP Armow Wind Ontario GP Inc	50.00
SRE Wind GP Holding Inc.	South Kent Wind GP Inc.	50.00
SRE Wind GP Holding Inc.	Grand Renewable Wind GP Inc.	50.00
South Kent Wind GP Inc.	South Kent Wind LP Inc.	0.00
Grand Renewable Wind GP Inc.	Grand Renewable Wind LP Inc.	0.00
North Kent Wind 1 GP Inc	North Kent Wind 1 LP	0.00
SRE Solar Development GP Inc.	SRE Solar Development LP	0.00
SRE Solar Construction Management GP Inc.	SRE Solar Construction Management LP	0.00
SRE BRW EPC GP INC.	SRE BRW EPC LP	0.00
SRE North Kent 1 GP Holdings Inc	North Kent Wind 1 GP Inc	50.00
SRE North Kent 2 GP Holdings Inc	SRE North Kent 2 LP Holdings LP	0.00
SRE Belle River GP Holdings Inc	SP Belle River Wind GP Inc	50.00
SRE NK1 EPC GP Inc	SRE NK1 EPC LP	0.00
SRE Summerside Construction GP Inc.	SRE Summerside Construction LP	0.00
Samsung Solar Energy LLC	Samsung Solar Energy 1 LLC	100.00
Samsung Solar Energy LLC	Samsung Solar Energy 2 LLC	100.00
Samsung Solar Energy LLC	Samsung Solar Energy 3, LLC	100.00
Samsung Solar Energy 1 LLC	CS SOLAR LLC	50.00
Samsung Solar Energy 3, LLC	SST SOLAR, LLC	50.00
Samsung C&T Deutschland GmbH	POSS-SLPC, S.R.O	20.00
Samsung C&T Deutschland GmbH	Solluce Romania 1 B.V.	20.00
Samsung C&T Deutschland GmbH	S.C. Otelinox S.A	99.70
Solluce Romania 1 B.V.	LJG GREEN SOURCE ENERGY ALPHA S.R.L.	78.00
Samsung C&T Malaysia SDN. BHD	WARIS GIGIH ENGINEERING AND TECHNOLOGY SDN. BHD.	70.00
Samsung C&T Singapore Pte., Ltd.	Samsung Chemtech Vina LLC	48.30
Samsung C&T Singapore Pte., Ltd.	Samsung C&T Thailand Co., Ltd	0.20
Samsung C&T Singapore Pte., Ltd.	PT. INSAM BATUBARA ENERGY	10.00
Samsung C&T Singapore Pte., Ltd.	Malaysia Samsung Steel Center Sdn.Bhd	30.00
Samsung C&T Singapore Pte., Ltd.	S&G Biofuel PTE.LTD	12.60
S&G Biofuel PTE.LTD	PT. Gandaerah Hendana	95.00
S&G Biofuel PTE.LTD	PT. Inecda	95.00
Samsung C&T Hongkong Ltd.	Samsung C&T Thailand Co., Ltd	6.80
Samsung C&T Hongkong Ltd.	SAMSUNG TRADING (SHANGHAI) CO., LTD	100.00
Samsung C&T Hongkong Ltd.	Samsung Precision Stainless Steel (pinghu) Co.,Ltd.	45.00
Samsung Electronics	Samsung Japan Corporation	100.00
Samsung Electronics	Samsung R&D Institute Japan Co. Ltd.	100.00
Samsung Electronics	Samsung Electronics America, Inc.	100.00
Samsung Electronics	Samsung Electronics Canada, Inc.	100.00
Samsung Electronics	Samsung Electronics Mexico S.A. De C.V.	63.60
Samsung Electronics	Samsung Electronics Ltd.	100.00
Samsung Electronics	Samsung Electronics (UK) Ltd.	100.00
Samsung Electronics	Samsung Electronics Holding GmbH	100.00
Samsung Electronics	Samsung Electronics Iberia, S.A.	100.00
Samsung Electronics	Samsung Electronics France S.A.S	100.00
Samsung Electronics	Samsung Electronics Hungarian Private Co. Ltd.	100.00
Samsung Electronics	Samsung Electronics Italia S.P.A.	100.00
Samsung Electronics	Samsung Electronics Europe Logistics B.V.	100.00

Investor	Investee	Ownership
Samsung Electronics	Samsung Electronics Benelux B.V.	100.00
Samsung Electronics	Samsung Electronics Overseas B.V.	100.00
Samsung Electronics	Samsung Electronics Polska, SP.Zo.o	100.00
Samsung Electronics	Samsung Electronics Portuguesa, Unipessoal, Lda.	100.00
Samsung Electronics	Samsung Electronics Nordic Aktiebolag	100.00
Samsung Electronics	Samsung Electronics Austria GmbH	100.00
Samsung Electronics	Samsung Electronics Slovakia s.r.o	55.70
Samsung Electronics	Samsung Electronics Europe Holding Cooperatief U.A.	100.00
Samsung Electronics	Samsung Electronics Display (M) Sdn. Bhd.	75.00
Samsung Electronics	Samsung Electronics (M) Sdn. Bhd.	100.00
Samsung Electronics	Samsung Vina Electronics Co., Ltd.	100.00
Samsung Electronics	Samsung Asia Pte. Ltd.	100.00
Samsung Electronics	Samsung India Electronics Private Ltd.	100.00
Samsung Electronics	Samsung R&D Institute India-Bangalore Private Limited	100.00
Samsung Electronics	Samsung Electronics Australia Pty. Ltd.	100.00
Samsung Electronics	PT Samsung Electronics Indonesia	100.00
Samsung Electronics	Thai Samsung Electronics Co., Ltd.	91.80
Samsung Electronics	Samsung Malaysia Electronics (SME) Sdn. Bhd.	100.00
Samsung Electronics	Samsung Electronics Hong Kong Co., Ltd.	100.00
Samsung Electronics	Suzhou Samsung Electronics Co., Ltd.	69.10
Samsung Electronics	Samsung (CHINA) Investment Co., Ltd.	100.00
Samsung Electronics	Samsung Electronics Suzhou Semiconductor Co., Ltd.	100.00
Samsung Electronics	Tianjin Samsung Electronics Co., Ltd.	48.20
Samsung Electronics	Samsung Electronics Taiwan Co., Ltd.	100.00
Samsung Electronics	Tianjin Samsung Telecom Technology Co., Ltd.	90.00
Samsung Electronics	Shanghai Samsung Semiconductor Co., Ltd.	100.00
Samsung Electronics	Samsung Electronics Suzhou Computer Co., Ltd.	73.70
Samsung Electronics	Samsung Semiconductor (China) R&D Co., Ltd.	100.00
Samsung Electronics	Samsung (China) Semiconductor Co., Ltd.	100.00
Samsung Electronics	Samsung Semiconductor Xian Co., Ltd.	100.00
Samsung Electronics	Samsung Gulf Electronics Co., Ltd.	100.00
Samsung Electronics	Samsung Electronics Egypt S.A.E	0.10
Samsung Electronics	Samsung Electronics South Africa (Pty) Ltd.	100.00
Samsung Electronics	Samsung Electronics Latinoamerica (Zona Libre), S. A.	100.00
Samsung Electronics	Samsung Eletronica da Amazonia Ltda.	87.00
Samsung Electronics	Samsung Electronics Argentina S.A.	98.00
Samsung Electronics	Samsung Electronics Chile Limitada	4.10
Samsung Electronics	Samsung Electronics Rus Company LLC	100.00
Samsung Electronics	Samsung Electronics Rus Kaluga LLC	100.00
Samsung Electronics	Tianjin Samsung LED Co., Ltd.	100.00
Samsung Biologics	Samsung Biologics America, Inc.	100.00
Samsung BioEpis	Samsung Bioepis United States Inc.	100.00
Samsung BioEpis	SAMSUNG BIOEPIS UK LIMITED	100.00
Samsung BioEpis	Samsung Bioepis NL B.V.	100.00
Samsung BioEpis	Samsung Bioepis CH GmbH	100.00
Samsung BioEpis	Samsung Bioepis PL Sp z o.o.	100.00
Samsung BioEpis	SAMSUNG BIOEPIS AU PTY LTD	100.00
Samsung BioEpis	SAMSUNG BIOEPIS NZ LIMITED	100.00
Samsung BioEpis	SAMSUNG BIOEPIS TW Limited	100.00
Samsung BioEpis	Samsung Bioepis HK Limited	100.00
Samsung BioEpis	SAMSUNG BIOEPIS IL LTD	100.00
Samsung BioEpis	SAMSUNG BIOEPIS BR PHARMACEUTICAL LTDA	100.00
Samsung Display	Intellectual Keystone Technology LLC	41.90
Samsung Display	Samsung Display Slovakia, s.r.o.	100.00
Samsung Display	Samsung Display Vietnam Co., Ltd.	100.00

Investor	Investee	Ownership
Samsung Display	Samsung Display Noida Private Limited	100.00
Samsung Display	Samsung Display Dongguan Co., Ltd.	100.00
Samsung Display	Samsung Display Tianjin Co., Ltd.	95.00
Samsung Display	Novalied GmbH	9.90
SEMES	SEMES America, Inc.	100.00
SEMES	SEMES (XIAN) Co., Ltd.	100.00
Samsung Electronics America, Inc.	NeuroLogica Corp.	100.00
Samsung Electronics America, Inc.	Dacor Holdings, Inc.	100.00
Samsung Electronics America, Inc.	Samsung HVAC America, LLC	100.00
Samsung Electronics America, Inc.	SmartThings, Inc.	100.00
Samsung Electronics America, Inc.	Samsung Oak Holdings, Inc.	100.00
Samsung Electronics America, Inc.	Joyent, Inc.	100.00
Samsung Electronics America, Inc.	TeleWorld Solutions, Inc.	100.00
Samsung Electronics America, Inc.	Prismview, LLC	100.00
Samsung Electronics America, Inc.	Samsung Semiconductor, Inc.	100.00
Samsung Electronics America, Inc.	Samsung Research America, Inc	100.00
Samsung Electronics America, Inc.	Samsung Electronics Home Appliances America, LLC	100.00
Samsung Electronics America, Inc.	Samsung International, Inc.	100.00
Samsung Electronics America, Inc.	Harman International Industries, Inc.	100.00
Dacor Holdings, Inc.	Dacor, Inc.	100.00
Dacor, Inc.	Dacor Canada Co.	100.00
TeleWorld Solutions, Inc.	TWS LATAM B, LLC	100.00
TeleWorld Solutions, Inc.	TWS LATAM S, LLC	100.00
TWS LATAM B, LLC	SNB Technologies, Inc. Mexico S.A. de. C.V	50.00
TWS LATAM S, LLC	SNB Technologies, Inc. Mexico S.A. de. C.V	50.00
Samsung Semiconductor, Inc.	Samsung Austin Semiconductor LLC.	100.00
Samsung Electronics Canada, Inc.	AdGear Technologies Inc.	100.00
Samsung Research America, Inc	SAMSUNG NEXT LLC	100.00
SAMSUNG NEXT LLC	SAMSUNG NEXT FUND LLC	100.00
Samsung International, Inc.	Samsung Mexicana S.A. de C.V	100.00
Samsung Electronics Mexico S.A. De C.V.	Samsung Electronics Digital Appliance Mexico, SA de CV	100.00
Harman International Industries, Inc.	Harman International Japan Co., Ltd.	100.00
Harman International Industries, Inc.	Harman International Industries Canada Ltd.	100.00
Harman International Industries, Inc.	Harman Becker Automotive Systems, Inc.	100.00
Harman International Industries, Inc.	Harman Professional, Inc.	100.00
Harman International Industries, Inc.	Harman Connected Services, Inc.	100.00
Harman International Industries, Inc.	Harman Financial Group LLC	100.00
Harman International Industries, Inc.	Harman Belgium SA	100.00
Harman International Industries, Inc.	Harman France SNC	100.00
Harman International Industries, Inc.	Red Bend Software SAS	100.00
Harman International Industries, Inc.	Harman Inc. & Co. KG	66.00
Harman International Industries, Inc.	Harman KG Holding, LLC	100.00
Harman International Industries, Inc.	Harman Becker Automotive Systems Italy S.R.L.	100.00
Harman International Industries, Inc.	Harman Finance International, SCA	100.00
Harman International Industries, Inc.	Harman Finance International GP S.a.r.l	100.00
Harman International Industries, Inc.	Harman Industries Holdings Mauritius Ltd.	100.00
Harman International Industries, Inc.	Harman International Mexico, S. de R.L. de C.V.	99.90
Harman Becker Automotive Systems, Inc.	Harman International Estonia OU	100.00
Harman Professional, Inc.	AMX UK Limited	100.00
Harman Professional, Inc.	Harman Singapore Pte. Ltd.	100.00
Harman Professional, Inc.	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	0.00
Harman Professional, Inc.	Harman do Brasil Industria Eletronica e Participacoes Ltda.	0.00
Harman Connected Services, Inc.	Harman Connected Services Engineering Corp.	100.00
Harman Connected Services, Inc.	Harman Connected Services AB.	100.00
Harman Connected Services, Inc.	Harman Connected Services UK Ltd.	100.00

Investor	Investee	Ownership
Harman Connected Services, Inc.	Harman Connected Services Corp. India Pvt. Ltd.	1.60
Harman Connected Services, Inc.	Global Symphony Technology Group Private Ltd.	100.00
Harman Financial Group LLC	Harman International (India) Private Limited	0.00
Harman Financial Group LLC	Harman International Mexico, S. de R.L. de C.V.	0.10
Harman Financial Group LLC	Harman de Mexico, S. de R.L. de C.V.	0.00
Samsung Electronics (UK) Ltd.	Samsung Semiconductor Europe Limited	100.00
Samsung Electronics Holding GmbH	Samsung Semiconductor Europe GmbH	100.00
Samsung Electronics Holding GmbH	Samsung Electronics GmbH	100.00
Samsung Electronics Hungarian Private Co. Ltd.	Samsung Electronics Czech and Slovak s.r.o.	31.40
Samsung Electronics Hungarian Private Co. Ltd.	Samsung Electronics Slovakia s.r.o	44.30
Samsung Electronics Benelux B.V.	Samsung Electronics Mexico S.A. De C.V.	36.40
Samsung Electronics Benelux B.V.	SAMSUNG ELECTRONICS BALTICS SIA	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics West Africa Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics East Africa Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Saudi Arabia Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Egypt S.A.E	99.90
Samsung Electronics Benelux B.V.	Samsung Electronics Israel Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Tunisia S.A.R.L	99.00
Samsung Electronics Benelux B.V.	Samsung Electronics Pakistan (Private) Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics South Africa Production (pty) Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Turkey	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Industry and Commerce Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Semiconductor Israel R&D Center, Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Levant Co.,Ltd.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Maghreb Arab	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Venezuela, C.A.	100.00
Samsung Electronics Benelux B.V.	Samsung Eletronica da Amazonia Ltda.	13.00
Samsung Electronics Benelux B.V.	Samsung Electronics Chile Limitada	95.90
Samsung Electronics Benelux B.V.	Samsung Electronics Peru S.A.C.	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Ukraine Company LLC	100.00
Samsung Electronics Benelux B.V.	Samsung R&D Institute Rus LLC	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Central Eurasia LLP	100.00
Samsung Electronics Benelux B.V.	Samsung Electronics Caucasus Co. Ltd	100.00
Samsung Electronics Benelux B.V.	Corephotronics Ltd.	100.00
Zhilabs, S.L.	Zhilabs Inc.	100.00
Samsung Electronics Nordic Aktiebolag	Samsung Nanoradio Design Center	100.00
AKG Acoustics GmbH	Harman Professional Denmark ApS	100.00
AKG Acoustics GmbH	Studer Professional Audio GmbH	100.00
Harman Professional Denmark ApS	Martin Professional Japan Ltd.	40.00
Harman Professional Denmark ApS	Harman International s.r.o	100.00
Harman Becker Automotive Systems GmbH	Harman International Romania SRL	0.00
Harman Holding GmbH & Co. KG	Harman Becker Automotive Systems GmbH	100.00
Harman Holding GmbH & Co. KG	Harman Deutschland GmbH	100.00
Harman Holding GmbH & Co. KG	Harman Becker Automotive Systems Manufacturing Kft	100.00
Harman Holding GmbH & Co. KG	Harman RUS CIS LLC	100.00
Harman Inc. & Co. KG	Harman Holding GmbH & Co. KG	100.00
Harman Inc. & Co. KG	Harman Management GmbH	100.00
Harman Inc. & Co. KG	Harman Hungary Financing Ltd.	100.00
Harman Connected Services GmbH	Harman Connected Services OOO	100.00
Harman KG Holding, LLC	Harman Inc. & Co. KG	34.00
Harman Becker Automotive Systems Manufacturing Kft	Harman Professional Kft	100.00
Harman Becker Automotive Systems Manufacturing Kft	Harman Consumer Nederland B.V.	100.00
Harman Becker Automotive Systems Manufacturing Kft	Harman International Romania SRL	100.00
Harman Becker Automotive Systems Manufacturing Kft	Red Bend Ltd.	100.00
Harman Becker Automotive Systems Manufacturing Kft	Harman do Brasil Industria Eletronica e Participacoes Ltda.	100.00

Investor	Investee	Ownership
Harman Hungary Financing Ltd.	Harman International Industries Limited	100.00
Harman Finance International GP S.a.r.l	Harman Finance International, SCA	0.00
Harman Consumer Nederland B.V.	AKG Acoustics GmbH	100.00
Harman Consumer Nederland B.V.	Harman Audio Iberia España Sociedad Limitada	100.00
Harman Consumer Nederland B.V.	Harman Holding Limited	100.00
Harman Audio Iberia España Sociedad Limitada	Harman France SNC	0.00
Harman Connected Services AB.	Harman Finland Oy	100.00
Harman Connected Services AB.	Harman Connected Services GmbH	100.00
Harman Connected Services AB.	Harman Connected Services Poland Sp.zoo	100.00
Harman Connected Services AB.	Harman Connected Services Solutions (Chengdu) Co., Ltd.	100.00
Harman International Industries Limited	Harman Automotive UK Limited	100.00
Harman International Industries Limited	Martin Manufacturing (UK) Ltd	100.00
Harman International Industries Limited	Harman International Industries PTY Ltd.	100.00
Harman International Industries Limited	Harman de Mexico, S. de R.L. de C.V.	100.00
Harman Connected Services UK Ltd.	Harman Connected Services Morocco	100.00
Samsung Electronics Austria GmbH	Samsung Electronics Switzerland GmbH	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Czech and Slovak s.r.o.	68.60
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Romania LLC	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Zhilabs, S.L.	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Porta Nuova Varesine Building 2 S.r.l.	49.00
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Poland Manufacturing SP.Zo.o	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Greece S.M.S.A	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Electronics Air Conditioner Europe B.V.	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	FOODIENT LTD.	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Denmark Research Center ApS	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Samsung Cambridge Solution Centre Limited	100.00
Samsung Electronics Europe Holding Cooperatief U.A.	Novald GmbH	40.00
Samsung Electronics Singapore Pte. Ltd.	Samsung Electronics Display (M) Sdn. Bhd.	25.00
Samsung Electronics Singapore Pte. Ltd.	iMarket Asia Co., Ltd.	11.40
Samsung Asia Pte. Ltd.	Samsung Electronics Japan Co., Ltd.	100.00
Samsung Asia Pte. Ltd.	Samsung Electronics Singapore Pte. Ltd.	100.00
Samsung Asia Pte. Ltd.	Samsung Electronics New Zealand Limited	100.00
Samsung Asia Pte. Ltd.	Samsung Electronics Philippines Corporation	100.00
Samsung Asia Pte. Ltd.	Samsung R&D Institute BanglaDesh Limited	100.00
Samsung Asia Pte. Ltd.	Samsung Electronics Vietnam Co., Ltd.	100.00
Samsung Asia Pte. Ltd.	Samsung Electronics Vietnam THANGUYEN Co., Ltd.	100.00
Samsung Asia Pte. Ltd.	Samsung Electronics HCMC CE Complex Co., Ltd.	100.00
Samsung Asia Pte. Ltd.	Samsung Electro-Mechanics (Thailand) Co., Ltd.	25.00
Samsung India Electronics Private Ltd.	Samsung Nepal Services Pvt, Ltd	100.00
PT Samsung Electronics Indonesia	PT Samsung Telecommunications Indonesia	100.00
Thai Samsung Electronics Co., Ltd.	Laos Samsung Electronics Sole Co., Ltd	100.00
Samsung Electronics Hong Kong Co., Ltd.	iMarket Asia Co., Ltd.	11.30
Suzhou Samsung Electronics Co., Ltd.	Samsung Suzhou Electronics Export Co., Ltd.	100.00
Samsung (CHINA) Investment Co., Ltd.	Suzhou Samsung Electronics Co., Ltd.	19.20
Samsung (CHINA) Investment Co., Ltd.	Samsung Mobile R&D Center China-Guangzhou	100.00
Samsung (CHINA) Investment Co., Ltd.	Samsung R&D Institute China-Shenzhen	100.00
Samsung (CHINA) Investment Co., Ltd.	Tianjin Samsung Electronics Co., Ltd.	43.10
Samsung (CHINA) Investment Co., Ltd.	Beijing Samsung Telecom R&D Center	100.00
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics Suzhou Computer Co., Ltd.	26.30
Samsung (CHINA) Investment Co., Ltd.	Samsung Electronics China R&D Center	100.00
Harman International (China) Holdings Co., Ltd.	Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	100.00
Harman International (China) Holdings Co., Ltd.	Harman Technology (Shenzhen) Co., Ltd.	100.00
Harman International (China) Holdings Co., Ltd.	Harman (China) Technologies Co., Ltd.	100.00
Harman Holding Limited	Harman Commercial (Shanghai) Co., Ltd.	100.00
Harman Holding Limited	Harman International (China) Holdings Co., Ltd.	100.00

Investor	Investee	Ownership
Harman Holding Limited	Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	100.00
Samsung Gulf Electronics Co., Ltd.	Samsung Electronics Egypt S.A.E	0.10
Samsung Electronics Maghreb Arab	Samsung Electronics Tunisia S.A.R.L	1.00
Harman Industries Holdings Mauritius Ltd.	Harman International (India) Private Limited	100.00
Global Symphony Technology Group Private Ltd.	Harman Connected Services Corp. India Pvt. Ltd.	98.40
Red Bend Ltd.	Red Bend Software Ltd.	100.00
Samsung Electronics Latinoamerica (Zona Libre), S. A.	Samsung Electronics Latinoamerica Miami, Inc.	100.00
Samsung Electronics Latinoamerica (Zona Libre), S. A.	Samsung Electronica Colombia S.A.	100.00
Samsung Electronics Latinoamerica (Zona Libre), S. A.	Samsung Electronics Panama. S.A.	100.00
Samsung Electronica da Amazonia Ltda.	Samsung Electronics Argentina S.A.	2.00
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	100.00
Samsung Electronics Central Eurasia LLP	Samsung Electronics Caucasus Co. Ltd	0.00
Samsung SDI	Intellectual Keystone Technology LLC	41.00
Samsung SDI	Samsung SDI Japan Co., Ltd.	89.20
Samsung SDI	Samsung SDI America, Inc.	91.70
Samsung SDI	Samsung SDI Hungary., Zrt.	100.00
Samsung SDI	Samsung SDI Europe GmbH	100.00
Samsung SDI	Samsung SDI Battery Systems GmbH	100.00
Samsung SDI	Samsung SDI Vietnam Co., Ltd.	100.00
Samsung SDI	Samsung SDI Energy Malaysia Sdn, Bhd.	100.00
Samsung SDI	Samsung SDI India Private Limited	100.00
Samsung SDI	Samsung SDI (Hong Kong) Ltd.	97.60
Samsung SDI	Samsung SDI China Co., Ltd.	100.00
Samsung SDI	Samsung SDI-ARN (Xi'An) Power Battery Co., Ltd.	65.00
Samsung SDI	Samsung SDI (Tianjin) Battery Co., Ltd.	80.00
Samsung SDI	Novald GmbH	50.10
Samsung SDI	SAMSUNG SDI WUXI CO.,LTD.	100.00
Samsung SDI	Samsung SDI (Wuxi) Battery Systems Co., Ltd.	50.00
Samsung SDI	iMarket Asia Co., Ltd.	8.70
Samsung SDI (Hong Kong) Ltd.	Samsung SDI India Private Limited	0.00
Samsung SDI (Hong Kong) Ltd.	Tianjin Samsung SDI Co., Ltd.	80.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics Japan Co., Ltd.	100.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics America, Inc.	100.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics GmbH	100.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics (Thailand) Co., Ltd.	75.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics Philippines, Corp.	100.00
Samsung Electro-Mechanics	Calamba Premier Realty Corporation	39.80
Samsung Electro-Mechanics	Samsung Electro-Mechanics Pte Ltd.	100.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics Vietnam Co., Ltd.	100.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics Software India Bangalore Private Limited	99.90
Samsung Electro-Mechanics	Dongguan Samsung Electro-Mechanics Co., Ltd.	100.00
Samsung Electro-Mechanics	Tianjin Samsung Electro-Mechanics Co., Ltd.	81.80
Samsung Electro-Mechanics	Samsung High-Tech Electro-Mechanics (Tianjin) Co., Ltd.	95.00
Samsung Electro-Mechanics	Samsung Electro-Mechanics (Shenzhen) Co., Ltd.	100.00
Samsung Electro-Mechanics	Kunshan Samsung Electro-Mechanics Co., Ltd.	100.00
Samsung Electro-Mechanics	iMarket Asia Co., Ltd.	8.70
Calamba Premier Realty Corporation	Batino Realty Corporation	100.00
Samsung Electro-Mechanics Pte Ltd.	Samsung Electro-Mechanics Software India Bangalore Private Limited	0.10
Samsung Fire & Marine Insurance	Samsung Fire & Marine Management Corporation	100.00
Samsung Fire & Marine Insurance	SAMSUNG FIRE & MARINE INSURANCE COMPANY OF EUROPE LTD.	100.00
Samsung Fire & Marine Insurance	PT. Asuransi Samsung Tugu	70.00
Samsung Fire & Marine Insurance	SAMSUNG VINA INSURANCE COMPANY LIMITED	75.00
Samsung Fire & Marine Insurance	Samsung Reinsurance Pte. Ltd.	100.00
Samsung Fire & Marine Insurance	Samsung Property & Casualty Insurance Company (China), Ltd	100.00

Investor	Investee	Ownership
Samsung Fire & Marine Insurance	Samsung Fire & Marine Insurance Management Middle East Limited	100.00
Samsung Heavy Industries Co.,Ltd.	Camellia Consulting Corporation	100.00
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries India Pvt.Ltd.	100.00
Samsung Heavy Industries Co.,Ltd.	SAMSUNG HEAVY INDUSTRIES (M) SDN.BHD	100.00
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries (Ningbo) Co., Ltd	100.00
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries (Rongcheng) Co., Ltd	100.00
Samsung Heavy Industries Co.,Ltd.	Rongcheng Gaya Heavy Industries Co., Ltd	100.00
Samsung Heavy Industries Co.,Ltd.	SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	100.00
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries Mozambique LDA	100.00
Samsung Heavy Industries Co.,Ltd.	Samsung Heavy Industries Rus LLC	100.00
SAMSUNG HEAVY INDUSTRIES NIGERIA LIMITED	SHI - MCI FZE	70.00
Samsung Life Insurance	Porta Nuova Varesine Building 2 S.r.l.	51.00
Samsung Life Insurance	THAI SAMSUNG LIFE INSURANCE CO., LTD.	48.90
Samsung Life Insurance	Beijing Samsung Real Estate Co.. Ltd	90.00
Samsung Asset Management	Samsung Asset Management (New York), Inc.	100.00
Samsung Asset Management	Samsung Global SME Private Equity Manager Fund Co., Ltd.	100.00
Samsung Asset Management	Samsung Asset Management (London) Ltd.	100.00
Samsung Asset Management	Samsung Private Equity Manager I Co., Ltd.	100.00
Samsung Asset Management	Samsung Asset Management (Hong Kong) Ltd.	100.00
Samsung Asset Management (Hong Kong) Ltd.	Samsung Asset Management (Beijing) Ltd.	100.00
Samsung C&T Corporation	MYODO METAL CO., LTD.	100.00
Samsung C&T Corporation	Samsung C&T Japan Corporation	100.00
Samsung C&T Corporation	Samsung C&T America Inc.	100.00
Samsung C&T Corporation	Samsung E&C America, INC.	100.00
Samsung C&T Corporation	Samsung Renewable Energy Inc.	100.00
Samsung C&T Corporation	QSSC, S.A. de C.V.	80.00
Samsung C&T Corporation	Samsung C&T Oil & Gas Parallel Corp.	100.00
Samsung C&T Corporation	Samsung C&T Lima S.A.C.	100.00
Samsung C&T Corporation	Samsung C&T Deutschland GmbH	100.00
Samsung C&T Corporation	Samsung C&T U.K. Ltd.	100.00
Samsung C&T Corporation	Samsung C&T ECUK Limited	100.00
Samsung C&T Corporation	Whessoe engineering Limited	100.00
Samsung C&T Corporation	POSS-SLPC, S.R.O	50.00
Samsung C&T Corporation	Solluce Romania 1 B.V.	80.00
Samsung C&T Corporation	SAM investment Manzanilo.B.V	53.30
Samsung C&T Corporation	Samsung C&T (KL) Sdn.,Bhd.	100.00
Samsung C&T Corporation	Samsung C&T Malaysia SDN. BHD	100.00
Samsung C&T Corporation	Erdsam Co., Ltd.	100.00
Samsung C&T Corporation	Samsung Chemtech Vina LLC	51.70
Samsung C&T Corporation	Samsung C&T Thailand Co., Ltd	93.00
Samsung C&T Corporation	PT. INSAM BATUBARA ENERGY	90.00
Samsung C&T Corporation	Samsung E&C India Private Limited	100.00
Samsung C&T Corporation	Samsung C&T Corporation India Private Limited	100.00
Samsung C&T Corporation	Malaysia Samsung Steel Center Sdn.Bhd	70.00
Samsung C&T Corporation	Samsung C&T Singapore Pte., Ltd.	100.00
Samsung C&T Corporation	S&G Biofuel PTE.LTD	50.50
Samsung C&T Corporation	SAMSUNG C&T Mongolia LLC.	70.00
Samsung C&T Corporation	Samsung C&T Eng.&Const. Mongolia LLC.	100.00
Samsung C&T Corporation	S&WOO CONSTRUCTION PHILIPPINES,INC.	100.00
Samsung C&T Corporation	VSSC STEEL CENTER LIMITED LIABILITY COMPANY	85.00
Samsung C&T Corporation	Samsung C&T Hongkong Ltd.	100.00
Samsung C&T Corporation	Samsung C&T Taiwan Co., Ltd.	100.00
Samsung C&T Corporation	Samsung Precision Stainless Steel (pinghu) Co.,Ltd.	55.00
Samsung C&T Corporation	SAMSUNG C&T (SHANGHAI) CO., LTD.	100.00
Samsung C&T Corporation	Samsung C&T (Xi'an) Co., Ltd.	100.00

Investor	Investee	Ownership
Samsung C&T Corporation	WARIS GIGIH ENGINEERING AND TECHNOLOGY SDN. BHD.	30.00
Samsung C&T Corporation	SAMSUNG C&T CORPORATION SAUDI ARABIA	100.00
Samsung C&T Corporation	SAM Gulf Investment Limited	100.00
Samsung C&T Corporation	Samsung C&T Chile Copper SpA	100.00
Samsung C&T Corporation	SCNT Power Kelar Inversiones Limitada	100.00
Samsung C&T Corporation	Samsung C&T Corporation Rus LLC	100.00
Samsung C&T Corporation	Samsung SDI America, Inc.	8.30
Samsung C&T Corporation	Samsung SDI (Hong Kong) Ltd.	2.40
Samsung C&T Corporation	Beijing Samsung Real Estate Co.. Ltd	10.00
Samsung C&T Corporation	Cheil Industries Corp., USA	100.00
Samsung C&T Corporation	CHEIL INDUSTRIES ITALY SRL	100.00
Samsung C&T Corporation	Samsung Fashion Trading Co.,Ltd	100.00
Samsung C&T Corporation	SAMSUNG C&T CORPORATION VIETNAM CO., LTD	100.00
Samsung C&T Corporation	Samsung C&T Corporation UEM Construction JV Sdn Bhd	60.00
Samsung C&T Corporation	iMarket Asia Co., Ltd.	19.30
Samsung Welstory	WELSTORY VIETNAM COMPANY LIMITED	100.00
Samsung Welstory	Shanghai Ever-Hongjun Business Mgt Service Co.,LTD	85.00
Samsung Welstory	Shanghai Welstory Food Company Limited	81.60
MULTICAMPUS	LANGUAGE TESTING INTERNATIONAL, INC.	82.40
Pengtai Greater China Company Limited	PENGTAI CHINA CO.,LTD.	100.00
Pengtai Greater China Company Limited	PengTai Taiwan Co., Ltd.	100.00
PENGTAI CHINA CO.,LTD.	PENGTAI E-COMMERCE CO.,LTD	100.00
PENGTAI CHINA CO.,LTD.	PENGTAI MARKETING SERVICE CO.,LTD.	100.00
PENGTAI INTERACTIVE ADVERTISING CO.,LTD	Medialytics Inc.	100.00
PENGTAI INTERACTIVE ADVERTISING CO.,LTD	Beijing Pengtai Baozun E-commerce Co., Ltd.	51.00
iMarket Asia Co., Ltd.	iMarket China Co., Ltd.	80.00
Samsung Securities	Samsung Securities (America), Inc.	100.00
Samsung Securities	Samsung Securities (Europe) Limited.	100.00
Samsung Securities	Samsung Securities (Asia) Limited.	100.00
Samsung SDS	iMarket Asia Co., Ltd.	40.60
Samsung SDS	Samsung SDS America, Inc.	100.00
Samsung SDS	SAMSUNG SDS GSCL Canada., Ltd.	100.00
Samsung SDS	Neo EXpress Transportation (NEXT), Inc.	51.00
Samsung SDS	Samsung SDS Europe, Ltd.	100.00
Samsung SDS	Samsung SDS Global SCL Hungary, Kft.	100.00
Samsung SDS	Samsung SDS Global SCL Slovakia, S.R.O.	100.00
Samsung SDS	Samsung SDS Global SCL Poland Sp. Z.o.o.	100.00
Samsung SDS	Samsung GSCL Sweden AB	100.00
Samsung SDS	Samsung SDS Global SCL France SAS	100.00
Samsung SDS	Samsung SDS Global SCL Greece Societe Anonyme	100.00
Samsung SDS	Samsung SDS Global SCL Baltics, SIA	100.00
Samsung SDS	Samsung SDS Global SCL Italy S.R.L. A Socio Unico	100.00
Samsung SDS	Samsung SDS Global Supply Chain Logistics Spain S.L.U	100.00
Samsung SDS	Samsung SDS Global SCL Netherlands Cooperatief U.A.	100.00
Samsung SDS	Samsung SDS Global SCL Germany GmbH	100.00
Samsung SDS	Samsung SDS Global SCL Romania S.R.L	100.00
Samsung SDS	Samsung SDS Asia Pacific Pte, Ltd.	100.00
Samsung SDS	Samsung Data Systems India Private Limited	100.00
Samsung SDS	VASCO Supply Chain Solutions Private Limited	51.00
Samsung SDS	Samsung SDS Vietnam Co., Ltd.	100.00
Samsung SDS	PT. Samsung SDS Global SCL Indonesia	100.00
Samsung SDS	Samsung SDS Global SCL Philippines Co., Ltd.Inc.	100.00
Samsung SDS	Samsung SDS Global SCL Thailand Co.,Ltd	100.00
Samsung SDS	Samsung SDS Global SCL Malaysia SDN.BHD.	100.00
Samsung SDS	SAMSUNG SDS Global SCL Austraila Pty.,Ltd.	100.00

Investor	Investee	Ownership
Samsung SDS	SDS-ACUTECH CO., Ltd.	50.00
Samsung SDS	ALS SDS Joint Stock Company	51.00
Samsung SDS	SDS-MP Logistics Joint Stock Company	51.00
Samsung SDS	Samsung SDS China Co., Ltd.	100.00
Samsung SDS	Samsung SDS Global SCL Hong Kong Co., Ltd.	100.00
Samsung SDS	SAMSUNG SDS Global SCL Egypt	100.00
Samsung SDS	Samsung SDS Global SCL South Africa (PTY) Ltd.	100.00
Samsung SDS	Samsung SDS Global SCL Nakliyat ve Lojistik Anonim Sirketi	100.00
Samsung SDS	Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	100.00
Samsung SDS	Samsung SDS Latin America Solucoes Em Tecnologia Ltda.	99.70
Samsung SDS	INTE-SDS Logistics S.A. de C.V.	51.00
Samsung SDS	Samsung SDS Global SCL Rus Limited Liability Company	100.00
Miracom	MIRACOM INC ASIA PACIFIC LIMITED	100.00
Samsung SDS America, Inc.	Samsung SDS Mexico, S.A. DE C.V.	99.00
Samsung SDS America, Inc.	Samsung SDS Global SCL Panama S. A.	100.00
Samsung SDS America, Inc.	Samsung SDS Global SCL Chile Limitada	100.00
Samsung SDS America, Inc.	Samsung SDS Global SCL Peru S.A.C.	100.00
Samsung SDS America, Inc.	Samsung SDS Global SCL Colombia S.A.S.	100.00
Samsung SDS America, Inc.	Samsung SDS Latin America Solucoes Em Tecnologia Ltda.	0.30
Samsung SDS Europe, Ltd.	Samsung SDS Global SCL Netherlands Cooperatief U.A.	0.00
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Global SCL Poland Sp. Z.o.o.	0.00
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Global SCL Greece Societe Anonyme	0.00
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Global SCL Romania S.R.L	0.00
Samsung SDS Global SCL Netherlands Cooperatief U.A.	Samsung SDS Global SCL Rus Limited Liability Company	0.00
Samsung SDS China Co., Ltd.	Samsung SDS Global Development Center Xi'an	100.00
Samsung SDS China Co., Ltd.	Samsung SDS Global SCL Beijing Co., Ltd	100.00
Samsung Engineering	Samsung Engineering America Inc.	100.00
Samsung Engineering	Samsung Engineering Hungary Ltd.	100.00
Samsung Engineering	Samsung Engineering Italy S.R.L.	100.00
Samsung Engineering	Samsung Engineering (Malaysia) SDN. BHD.	100.00
Samsung Engineering	PT Samsung Engineering Indonesia Co., Ltd.	100.00
Samsung Engineering	Samsung Engineering (Thailand) Co., Ltd.	81.00
Samsung Engineering	Samsung Engineering India Private Limited	100.00
Samsung Engineering	Samsung Engineering Vietnam Co., Ltd.	100.00
Samsung Engineering	Samsung Engineering Construction (Shanghai) Co., Ltd	100.00
Samsung Engineering	Samsung Engineering Construction Xi' an Co., Ltd.	100.00
Samsung Engineering	Samsung Saudi Arabia Co., Ltd.	100.00
Samsung Engineering	Muharrag Wastewater Services Company W.L.L.	99.80
Samsung Engineering	Muharrag STP Company B.S.C.	6.60
Samsung Engineering	Muharrag Holding Company 1 Ltd.	65.00
Samsung Engineering	Samsung Ingenieria Mexico Construccion Y Operacion S.A. De C.V.	99.90
Samsung Engineering	Samsung Engineering Trinidad Co., Ltd.	100.00
Samsung Engineering	Samsung Ingenieria Manzanillo, S.A. De C.V.	99.90
Samsung Engineering	Grupo Samsung Ingenieria Mexico, S.A. De C.V.	100.00
Samsung Engineering	Samsung Ingenieria Energia S.A. De C.V.	100.00
Samsung Engineering	Samsung Engineering Bolivia S.A	100.00
Samsung Engineering	Samsung Ingenieria DUBA S.A. de C.V.	100.00
Samsung Engineering	Samsung Engineering Kazakhstan L.L.P.	100.00
Samsung Engineering America Inc.	SEA Construction, LLC	100.00
Samsung Engineering America Inc.	SEA Louisiana Construction, L.L.C.	100.00
Samsung Engineering (Malaysia) SDN. BHD.	Muharrag Wastewater Services Company W.L.L.	0.30
Samsung Engineering India Private Limited	Samsung Saudi Arabia Co., Ltd.	0.00

Investor	Investee	Ownership
Samsung Saudi Arabia Co., Ltd.	Samsung EPC Company Ltd.	75.00
Muharrag Holding Company 1 Ltd.	Muharrag Holding Company 2 Ltd.	100.00
Muharrag Holding Company 2 Ltd.	Muharrag STP Company B.S.C.	89.90
Samsung Ingenieria Manzanillo, S.A. De C.V.	Asociados Constructores DBNR, S.A. de C.V.	49.00
S1 Corporation	S-1 CORPORATION HUNGARY LLC	100.00
S1 Corporation	S-1 CORPORATION VIETNAM CO., LTD	100.00
S1 Corporation	Samsung Beijing Security Systems	100.00
Cheil Worldwide	PENGTAI INTERACTIVE ADVERTISING CO.,LTD	100.00
Cheil Worldwide	Cheil USA Inc.	100.00
Cheil Worldwide	Cheil Central America Inc.	100.00
Cheil Worldwide	Iris Worldwide Holdings Limited	100.00
Cheil Worldwide	CHEIL EUROPE LIMITED	100.00
Cheil Worldwide	Cheil Germany GmbH	100.00
Cheil Worldwide	Cheil France SAS	100.00
Cheil Worldwide	CHEIL SPAIN S.L	100.00
Cheil Worldwide	Cheil Benelux B.V.	100.00
Cheil Worldwide	Cheil Nordic AB	100.00
Cheil Worldwide	Cheil India Private Limited	100.00
Cheil Worldwide	Cheil (Thailand) Ltd.	100.00
Cheil Worldwide	Cheil Singapore Pte. Ltd.	100.00
Cheil Worldwide	CHEIL VIETNAM COMPANY LIMITED	99.00
Cheil Worldwide	Cheil Integrated Marketing Philippines, Inc.	100.00
Cheil Worldwide	CHEIL MALAYSIA SDN. BHD.	100.00
Cheil Worldwide	Cheil New Zealand Limited	100.00
Cheil Worldwide	CHEIL CHINA	100.00
Cheil Worldwide	Cheil Hong Kong Ltd.	100.00
Cheil Worldwide	Caishu (Shanghai) Business Consulting Co., Ltd	100.00
Cheil Worldwide	Cheil MEA FZ-LLC	100.00
Cheil Worldwide	Cheil South Africa (Pty) Ltd	100.00
Cheil Worldwide	CHEIL KENYA LIMITED	99.00
Cheil Worldwide	Cheil Communications Nigeria Ltd.	99.00
Cheil Worldwide	Cheil Worldwide Inc./Jordan LLC.	100.00
Cheil Worldwide	Cheil Ghana Limited	100.00
Cheil Worldwide	Cheil Egypt LLC	99.90
Cheil Worldwide	Cheil Brasil Comunicacoes Ltda.	100.00
Cheil Worldwide	Cheil Mexico, S.A. de C.V.	98.00
Cheil Worldwide	Cheil Chile SpA.	100.00
Cheil Worldwide	Cheil Peru S.A.C.	100.00
Cheil Worldwide	CHEIL ARGENTINA S.A.	98.00
Cheil Worldwide	Cheil Rus LLC	100.00
Cheil Worldwide	Cheil Ukraine LLC	100.00
Cheil Worldwide	Cheil Kazakhstan LLC	100.00
Hotel Shilla	Samsung Hospitality America Inc.	100.00
Hotel Shilla	Shilla Travel Retail Pte. Ltd.	100.00
Hotel Shilla	Samsung Shilla Business Service Beijing Co., Ltd.	100.00
Hotel Shilla	Shilla Travel Retail Hong Kong Limited	100.00
Hotel Shilla	Shilla Travel Retail Taiwan Limited	64.00
HDC Shilla Duty Free LTD	HDC SHILLA (SHANGHAI) CO., LTD	100.00
SBTM	Samsung Hospitality U.K. Inc.	100.00
SBTM	Samsung Hospitality Europe GmbH	100.00
SBTM	SAMSUNG HOSPITALITY ROMANIA SRL	100.00
SBTM	Samsung Hospitality Vietnam Co., Ltd.	99.00
SBTM	Samsung Hospitality Philippines Inc.	100.00
SBTM	Samsung Hospitality India Private Limited	100.00
Iris Americas, Inc.	Iris (USA) Inc.	100.00

Investor	Investee	Ownership
Iris Americas, Inc.	Iris Atlanta, Inc.	100.00
Iris Americas, Inc.	Iris Experience, Inc.	100.00
Iris Americas, Inc.	Iris Latin America, Inc.	100.00
Iris Americas, Inc.	Iris Worldwide San Diego, Inc.	100.00
Iris Americas, Inc.	89 Degrees, Inc.	100.00
Iris Latin America, Inc.	Irisnation Latina No.2, S. de R.L. de C.V.	0.00
Iris Latin America, Inc.	Irisnation Latina, S. de R.L. de C.V.	0.00
Iris Canada Holdings Ltd	Pricing Solutions Ltd	100.00
Cheil USA Inc.	The Barbarian Group LLC	100.00
Cheil USA Inc.	McKinney Ventures LLC	100.00
Cheil USA Inc.	Cheil India Private Limited	0.00
Cheil USA Inc.	Cheil Mexico, S.A. de C.V.	2.00
Iris Worldwide Holdings Limited	Iris Nation Worldwide Limited	100.00
Iris Nation Worldwide Limited	Iris Americas, Inc.	100.00
Iris Nation Worldwide Limited	Irisnation Latina No.2, S. de R.L. de C.V.	100.00
Iris Nation Worldwide Limited	Irisnation Latina, S. de R.L. de C.V.	100.00
Iris Nation Worldwide Limited	Iris Canada Holdings Ltd	100.00
Iris Nation Worldwide Limited	Iris London Limited	100.00
Iris Nation Worldwide Limited	Iris Promotional Marketing Ltd	100.00
Iris Nation Worldwide Limited	Iris Ventures 1 Limited	98.60
Iris Nation Worldwide Limited	Founded Partners Limited	100.00
Iris Nation Worldwide Limited	Iris Products (Worldwide) Limited	100.00
Iris Nation Worldwide Limited	Iris Korea Limited	100.00
Iris Nation Worldwide Limited	Iris Digital Limited	100.00
Iris Nation Worldwide Limited	Iris Amsterdam B.V.	100.00
Iris Nation Worldwide Limited	Iris Ventures (Worldwide) Limited	100.00
Iris Nation Worldwide Limited	Iris Culture Limited	100.00
Iris Nation Worldwide Limited	Concise Consultants Limited	100.00
Iris Nation Worldwide Limited	Atom42 Ltd	100.00
Iris Nation Worldwide Limited	WDMP Limited	49.00
Iris Nation Worldwide Limited	Pricing Solutions (UK) Limited	100.00
Iris Nation Worldwide Limited	Iris Services Limited Dooel Skopje	100.00
Iris Nation Worldwide Limited	Irisnation Singapore Pte. Ltd.	100.00
Iris Nation Worldwide Limited	Iris Worldwide Integrated Marketing Private Limited	100.00
Iris Nation Worldwide Limited	Iris Sydney PTY Ltd	100.00
Iris Nation Worldwide Limited	Iris Worldwide (Thailand) Limited	100.00
Iris Nation Worldwide Limited	Iris Beijing Advertising Company Limited	100.00
Iris London Limited	Iris Partners LLP	100.00
Iris Promotional Marketing Ltd	Holdings BR185 Limited	100.00
Iris Ventures 1 Limited	Iris Germany GmbH	100.00
Founded Partners Limited	Founded, Inc.	100.00
Iris Germany GmbH	Pepper NA, Inc.	100.00
Iris Germany GmbH	Pepper Technologies Pte. Ltd.	100.00
CHEIL EUROPE LIMITED	Beattie McGuinness Bungay Limited	100.00
CHEIL EUROPE LIMITED	Cheil Italia S.r.l	100.00
Cheil Germany GmbH	Cheil Austria GmbH	100.00
Cheil Germany GmbH	Centrade Integrated SRL	100.00
Centrade Integrated SRL	Centrade Cheil HU Kft.	100.00
Centrade Integrated SRL	Centrade Cheil Adriatic D.O.O.	100.00
Cheil India Private Limited	Experience Commerce Software Private Limited	100.00
Cheil Singapore Pte. Ltd.	Pengtai Greater China Company Limited	95.70
Cheil Singapore Pte. Ltd.	PT. CHEIL WORLDWIDE INDONESIA	100.00
Cheil Integrated Marketing Philippines, Inc.	Cheil Philippines Inc.	30.00
Shilla Travel Retail Pte. Ltd.	Shilla Retail Plus Pte. Ltd.	100.00
Cheil Hong Kong Ltd.	Pengtai Greater China Company Limited	3.10

Investor	Investee	Ownership
Samsung Shilla Business Service Beijing Co., Ltd.	Tianjin Samsung International Travel Service Co., Ltd	100.00
Shilla Travel Retail Hong Kong Limited	Shilla Retail Limited	100.00
Shilla Travel Retail Hong Kong Limited	Shilla Travel Retail Duty Free HK Limited	100.00
Cheil MEA FZ-LLC	One Agency FZ-LLC	100.00
Cheil MEA FZ-LLC	One RX Project Management Design and Production Limited Company	0.00
Cheil MEA FZ-LLC	Cheil Egypt LLC	0.10
Cheil South Africa (Pty) Ltd	CHEIL KENYA LIMITED	1.00
Cheil South Africa (Pty) Ltd	Cheil Communications Nigeria Ltd.	1.00
One Agency FZ-LLC	One RX India Private Limited	100.00
One Agency FZ-LLC	One RX Project Management Design and Production Limited Company	100.00
One Agency FZ-LLC	ONE RX INTERIOR DECORATION L.L.C	100.00
One Agency FZ-LLC	ONE AGENCY PRINTING L.L.C	100.00
One Agency FZ-LLC	One Agency South Africa (Pty) Ltd	100.00
ONE RX INTERIOR DECORATION L.L.C	One RX India Private Limited	0.00
Holdings BR185 Limited	Brazil 185 Participacoes Ltda	100.00
Brazil 185 Participacoes Ltda	Iris Router Marketing Ltda	100.00
Cheil Brasil Comunicacoes Ltda.	CHEIL ARGENTINA S.A.	2.00

Percent of ownership as of September 30, 2021 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, 2021

(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 September 30, 2021]

		Concurrent position		
Name	Position	Name of company	Position	Full/part time
Hark-kyu Park	President	Samsung Display	Non-Executive director	Part time
Yong-kwan Kim	Executive VP	Samsung Medison	Representative Director	Full time
Yeon-sung Kim	Senior VP	Samsung Electronics Sales	Auditor	Part time
		Samsung Electronics Logitech	Auditor	Part time
		Samsung Electronics Service	Auditor	Part time
Sung-won Son	Senior VP	Samsung Medison	Auditor	Part time
Khi-jae Cho	Senior VP	Samsung Display	Auditor	Part time
Sung-woo Shin	Senior VP	STECO	Auditor	Part time
Eung-joon Chi	VP	SEMES	Auditor	Part time
Han-jong Yoo	VP	SERI	Auditor	Part time
Myeong-cheol Kim	VP	SEMES	Non-Executive director	Part time
Doug-yong Sung	VP	SEMES	Non-Executive director	Part time
Hyung-joon Moon	VP	STECO	Non-Executive director	Part time
Sung-wuk Kang	VP	Samsung Venture Investment	Auditor	Part time

E. Equity investments in other corporations

The total book value of equity investments in other corporations as of September 30, 2021 is KRW 57,819 billion (for the purpose of management participation, etc.).

[As of September 30, 2021]

(KRW Mil)

Investment purpose	No. of investees			Invested amount			
	Listed	Unlisted	Total	Beginning balance	Increase (decrease)		Ending balance
					Acquisition (disposal)	Valuation gain (loss)	
Management participation	20	80	100	58,020,727	-180,534	-135,824	57,704,369
General investment	-	-	-	-	-	-	-
Simple investment	3	40	43	109,571	-149	5,242	114,664
	23	120	143	58,130,298	-180,683	-130,582	57,819,033

X. Transactions with Affiliates and Subsidiaries

1. Credit offerings for affiliates and subsidiaries

As of September 30, 2021, 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, 2020	Jun 13, 2022	1,328,000	1,328,000	-	-	-	
SEM	Subsidiary	BBVA etc.	Payment guarantee	Operating fund	Nov 9, 2020	Aug 19, 2022	485,000	906,000	-	-	-	
SAMCOL	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	310,000	310,000	117,109	-117,109	-	
SEDA	Subsidiary	BRADESCO etc.	Payment guarantee	Operating fund	Nov 9, 2020	Sep 30, 2022	559,000	409,000	-	-	-	
SECH	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Dec 17, 2020	Jun 13, 2022	142,000	62,000	-	-	-	
SEPR	Subsidiary	BBVA etc.	Payment guarantee	Operating fund	Dec 17, 2020	Jun 13, 2022	230,000	150,000	-	-	-	
SSA	Subsidiary	SCB etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	318,000	318,000	-	-	-	
SEMAG	Subsidiary	SocGen etc.	Payment guarantee	Operating fund	Nov 09, 2020	Dec 16, 2021	110,000	110,000	-	-	-	
SETK	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	837,000	837,000	169,280	-90,843	78,437	17.5%
SETK-P	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Mar 01, 2021	Dec 16, 2021	-	100,000	-	40,339	40,339	19.5%
SECE	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Dec 17, 2020	Jul 19, 2022	74,434	74,099	-	-	-	
SEEG	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2021	Jun 13, 2022	85,000	85,000	-	-	-	
SEIN	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	145,000	70,000	-	-	-	
SJC	Subsidiary	Mizuho Bank etc.	Payment guarantee	Operating fund	Nov 09, 2020	May 31, 2022	916,062	886,827	-	-	-	
SEUC	Subsidiary	Credit Agricole etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	150,000	150,000	-	-	-	
SEDAM	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	222,000	141,000	-	-	-	
SECA	Subsidiary	BoA	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	70,000	70,000	-	-	-	
SELA	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2020	Dec 16, 2021	120,000	120,000	-	-	-	
SEEH	Subsidiary	HSBC etc.	Payment guarantee	Operating fund	Nov 1, 2020	Sep 5, 2022	653,000	712,400	-	-	-	
SERK	Subsidiary	SOCGEN etc.	Payment guarantee	Operating fund	Nov 9, 2020	Jul 12, 2022	269,800	290,000	-	-	-	
SELV	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2020	Dec 16, 2021	10,000	10,000	-	-	-	
SEIL	Subsidiary	Citibank	Payment guarantee	Operating fund	Jan 01, 2021	Dec 16, 2021	-	15,600	-	10,563	10,563	1.4%
SAPL	Subsidiary	BOA etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	395,000	345,000	-	-	-	
SEV	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 09, 2020	Feb 28, 2021	15,000	-	-	-	-	
SAVINA	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2021	Jun 13, 2022	71,000	51,000	-	-	-	
SET	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 09, 2020	Feb 28, 2021	30,000	-	-	-	-	
SCIC	Subsidiary	HSBC etc.	Payment guarantee	Operating fund	Nov 09, 2020	Jun 13, 2022	300,000	300,000	-	-	-	
SME	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	110,000	110,000	-	-	-	
SAMEX	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2020	Dec 16, 2021	5,000	5,000	-	-	-	
SEASA	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2020	Dec 16, 2021	2,000	2,000	-	-	-	
SSAP	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	30,000	35,000	-	-	-	
SEPM	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2021	Jun 13, 2022	35,000	35,000	-	-	-	
SESAR	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2021	Jun 13, 2022	50,000	50,000	-	-	-	
AdGear Technologies Inc.	Subsidiary	BOA	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	2,000	2,000	-	-	-	

Harman International Industries, Inc.	Subsidiary	JP Morgan	Payment guarantee	Operating fund	Jun 14, 2021	Jun 13, 2022	100,000	100,000	-	-	-
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	25,000	25,000	-	-	-
Harman RUS CIS LLC	Subsidiary	SocGen	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	15,000	15,000	-	-	-
Harman Holding Limited	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2021	Jun 13, 2022	30,000	30,000	-	-	-
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Payment guarantee	Operating fund	Nov 09, 2020	Nov 08, 2021	15,000	15,000	-	-	-
Harman da Amazonia Industria Eletronica e Participacoes Ltda.											
Total							8,264,296	8,274,926	286,389	-157,050	129,339

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 345 thousand in guarantee fees in 2020 and has received the total amount in 2021.

2. Acquisitions and disposals of assets with affiliates and subsidiaries

Over the first three quarters of 2021, the Company sold assets to affiliates, including Samsung China Semiconductor LLC. (SCS), to increase production capacity of such affiliates. Also, the Company acquired assets including facility equipment from affiliates to improve efficiency of domestic 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	Sep 30, 2021	Machinery, etc.	Enhance capacity and production efficiency	194,182	116,259
SESS	Affiliates	Asset sale/purchase	Sep 28, 2021	Machinery, etc.	Enhance capacity and production efficiency	13,878	202
SAS	Affiliates	Asset sale/purchase	Aug 30, 2021	Machinery, etc.	Enhance capacity and production efficiency	8,694	730
SIEL	Affiliates	Asset sale	Jun 14, 2021	Machinery, etc.	Enhance capacity and production efficiency	2,609	356
Samsung Bioepis	Affiliates	Asset sale	May 13, 2021	Machinery, etc.	Enhance capacity and production efficiency	2,371	51
SEHC	Affiliates	Asset sale	Aug 02, 2021	Machinery, etc.	Enhance capacity and production efficiency	2,209	10
SEVT	Affiliates	Asset sale/purchase	Jul 27, 2021	Machinery, etc.	Enhance capacity and production efficiency	1,741	208
SEV	Affiliates	Asset sale/purchase	Aug 19, 2021	Machinery, etc.	Enhance capacity and production efficiency	1,736	601
Samsung SDI	Affiliates	Asset sale	Feb 17, 2021	Machinery, etc.	Enhance capacity and production efficiency	269	181
SEDA	Affiliates	Asset sale	Jul 23, 2021	Machinery, etc.	Enhance capacity and production efficiency	403	170
SEIN	Affiliates	Asset purchase	Jan 11, 2021	Machinery, etc.	Enhance capacity and production efficiency	162	-
TSEC	Affiliates	Asset purchase	Mar 24, 2021	Machinery, etc.	Enhance capacity and production efficiency	102	-

Separate basis; acquisitions and disposals of assets listed above are not subject to a resolution of the Board.

See 「1. Subsidiaries subject to consolidated financial statements (detailed)」 in 「XII. Appendix」 for names of subsidiaries.

1) Most recent transaction.

2) Properly calculated by an appropriate method based upon market value assessment. Transaction was made under normal conditions (eg, terms of cash payment within the 15th, 30th of the following month of transaction).

3. Business transactions with affiliates and subsidiaries

Over the first three quarters of 2021, the Company had transactions such as 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–Sep 2021	HHPs and home appliances	23,988,255
SSI	Affiliates	Sales, purchases, etc.	Jan– Sep 2021	Semiconductors	22,061,131
SSS	Affiliates	Sales, purchases, etc.	Jan– Sep 2021	Semiconductors	19,772,379
SEVT	Affiliates	Sales, purchases, etc.	Jan– Sep 2021	HHPs	19,488,223
SEV	Affiliates	Sales, purchases, etc.	Jan– Sep 2021	HHPs	13,916,901

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 September 30, 2021, the Company's outstanding loan amount is KRW 120.3 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, 2021)	Change	End of period (Sep 30, 2021)
Elentec Co., Ltd., etc.	Partner company and employee	Short-term loans	32,818	10,096	42,914
Bumjin I&D, etc.	Partner company and employee	Long-term loans	81,283	-3,887	77,396
Total			114,101	6,209	120,310

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.

B. Guarantees

- Domestic: Not applicable
- Overseas:

(USD thousand)

Company	Relation-ship	Creditor	Guarantee Expiry date	Transactions				Limit of guarantee
				Beginning of period	Increase	Decrease	End of period	
SEA	Subsidiary	BOA etc.	Jun 13, 2022	-	-	-	-	1,328,000
SEM	Subsidiary	BBVA etc.	Aug 19, 2022	-	-	-	-	906,000
SAMCOL	Subsidiary	Citibank etc.	Jun 13, 2022	117,109	-	-117,109	-	310,000
SEDA	Subsidiary	BRADESCO etc.	Sep 30, 2022	-	-	-	-	409,000
SECH	Subsidiary	Citibank etc.	Jun 13, 2022	-	-	-	-	62,000
SEPR	Subsidiary	BBVA etc.	Jun 13, 2022	-	-	-	-	150,000
SSA	Subsidiary	SCB etc.	Jun 13, 2022	-	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	Dec 16, 2021	-	-	-	-	110,000
SETK	Subsidiary	BNP etc.	Jun 13, 2022	169,280	-	-90,843	78,437	837,000
SETK-P	Subsidiary	BNP etc.	Dec 16, 2021	-	40,339	-	40,339	100,000
SECE	Subsidiary	Citibank etc.	Jul 19, 2022	-	-	-	-	74,099
SEEG	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	Jun 13, 2022	-	-	-	-	70,000
SJC	Subsidiary	Mizuho Bank etc.	May 31, 2022	-	-	-	-	886,827
SEUC	Subsidiary	Credit Agricole etc.	Jun 13, 2022	-	-	-	-	150,000
SEDAM	Subsidiary	Citibank etc.	Jun 13, 2022	-	-	-	-	141,000
SECA	Subsidiary	BoA	Nov 08, 2021	-	-	-	-	70,000
SELA	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	120,000
SEEH	Subsidiary	HSBC etc.	Sep 05, 2022	-	-	-	-	712,400
SERK	Subsidiary	SOCGEN etc.	Jul 12, 2022	-	-	-	-	290,000
SELV	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	10,000
SEIL	Subsidiary	Citibank	Dec 16, 2021	-	10,563	-	10,563	15,600
SAPL	Subsidiary	BOA etc.	Jun 13, 2022	-	-	-	-	345,000
SEV	Subsidiary	SCB	Feb 28, 2021	-	-	-	-	-
SAVINA	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	51,000
SET	Subsidiary	SCB	Feb 28, 2021	-	-	-	-	-
SCIC	Subsidiary	HSBC etc.	Jun 13, 2022	-	-	-	-	300,000
SME	Subsidiary	SCB	Nov 08, 2021	-	-	-	-	110,000
SAMEX	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	5,000
SEASA	Subsidiary	Citibank	Dec 16, 2021	-	-	-	-	2,000
SSAP	Subsidiary	SCB	Nov 08, 2021	-	-	-	-	35,000
SEPM	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	35,000
SESAR	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	50,000
AdGear Technologies Inc.	Subsidiary	BOA	Nov 08, 2021	-	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	Jun 13, 2022	-	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Nov 08, 2021	-	-	-	-	25,000
Harman RUS CIS LLC	Subsidiary	SocGen	Nov 08, 2021	-	-	-	-	15,000
Harman Holding Limited	Subsidiary	HSBC	Jun 13, 2022	-	-	-	-	30,000

Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Nov 08, 2021	-	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.								
Harman Finance International, SCA	Subsidiary	JP Morgan etc.	May 27, 2022	430,499	-	-24,551	405,948	405,948
SDN	Subsidiary	SIEL	Feb 17, 2023	273,243	197,833	-	471,076	471,076
Total				990,131	248,735	-232,503	1,006,363	9,151,950

Information above are prepared in consolidated basis. Debt guarantees for Harman Finance International, SCA, and SDN are provided by Harman International Industries, Inc. and Samsung Display Co., Ltd., 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 2020, the Company claimed approximately USD 345,000 as guarantee fee and, as of the reporting date, has collected the amount.

In 2020, Samsung Display Co., Ltd. claimed approximately USD 69,000 as guarantee fee to SDN and, as of the reporting date, has collected the amount.

Refer to the notes to the consolidated financial statements for the information on contingent liabilities.

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
Apr 18, 2019.	Seoul Central District Court	Employees of SEC	Fine	100	-	Article 14 Paragraph 4 and Article 68 Subparagraph 4 of the Monopoly Regulation and Fair Trade Act
Dec 9, 2019	Seoul Central District Court (Appeal in progress)	Employees of SEC	Imprisonment	-	-	Article 155 Paragraph 1, Article 31 Paragraph 1, and Article 30 of the Criminal Act
Feb 14, 2020	Suwon District Court	SEC and employees of SEC	Fine	12	-	Articles 23, 24, 29, 67, 68, 70, 71, etc., of the former Occupational Safety and Health Act
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

The Fair Trade Commission on November 21, 2018, filed a complaint against Chairman Kun-hee Lee for omitting Samoo Architects & Engineers and Seoyoung Engineering from Samsung affiliates when submitting required materials in 2014 under Article 14 Paragraph 4 of the Monopoly Regulation and Fair Trade Act, and the prosecution filed a summary indictment.

Chairman Kun-hee Lee on April 18, 2019, was ordered to pay a fine of KRW 100 million by the Seoul Central District Court, and the fine was subsequently paid.

On December 9, 2019, the Seoul Central District Court ruled on allegations that an SEC executive ordered executives and employees of Samsung Biologics and Samsung Bioepis to hide or destroy evidence related to the alleged fraudulent accounting. For violating Article 30, Article 31 Paragraph 1, and Article 155 Paragraph 1 of the Criminal Act, prison sentences were handed down to Executive Vice President K (27 service years) of 1 year and 6 months; Executive Vice President L (31 service years) of 1 year and 6 months; Executive Vice President M (9 service years) of 2 years; Vice President N (16 service years) of 1 year and 6 months and a 3-year suspended sentence; Vice President O (10 service years) of 1 year and 6 months and a 3-year suspended sentence.

An appeal against the decision has been filed. The Company will check on future developments of the court proceedings and relevant matters.

On February 14, 2020, regarding matters related to a CO₂ leak accident at the Giheung plant on September 4, 2018, the Suwon District Court ordered the Company to pay a fine of KRW 7 million and Executive Vice President P (27 service years), the person in general charge of safety and health, to pay KRW 5 million for violating Article 23 (Safety Measures), Article 24 (Health Measures), and Article 29 (Safety and Health Measures in Contracting) of the former Occupational Safety and Health Act, and the fines were subsequently paid.

To prevent recurrences and comply with the relevant law, the Company has strengthened the capabilities of its employees and partner companies to guarantee safety and health.

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 Gee-sung Choi, former President Choong-ki Chang, former President Sang-jin Park, and former Senior Vice President Seong-soo 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 judgements 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.

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.

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
Oct 4, 2018	FTC	SEC	Corrective order, penalty surcharge	488	Article 3 (Prohibition, etc. against Unfair Labeling or Advertising) Paragraph 1 Subparagraph 2 of the Act on Fair Labeling and Advertising and Article 3 Paragraph 2 of the Enforcement Decree of the same Act
Nov 21, 2018	FTC	Employees of SEC	Prosecution charge	-	Article 14 (Designation of Business Groups Subject to Limitations on Cross Shareholding) Paragraph 4 of the Monopoly Regulation and Fair Trade Act
Aug 23, 2019	FTC	SEC	Corrective measure, fine	0.5	Article 5 Paragraph 4 (Duty to Provide Online Completion Service) and Article 10 Paragraph 1 (Cybermall Operators' Indication Duty) of the Act on the Consumer Protection in Electronic Commerce, etc.
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

On October 4, 2018, regarding matters related to the advertising of the Company's air purifying products, including air purifiers, the Fair Trade Commission issued a corrective order against the Company and ordered the Company to pay a penalty surcharge of KRW 488 million for violating Article 3 (Prohibition, etc., against Unfair Labeling or Advertising) Paragraph 1 Subparagraph 2 of the Act on Fair Labeling and Advertising and Article 3 Paragraph 2 of the Enforcement Decree of the same Act, and the Company has subsequently paid the fine. In litigation to cancel the order, the Supreme Court on March 11, 2021 ruled partially in favor of the Company.

The Fair Trade Commission on November 21, 2018, filed a complaint against Chairman Kun-hee Lee for omitting Samoo Architects & Engineers and Seoyoung Engineering from Samsung affiliates when submitting required materials in 2014 under Article 14 (Designation of Business Groups Subject to Limitations on Cross Shareholding) Paragraph 4 of the Monopoly Regulation and Fair Trade Act.

※ Please refer to 『A. Sanctions of investigative and judicial agencies』 for more information, such as the details of the punishment.

On August 23, 2019, regarding matters related to Milk Music, the Fair Trade Commission issued corrective measures against the Company and ordered the Company to pay a fine of KRW 0.5 million under the Act on the Consumer Protection in Electronic Commerce, etc., for violating Article 5 Paragraph 4 (Duty to Provide Online Completion Service) and Article 10 Paragraph 1 (Cybermall Operators' Indication Duty). The Company subsequently paid the fine.

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 the Company to pay a penalty of KRW 101.217 billion for violating Article 23 Paragraph 1 Subparagraph 7 of the Act of the Monopoly Regulation and Fair Trade Act, and the administrative litigation against the disposition is in progress.

To ensure compliance with regulations on fair trade and labeling and advertising, the Company has strengthened its internal management standard and it provides preventive education to employees to prevent unfair trade practices and advertising.

(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 18, 2019	Yongin Fire Station	SEC (Giheung site)	Fine	0.5	Article 20 (Fire Safety Control of Specific Objects of Fire Service) Paragraph 6 of the Act on Fire Prevention and Installation, Maintenance, and Safety Control of Firefighting Systems
Jan 3, 2019– Dec 14, 2020	Ministry of Employment and Labor	SEC (Pyeongtaek, Onyang, Cheonan, Giheung/Hwaseong sites)	Fine	14.1	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
Dec 2, 2019– Dec 28, 2020	Ministry of Employment and Labor	SEC (Gwangju site)	Fine	386.3	Article 41 (Preparation and Keeping of Material Safety Data Sheets) Paragraph 3, Article 10 (Record and Report of Industrial Accidents) Paragraph 2, etc., of the former Occupational Safety and Health Act, Article 57 (Prohibition on Concealing Occurrence of Industrial Accidents and Reporting Thereof) Paragraph 3, Article 164 (Retention of Documents) 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
Jul 8, 2020	Korea Communications Commission	Subsidiary (Samsung Electronics Sales)	Corrective order, fine	36	Article 3 (Prohibition of Discriminative Subsidy Payment) Paragraph 1 and Article 4 (Restriction on Payment of Excessive Subsidies and Public Announcement) Paragraph 5 of the Mobile Device Distribution Improvement Act
Sep 18, 2020	Ministry of Employment and Labor	Subsidiary (Samsung Electronics Sales)	Suspension of construction work order, fine	5	Article 55 (Measures for Suspension of Work by the Minister of Employment and Labor in Cases of Serious Accidents) and Article 68 (Safety and Health Coordinators) Paragraph 1 of the Occupational Safety and Health 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	-	Article 53 (Corrective Measures by Minister of Employment and Labor) Paragraph 3 of the Occupational Safety and Health Act

With regards to a CO₂ leak accident at the Giheung plant on September 4, 2018, pursuant to the results of a special investigation by the Yongin Fire Station conducted from November 27 through December 6, 2018, the Company was ordered to pay a fine of KRW 0.5 million for violating Article 20 Paragraph 6 of the Occupational Safety and Health Act on January 18, 2019, and the Company has subsequently paid the fine.

To prevent recurrence and strengthen compliance, the Company has built a legal safety assessment evaluation system and conducts regular assessment.

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 etc. 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 etc. 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 etc. 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 etc. Process-Safety Reports) Paragraph 1, etc., of the Occupational Safety and Health Act on December 14, 2020 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.

Following the investigation on MSDS warning signs compliance on November 28, 2019 at Gwangju office by the Ministry of Employment and Labor, the Company on December 2, 2019, was ordered to pay a fine of KRW 1.4 million for violating Article 41 (Preparation, Keeping, etc. of Material Safety Data Sheets) Paragraph 3, etc., of the Occupational Safety and Health Act, and has subsequently paid the fine. (Paragraph 3 has since been deleted.) We conducted a company-wide investigation on the handling space of chemical substances and implemented relevant improvement measures. In addition, we are improving the prior evaluation process on new G-EHS chemical substances and providing education for supervisors in departments handling chemical substances.

Regarding the industrial incident at Gwangju site on May 19, 2020, the Company delayed the submission of industrial accident questionnaire to the Gwangju Regional Employment and Labor Office of the Ministry of Employment and Labor and as a result was ordered to pay a fine of KRW 7 million for violating Article 57 (Prohibition of Concealment; Reporting of Incidents) Paragraph 3 of Occupational Safety and Health Act on June 26, 2020, and the Company has subsequently paid the fine.

To prevent the recurrence and strengthen compliance, the Company has provided special education for the on-site environment and safety managers and supervisors.

With regards to the investigation from August 18, 2020 to January 18, 2021 by the Gwangju Regional Employment and Labor Office of Ministry of Employment and Labor on the Gwangju operation, the Company was ordered to pay the following fines regarding industrial incidents that have taken place since 2015: KRW 6 million for violating Article 10 (Recording and Reporting of Industrial Accidents) Paragraph 2 of the Occupational Safety and Health Act on September 1, 2020 (Paragraph 2 has since been deleted); KRW 60.4 million and 11.5 million, respectively, for violating Article 57 (Prohibition of Concealment; Reporting of Incidents) Paragraph 3 and Article 164 (Preservation of Documents) Paragraph 1 of the Occupational Safety and Health Act on September 10 and 23, 2020. The Company has subsequently paid the fines. Other fines include: KRW 20 million for violating Article 57 (Prohibition of Concealment; Reporting of Incidents) Paragraph 3 of the Occupational Safety and Health Act on October 19, 2020; and KRW 280 million for violating Article 10 (Prohibition of Concealment; Reporting of Incidents) Paragraph 2 of the former Occupational Safety and Health Act on December 28, 2020. The Company subsequently paid the fines.

To prevent the recurrence and strengthen compliance, the Company has provided special education for the on-site environment and safety managers and supervisors.

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.

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.

Korea Communications Commission ordered Samsung Electronics Sales to implement corrective measures and to pay a fine of KRW 36 million for violating Article 3 (Prohibition of Discriminative Subsidy Payment) Paragraph 1 and Article 4 (Restriction on Payment of Excessive Subsidies and Public Announcement) Paragraph 5 of the Mobile Device Distribution Improvement Act on July 8, 2020 and have subsequently paid the fine.

In order to prevent reoccurrences and comply with the relevant law, Samsung Electronics Sales strengthened its internal management standard, provided education for executives and employees.

Regarding a fatal accident on September 16, 2020 during the construction of an elevator wall structure, part of the construction process of newly-opening Hongdae branch of Samsung Digital Plaza, a site inspection was conducted on September 17, 2020 and Seoul West District Office of Seoul Regional Employment and Labor Office of Ministry of Employment and Labor on September 18, 2020 ordered Samsung Electronics Sales to suspend construction in pursuant to Article 55 (Suspension, etc. of Work on Occurrence of Serious Accidents) of the Occupational Safety and Health Act. In addition, Samsung Electronics Sales was ordered to pay a fine of KRW 5 million for violating Article 68 (Safety and Health Coordinator) Paragraph 1 of the Occupational Safety and Health Act and has subsequently paid the fine, and the Company appointed a safety and health coordinator.

To prevent reoccurrences and comply with the relevant law, Samsung Electronics Sales provided a special training for on-site safety managers and supervisors.

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.

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
Management plans for Social Contribution Fund for 2019	KRW 11.73 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 11.73 billion in matching funds for 2019. The contribution will be used for domestic and overseas volunteer programs as well as and local social contribution activities. 	Jan 31, 2019
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. 	
Sponsoring the WorldSkills Competition	EUR 1.5 million (approximately KRW 1.95 billion)	<ul style="list-style-type: none"> The contribution was made to support the Organizing Committee of WorldSkills International in WorldSkills Kazan 2019 as the top sponsor. 	Feb 26, 2019
Donation to Chung-nam Samsung Institute	KRW 2.991 billion	<ul style="list-style-type: none"> The contribution was made to improve education of the region. 	
Foundation of Samsung Welfare, etc.	KRW 73.0 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 19.5 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 31.0 billion) The contribution was made for the Ho-Am Prize (Ho-Am Foundation, KRW 5.0 billion) The contribution was made to provide funds for legal expenses for faculty members and Samsung scholarships for students (Sungkyunkwan University, KRW 17.5 billion) 	Apr 30, 2019
Contribution to the Korea Occupational Safety & Health Agency	KRW 31.0 billion	<ul style="list-style-type: none"> The fund is for building an electronics industry health and safety center and establishing health and safety infrastructure. 	
Performance incentive to suppliers of the DS division	KRW 77.45 billion	<ul style="list-style-type: none"> The contribution was provided to 296 primary and secondary suppliers of the DS division to prevent work accidents, improve productivity, and promote co-prosperity of the Company and its partner companies. 	
Financial support for startup program at Daegu, Gyeongbuk Creative Innovation Center	KRW 12.0 billion	<ul style="list-style-type: none"> Vitalize startup ecosystem and contribute to job creation to nurture startups in Korea Donation to Daegu Gyeongbuk University Start-up ※ Daegu Gyeongbuk University Start-up established a fund with the donation from Samsung Electronics. 	Jul 31, 2019
Donation to Heemang 2020 Nanum Campaign	KRW 31.0 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 29, 2019
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	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 	Apr 29, 2020

Contribution	Amount	Details	Date of Board approval
Welfare Foundation, etc.		<ul style="list-style-type: none"> 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) 	
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 	
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. 	
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. 	Nov 30, 2020
Management plans for Social Contribution Fund for 2021	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. The contribution will be used for educating adolescents and vulnerable population. 	Feb 16, 2021
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 	

External contributions are based on a resolution of the Board.

C. Acquisition and divestments

The major divestment and transfer of business transactions in the past three business years on a parent basis (separate basis) are as follows. For information on the business combinations and divestitures of subsidiaries, please refer to the notes on the business combination and assets held for sale (assets of disposal group) of the consolidated financial statements.

[PLP Business]

(1) Details of acquisition

In accordance to the resolution of the Board of Directors on April 30, 2019, the Company acquired PLP business from Samsung Electro-Mechanics Co., Ltd.(location: South Korea; CEO: Kye Hyun Kyung) at a price of KRW 785,000 million on June 1, 2019 to strengthen its semiconductor competitiveness through securing next-generation packaging technology.

Details of the above statement can be found in the “Business Acquisition from Related Parties”, published in DART (<http://dart.fss.or.kr/>) on April 30, 2019.

(KRW 100 mil)

	Account	Forecast		Actual			
		1st Year	2nd Year	1st Year		2nd Year	
				Actual	Difference	Actual	Difference
PLP Business	Sales	101	219	-	-	-	-
	Operating Income	-1,273	-2,155	-1,095	14%	-44	98%
	Net Income	-1,273	-2,155	-1,095	14%	-2,146	0%

No third-party sales is recognized from PLP business as its products are internally transferred within the Company’s manufacturing process. Actual operating income and net income for first year of acquisition (seven month period ended December 31, 2019) differs by 14% from the forecast due to several factors such as reduction in wages.

Actual operating income for the second year (the year ended December 31, 2020) of acquisition differs by 98% from the forecast due to several factors such as reduction in wages.

D. 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 September 30, 2021 (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, the Green Enterprise designation was cancelled for 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.

(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. Green technology development is a part of our “Planet First” strategy, which strives to conduct business activities in a manner that respect people and nature. Since the certification system was introduced in 2010, the Company has secured 9 valid Green Technology Certifications as of September 30, 2021. In addition, the Company has acquired ‘Green Technology’ product certificates for 208 models of commercialized products.

Certified Green Technologies as of September 30, 2021 are as follows:

Division	Certified Green Technologies	No.
CE	Technology to: 1) enhance energy efficiency of dryers using high-efficiency heat pump and heat exchanger; and 2) reduce stand-by power use by monitors etc.	9

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:

	2020	2019	2018
Greenhouse gas (tCO ₂ -eq)	12,532,779	11,143,405	10,752,832
Energy (TJ)	177,122	161,123	154,344

(Unit: tCO₂-eq, TJ)

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 September 30, 2021, Samsung Electronics' consolidated subsidiaries numbered 234 with the addition of 3 subsidiaries and reduction of 10 subsidiaries when compared to totals as of December 31, 2020. Below is the list of consolidated subsidiaries.

(KRW mil)

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics America, Inc. (SEA)	Jul 1978	Electronic goods sales	36,765,070	Over 50%	Y
Samsung International, Inc. (SII)	Oct 1983	Electronic goods production	1,224,995	Over 50%	Y
Samsung Mexicana S.A. de C.V (SAMEX)	Mar 1988	Electronic goods production	52,823	Over 50%	N
Samsung Electronics Home Appliances America, LLC (SEHA)	Aug 2017	Home appliance production	624,107	Over 50%	Y
Samsung Research America, Inc (SRA)	Oct 1988	R&D	612,015	Over 50%	Y
Samsung Next LLC (SNX)	Aug 2016	Subsidiary management (overseas)	108,806	Over 50%	Y
Samsung Next Fund LLC (SNXF)	Aug 2016	Tech/emerging-tech venture firm investments	116,257	Over 50%	Y
NeuroLogica Corp.	Feb 2004	Medical device production and sales	185,235	Over 50%	Y
Samsung HVAC America, LLC	Jul 2001	Air conditioner sales	45,827	Over 50%	N
Prismview, LLC	Oct 2007	LED display panel production and sales	51,605	Over 50%	N
Joyent, Inc.	Mar 2005	Cloud services	178,187	Over 50%	Y
Dacor Holdings, Inc.	Dec 1998	Subsidiary management (overseas)	32,027	Over 50%	N
Dacor, Inc.	Mar 1965	Home appliance production and sales	32,006	Over 50%	N
Dacor Canada Co.	Jun 2001	Home appliance sales	7	Over 50%	N
SmartThings, Inc.	Apr 2012	Smart home platform	171,461	Over 50%	Y
TeleWorld Solutions, Inc. (TWS)	May 2002	Network equipment installation and optimization	10,003	Over 50%	N
TWS LATAM B, LLC	Jul 2019	Subsidiary management (overseas)	0	Over 50%	N
TWS LATAM S, LLC	Jul 2019	Subsidiary management (overseas)	0	Over 50%	N
SNB Technologies, Inc. Mexico, S.A. de C.V	Oct 2019	Network equipment installation and optimization	0	Over 50%	N
Zhilabs Inc.	Feb 2017	Network solution sales	34	Over 50%	N
Samsung Semiconductor, Inc. (SSI)	Jul 1983	Semiconductor and display panel sales	9,669,349	Over 50%	Y
Samsung Austin Semiconductor LLC. (SAS)	Feb 1996	Semiconductor production	6,912,610	Over 50%	Y
Samsung Oak Holdings, Inc. (SHI)	Jun 2016	Subsidiary management (overseas)	307,373	Over 50%	Y
SEMES America, Inc.	Oct 1998	Semiconductor equipment services	1,852	Over 50%	N
Samsung Electronics Canada, Inc. (SECA)	Jul 1980	Electronic goods sales	1,539,360	Over 50%	Y
AdGear Technologies Inc.	Aug 2010	Digital advertising platform	72,955	Over 50%	N
Samsung Eletronica da Amazonia Ltda. (SEDA)	Jan 1995	Electronic goods production and sales	6,280,131	Over 50%	Y
Samsung Electronics Mexico S.A. De C.V. (SEM)	Jul 1995	Electronic goods sales	1,166,317	Over 50%	Y
Samsung Electronics Digital Appliance Mexico, SA de CV (SEDAM)	Dec 2012	Home appliance production	573,111	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics Latinoamerica (Zona Libre), S. A. (SELA)	Apr 1989	Electronic goods sales	451,092	Over 50%	Y
Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	May 1995	Electronic goods sales	368,616	Over 50%	Y
Samsung Electronica Colombia S.A. (SAMCOL)	Mar 1997	Electronic goods sales	546,013	Over 50%	Y
Samsung Electronics Argentina S.A. (SEASA)	Jun 1996	Marketing and services	45,396	Over 50%	N
Samsung Electronics Chile Limitada (SECH)	Dec 2002	Electronic goods sales	623,743	Over 50%	Y
Samsung Electronics Peru S.A.C. (SEPR)	Apr 2010	Electronic goods sales	235,626	Over 50%	Y
Samsung Electronics Venezuela, C.A. (SEVEN)	May 2010	Marketing and services	53	Over 50%	N
Samsung Electronics Panama, S.A. (SEPA)	Jul 2012	Consulting	2,188	Over 50%	N
Harman International Industries, Inc.	Jan 1980	Subsidiary management (overseas)	15,417,811	Over 50%	Y
Harman Becker Automotive Systems, Inc.	Jun 1981	Audio product production, sales, and R&D	6,224,304	Over 50%	Y
Harman Connected Services, Inc.	Feb 2002	Connected Service Provider	1,996,984	Over 50%	Y
Harman Connected Services Engineering Corp.	Sep 2004	Connected Service Provider	422	Over 50%	N
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Jul 2005	Audio product production and sales	38,399	Over 50%	N
Harman de Mexico, S. de R.L. de C.V.	Feb 1997	Audio product production	114,442	Over 50%	Y
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Nov 1958	Audio product sales and R&D	203,382	Over 50%	Y
Harman Financial Group LLC	Jun 2004	Management Company	610,931	Over 50%	Y
Harman International Industries Canada Ltd.	May 2005	Audio product sales	96	Over 50%	N
Harman International Mexico, S. de R.L. de C.V.	Dec 2014	Audio product sales	13,291	Over 50%	N
Harman KG Holding, LLC	Mar 2009	Subsidiary management (overseas)	0	Over 50%	N
Harman Professional, Inc.	Jul 2006	Audio product sales and R&D	735,105	Over 50%	Y
RT SV CO-INVEST, LP	Feb 2014	Venture firm investments	7,170	Over 50%	N
Beijing Integrated Circuit Industry International Fund, L.P	Dec 2014	Venture firm investments	24,984	Over 50%	N
China Materialia New Materials 2016 Limited Partnership	Sep 2017	Venture firm investments	6,274	Over 50%	N
Samsung Electronics (UK) Ltd. (SEUK)	Jul 1995	Electronic goods sales	2,767,563	Over 50%	Y
Samsung Electronics Ltd. (SEL)	Jan 1999	Subsidiary management (overseas)	6,512	Over 50%	N
Samsung Semiconductor Europe Limited (SSEL)	Apr 1997	Semiconductor and display panel sales	87,256	Over 50%	Y
Samsung Electronics GmbH (SEG)	Dec 1984	Electronic goods sales	2,687,535	Over 50%	Y
Samsung Electronics Holding GmbH (SEHG)	Feb 1982	Subsidiary management (overseas)	993,490	Over 50%	Y
Samsung Semiconductor Europe GmbH (SSEG)	Dec 1987	Semiconductor and display panel sales	887,060	Over 50%	Y
Samsung Electronics France S.A.S (SEF)	Jan 1988	Electronic goods sales	1,688,580	Over 50%	Y
Samsung Electronics Italia S.P.A. (SEI)	Apr 1991	Electronic goods sales	1,287,050	Over 50%	Y
Samsung Electronics Iberia, S.A. (SESA)	Jan 1989	Electronic goods sales	1,094,002	Over 50%	Y
Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP) (Formerly Samsung Electronics Portuguesa S.A.)	Sep 1982	Electronic goods sales	222,273	Over 50%	Y
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	Oct 1989	Electronic goods production and sales	2,230,457	Over 50%	Y
Samsung Electronics Europe Logistics B.V. (SELS)	May 1991	Logistics	1,700,033	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Electronics Benelux B.V. (SEBN)	Jul 1995	Electronic goods sales	2,145,488	Over 50%	Y
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	Oct 2008	Subsidiary management (overseas)	11,495,430	Over 50%	Y
Samsung Electronics Nordic Aktiebolag (SENA)	Mar 1992	Electronic goods sales	1,315,256	Over 50%	Y
Samsung Electronics Slovakia s.r.o. (SESK)	Jun 2002	TV and monitor production	1,428,228	Over 50%	Y
Samsung Display Slovakia s.r.o. (SDSK)	Mar 2007	Display panel processing	38,086	Over 50%	N
Samsung Electronics Polska, SP.Zo.o (SEPOL)	Apr 1996	Electronic goods sales	979,474	Over 50%	Y
Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	Feb 2010	Home appliance production	415,727	Over 50%	Y
Samsung Electronics Romania LLC (SEROM)	Sep 2007	Electronic goods sales	302,523	Over 50%	Y
Samsung Electronics Austria GmbH (SEAG)	Jan 2002	Electronic goods sales	455,973	Over 50%	Y
Samsung Electronics Switzerland GmbH (SESG)	May 2013	Electronic goods sales	301,953	Over 50%	Y
Samsung Electronics Czech and Slovak s.r.o. (SECZ)	Jan 2010	Electronic goods sales	254,632	Over 50%	Y
Samsung Electronics Baltics SIA (SEB)	Oct 2001	Electronic goods sales	127,453	Over 50%	Y
Samsung Electronics Greece S.M.S.A (SEGR)	Apr 2010	Electronic goods sales	102,008	Over 50%	Y
Samsung Electronics Air Conditioner Europe B.V. (SEACE)	Apr 2017	Air conditioner sales	101,242	Over 50%	Y
Samsung Nanoradio Design Center (SNDK)	Feb 2004	R&D	29,495	Over 50%	N
Samsung Denmark Research Center ApS (SDRC)	Sep 2012	R&D	26,942	Over 50%	N
Samsung Cambridge Solution Centre Limited (SCSC)	Sep 2012	R&D	147,315	Over 50%	Y
Zhilabs, S.L.	Nov 2008	Network solution R&D and sales	10,010	Over 50%	N
Foodient Ltd.	Mar 2012	R&D	3,103	Over 50%	N
Samsung Electronics Rus Company LLC (SERC)	Oct 2006	Electronic goods sales	1,244,802	Over 50%	Y
Samsung Electronics Rus Kaluga LLC (SERK)	Jul 2007	TV production	1,124,492	Over 50%	Y
Samsung Electronics Ukraine Company LLC (SEUC)	Sep 2008	Electronic goods sales	274,305	Over 50%	Y
Samsung Electronics Central Eurasia LLP (SECE)	Sep 2008	Electronic goods sales	191,721	Over 50%	Y
Samsung Electronics Overseas B.V. (SEO)	Jan 1997	Electronic goods sales	93,508	Over 50%	Y
Samsung R&D Institute Rus LLC (SRR)	Nov 2011	R&D	45,548	Over 50%	N
Samsung Electronics Caucasus Co. Ltd (SECC)	Oct 2014	Marketing	1,985	Over 50%	N
AKG Acoustics GmbH	Mar 1947	Audio product production and sales	337,305	Over 50%	Y
AMX UK Limited	Mar 1993	Audio product sales	0	Over 50%	N
Harman Audio Iberia Espana Sociedad Limitada	Nov 2012	Audio product sales	414	Over 50%	N
Harman Automotive UK Limited	Oct 2012	Audio product production	0	Over 50%	N
Harman Becker Automotive Systems GmbH	Jul 1990	Audio product production, sales, and R&D	3,787,210	Over 50%	Y
Harman Becker Automotive Systems Italy S.R.L.	Dec 2005	Audio product sales	1,179	Over 50%	N
Harman Becker Automotive Systems Manufacturing Kft	Aug 1994	Audio product R&D and production	2,923,599	Over 50%	Y
Harman Belgium SA	Apr 1967	Audio product sales	2,440	Over 50%	N
Harman Connected Services AB.	Oct 1984	Connected Service Provider	28,428	Over 50%	N

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Harman Finland Oy	Jul 1998	Connected Service Provider	506	Over 50%	N
Harman Connected Services GmbH	Dec 2005	Connected Service Provider	45,711	Over 50%	N
Harman Connected Services Poland Sp.zoo	Jun 2007	Connected Service Provider	8,992	Over 50%	N
Harman Connected Services UK Ltd.	Sep 2008	Connected Service Provider	60,783	Over 50%	N
Harman Consumer Nederland B.V.	Dec 1995	Audio product sales	420,982	Over 50%	Y
Harman Deutschland GmbH	Mar 1998	Audio product sales	16,097	Over 50%	N
Harman Finance International GP S.a.r.l	Apr 2015	Subsidiary management (overseas)	0	Over 50%	N
Harman France SNC	Nov 1995	Audio product sales	151,704	Over 50%	Y
Harman Holding GmbH & Co. KG	Jun 2002	Management Company	4,833,116	Over 50%	Y
Harman Hungary Financing Ltd.	Jun 2012	Financing Company	34,400	Over 50%	N
Harman Inc. & Co. KG	Jun 2012	Subsidiary management (overseas)	3,898,359	Over 50%	Y
Harman International Estonia OU	May 2015	R&D	95	Over 50%	N
Harman International Industries Limited	Mar 1980	Audio product sales and R&D	90,302	Over 50%	Y
Harman International Romania SRL	Feb 2015	R&D	22,223	Over 50%	N
Harman Finance International, SCA	Apr 2015	Financing Company	485,628	Over 50%	Y
Harman International s.r.o	Feb 2015	Audio product production	19	Over 50%	N
Harman Management GmbH	Apr 2002	Subsidiary management (overseas)	0	Over 50%	N
Harman Professional Kft	Dec 2014	Audio product R&D and production	58,925	Over 50%	N
Martin Manufacturing (UK) Ltd	May 1985	Audio product production	0	Over 50%	N
Harman Professional Denmark ApS	Jul 1987	Audio product sales and R&D	46,116	Over 50%	N
Red Bend Software Ltd.	Aug 2004	Software design	0	Over 50%	N
Red Bend Software SAS	Oct 2002	Software design	7,190	Over 50%	N
Studer Professional Audio GmbH	Nov 2003	Audio product sales and R&D	8,988	Over 50%	N
Harman Connected Services OOO	Nov 1998	Connected Service Provider	12,683	Over 50%	N
Harman RUS CIS LLC	Aug 2011	Audio product sales	124,474	Over 50%	Y
Samsung Gulf Electronics Co., Ltd. (SGE)	May 1995	Electronic goods sales	1,092,268	Over 50%	Y
Samsung Electronics Turkey (SETK)	Dec 1984	Electronic goods sales	610,865	Over 50%	Y
Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Feb 2021	Electronic goods production	-	Over 50%	N
Samsung Electronics Levant Co.,Ltd. (SELV)	Jul 2009	Electronic goods sales	336,819	Over 50%	Y
Samsung Electronics Maghreb Arab (SEMAG)	Nov 2009	Electronic goods sales	237,299	Over 50%	Y
Samsung Electronics Egypt S.A.E (SEEG)	Jul 2012	Electronic goods production and sales	751,563	Over 50%	Y
Samsung Electronics Israel Ltd. (SEIL)	Sep 2012	Marketing	18,594	Over 50%	N
Samsung Electronics Tunisia S.A.R.L (SETN)	Sep 2012	Marketing	4,744	Over 50%	N
Samsung Electronics Pakistan (Private) Ltd. (SEPAK)	Nov 2012	Marketing	2,665	Over 50%	N
Samsung Electronics Saudi Arabia Ltd. (SESAR)	Nov 2019	Electronic goods sales	251,516	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	Oct 2007	R&D	90,163	Over 50%	Y
Corephotonics Ltd.	Jan 2012	R&D	10,963	Over 50%	N
Samsung Electronics South Africa (Pty) Ltd. (SSA)	Jun 1994	Electronic goods sales	434,304	Over 50%	Y
Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	Jul 2014	TV and monitor production	85,433	Over 50%	Y
Samsung Electronics West Africa Ltd. (SEWA)	Mar 2010	Marketing	22,737	Over 50%	N
Samsung Electronics East Africa Ltd. (SEEA)	Dec 2011	Marketing	15,275	Over 50%	N
Global Symphony Technology Group Private Ltd.	Jan 2002	Subsidiary management (overseas)	41,320	Over 50%	N
Harman Connected Services Morocco	Apr 2012	Connected Service Provider	2,879	Over 50%	N
Harman Industries Holdings Mauritius Ltd.	Oct 2009	Subsidiary management (overseas)	80,469	Over 50%	Y
Red Bend Ltd.	Feb 1998	Audio product production	93,757	Over 50%	Y
Samsung Asia Pte. Ltd. (SAPL)	Jul 2006	Subsidiary management (overseas)	9,552,755	Over 50%	Y
Samsung Electronics Singapore Pte. Ltd. (SESP)	Oct 2020	Electronic goods sales	0	Over 50%	N
Samsung Malaysia Electronics Sdn. Bhd. (SME)	May 2003	Electronic goods sales	397,704	Over 50%	Y
Samsung Electronics Display (M) Sdn. Bhd. (SDMA)	Mar 1995	Electronic goods production	23,975	Over 50%	N
Samsung Electronics (M) Sdn. Bhd. (SEMA)	Sep 1989	Home appliance production	213,160	Over 50%	Y
Samsung Vina Electronics Co., Ltd. (SAVINA)	Jan 1995	Electronic goods sales	299,818	Over 50%	Y
Samsung Electronics Vietnam Co., Ltd. (SEV)	Mar 2008	Electronic goods production	12,623,956	Over 50%	Y
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Mar 2013	Telecom product production	15,500,024	Over 50%	Y
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Feb 2015	Electronic goods production and sales	2,609,150	Over 50%	Y
Samsung Display Vietnam Co., Ltd. (SDV)	Jul 2014	Display panel production	7,400,563	Over 50%	Y
PT Samsung Electronics Indonesia (SEIN)	Aug 1991	Electronic goods production and sales	966,723	Over 50%	Y
PT Samsung Telecommunications Indonesia (STIN)	Mar 2003	Electronic goods sales and service	49,717	Over 50%	N
Thai Samsung Electronics Co., Ltd. (TSE)	Oct 1988	Electronic goods production and sales	2,920,299	Over 50%	Y
Laos Samsung Electronics Sole Co., Ltd (LSE)	Sep 2016	Marketing	666	Over 50%	N
Samsung Electronics Philippines Corporation (SEPCO)	Mar 1996	Electronic goods sales	289,076	Over 50%	Y
Samsung Electronics Australia Pty. Ltd. (SEAU)	Nov 1987	Electronic goods sales	596,587	Over 50%	Y
Samsung Electronics New Zealand Limited (SENZ)	Sep 2013	Electronic goods sales	122,711	Over 50%	Y
Samsung India Electronics Private Ltd. (SIEL)	Aug 1995	Electronic goods production and sales	6,250,492	Over 50%	Y
Samsung Display Noida Private Limited (SDN)	Jul 2019	Display panel production	346,865	Over 50%	Y
Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	May 2005	R&D	399,137	Over 50%	Y
Samsung R&D Institute BanglaDesh Limited (SRBD)	Aug 2010	R&D	18,640	Over 50%	N
Samsung Nepal Services Pvt. Ltd (SNSL)	Nov 2017	Services	305	Over 50%	N
Samsung Japan Corporation (SJC)	Dec 1975	Semiconductor and display panel sales	1,668,902	Over 50%	Y
Samsung R&D Institute Japan Co. Ltd. (SRJ)	Aug 1992	R&D	162,609	Over 50%	Y
Samsung Electronics Japan Co., Ltd. (SEJ)	Sep 2008	Electronic goods sales	1,222,552	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
Harman Connected Services Corp. India Pvt. Ltd.	Apr 2002	Connected Service Provider	314,232	Over 50%	Y
Harman International (India) Private Limited	Jan 2009	Audio product sales and R&D	237,749	Over 50%	Y
Harman International Industries PTY Ltd.	Dec 2014	Subsidiary management (overseas)	0	Over 50%	N
Harman International Japan Co., Ltd.	Jun 1991	Audio product sales and R&D	67,816	Over 50%	N
Harman Singapore Pte. Ltd.	Aug 2007	Audio product sales	9,514	Over 50%	N
Samsung (CHINA) Investment Co., Ltd. (SCIC)	Mar 1996	Electronic goods sales	15,438,819	Over 50%	Y
Samsung Electronics Hong Kong Co., Ltd. (SEHK)	Sep 1988	Electronic goods sales	1,377,388	Over 50%	Y
Samsung Electronics Taiwan Co., Ltd. (SET)	Nov 1994	Electronic goods sales	1,580,003	Over 50%	Y
Tianjin Samsung Electronics Co., Ltd. (TSEC)	Apr 1993	TV and monitor production	417,423	Over 50%	Y
Suzhou Samsung Electronics Co., Ltd. (SSEC)	Apr 1995	Home appliance production	570,871	Over 50%	Y
Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	Apr 1995	Home appliance production	499,221	Over 50%	Y
Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	Sep 2002	Electronic goods production and R&D	830,015	Over 50%	Y
Tianjin Samsung Telecom Technology Co., Ltd. (TSTC)	Mar 2001	Telecom product production	581,611	Over 50%	Y
Beijing Samsung Telecom R&D Center (SRC-Beijing)	Sep 2000	R&D	125,807	Over 50%	Y
Samsung Electronics China R&D Center (SRC-Nanjing)	May 2004	R&D	68,937	Over 50%	N
Samsung Mobile R&D Center China- Guangzhou (SRC-Guangzhou)	Jan 2010	R&D	90,436	Over 50%	Y
Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	Mar 2013	R&D	36,475	Over 50%	N
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Oct 2001	Semiconductor and display panel sales	7,678,989	Over 50%	Y
Samsung (China) Semiconductor Co., Ltd. (SCS)	Sep 2012	Semiconductor production	14,348,735	Over 50%	Y
Samsung Semiconductor Xian Co., Ltd. (SSCX)	Apr 2016	Semiconductor and display panel sales	779,561	Over 50%	Y
Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	Dec 1994	Semiconductor processing	1,197,268	Over 50%	Y
Tianjin Samsung LED Co., Ltd. (TSLED)	May 2009	LED production	536,956	Over 50%	Y
Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	Apr 2003	R&D	56,016	Over 50%	N
Samsung Display Dongguan Co., Ltd. (SDD)	Nov 2001	Display panel production	1,767,663	Over 50%	Y
Samsung Display Tianjin Co., Ltd. (SDT)	Jun 2004	Display panel production	1,262,887	Over 50%	Y
SEMES (XIAN) Co., Ltd.	Jul 2013	Semiconductor equipment services	2,358	Over 50%	N
Harman (China) Technologies Co., Ltd.	Mar 2011	Audio product production	114,676	Over 50%	Y
Harman (Suzhou) Audio and Infotainment Systems Co., Ltd.	Mar 2013	Audio product sales	11,901	Over 50%	N
Harman Automotive Electronic Systems (Suzhou) Co., Ltd.	Sep 2006	Audio product R&D and production	273,657	Over 50%	Y
Harman Commercial (Shanghai) Co., Ltd.	Oct 2010	Audio product sales	417	Over 50%	N
Harman Connected Services Solutions (Chengdu) Co., Ltd.	Aug 2007	Connected Service Provider	21,854	Over 50%	N
Harman Holding Limited	May 2007	Audio product sales	467,068	Over 50%	Y
Harman International (China) Holdings Co., Ltd.	Jun 2009	Audio product sales and R&D	575,708	Over 50%	Y
Harman Technology (Shenzhen) Co., Ltd.	Sep 2004	Audio product sales and R&D	48,692	Over 50%	N
Samsung Display	Apr 2012	Display panel production and sales	50,039,755	Over 50%	Y

Subsidiary	Date established	Major business	Assets as of Dec 31, 2019	Ownership	Classified as major subsidiary (Y/N)
SU Materials	Aug 2011	Display panel component production	34,845	Over 50%	N
STECO	Jun 1995	Semiconductor component production	164,027	Over 50%	Y
SEMES	Jan 1993	Semiconductor/FPD manufacturing equipment production and sales	1,596,649	Over 50%	Y
Samsung Electronics Service	Oct 1998	Electronics goods repair services	514,221	Over 50%	Y
Samsung Electronics Service CS	Oct 2018	Customer management services	21,200	Over 50%	N
Samsung Electronics Sales	Jul 1996	Electronic goods sales	1,135,295	Over 50%	Y
Samsung Electronics Logitech	Apr 1998	Total logistics services	349,516	Over 50%	Y
Samsung Medison	Jul 1985	Medical device production and sales	370,529	Over 50%	Y
Mirero System	Jan 1994	Semiconductor software development and supply	26,030	Over 50%	N
Dowoo Insys	Mar 2010	Display panel component production	50,518	Over 50%	N
GF Co., Ltd.	Oct 2015	Display panel component production	3,173	Over 50%	N
Harman Korea	Jan 2005	Semiconductor software development and supply	18,843	Over 50%	N
SVIC #21 Venture Capital Union	Nov 2011	Tech/emerging-tech venture firm investments	100,891	Over 50%	Y
SVIC #22 Venture Capital Union	Nov 2011	Tech/emerging-tech venture firm investments	81,530	Over 50%	Y
SVIC #26 Venture Capital Union	Nov 2014	Tech/emerging-tech venture firm investments	83,941	Over 50%	Y
SVIC #27 Venture Capital Union	Sep 2014	Tech/emerging-tech venture firm investments	42,249	Over 50%	N
SVIC #28 Venture Capital Union	Feb 2015	Tech/emerging-tech venture firm investments	366,921	Over 50%	Y
SVIC #29 Venture Capital Union	Apr 2015	Tech/emerging-tech venture firm investments	56,642	Over 50%	N
SVIC #32 Venture Capital Union	Aug 2016	Tech/emerging-tech venture firm investments	291,176	Over 50%	Y
SVIC #33 Venture Capital Union	Nov 2016	Tech/emerging-tech venture firm investments	342,053	Over 50%	Y
SVIC #37 Venture Capital Union	Nov 2017	Tech/emerging-tech venture firm investments	40,056	Over 50%	N
SVIC #40 Venture Capital Union	Jun 2018	Tech/emerging-tech venture firm investments	37,697	Over 50%	N
SVIC #42 Venture Capital Union	Nov 2018	Tech/emerging-tech venture firm investments	8,558	Over 50%	N
SVIC #43 Venture Capital Union	Dec 2018	Tech/emerging-tech venture firm investments	2,106	Over 50%	N
SVIC #45 Venture Capital Union	May 2019	Tech/emerging-tech venture firm investments	101,781	Over 50%	Y
SVIC #48 Venture Capital Union	Dec 2019	Tech/emerging-tech venture firm investments	55,235	Over 50%	N
SVIC #52 Venture Capital Union	May 2021	Tech/emerging-tech venture firm investments	-	Over 50%	N
SVIC #55 Venture Capital Union	Sep 2021	Tech/emerging-tech venture firm investments	-	Over 50%	N
Private Equity Fund for Semiconductor Growth	Mar 2017	Semiconductor industry investments	75,082	Over 50%	Y
Private Equity Fund for Co-existence of System Semiconductor Firms	Apr 2020	Semiconductor industry investments	40,036	Over 50%	N

Companies with over KRW 75 billion in total assets as of December 31, 2020 are classified as major subsidiaries.

See 『II. Businesses Overview』 for detailed information about major business segments.

(Changes in subsidiaries)

	Americas	Europe/ CIS	MEA/ Africa	Asia ex China	China	Domestic	Total	Increase	Decrease
As of Dec 31, 2018	56	79	21	35	36	25	252	-	-
Changes in 2019	(2)	(4)	(2)	(5)	(2)	3	(12)	<p>[Europe/CIS: 1] Foodient Ltd.</p> <p>[MEA/Africa: 2] Corephotronics Ltd. Samsung Electronics Saudi Arabia Ltd. (SESAR)</p> <p>[Asia ex China: 1] Samsung Display Noida Private Limited (SDN)</p> <p>[Domestic: 4] SVIC #45 Venture Capital Union SVIC #48 Venture Capital Union Dowoo Insys GF Co., Ltd.</p>	<p>[Americas: 2] Harman Investment Group, LLC Red Bend Software Inc.</p> <p>[Europe/CIS: 5] Samsung France Research Center SARL (SFRC) Innoetics E.P.E. Duran Audio B.V. Harman International SNC Harman Professional France SAS</p> <p>[MEA/Africa: 4] Broadsense Ltd. iOnRoad Ltd iOnRoad Technologies Ltd Towersec Ltd.</p> <p>[Asia ex China: 6] Harman Connected Services Japan Co., Ltd. Red Bend Software Japan Co., Ltd. Studer Japan Ltd. Harman International Singapore Pte. Ltd. AMX Products And Solutions Private Limited Samsung Medison India Private Ltd. (SMIN)</p> <p>[China: 2] Samsung Electronics (Beijing) Service Company Limited (SBSC) Harman Connected Services Solutions (Beijing) Co., Ltd.</p> <p>[Domestic: 1] Red Bend Software Inc.</p>
As of Dec 31 2019	54	75	19	30	34	28	240	-	-
Changes in 2020	1	-	-	-	(1)	1	1	<p>[Americas: 4] TeleWorld Solutions, Inc. (TWS) TWS LATAM B, LLC TWS LATAM S, LLC SNB Technologies, Inc. Mexico, S.A. de C.V</p> <p>[Asia ex China: 1] Samsung Electronics Singapore Pte. Ltd. (SESP)</p> <p>[Domestic: 1] Private Equity Fund for Co-existence of System Semiconductor Firms</p>	<p>[Americas: 3] Harman Connected Services South America S.R.L. EverythingDacor.com, Inc. Distinctive Appliances of California, Inc.</p> <p>[Asia ex China: 1] Martin Professional Pte. Ltd.</p> <p>[China: 1] Samsung Tianjin Mobile Development Center (SRC-Tianjin)</p>
As of Dec 31 2020	55	75	19	30	33	29	241	-	-
Changes in 2021	(3)	(3)	1	-	(4)	2	(7)	<p>[MEA/Africa: 1] Samsung Electronics Industry and Commerce Ltd. (SETK-P)</p> <p>[Domestic: 2] SVIC #52 Venture Capital Union SVIC #55 Venture Capital Union</p>	<p>[Americas: 3] Viv Labs. Inc. Stellus Technologies, Inc. SigMast Communications Inc.</p> <p>[Europe/CIS: 3] Arcam Limited A&R Cambridge Limited Harman Connected Services Limited</p> <p>[China: 4] Samsung Suzhou Module Co., Ltd. (SSM) Samsung Suzhou LCD Co., Ltd. (SSL) Samsung Electronics Huizhou Co., Ltd.(SEHZ) Shenzhen Samsung Electronics Telecommunication Co., Ltd.(SSET)</p>
As of Sep 30 2021	52	72	20	30	29	31	234	-	-

2. Affiliates & subsidiaries (detailed)

A. Domestic affiliates

As of September 30, 2021, Samsung Group is consisted of 59 domestic affiliates. Among the Samsung Group's 59 domestic affiliates, sixteen (16) affiliates including Samsung Electronics are listed, and forty-four (43) affiliates are unlisted.

[As of September 30, 2021]

Listing	No. of affiliates	Names of affiliates
Listed	16	Samsung C&T; Samsung Electronics; Samsung SDI; Samsung Electro-mechanics; Samsung Fire & Marine Insurance; Samsung Heavy Industries; Samsung Life Insurance; Multicampus; Samsung Securities; Samsung SDS; Samsung Card; Samsung Engineering; S1; Cheil Worldwide; Hotel Shilla; Samsung Biologics
Unlisted	43	Seoul Lakeside CC; Samwoo Architects & Engineers; CVnet Corporation; Samsung Bioepis; Samsung Display; Samsung Corning Advanced Glass; SU Materials; STECO; SEMES; Samsung Electronics Service; Samsung Electronics Sales; Samsung Electronics Logitech; Suwon Samsung Bluewings FC; Samsung Medison; Samsung Claim Adjustment Service; Samsung Fire & Marine Insurance Service; Samsung Fire & Marine Insurance Financial Service; Samsung Electronics Service CS; Samsung Futures; Samsung Asset Management; Samsung Life Service; Samsung SRA Asset Management; Samsung Life Financial Service; SD Flex; Cheil Fashion Retail Co., Ltd.; Samsung Welstory; SECUI; STM; S-Core; OpenHands; Miracom; Samsung Card Customer Service; Human TSS; S-1CRM; Shilla Stay; HDC Shilla Duty Free LTD; Samsung Economic Research Institute (SERI); Samsung Lions; Samsung Venture Investment Corporation; Samsung Active Asset Management; Samsung Hedge Asset Management; Harman International Korea; SBTM
Total	59	

B. Foreign affiliates

[As of September 30, 2021]

Listing	No. of affiliates	Names of affiliates	Country
Unlisted	583	SAMOO HU Designer and Engineering Services Limited	Hungary
		SAMOO DESIGNERS & ENGINEERS INDIA PRIVATE LIMITED	India
		SAMOO (KL) SDN. BHD.	Malaysia
		Meadowland Distribution	USA
		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
		FLOWFY COMMERCE SERVICE 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		

Listing	No. of affiliates	Names of affiliates	Country
		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 DEVELOPMENT GP INC.	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
		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
		SST SOLAR, LLC	USA
		POSS-SLPC, S.R.O	Slovakia
		Solluce Romania 1 B.V.	Romania
		S.C. Otelinox S.A	Romania

Listing	No. of affiliates	Names of affiliates	Country
		LJG GREEN SOURCE ENERGY ALPHA S.R.L.	Romania
		WARIS GIGIH ENGINEERING AND TECHNOLOGY SDN. BHD.	Malaysia
		Samsung Chemtech Vina LLC	Vietnam
		Samsung C&T Thailand Co., Ltd	Thailand
		PT. INSAM BATUBARA ENERGY	Indonesia
		Malaysia Samsung Steel Center Sdn.Bhd	Malaysia
		S&G Biofuel PTE.LTD	Singapore
		PT. Gandaerah Hendana	Indonesia
		PT. Inecda	Indonesia
		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
		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

Listing	No. of affiliates	Names of affiliates	Country
		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
		Samsung Biologics America, 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 BIOEPIS 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
		Samsung Display Slovakia, s.r.o.	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
		Dacor Holdings, Inc.	USA
		Samsung HVAC America, LLC	USA
		SmartThings, Inc.	USA
		Samsung Oak Holdings, Inc.	USA
		Joyent, Inc.	USA
		TeleWorld Solutions, Inc.	USA
		Prismview, LLC	USA
		Samsung Semiconductor, Inc.	USA
		Samsung Research America, Inc	USA
		Samsung Bioepis United States Inc.	USA
		Samsung Electronics Home Appliances America, LLC	USA

Listing	No. of affiliates	Names of affiliates	Country
		Samsung International, Inc.	USA
		Harman International Industries, Inc.	USA
		Dacor, Inc.	USA
		Dacor Canada Co.	Canada
		TWS LATAM B, LLC	USA
		TWS LATAM S, LLC	USA
		SNB Technologies, Inc. Mexico S.A. de. C.V	Mexico
		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
		Harman International Japan Co., Ltd.	Japan
		Harman International Industries Canada Ltd.	Canada
		Harman Becker Automotive Systems, Inc.	USA
		Harman Professional, Inc.	USA
		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
		AMX UK Limited	United Kingdom
		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

Listing	No. of affiliates	Names of affiliates	Country
		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 Turkey	Turkey
		Samsung Electronics Industry and Commerce Ltd.	Turkey
		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 Rus LLC	Russian Fed.
		Samsung Electronics Central Eurasia LLP	Kazakhstan
		Samsung Electronics Caucasus Co. Ltd	Azerbaijan
		Corephotonics Ltd.	Israel
		Zhilabs Inc.	USA
		Samsung Nanoradio Design Center	Sweden
		Harman Professional Denmark ApS	Denmark
		Studer Professional Audio GmbH	Switzerland
		Martin Professional Japan Ltd.	Japan
		Harman International s.r.o	Czech Republic
		Harman International Romania SRL	Romania
		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 España 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
		Martin Manufacturing (UK) Ltd	United Kingdom
		Harman International Industries PTY Ltd.	Australia
		Harman Connected Services Morocco	Morocco
		Samsung Electronics Switzerland GmbH	Switzerland

Listing	No. of affiliates	Names of affiliates	Country
		Samsung Electronics Romania LLC	Romania
		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
		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 Electro-Mechanics (Thailand) Co., Ltd.	Thailand
		Samsung Nepal Services Pvt, Ltd	Nepal
		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
		Red Bend Software Ltd.	United Kingdom
		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

Listing	No. of affiliates	Names of affiliates	Country
		Samsung SDI (Tianjin) Battery Co.,Ltd.	China
		SAMSUNG SDI WUXI CO.,LTD.	China
		Samsung SDI (Wuxi) Battery Systems 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
		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 (Ningbo) Co., Ltd	China
		Samsung Heavy Industries (Rongcheng) Co., Ltd	China
		Rongcheng Gaya Heavy Industries 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
		THAI SAMSUNG LIFE INSURANCE 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 (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
		MYODO METAL CO., LTD.	Japan
		Samsung C&T Japan Corporation	Japan
		Samsung C&T America Inc.	USA
		Samsung E&C America, INC.	USA
		Samsung Renewable Energy Inc.	Canada

Listing	No. of affiliates	Names of affiliates	Country
		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
		Whessoe engineering Limited	United Kingdom
		SAM investment Manzanilo.B.V	Netherlands
		Samsung C&T (KL) Sdn.,Bhd.	Malaysia
		Samsung C&T Malaysia SDN. BHD	Malaysia
		Erdsam Co., Ltd.	Hong Kong
		Samsung E&C 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
		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 Kellar Inversiones Limitada	Chile
		Samsung C&T Corporation Rus LLC	Russian Fed.
		Cheil Industries Corp., USA	USA
		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
		Neo EXpress Transportation (NEXT) Inc.	USA

Listing	No. of affiliates	Names of affiliates	Country
		Samsung SDS Europe, Ltd.	United Kingdom
		Samsung SDS Global SCL Hungary, Kft.	Hungary
		Samsung SDS Global SCL Slovakia, S.R.O.	Slovakia
		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 Greece Societe Anonyme	Greece
		Samsung SDS Global SCL Baltics, SIA	Latvia
		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
		VASCO Supply Chain Solutions 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 Austraila 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	Turkey
		Samsung SDS Global Supply Chain Logistics Middle East DWC-LLC	Utd.Arab Emir.
		Samsung SDS Latin America Solucoes Em Tecnologia Ltda.	Brazil
		INTE-SDS Logistics S.A. de C.V.	Mexico
		Samsung SDS Global SCL Rus Limited Liability Company	Russian Fed.
		MIRACOM INC ASIA PACIFIC LIMITED	Hong Kong
		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 SDS Global SCL Beijing Co., Ltd	China
		Samsung SDS Global Development Center Xi'an	China
		Samsung Engineering America Inc.	USA
		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

Listing	No. of affiliates	Names of affiliates	Country
		Samsung Engineering India Private Limited	India
		Samsung Engineering Vietnam Co., Ltd.	Vietnam
		Samsung Engineering Construction (Shanghai) Co., Ltd	China
		Samsung Engineering Construction Xi'an Co., Ltd.	China
		Samsung Saudi Arabia Co., Ltd.	Saudi Arabia
		Muharrag Wastewater Services Company W.L.L.	Bahrain
		Muharrag STP Company B.S.C.	Bahrain
		Muharrag 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
		Muharrag 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
		Shilla Retail Plus Pte. Ltd.	Singapore
		Samsung Beijing Security Systems	China
		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 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	Names of affiliates	Country
		Cheil Communications Nigeria Ltd.	Nigeria
		Cheil Worldwide Inc./Jordan LLC.	Jordan
		Cheil Ghana Limited	Ghana
		Cheil Egypt LLC	Egypt
		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
		Shilla Travel Retail Taiwan Limited	Taiwan
		HDC SHILLA (SHANGHAI) CO., LTD	China
		Samsung Hospitality U.K. Inc.	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
		Iris (USA) Inc.	USA
		Iris Atlanta, Inc.	USA
		Iris Experience, Inc.	USA
		Iris Latin America, Inc.	USA
		Iris Worldwide San Diego, Inc.	USA
		89 Degrees, 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
		The Barbarian Group LLC	USA
		McKinney Ventures LLC	USA
		Iris Nation Worldwide Limited	United Kingdom
		Iris Americas, Inc.	USA
		Iris Canada Holdings 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 Products (Worldwide) Limited	United Kingdom
		Iris Korea Limited	United Kingdom
		Iris Digital Limited	United Kingdom
		Iris Amsterdam B.V.	Netherlands
		Iris Ventures (Worldwide) Limited	United Kingdom
		Iris Culture Limited	United Kingdom

Listing	No. of affiliates	Names of affiliates	Country
		Concise Consultants Limited	United Kingdom
		Atom42 Ltd	United Kingdom
		WDMP Limited	United Kingdom
		Pricing Solutions (UK) Limited	United Kingdom
		Iris Services Limited Dooel Skopje	Macedonia
		Irisnation Singapore Pte. Ltd.	Singapore
		Iris Worldwide Integrated Marketing Private Limited	India
		Iris Sydney PTY Ltd	Australia
		Iris Worldwide (Thailand) Limited	Thailand
		Iris Beijing Advertising Company Limited	China
		Iris Partners LLP	United Kingdom
		Holdings BR185 Limited	Brit.Virgin Is.
		Iris Germany GmbH	Germany
		Founded, Inc.	USA
		Pepper NA, Inc.	USA
		Pepper Technologies Pte. Ltd.	Singapore
		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
		Pengtai Greater China Company Limited	Hong Kong
		PT. CHEIL WORLDWIDE INDONESIA	Indonesia
		Cheil Philippines Inc.	Philippines
		Tianjin Samsung International Travel Service Co., Ltd	China
		Shilla Retail Limited	Macau
		Shilla Travel Retail Duty Free HK Limited	Hong Kong
		One Agency FZ-LLC	Utd.Arab Emir.
		One RX Project Management Design and Production Limited Company	Turkey
		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.
		One Agency South Africa (Pty) Ltd	South Africa
		Brazil 185 Participacoes Ltda	Brazil
		Iris Router Marketing Ltda	Brazil

3. Equity investments in other corporations (detailed)

The total book value of equity investments in other corporations as of September 30, 2021 is KRW 57,819 billion (for the purpose of management participation, etc.)

[As of September 30, 2021]

(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 assets	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	9,225,498	623,811
Listed	Samsung SDI	1977.01	Management participation	304	13,463	19.6	1,242,605	-	-	-	13,463	19.6	1,242,605	21,534,232	630,966
Listed	Samsung Heavy Industries	1977.09	Management participation	125	100,693	16.0	708,882	-	-	-84,583	100,693	16.0	624,299	12,922,171	-1,492,700
Listed	Hotel Shilla	1979.12	Management participation	252	2,005	5.1	164,988	-	-	8,620	2,005	5.1	173,608	2,893,842	-283,346
Listed	Cheil Worldwide	1988.09	Management participation	185	29,038	25.2	491,599	-	-	-	29,038	25.2	491,599	2,242,464	158,280
Listed	Samsung SDS	1992.07	Management participation	6,160	17,472	22.6	560,827	-	-	-	17,472	22.6	560,827	9,154,919	452,909
Listed	Samsung BioLogics	2011.04	Management participation	30,000	20,837	31.5	443,193	-	-	-	20,837	31.5	443,193	6,424,201	240,975
Unlisted	Samsung Display	2012.04	Management participation	16,009,547	221,969	84.8	18,509,307	-	-	-	221,969	84.8	18,509,307	50,039,755	1,798,100
Unlisted	STECO	1995.06	Management participation	24,000	2,590	70.0	35,861	-	-	-	2,590	70.0	35,861	164,027	9,295
Unlisted	SEMES	1992.12	Management participation	1,000	2,173	91.5	71,906	-	-	-	2,173	91.5	71,906	1,596,649	201,985
Unlisted	Samsung Electronics Service	1998.01	Management participation	30,000	6,000	99.3	48,121	-	-	-	6,000	99.3	48,121	514,221	-7,959
Unlisted	Samsung Electronics Sales	2000.12	Management participation	3,100	1,767	100.0	247,523	-	-	-	1,767	100.0	247,523	1,135,295	21,995
Unlisted	Samsung Electronics Logitech	1999.04	Management participation	76	1,011	100.0	46,669	-	-	-	1,011	100.0	46,669	349,516	21,068
Unlisted	Samsung Medison	2011.02	Management participation	286,384	87,350	68.5	302,283	-	-	-	87,350	68.5	302,283	370,529	1,538
Unlisted	SERI	1991.05	Management participation	320	3,576	29.8	24,942	-	-	-	3,576	29.8	24,942	144,572	430
Unlisted	Samsung Venture Investment	1999.11	Management participation	4,900	980	16.3	22,060	-	-	184	980	16.3	22,244	132,460	10,175
Unlisted	SVIC #21	2011.11	Management participation	19,800	1	99.0	80,888	0	356	-	1	99.0	81,244	100,891	861
Unlisted	SVIC #22	2011.11	Management participation	19,800	1	99.0	93,624	-0	-18,166	-	1	99.0	75,458	81,530	-17,022

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 assets	Net income (loss)
								Qty	Amount						
Unlisted	SVIC #26	2014.11	Management participation	19,800	2	99.0	98,577	-0	-2,134	-	2	99.0	96,443	83,941	-50,147
Unlisted	SVIC #27	2014.09	Management participation	5,940	0	99.0	43,785	-	-	-	0	99.0	43,785	42,249	-6,528
Unlisted	SVIC #28	2015.02	Management participation	7,425	2	99.0	168,980	0	1,184	-	2	99.0	170,164	366,921	33,542
Unlisted	SVIC #32	2016.08	Management participation	19,800	2	99.0	182,606	-0	-11,465	-	2	99.0	171,141	291,176	64,353
Unlisted	SVIC #33	2016.11	Management participation	4,950	2	99.0	173,307	0	8,410	-	2	99.0	181,717	342,053	135,637
Unlisted	SVIC #42	2018.11	Management participation	4,950	0	99.0	11,048	0	7,297	-	0	99.0	18,345	8,558	-1,583
Unlisted	SVIC #45	2019.05	Management participation	19,800	1	99.0	113,417	0	31,828	-	1	99.0	145,245	101,781	-10,873
Unlisted	SVIC #52	2021.05	Management participation	9,900	-	-	-	0	9,900	-	0	99.0	9,900	-	-
Unlisted	Semiconductor Growth Fund	2017.03	Management participation	500	50,000,000	66.7	50,000	-	-	-	50,000,000	66.7	50,000	75,082	-316
Unlisted	System LSI Mutual benefit private equity trust	2020.04	Management participation	25,000	25,000,000	62.5	25,000	25,000,000	25,000	-	50,000,000	62.5	50,000	40,036	-407
Listed	iMarket Korea	2000.12	Management participation	1,900	647	1.8	5,658	-	-	2,013	647	1.9	7,671	1,110,821	28,800
Listed	KT Skylife	2001.12	Simple investment	3,344	240	0.5	2,114	-	-	274	240	0.5	2,388	919,476	58,190
Listed	Yongpyong Resort	2007.05	Simple investment	1,869	400	0.8	1,702	-	-	658	400	0.8	2,360	911,905	-17,562
Listed	ATech Solution	2009.11	Simple investment	26,348	1,592	15.9	19,263	-	-	4,776	1,592	15.9	24,039	182,295	2,911
Listed	Wonik Holdings	2013.12	Management participation	15,411	1,759	2.3	11,153	-	-	-1,935	1,759	2.3	9,218	1,607,661	96,913
Listed	Wonik IPS	2016.04	Management participation	16,214	1,851	3.8	81,904	-	-	-7,774	1,851	3.8	74,130	1,099,641	97,819
Listed	Dongjin Semichem	2017.11	Management participation	48,277	2,468	4.8	90,078	-	-	-12,463	2,468	4.8	77,615	960,792	85,258
Listed	Soulbrain Holdings	2017.11	Management participation	30,752	462	2.2	20,825	-	-	-2,540	462	2.2	18,285	1,339,378	1,444,437
Listed	Soulbrain	2020.07	Management participation	24,866	373	4.8	101,668	-	-	336	373	4.8	102,004	717,745	64,883
Listed	S&S Tech	2020.08	Management participation	65,933	1,716	8.0	74,651	-	-	-15,788	1,716	8.0	58,863	185,991	10,996
Listed	YIK Corp	2020.08	Management participation	47,336	9,602	11.9	60,010	-	-	-7,681	9,602	11.7	52,329	280,796	20,467
Listed	KCTech	2020.11	Management participation	20,720	1,022	4.9	31,433	-	-	-6,644	1,022	4.9	24,789	407,295	42,590

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 assets	Net income (loss)
								Qty	Amount						
Listed	lotvacuum	2020.11	Management participation	18,990	1,268	7.7	24,086	-	-	-6,656	1,268	7.1	17,430	227,581	4,008
Listed	NEW POWER PLASMA	2020.11	Management participation	12,739	2,141	4.9	14,109	-	-	4,132	2,141	4.9	18,241	476,930	30,343
Listed	FineSemitech	2021.03	Management participation	43,009	-	-	-	1,523	43,009	-2,346	1,523	7.0	40,663	224,226	18,687
Listed	DNF	2021.08	Management participation	20,964	-	-	-	810	20,964	-2,941	810	7.0	18,023	156,382	14,419
Unlisted	The Korea Economic Daily	1987.05	Simple investment	150	72	0.4	365	-	-	-	72	0.4	365	518,088	35,124
Unlisted	Korea Business Banking	1995.01	Simple investment	5,000	1,000	17.2	3,040	-	-	26	1,000	17.2	3,066	85,905	1,365
Unlisted	Cyber Bank	2000.12	Simple investment	8,000	1,083	7.5	0	-	-	-	1,083	7.5	0	0	0
Unlisted	FineChips	2001.12	Simple investment	10	2	3.2	10	-	-	-	2	3.2	10	10,682	1,667
Unlisted	Inkel	2006.11	Simple investment	130	0	0.0	0	-	-	-	0	0.0	0	92,839	-4,750
Unlisted	Intellectual Discovery	2011.05	Simple investment	5,000	357	10.7	1,922	-	-	-	357	10.7	1,922	51,670	3,923
Unlisted	Maltani Corp.	2012.04	Simple investment	16,544	45	15.0	9,121	-	-	-492	45	15.0	8,629	72,010	1,731
Unlisted	Pantech	2013.06	Simple investment	53,000	53,000	10.0	0	-	-	-	53,000	10.0	0	43,812	-16,267
Unlisted	AI Research Institute	2016.07	Simple investment	3,000	600	14.3	3,000	-	-	-	600	14.3	3,000	15,273	-1,810
Unlisted	Mico Ceramics	2020.11	Management participation	21,667	747	15.7	21,667	-	-	242	747	15.7	21,909	119,719	8,569
Unlisted	Shinsung Eng & Construction	2010.07	Simple investment	1	0	0.0	0	-	-	-	0	0.0	0	205,649	3,583
Unlisted	Woobang	2010.07	Simple investment	0	1	0.0	0	-	-	-	1	0.0	0	692,809	54,371
Unlisted	Sambo Computer	2012.09	Simple investment	0	0	0.0	0	-	-	-	0	0.0	0	44,816	4,901
Unlisted	Daewoo Development	2012.12	Simple investment	0	0	0.0	0	-	-	-	0	0.0	0	330,806	6,409
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	316,041	20,038
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	2,972	-6,039

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 assets	Net income (loss)
								Qty	Amount						
Unlisted	Point Anybeam	2019.12	Simple investment	61	12	3.5	61	-	-	-	12	3.5	61	1,727	-209
Unlisted	JNT	2011.02	Simple investment	1,800	0	24.0	1,758	-	-	-	0	24.0	1,758	3,503	-1,336
Unlisted	Daishin Aju IB	2011.08	Simple investment	258	0	3.0	681	-0	-45	-	0	3.0	636	12,980	-171
Unlisted	TS	2011.11	Simple investment	1,700	0	20.5	-	-0	-	-	-	-	-	-	-
Unlisted	L&S	2012.07	Simple investment	848	0	7.5	309	-0	-44	-	0	7.5	265	14,200	19,441
Unlisted	KTCNP-GC	2013.12	Simple investment	960	0	3.6	1,816	-	-	-	0	3.6	1,816	97,660	-22,314
Unlisted	POSCO Social Enterprise Fund	2013.12	Simple investment	600	0	10.0	240	-0	-60	-	0	10.0	180	2,242	-94
Unlisted	SEA	1978.07	Management participation	59,362	492	100.0	17,166,557	-	-	-	492	100.0	17,166,557	36,765,070	1,623,555
Unlisted	SECA	1992.08	Management participation	3,823	0	100.0	90,922	-	-	-	0	100.0	90,922	1,539,360	24,835
Unlisted	SEDA	1994.01	Management participation	13,224	77,205,709	87.0	647,620	-	-	-	77,205,709	87.0	647,620	6,280,131	819,561
Unlisted	SEM	1995.07	Management participation	3,032	3,837	63.6	165,638	-	-	-	3,837	63.6	165,638	1,166,317	61,216
Unlisted	SELA	1989.04	Management participation	319	40	100.0	86,962	-	-	-	40	100.0	86,962	481,023	25,369
Unlisted	SEASA	1996.06	Management participation	4,696	21,854	98.0	6,779	-	-	-	21,854	98.0	6,779	45,396	4,851
Unlisted	SECH	2002.12	Management participation	597	0	4.1	597	-	-	-	0	4.1	597	623,743	19,563
Unlisted	SEUK	1995.07	Management participation	33,908	109,546	100.0	433,202	-	-	-	109,546	100.0	433,202	2,767,563	133,016
Unlisted	SEL	1998.12	Management participation	8,280	4,393	100.0	0	-	-	-	4,393	100.0	0	6,512	0
Unlisted	SEHG	1982.02	Management participation	28,042	0	100.0	354,846	-	-	-	0	100.0	354,846	993,490	106,190
Unlisted	SEF	1991.08	Management participation	230	2,700	100.0	234,115	-	-	-	2,700	100.0	234,115	1,688,580	61,596
Unlisted	SEI	1993.05	Management participation	862	677	100.0	143,181	-	-	-	677	100.0	143,181	1,287,050	46,819
Unlisted	SESA	1989.01	Management participation	3,276	8,021	100.0	142,091	-	-	-	8,021	100.0	142,091	1,094,002	28,742
Unlisted	SEP	1982.09	Management participation	204	1,751	100.0	37,616	-	-	-	1,751	100.0	37,616	222,273	6,413
Unlisted	SEH	1991.05	Management participation	1,954	753	100.0	650,157	-	-	-	753	100.0	650,157	2,230,457	148,056

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 assets	Net income (loss)
								Qty	Amount						
Unlisted	SELS	1991.05	Management participation	18,314	1,306	100.0	24,288	-	-	-	1,306	100.0	24,288	1,700,033	20,623
Unlisted	SEBN	1995.07	Management participation	236	539,138	100.0	914,751	-	-	-	539,138	100.0	914,751	2,145,488	58,579
Unlisted	SEEH	2008.01	Management participation	4,214	0	100.0	1,369,992	-	-	-	0	100.0	1,369,992	11,495,430	16,150
Unlisted	SENA	1992.03	Management participation	392	1,000	100.0	69,372	-	-	-	1,000	100.0	69,372	1,315,256	43,423
Unlisted	SESK	2002.06	Management participation	8,976	0	55.7	263,767	-	-	-	0	55.7	263,767	1,428,228	62,271
Unlisted	SEPOL	1996.04	Management participation	5,462	106	100.0	78,267	-	-	-	106	100.0	78,267	979,474	56,998
Unlisted	SEAG	2002.01	Management participation	40	0	100.0	32,162	-	-	-	0	100.0	32,162	455,973	19,341
Unlisted	SERC	2006.01	Management participation	24,877	0	100.0	188,290	-	-	-	0	100.0	188,290	1,244,802	119,980
Unlisted	SERK	2007.07	Management participation	4,600	0	100.0	204,555	-	-	-	0	100.0	204,555	1,124,492	93,207
Unlisted	SEO	1997.01	Management participation	120	0	100.0	-10,043	-	-	-	0	100.0	-10,043	93,508	777
Unlisted	SGE	1995.05	Management participation	827	0	100.0	32,836	-	-	-	0	100.0	32,836	1,092,268	2,200
Unlisted	SEEG	2012.07	Management participation	23	0	0.1	39	-	-	-	0	0.1	39	751,563	136,950
Unlisted	SSA	1998.12	Management participation	263	2,000	100.0	32,622	-	-	-	2,000	100.0	32,622	434,304	18,322
Unlisted	SAPL	2006.07	Management participation	793	877,133	100.0	981,483	-	-	-	877,133	100.0	981,483	9,552,755	968,504
Unlisted	SME	2003.05	Management participation	4,796	17,100	100.0	7,644	-	-	-	17,100	100.0	7,644	397,704	13,099
Unlisted	SDMA	1995.03	Management participation	21,876	71,400	75.0	18,741	-	-	-	71,400	75.0	18,741	23,975	-741
Unlisted	SEMA	1989.09	Management participation	4,378	16,247	100.0	103,402	-	-	-	16,247	100.0	103,402	213,160	22,402
Unlisted	SAVINA	1995.01	Management participation	5,839	0	100.0	28,365	-	-	-	0	100.0	28,365	299,818	27,986
Unlisted	SEIN	1991.08	Management participation	7,463	46	100.0	118,909	-	-	-	46	100.0	118,909	966,723	54,763
Unlisted	TSE	1988.01	Management participation	1,390	11,020	91.8	279,163	-	-	-	11,020	91.8	279,163	2,920,299	160,264
Unlisted	SEAU	1987.11	Management participation	392	53,200	100.0	111,964	-	-	-	53,200	100.0	111,964	596,587	34,804
Unlisted	SIEL	1995.08	Management participation	5,414	216,787	100.0	75,263	-	-	-	216,787	100.0	75,263	6,250,492	611,571

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 assets	Net income (loss)
								Qty	Amount						
Unlisted	SRI-B	2005.05	Management participation	7,358	17	100.0	31,787	-	-	-	17	100.0	31,787	399,137	48,399
Unlisted	SJC	1975.12	Management participation	273	1,560	100.0	253,108	-	-	-	1,560	100.0	253,108	1,668,902	7,684
Unlisted	SRJ	1992.08	Management participation	3,120	122	100.0	117,257	-	-	-	122	100.0	117,257	162,609	3,634
Unlisted	SCIC	1996.03	Management participation	23,253	0	100.0	640,452	-	-	-	0	100.0	640,452	15,438,819	127,051
Unlisted	SEHK	1988.09	Management participation	349	274,250	100.0	79,033	-	-	-	274,250	100.0	79,033	1,377,388	17,584
Unlisted	SET	1994.11	Management participation	456	27,270	100.0	112,949	-	-	-	27,270	100.0	112,949	1,580,003	22,910
Unlisted	SEHZ	1992.12	Management participation	792	0	89.6	255,535	0	-255,535	-	-	-	-	1,428,868	10,177
Unlisted	TSEC	1993.04	Management participation	15,064	0	48.2	103,134	-	-	-	0	48.2	103,134	417,423	-154,881
Unlisted	SSEC	1995.04	Management participation	32,128	0	69.1	130,551	-	-	-	0	69.1	130,551	570,871	70,569
Unlisted	SESC	2002.09	Management participation	5,471	0	73.7	34,028	-	-	-	0	73.7	34,028	830,015	-2,717
Unlisted	TSTC	2001.03	Management participation	10,813	0	90.0	260,092	-	-	-	0	90.0	260,092	581,611	6,440
Unlisted	SSET	2002.02	Management participation	6,009	0	100.0	41,182	0	-41,182	-	-	-	-	42,469	1,144
Unlisted	SSS	2001.01	Management participation	1,200	0	100.0	19,189	-	-	-	0	100.0	19,189	7,678,989	271,691
Unlisted	SCS	2012.09	Management participation	111,770	0	100.0	5,275,760	-	-	-	0	100.0	5,275,760	14,348,735	1,100,619
Unlisted	SSCX	2016.04	Management participation	1,141	0	100.0	1,141	-	-	-	0	100.0	1,141	779,561	35,288
Unlisted	SESS	1994.12	Management participation	18,875	0	100.0	504,313	-	-	-	0	100.0	504,313	1,197,268	81,762
Unlisted	TSLED	2012.04	Management participation	119,519	0	100.0	119,519	-	-	-	0	100.0	119,519	536,956	36,630
Unlisted	SSCR	2006.09	Management participation	3,405	0	100.0	9,332	-	-	-	0	100.0	9,332	56,016	5,752
Unlisted	TSST Japan	2004.03	Management participation	1,639	30	49.0	0	-	-	-	30	49.0	0	237	-33
Unlisted	STE	1996.01	Management participation	4,206	2	49.0	0	-	-	-	2	49.0	0	6,189	0
Unlisted	Semiconductor Portal	2002.12	Simple investment	38	0	1.2	10	-	-	-	0	1.2	10	2,041	60
Unlisted	Nanosys	2010.08	Simple investment	4,774	1,747	1.3	2,387	253	-	-	2,000	0.8	2,387	27,733	-9,709

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 assets	Net income (loss)
								Qty	Amount						
Unlisted	One-Blue	2011.07	Management participation	1,766	0	16.7	1,766	-	-	-	0	16.7	1,766	21,163	564
Unlisted	TidalScale	2013.08	Simple investment	1,112	2,882	4.3	1,112	-	-	-	2,882	4.3	1,112	6,173	-7,641
Unlisted	Sentiance	2012.12	Simple investment	3,422	7	7.2	3,422	-	-	-	7	7.2	3,422	6,457	-4,566
Unlisted	Mantis Vision	2014.01	Simple investment	1,594	355	2.1	1,980	-	-	-	355	2.1	1,980	31,758	-20,478
Unlisted	Leman	2014.08	Simple investment	1,019	17	3.4	1,019	-	-	-	17	3.4	1,019	3,584	-3,919
Unlisted	Keyssa	2016.01	Simple investment	3,332	1,235	1.9	3,332	-	-	-	1,235	1.9	3,332	6,371	-16,193
Unlisted	SensiFree	2016.01	Simple investment	2,111	666	9.5	2,111	-	-	-	666	9.5	2,111	1,610	-2,173
Unlisted	Unispectral	2016.02	Simple investment	1,112	2,308	7.9	2,130	-	-	-	2,308	7.9	2,130	1,273	-2,521
Unlisted	Quobyte	2016.04	Simple investment	2,865	729	11.8	2,865	-	-	-	729	11.8	2,865	2,483	-650
Unlisted	Afero	2016.05	Simple investment	5,685	723	5.5	5,685	-	-	-	723	5.5	5,685	4,926	-4,101
Unlisted	Graphcore	2016.06	Simple investment	3,494	12,000	3.3	3,494	-	-	-	12,000	1.4	3,494	279,496	-148,852
Unlisted	Soundhound	2016.12	Simple investment	7,059	306	1.1	7,059	-	-	-	306	1.1	7,059	119,637	-38,507
Unlisted	Aimotive	2017.12	Simple investment	3,302	2	3.2	3,302	-	-	-	2	3.2	3,302	47,351	-8,200
Unlisted	Fasetto	2019.01	Simple investment	6,701	475	5.2	12,554	-	-	-	475	5.2	12,554	5,436	-12,689
Unlisted	Innovium	2020.09	Simple investment	11,705	987	0.9	11,705	-	-	-	987	0.9	11,705	195,883	-56,116

Based on separate financial statements

Ownership percentage is calculated based on the number of common shares issued

The Company measures fair value 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, Soundhound are as of December 31 2018, due to difficulties in obtaining the most recent financial data

4. R&D results (detailed)

CE Division	
Research project	Details
Visual Display	
QLED 8K TV February 2019–June 2020	<ul style="list-style-type: none"> □ Flat QLED 8K TV (65/75/85") <ul style="list-style-type: none"> - Blends well with walls: flat design and Infinity screen; no border between screen and bezel—a world's first. - Innovative form factor: metal stand which gives a floating impression - QLED 8K enables picture quality close to real life, high resolution via AI upscaling, True Reality picture quality in any given environment - Multi-sound channel and Object Tracking Sound+ synchronize video and sound, maximizing surround sound experience - Wide range of content, multimedia experiences, and entertainment-specific functions provide convenient and colorful experiences
Neo QLED 8K March 2021–June 2021	<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"> - Q900 (65 · 75 · 85") / Q800 (65 · 75 · 85") / Q700 (65 · 75") - QLED 8K resolution offers viewing experience as if looking at real-life objects, with enhanced contrast of sophisticated Mini LED
Neo QLED 4K March 2021–September 2021	<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") <ul style="list-style-type: none"> - Q85 (55 · 65 · 75 · 85") - Q90 (43 · 50 · 55 · 65 · 75 · 85 · 98") - Q95 (55 · 65 · 75 · 85") □ 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
QLED 4K TV March 2021	<ul style="list-style-type: none"> □ Flat QLED 4K TV (43 · 50 · 55 · 60 · 65 · 70 · 75 · 82 · 85") □ Specs and features <ul style="list-style-type: none"> - Flagship QLED maximizes viewing experience with the highest picture quality within 4K (AI/brightness/viewing angle) and sound quality (OTS) - Maximizes immersive experience with the highest level of brightness contrast, free viewing angle, life-like color, and optimal brightness - Optimal viewing experience by identifying user context based on voice recognition and AI technologies
UHD TV March 2021	<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
Lifestyle TV September 2021	<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 □ The Frame (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 □ 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 □ Outdoor TV (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 the best Smart UX/OTT experience in the industry - 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
Sound Bar March 2020	<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

CE Division

Research project	Details
LCD monitor January 2021–June 2021	<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.)
Signage October 2019–June 2021	<ul style="list-style-type: none"> □ LCD-based B2B Smart Signage (LFD, Video Wall, etc.) (49 · 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
Home appliances	
Refrigerators August 2021	<ul style="list-style-type: none"> □ Bespoke refrigerator <ul style="list-style-type: none"> - T-Type · Kimchi · BMF · Ladder 1Door (24" R/F/Kimchi) · 18" New 1Door - Customers can configure designs in many ways, easy design changes - Can set up combinations of fridge/freezer/kimchi refrigerators between similar models, Kitchen Fit models available □ Chef Collection refrigerator <ul style="list-style-type: none"> - High-end, premium refrigerator - Premium Bespoke design and new CMF - Features water & ice solution: Auto fill pitcher, auto ice maker (dual mode: cocktail Ice, standard Ice) - FDSR energy efficiency grade 1 □ Cube refrigerator <ul style="list-style-type: none"> - Multi Cube refrigerator: customized design and storage (different temperatures for storing wine, beer, and cosmetic products) - Peltier System identifies and creates optimal temperature (between 5–18 °C) - Double Glass System blocks UV and maintains the right temperature - Wi-Fi Control enables real-time monitoring and control - RM (Remote Management) Function: remote assessment and repair, provides information on expiration date of beverages in the fridge □ 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
Washer September 2021	<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 pyocyanus, Escherichia coli, and Staphylococcus aureus)

CE Division

Research project	Details
Air conditioner April 2021	<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 the highest level of 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
Vacuums May 2021	<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)
Cooking appliances March 2021	<ul style="list-style-type: none"> □ Bespoke Qooker <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 Qooker-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.
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 February 2019–May 2021	<ul style="list-style-type: none"> □ Bespoke Air Dresser (18 · 24") <ul style="list-style-type: none"> - AI drying and washing cycle syncing - Long clothing care zone, holds 5 hangers, compared to 3 for 18" model - Real-care (inner-garment care, low noise level), real purification with ultra-fine dust filter, real odor elimination with odor decomposing filter, real-sanitization with jet steam, wrinkle care, real dehumidification dehumidifies the room even with the door closed □ 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
Air purifier December 2020	<ul style="list-style-type: none"> □ Bespoke Cube air purifier <ul style="list-style-type: none"> - Premium air purifier in Bespoke lineup - Use one of the three specialized filters as needed: sterilization, deodorization, pet - Customizable to the space, interior, and lifestyle - Mountable on walls to fit the interior without compromising dust-removing function with cubic filtration feature
Air-purification ventilation system September 2020	<ul style="list-style-type: none"> □ Air-purification ventilation system <ul style="list-style-type: none"> - Ventilation capacity 33 m², Airflow 40–50CMH - Ventilates and purifies air indoors by linking ventilation system with air-purification module - Individual air-purification for each separate space, circulation & wind-free purification - Sensors detecting CO₂, etc. enables automatic ventilation depending on air quality change

IM Division

Research project	Details
Mobile Galaxy Foldable September 2019– August 2021	<ul style="list-style-type: none"> □ Galaxy Fold (September 2019) <ul style="list-style-type: none"> - Creating a new market and securing market share by developing world's first in-foldable smart phone - 7.3" QXGA+(1,536×2,152) 1.5R in-foldable display - Secured standard technology by developing hinge for in-foldable phones—a world's first (released Feb 2019) - Offers new user experience tailored to foldable smart phones - Can use up to three apps with multi-active window function, offering unrivaled multitasking environment - When folding or unfolding the phone, provides app using experience with smooth changes between screens with minimal interruption □ Galaxy Z flip (February 2020) <ul style="list-style-type: none"> - Design: New style with innovative foldable display - Screen: Main 6.7" flexible ultra-thin glass (2,636 x 1080) - cover 1.1"super AMOLED (300 x 112) - Size (W x H x D): (unfolded) 73.6mm x 167.3mm x 6.9–7.2mm (folded) 73.6mm x 87.4mm x 15.4–17.3mm - Platform (H/W, S/W): SDM855+, Android 10.0 - Ultra-thin glass technology allows foldable glass display—a first among Galaxy models—and enhances durability - Easy to carry with a new form factor allowing compact size by flip fold - Free-stop feature enables users to freely control the angle of the flip, allowing Flex Mode experience - Screen ratio 21.9:9 enhances suitability of multi active window □ Galaxy Z Fold 2 (September 2020) <ul style="list-style-type: none"> - Screen: Main display 7.6", cover display 6.2" - Size (W x H x D): (folded) 68mm x 159.2mm x 13.8 (~16.8) mm - Platform (H/W, S/W): SDM 865 Plus, Android 10, One UI 2.5 - Supports ultra-high speed 5G and 12MP camera - Infinity Flex Display supports flex mode - Dynamic AMOLED 2X display with 120Hz flexible scan rate - Samsung Ultra Thin Glass - Supports wireless Samsung DeX and UWB - Evolved multi-active window enabling simultaneous use of three apps maximum - Provides app continuity from cover display to main display □ 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 □ 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) 86.4mm x 72.2mm x 15.9~17.1mm (unfolded) 166mm x 72.2mm 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

IM Division

Research project	Details
Galaxy S January 2021	<ul style="list-style-type: none"> □ Galaxy S10e · S10 · S10+ · S10 5G (5.8/6.1/6.4/6.7") (March 2019, 5G: April 2019) <ul style="list-style-type: none"> - Design: Full Front Punch Hole Infinity Display - Platform (H/W, S/W): Exynos9820, SDM855, Android 9 - World's first model using commercialized 5G technology - Combination of triple cameras delivers zoom, tele, ultra wide function: wide (12M)+tele (12M)+ultra wide (16M) - Supports HDR10+ video shooting on mobile for the first time in the world - Dynamic AMOLED display delivers near-original colors, supports HDR - On-screen fingerprint recognition sensor using ultrasound □ Galaxy S20 · S20+ · S20 Ultra 5G (March 2020) <ul style="list-style-type: none"> - Design: Best Fit in hand compact, yet large screen design - Screen: S20 6.2", S20+ 6.7", S20 U 6.9" - Size (W x H x D): S20 69.1mm x 151.7mm x 7.9mm; S20+ 73.7 x 161.9 x 7.8mm; S20 U 76.0 x 166.9 x 8.8mm - Platform (H/W, S/W): Exynos990 · SDM865, Android 10.0, One UI 2.1 - Smartphone that will change the future of mobile and pictures: significantly higher resolution and 8K video recording allows taking pictures and videos in unprecedented quality and easy and swift sharing with 5G - Pictures and videos with significantly higher resolution: S20 · S20+ 64MP, S20 U 108MP - 100x zoom, the highest space zoom yet in smartphones: S20 U 108MP - Take higher quality, clearer and brighter pictures and videos even at night with three times bigger sensor (using AI technology) - Take videos in 8K, the highest quality yet in smartphones - Super steady feature reduces blur from shaking but captures dynamic movements - Single take allows the best pictures and videos with a single shot □ Galaxy S20 FE (October 2020) <ul style="list-style-type: none"> - Makes S series experience available to more customers - Screen: 6.5" FHD+ sAMOLED Infinity-O (2,400 x 1,080) - Size (W x H x D): 74.5mm x 159.8mm x 8.4mm - Platform (H/W, S/W): Exynos990, SDM865, Android 10.0, One UI 2.5 - New entry-level flagship product equipped with premium features enhances market influence and provides experiences for various functions optimal to customers - Provides major S20 features: 120Hz display, same specs for camera and battery, same AP with flagship models, One UI 2.5 UX □ 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 • 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 Note August 2020	<ul style="list-style-type: none"> □ Galaxy Note10 · 10+ (6.3/6.8") (August 2019) <ul style="list-style-type: none"> - Design: Full Front Punch Hole Infinity Display - Platform (H/W, S/W): Exynos9825, SDM855, Android 9.0 - Upgraded S Pen • Enhanced usability with higher battery capacity and improved BT latency • Camera controls (can take pictures, change mode, change zoom, etc.), change volume, run apps, operate stopwatch - Note 10+: Quad camera supports high-resolution and maximum viewing angle shooting under wide range of illuminance • Wide (12M) + tele (12M) + Ultra Wide (16M) + VGA ※ Note10 has three rear cameras □ Galaxy Note20 · 20 Ultra (6.7 · 6.9") (August 2020) <ul style="list-style-type: none"> - Size (W x H x D): Note20 75.2mm x 161.6mm x 8.3 mm, Note20 Ultra 77.2mm x 164.8mm x 8.1 mm - Platform (H/W, S/W): Exynos 990 · SDM 865 Plus, Android 10, One UI 2.5 - Supports high-speed 5G and Wi-Fi 6 - First in the Galaxy lineup to support Ultra Wide Band (Note 20 Ultra) - 108MP camera (Note 20 Ultra), 64MP camera (Note 20) - Maximum 120Hz scan rate display (Note 20 Ultra) - First to support wireless Samsung DeX - Supports S pen and Samsung Note; easy-to-use and perfectly resembling pen-writing experience; supports MS Xbox Game

IM Division	
Research project	Details
Galaxy Tab June 2021	<ul style="list-style-type: none"> □ Galaxy Tab S7 · S7+ (August 2020) <ul style="list-style-type: none"> - Design: Premium Tablet (display, pen, performance) - Screen: 12.4" WQXGA AMOLED (16:10, 2800x1752/120Hz), 11" WQXGA LTPS TFT (16:10, 2,560x1,600/120Hz) - Size (W x H x D): 285.0mm x 185.0mm x 5.7mm (12.4"), 253.8 x 165.3 x 6.3mm (11") - Platform (H/W, S/W): SDM865+, Android 10, One UI 2.5 - Secured premium competitiveness by developing a thin large-display metal design - The first tablet that supports 5G (mmWave) for global carriers and the four major carriers in the US - Enhanced usability of Samsung Notes with 120Hz display and optimal pen latency (9ms) - N-generation AP maximizes performance (seamless multi-tasking & gaming experience)
	<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 • Simple conversion of handwriting to text • Direct input with S Pen into the input box - Enhanced function of PENUP Drawing • 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 • 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
Galaxy A May 2021	<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 - 6.5" FHD+ sAMOLED HD (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)
	<ul style="list-style-type: none"> □ Galaxy A72 (March 2021) <ul style="list-style-type: none"> - Offers enhanced user experience and increase competitiveness via strengthened core features - 6.7" FHD+ sAMOLED HD (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)
	<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 - 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"> - 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 - Powerful camera that enables photographing on a professional level (ultra-wide 12MP, main 64MP, close-up 5MP)

IM Division

Research project	Details
Galaxy Book April 2021	<ul style="list-style-type: none"> □ Galaxy Book Flex 2 (December 2020) <ul style="list-style-type: none"> - Design: 2-in-1 PC with S Pen, QLED display - Screen: 15.6" QLED FHD (16:9, 1920 x 1080), 13.3" QLED FHD (16:9, 1920 x 1080) - Size (W x H x D): (15.6") 355.0mm x 227.2mm x 14.9mm (13.3") 302.6mm x 202.9mm x 12.9mm - Platform, OS: Intel 11th generation CPU, Windows 10 - QLED: Color Volume 100%, Super Bright Outdoor Mode Max 600nit - S Pen: Samsung Notes, Clip Studio, Gesture - SSD: Powerful performance & Latest Gen4 SSD □ Galaxy Book Flex2 5G (December 2020) <ul style="list-style-type: none"> - 13.3" QLED FHD Up to 600nit Brightness, Color Volume 100% - Size (W x H x D): 304.9mm x 202.3mm x 13.9–14.9mm - Platform, OS: 11th-generation Intel CPU, Intel Iris Xe Graphics, Windows 10 - Supports ultra-fast 5G (Sub-6) <ul style="list-style-type: none"> Connects to state-of-the art wireless LAN 802.11 ax (Wi-Fi6) - Double Camera <ul style="list-style-type: none"> • World-facing camera (13M AF) and front-facing camera (1M) Camera - Long battery life (20 hours battery life, based on MM14) - Comes with S-Pen, allowing quick expression of inspiration (Digitizer) - Stronger connection to Tablets, Phones <ul style="list-style-type: none"> • Link to Windows: Smartphone apps opens seamlessly on PCs • Samsung Notes: Syncs notes between Phone-Tablet-PC □ Galaxy Book Go (April 2021) <ul style="list-style-type: none"> - 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 the 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 Watch August 2021	<ul style="list-style-type: none"> □ Galaxy Watch3 (August 2020) <ul style="list-style-type: none"> - Design: Premium smart watch resembling the design of a traditional watch - Display: 1.4" (45mm), 1.2" (41mm) OLED (360 x 360) - Size (W x H x D): 45.0 x 46.2 x 11.1 (45mm) 41.0 x 42.5 x 11.3 (41mm) - Platform (H/W, S/W): Exynos9110, Tizen 5.5 - Expanding portfolio to titanium models (high-end segment) - Identifying and have included differentiated health-related services <ul style="list-style-type: none"> • Blood pressure, ECG, fall detection features commercialized globally □ 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 • Provides key services of Google, including Play Store/Google Map/YT Music • Supports specialized fitness apps and other various service apps

IM Division	
Research project	Details
Galaxy buds January 2020–August 2021	<ul style="list-style-type: none"> □ Galaxy Buds+ (January 2020) <ul style="list-style-type: none"> - Design: Canal-type TWS (True Wireless Stereo) - Platform (HW, SW): MCU (BCM43015), OS (RTOS), BT 5.0 - Battery: (Earbuds) 85mAh x 2, (cradle) 270mAh - Powerful mid to low keys and highest sound quality with application of 2-way speaker (woofer & tweeter) - 2 outer beamforming mic and 1 inner mic optimizes phone call sound - Improved errors in proximity sensor by adding grip sensor - Longest play time compared to products in the same class, with upgraded battery: 22 hours for streaming (earbuds 11H & cradle 11H) □ Galaxy Buds Live (August 2020) <ul style="list-style-type: none"> - Design: Open-type TWS with innovative design and high-quality sound - Size (W x H x D): (Earbuds) 16.5mm x 27.3mm x 14.9mm, (Cradle) 50.0mm x 50.2mm x 27.8mm - Platform (H/W, S/W): BCM43015, RTOS - Ergonomic design that fits ears perfectly, provides all-day comfort sitting softly inside the ear. - Open type Active Noise Cancellation reduces background noises but let you hear what you want to hear. - Large-size 12mm speakers and Bass Duct deliver rich, spacious live sound - Three built-in mics and a Voice Pickup Unit enables the best call quality □ 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 • 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* • 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 • 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
Network	
RAN S/W Package April 2019–June 2021	<ul style="list-style-type: none"> □ SVR18.3 5G S/W package (April 2019) <ul style="list-style-type: none"> - S/W Package to commercialize domestic 5G NR for the first time in the world • Commercialized 5G NSA by using LTE network links in the Seoul and the capital area • Supports 5G base station (3.5GHz, 28GHz, 39GHz 5G Massive MIMO) □ SVR21B NR vDU SW PKG (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
Core S/W Package March 2020	<ul style="list-style-type: none"> □ SVR19B 5G core S/W package (March 2020) <ul style="list-style-type: none"> - Developed containerized-based 5G Core Network Function • Efficient and quick service distribution and maintenance cost reduction possible by flexibly containerizing host OS resource

IM Division	
Research project	Details
Base stations September 2019–September 2021	<ul style="list-style-type: none"> □ Developed 5G NR DU (September 2019) <ul style="list-style-type: none"> - New dual CPU based main card and first 5G SoC modem using channel card - Single HW can accommodate a combination of LTE, NR above and NR below products, offering different channels at the same time - Supports high capacity, low power consumption (including power saving) and virtualization/non virtualization S/W structure □ Developed 26GHz 5G NR RFIC Chip (February 2020) <ul style="list-style-type: none"> - 2nd generation RFIC Chip, following SEC's 1st generation products (28GHz/39GHz) - 2nd generation has improved evm function, power efficiency, and mass production □ Developed FSU10 (May 2020) <ul style="list-style-type: none"> - FSU (fronthaul switch unit) to support vRAN business - Makes spectrum sharing between LTE and NR (below 6GHz) possible - One RU fits both LTE DU and NR vRAN via spectrum sharing □ Developed NR Indoor AU (August 2020) <ul style="list-style-type: none"> - Our first 5G In-building Solution AU product - Small form-factor enables low-power consumption, indoor installation on walls, pillars, and ceilings □ Developed NR C-Band MMU (3.7G 64T64R 200W MMU) (Dec 2020) <ul style="list-style-type: none"> - First ever TDD-based MMU (Massive MIMO Unit) that operates in C-BAND in North America - Supports broadband IBW 280M, thus any carrier with C-Band across the country may use the product □ Developed MMU Beam Forming SoC (Feb 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 (Sep 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

DS Division	
Research project	Details
Memory	
DRAM for mobile July 2019–February 2020	<ul style="list-style-type: none"> □ Mass production of 2nd generation 10-nano class (1y) 12Gb LPDDR5 DRAM for mobile, with highest speed and capacity in the world <ul style="list-style-type: none"> - Next-generation mobile solution with better speed, capacity, and power efficiency - Contributed to introducing 5G smartphones with 1.3 times the speed (5,500Mbps), and 30% lower power consumption - 12Gb LPDDR5-based line up (6GB, 12GB) provided for the first time □ World's first mass production of 16Gb LPDDR5 mobile DRAM: highest speed and capacity in the world <ul style="list-style-type: none"> - Performance improved by 30%, capacity by 2 times, and 20% less power consumption vs 8GB LPDDR4X - Gaming performance (picture quality, haptic feedback) same or better than PCs possible with smartphones
DRAM for server August 2019–March 2021	<ul style="list-style-type: none"> □ Mass Production of 1st generation 10-nano class (1x) 256GB 3DS DDR4 DRAM for servers, highest capacity in the world <ul style="list-style-type: none"> - World's first mass production of 256GB DRAM with ultra-high performance and capacity - 2 times the capacity and 30% increase in power efficiency compared to 128GB □ Development of 3rd generation 10-nano class (1z) 8Gb DDR4 DRAM—world's best <ul style="list-style-type: none"> - Secured ultra-fast, ultra-power-efficient solutions for mass production of DDR5 · LPDDR5 - Efficiency up by more than 20% compared to 2nd generation (1y-nano) DRAM - Expand portion of 1z-nano DRAM lineup in the next-generation products by mass production beginning in September in Pyeongtaek □ 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

DS Division	
Research project	Details
HBM DRAM October 2019–August 2021	<ul style="list-style-type: none"> □ Development of 12-stack 3DS TSV PKG, with world's highest HBM DRAM capacity <ul style="list-style-type: none"> - Development of highest performance and capacity 12GB HBM DRAM for supercomputers—industry's first - 1.5 times the capacity and convenience of system design improved with 8GB package - Strengthened leadership in next-generation HPC DRAM by breakthrough in package technology - Plan to mass produce 24GB HBM, the industry's highest, to meet customer needs □ Rollout of ultra-fast DRAM for AI and next-generation super computer for the first time in the world (16GB HBM2E 'Flashbolt') <ul style="list-style-type: none"> - Stacked 8 10-nano (1y) 16Gb DRAM, enabling 16GB, the highest capacity - Able to send 82 Full HD movies (410GB) at 3.2Gb/sec - Continue to lead market expansion by supplying 2nd generation HBM2 and 3rd generation HBM2E at the same time □ 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, which has the highest reputation 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
eStorage February 2019–March 2020	<ul style="list-style-type: none"> □ Mass production of next-generation smartphone memory, eUFS 3.0—a world's first <ul style="list-style-type: none"> - Embedded 5th generation (9x-layers) cell stacked 512Gb 3 bit V-NAND for the first time in the industry - Reading and writing 2 times faster compared to eUFS 2.0 - Securing early foothold and high growth in next-generation ultra-high-resolution mobile market □ Industry's only mass production of 1TB eUFS 2.1, with a writing speed of 1200MB/s <ul style="list-style-type: none"> - 3 times the performance compared to 512GB eUFS 3.0 (continued writing speed of 410MB/s) - Smartphone memory storage (1200MB/s) is 2 times faster than PC (SSD 540MB/s)
SSD for PC July 2019	<ul style="list-style-type: none"> □ Mass production of 6th-generation (1xx) 256Gb V-NAND-based PC SSD—fastest in the world <ul style="list-style-type: none"> - Exclusive mass production of higher than 100 layers cell single process stacked V-NAND - 1.2 times the speed and productivity higher by more than 20% - Lead the storage market with competitive edge in ultra-fast, ultra-power-efficient products
SSD for server August 2019–June 2021	<ul style="list-style-type: none"> □ Mass production of 5th generation (9x-layer) V-NAND-based 30.72TB NVMe SSD for servers—highest speed and capacity in the world <ul style="list-style-type: none"> - Secured next-generation SSD solution with improved speed, capacity, and efficiency - Introduced 8GB/s PCIe Gen4 SSD with 2.2 times the speed - Exclusively offers top 3 SW (Never Die SSD, FIP, ML) solution □ 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

DS Division

Research project	Details
Brand SSD January 2020–March 2021	<ul style="list-style-type: none"> □ Launched 'T7 Touch', premium portable SSD—highest performance in the industry <ul style="list-style-type: none"> - 5th generation 512Gb V-NAND with world's highest performance and NVMe controller with ultra-fast embedded interface - Supports reading and writing speed of 1,050MB/s and 1,000MB/s, respectively, up to 9.5 times faster than external HDD (110MB/s) and about 2 times faster than the previous model (SEC's portable SSD T5) □ Global launch of high-capacity 4-bit SSD '870 QVO' <ul style="list-style-type: none"> - Introduced 4 SATA SSD models including 1/2/4TB and 8TB model, the highest in the industry - Provides optimal solution to customers with need for high-performance/high-capacity computing environment, with quick data-process speed close to the maximum speed of SATA interface - Boasts high speed/capacity, reasonable price, launched in 40 countries in several phases □ Global launch of PCIe-Gen4-applied SSD '980 PRO', boasting highest performance in the industry <ul style="list-style-type: none"> - Provides ultra-high resolution via consumer SSD with the highest-speed in the industry - Continue to lead market for professional PC and workstation used for editing of 8K, 4K videos and games requiring high-specs - 5-year warranty (longest in the industry) □ 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
EUV March 2020	<ul style="list-style-type: none"> □ Supplied 1 million 1st generation 10-nano class (D1x) DRAM modules <ul style="list-style-type: none"> - Mass production of EUV DRAM—the only company in the industry with EUV DRAM mass production system - Secured 10-nano class advanced process and mass production, enabling next-generation DRAM in a timely manner. - EUV process applied to all 4th generation 10-nano class DRAM, and is now expanding to 5th generation and 6th generation products
CXL May 2021	<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
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	<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

DS Division

Research project	Details
System LSI Image Sensor January 2019–September 2021	<ul style="list-style-type: none"> □ ISOCELL Slim sensor with ultra-small pixel size (3T2, 0.8um/20Mp) <ul style="list-style-type: none"> - Highest resolution (20Mp) among 1/3.4" sensors, offers high-resolution optimized for bezel-less displays - Tetracell technology for front camera, allowing high performance under low lighting, high magnification for back camera reduces module size, improving picture quality □ Ultra-high resolution ISOCELL Bright sensor (GW1, 0.8um/64Mp) <ul style="list-style-type: none"> - DCG structure enhances dynamic range - Super PD technology maximizes auto-focus function and enables 480-frames-per-second, full-HD slow motion function - Rich colors by supporting real-time HDR □ High resolution ISOCELL Bright sensor (GM2, 0.8um/48Mp) <ul style="list-style-type: none"> - Super PD technology maximizes auto-focus function and enables 240-frames-per-second, full-HD slow motion function □ World's first 108Mp ISOCELL Bright sensor (HMX, 0.8um/108Mp) <ul style="list-style-type: none"> - AI-ISO-applied S/W controls the amount of light, enhancing color reproduction - Can shoot 30 frames per second in 6k - Improved sensitivity with ISOCELL plus and Tetracell technology □ ISOCELL Slim sensor with world's smallest pixel size (GH1, 0.7um/43.7Mp) <ul style="list-style-type: none"> - Enables easier application of full-screen display set thanks to smaller and thinner module - Supports high-resolution videos and minimizes loss of viewing angle - Improved sensitivity with ISOCELL plus and Tetracell technology □ Industry's first next-generation 108Mp ISOCELL Bright sensor with 2-times the sensitivity enabled by Nonacell technology <ul style="list-style-type: none"> - Enables preview function without compromising picture quality in 3x magnification, thanks to enhanced zoom feature - Features state-of-the-art technologies: smart ISO, real-time HDR, digital correction of shaking images □ Dual-pixel and Tetracell-technology-based sensors (GN1, 1.2um/50Mp) <ul style="list-style-type: none"> - Offers images in 100Mp with dual-pixel technology (2 photodiodes in a pixel) - Takes bright, sophisticated images with Tetracell technology (enables 4 times the sensitivity in the dark) □ Established industry's first lineup of 0.7um-pixel-based image sensors (HM2, GW3, GM5, JD1) <ul style="list-style-type: none"> - Leadership in ultra-small, high-resolution image sensor technology with state-of-the-art 'ISOCELL 2.0' technology and more - (HM2) first to offer 108Mp with 0.7um pixel - (GW3) takes 60-frames-per-second 4K 64Mp images - (GM5) takes 48 Mp images supporting ultra-wide angle and folded zoom - (JD1) ultra-small 32Mp product, optimal for bezel-less design □ 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

DS Division	
Research project	Details
Exynos Mobile January 2019–September 2021	<ul style="list-style-type: none"> □ World's first modem solution for 5G smartphones (Exynos modem 5100, Exynos RF 5500, Exynos SM 5800) <ul style="list-style-type: none"> - Data transmission 1.7 times faster compared to LTE - New RF · SM, improved power efficiency for transmission □ Best-in-class 7-nano 5G modem (Exynos 5123) <ul style="list-style-type: none"> - Maximum 2 times faster compared to previous model in sub-6GHz 5G network - Achieved maximum speed of 3.0Gbps in 4G network - Supports global Sub-6GHz/mmWave □ SoC for automobile infotainment (Exynos auto V9) <ul style="list-style-type: none"> - Octa-core CPU simultaneously controls 6 displays and 12 cameras - 3 GPU respectively supports dashboard · CID · HUD - NPU enables digital recognition of voice · face · movement - Enhanced stability by securely supporting ASIL-B function □ SoC exclusively for short-distance IoT with low power consumption and enhanced security (Exynos i T100) <ul style="list-style-type: none"> - Processor · memory · communications function in a package □ One-chip integrating 5G modem supporting sub-6GHz and AP (Exynos 980) <ul style="list-style-type: none"> - Supports latest communications feature including EN-DC, Wi-Fi 6 - Enhanced NPU function compared to previous generation and premium products □ Enhanced functions with 5th-generation CPU and premium GPU (Exynos 990) <ul style="list-style-type: none"> - AI processing higher than 10 TOPS enhanced image analyzing and face recognition function - Supports latest LPDDR5 DRAM and high-resolution camera of 50MP ↑ □ Launched Exynos 2100, 5G-integrated premium mobile AP <ul style="list-style-type: none"> - Applied state-of-the-art 5-nano 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
LSI January 2019–May 2021	<ul style="list-style-type: none"> □ PDIC for TA supporting USB-PD 3.0 standard and high-speed charge protocol (MM101) <ul style="list-style-type: none"> - Moisture detection, voltage protection function □ World's first one-chip integrating PDIC and SE (SE8A) <ul style="list-style-type: none"> - Blocks unauthorized products by supporting type-C authorization - Supports advanced security features such as saving security key · authorization certificate, supporting encryption · decryption □ Industry's first integrated power-managing chip for wireless earphones (MUA01, MUB01) <ul style="list-style-type: none"> - Integrates multiple chips, optimized for small-size batteries - Provides optimal solution for rapidly-growing wireless earphone market □ DDI enables optimized ultra-high resolution for 8K TVs and enhanced transmission efficiency (S6CT93P) <ul style="list-style-type: none"> - Enhanced signal quality and development efficiency by utilizing equalizer S/W □ Best integrated security solution for mobile (S3K250AF) <ul style="list-style-type: none"> - Independently developed S/W in H/W security chip, which received EAL 5+ in Common Criteria - Mobile security solution lays the foundation for new mobile services □ Received EAL 6+, the highest rank for mobile device, solution with independently-developed S/W (S3FV9RR) <ul style="list-style-type: none"> - Useable for various smart devices, as the solution operates independently for various processors - Various functions including H/W secure boot, device authentication offer stronger security □ 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
Foundry	

DS Division	
Research project	Details
Ship eMRAM solution products (based on 28nm FD-SOI process) March 2019	<ul style="list-style-type: none"> □ Combined low-power process and next-generation embedded memory technology <ul style="list-style-type: none"> - Maximized power efficiency as the product uses low motion power and eliminates standby power and an erase cycle - Supports record speed about 1000 times faster than the previous eFlash □ Embedded to system semiconductor by using minimum layers <ul style="list-style-type: none"> - Reduced production costs thanks to a simpler design structure □ Optimal for MCU/IoT/AI thanks to low-power and small size
5nm EUV process April 2019	<ul style="list-style-type: none"> □ Developed 5nm EUV process with EUV lithography <ul style="list-style-type: none"> - 25% decrease in logic area efficiency with 20% lower power consumption or 10% higher performance compared to 7nm by optimizing cell architecture - Previous 7nm customers can utilize the same IP in the 5nm EUV process
3D IC packaging technology 'X-Cube' August 2020	<ul style="list-style-type: none"> □ Developed 3D IC packaging technology 'X-Cube' and the infrastructure for the design <ul style="list-style-type: none"> - Uses TSV technology to stack different chips individually made from different wafers to make them into one chip - Allows greater flexibility in design by reducing the chip size and using high-capacity memory solution - Significant leaps in data-processing speed and power efficiency of system semiconductors - Design method and tools to apply 'X-Cube' on 5-nano and 7-nano processes have been verified. - Produced industry's first test chip that stacks SRAM on top of EUV 7-nano logic die
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
8-nano RF process June 2021	<ul style="list-style-type: none"> □ Radio Frequency (RF) process for 5G communication that even 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 'RFeFET (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 14-nano RF process <ul style="list-style-type: none"> - Total number of transistors of chips decreased with the drastic improvement of RFeFET performance
Display panel	
Hole in Display OLED for Galaxy S10 March 2019	<ul style="list-style-type: none"> □ Maximized screen size via world's first commercialization of Flexible Hole in Display <ul style="list-style-type: none"> - One S10 6.1" 3K QHD+(3,040×1,440) Hole, Two S10+ 6.4" Holes □ Offers a comfortable display by significantly decreasing blue light <ul style="list-style-type: none"> - Decreased blue light emission 42% from S9 (TUV Rheinland Eye Comfort Certification)
15.6" UHD OLED for NPC May 2019	<ul style="list-style-type: none"> □ Developed world's first 4K OLED display for NPC <ul style="list-style-type: none"> - 15.6" UHD (3,840 x 2,160), 16:9 - Blue light reduction, shorter response time, wide field of view allow vivid images
4K high-resolution OLED for smartphones June 2019	<ul style="list-style-type: none"> □ Developed world's first 4K mobile OLED display <ul style="list-style-type: none"> - 6.5" UHD (1,644×3,840), 643ppi, 16M Color - Offers original cinematic movie ratio of 21:9
Curved LCD for gaming monitors June 2019	<ul style="list-style-type: none"> □ Developed world's first 240Hz Curved LCD display <ul style="list-style-type: none"> - 27" FHD (1920×1080), 16:9 - High refresh rate of 240Hz, supports G-sync, allowing uninterrupted gaming environment - Curvature of 1500R, wide viewing angle allow highly-immersive gaming experience
Foldable OLED for Galaxy Fold September 2019	<ul style="list-style-type: none"> □ Display innovation by developing the world's first foldable display <ul style="list-style-type: none"> - In-foldable AMOLED (radius: 1.5R) - 7.3" QXGA+ (1,536×2,152), 4:3 - Decreased display thickness by approximately 50% (vs existing panels) by developing polymer composite material
Foldable OLED for Galaxy Z Flip February 2020	<ul style="list-style-type: none"> □ Mass production of world's first glass type window foldable display <ul style="list-style-type: none"> - 6.7" Full HD+(1,080×2,640) - Improved durability and applied camera hole (first in foldable phones) by using UTG (ultra-thin glass)
WQ+ high-speed OLED for Galaxy S20 March 2020	<ul style="list-style-type: none"> □ Maximized touch feature with world's first WQ+ resolution, 120Hz, high speed <ul style="list-style-type: none"> - S20 6.23"/6.67"/6.87" QHD+(3,200×1,440) - Harmful blue light less than 6.5%, Eye Care Display certified (SGS, international certification institution)
Foldable OLED for Galaxy Z Fold 2 September 2020	<ul style="list-style-type: none"> □ World's first mass production of foldable display with a 1.4R curvature <ul style="list-style-type: none"> - 7.6" (2,208 ×1,768) in – foldable - Achieved 1.4R curvature radius via structural design that minimizes folding stress - Improved power efficiency with adaptive frequency (adjusts scan rate from 10-120Hz to screen)

DS Division	
Research project	Details
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 Fold 3 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