

# SAMSUNG

## SAMSUNG ELECTRONICS Co., Ltd.

### 2023 Interim Business Report

For the quarter ended March 31, 2023

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

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

## **Table of Contents**

<b>Certification .....</b>	<b>3</b>
<b>I. Corporate Overview .....</b>	<b>4</b>
<b>II. Businesses Overview.....</b>	<b>5</b>
<b>III. Financial Affairs.....</b>	<b>35</b>
<b>IV. Management Discussion and Analysis.....</b>	<b>159</b>
<b>V. Auditor's Report.....</b>	<b>160</b>
<b>VI. Corporate Governance .....</b>	<b>165</b>
<b>VII. Information on Shareholders .....</b>	<b>166</b>
<b>VIII. Executives and Employees .....</b>	<b>171</b>
<b>IX. Affiliates and Subsidiaries .....</b>	<b>174</b>
<b>X. Transactions with affiliates and subsidiaries .....</b>	<b>175</b>
<b>XI. Other Information.....</b>	<b>178</b>
<b>XII. Appendix.....</b>	<b>180</b>

# Certification

## Letter of Certification

We, Jong-hee Han and Hark-kyu Park, as a CEO and the executive in charge of reporting, respectively, certify that we have thoroughly reviewed the interim business report of Samsung Electronics Co., Ltd. for the three-month period ended March 31, 2023.

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

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

Date: May 15, 2023

Jong-hee Han



Vice Chairman and CEO  
Samsung Electronics Co., Ltd.

Executive responsible for reporting: Hark-kyu Park

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President and CFO  
Samsung Electronics Co., Ltd.

# I. Corporate Overview

## 1. Overview

Pursuant to the reporting guidelines set forth by the Financial Supervisory Service (FSS) of South Korea, the Overview section reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## 2. Company history

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Company history section, reported in the full-year business report, is not included in the interim reports.

## 3. Changes in paid-in capital

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

## 4. Stock information

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Stock information section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## 5. Changes to Articles of Incorporation

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Changes to Articles of Incorporation section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## II. Businesses Overview

### *Note on forward-looking statements*

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

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

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

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

#### **(Responsibility statement)**

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

### **1. Overview**

In addition to our headquarters in Korea, Samsung Electronics consists of 230 subsidiaries across the world responsible for sales and production, which include 9 regional headquarters for the Device eXperience (DX) Division, 5 regional headquarters for the Device Solutions (DS) Division, and subsidiaries of Samsung Display (SDC) and Harman.

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

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

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

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

We have 196 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 43 subsidiaries in Americas, including SEA (New Jersey; responsible for the sales of finished products including TV and HHPs), SII (California; manufacturing of TVs), SSI (California; sales of semiconductors and DPs), SAS (Texas; manufacturing of semiconductor products), SEDA (Brazil; manufacturing of multiple finished products) and Harman (Connecticut; automotive components) in the US.

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

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

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

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

In 1Q23, the Company recorded total revenue of KRW 63,745.4 billion, a decrease of 18.0% year-on-year. Major customers (listed in alphabetical order) included Apple, AT&T, Deutsche Telekom, Qualcomm, and Verizon.

## **2. Key products and services**

### **A. Revenue**

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

In 1Q23, reported revenue was KRW 46,222.5 billion (72.5% of total net sales) for DX; KRW 13,734.5 billion (21.5%) for DS; KRW 6,614.2 billion (10.4%) for SDC; and KRW 3,165.9 billion (5.0%) for Harman.

Organization	Major products	Revenue	Portion
DX Division	TVs, monitors, refrigerators, washing machines, air conditioners, HHPs, network systems, computers, etc.	462,225	72.5%
DS Division	DRAM, NAND flash, mobile APs, etc.	137,345	21.5%
SDC	OLED smartphone panels, etc.	66,142	10.4%
Harman	Digital cockpit, telematics, speakers, etc.	31,659	5.0%
Others	Overlapping internal transactions between Divisions	-59,917	-9.4%
Total		637,454	100.0%

Includes inter-divisional transactions.

☞ See [『4. Revenue and long-term contracts』](#) for information by each product.

## B. Average selling price changes

In 1Q23, TV Average Selling Price("ASP") for televisions decreased approximately 5% and HHP ASP increased approximately 21% year-on-year. Memory-product ASP fell approximately 50% year-on-year, and display panel (OLED panels for smartphones) ASP increased approximately 2%. The ASP of digital cockpits increased approximately 1.0% year-on-year.

## 3. Production materials and production facilities

### A. Key production materials

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

Organization	Type of purchase	Item	Specific usage	Purchase price	Portion <sup>1)</sup>	Main supplier(s)
DX Division	Production materials	Mobile AP	CPU	26,402	14.9%	Qualcomm, MediaTek, etc.
	Production materials	Camera module	Camera for HHP	16,662	9.4%	Semco, Powerlogics, etc.
	Production materials	Display panel	Color picture signaler for TV, monitor	11,224	6.3%	CSOT, AUO, BOE, etc.
	Production materials	Others	-	123,132	69.4%	
	Sub total			177,420	100.0%	
DS Division	Production materials	Chemical	Disk processing	7,106	16.5%	Soulbrain, DongWoo Fine-Chem, etc.
	Production materials	Wafer	Semiconductor disk	6,705	15.6%	SK Siltron, Siltronic, etc.
	Production materials	Others	-	29,284	67.9%	
	Sub total			43,095	100.0%	

Organization	Type of purchase	Item	Specific usage	Purchase price	Portion <sup>1)</sup>	Main supplier(s)
SDC	Production materials	FPCA	Circuit	4,323	20.7%	BH, YP Electronics, etc.
	Production materials	Window	Tempered glass	3,036	14.6%	Apple, Biel, etc.
	Production materials	Others	-	13,490	64.7%	
	Sub total			20,849	100.0%	
Harman	Production materials	SoC	Chips for vehicles	1,972	15.9%	Nvidia, Intel, etc.
	Production materials	Others	-	10,430	84.1%	
	Sub total			12,402	100.0%	
Others	Production materials	-	-	103	-	
Total				253,869	-	

Purchase price does not include sales between Divisions.

Semco is a subsidiary.

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

## B. Production material price trends

On a year-on-year basis, the prices of mobile APs and camera modules, which are major production materials for the DX Division, decreased approximately 20% and increased around 15%, respectively. The price of TV and monitor display panels decreased in the region of 14%. The prices of wafers for semiconductor disks increased by about 2%, and FPCAs for SDC declined by approximately 3%. The price of tempered glass windows also decreased, falling approximately 4%. For Harman, the price of SoCs increased by about 10% and memory for vehicles increased by approximately 7%.

## C. Production capacity, output, utilization rate

### (Capacity)

Organization	Item	Capacity			(1,000 units)
		1Q23	2022	2021	
DX Division	Image devices	13,697	55,747	54,235	
	HHP	83,400	332,170	319,550	
DS Division	Memory	465,881,169	1,905,731,836	1,756,009,941	
SDC	Display panel	572	2,700	3,604	
Harman	Digital cockpit	2,909	11,257	9,066	

Production capacity for major product categories on a consolidated basis.

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

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

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

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

SDC's production capacity is calculated as follows:

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

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

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

## (Output)

In 1Q23, the DX Division's image device output was 10,559 thousand units (major production sites: Mexico, Vietnam, Brazil, and Hungary), and HHP output was 54,361 thousand units (major production sites: Korea [Gumi], Vietnam, India, and Brazil). The DS Division's memory output (1Gb equivalent) was 465,881 million (major production sites: Korea [Hwaseong, Pyeongtaek, etc.] and China). SDC's output of display panels was 289 thousand units (major production sites: Korea [Cheonan, Asan]). Harman's Digital cockpit output was 2,188 thousand units.

Organization	Item	Output		
		1Q23	2022	2021
DX Division	Image devices	10,559	41,802	44,133
	HHP	54,361	229,180	260,501
DS Division	Memory	465,881,169	1,905,731,836	1,756,009,941
SDC	Display panel	289	2,008	2,849
Harman	Digital cockpit	2,188	8,334	6,928

Output for major product categories on a consolidated basis.

## (Utilization rate)

DX utilization rates in 1Q23 were calculated as actual output relative to production capacity. The utilization rates were 77.1% for image devices and 65.2% for HHPs.

Organization	Item	1Q23		
		Production capacity	Output	Utilization rate
DX Division	Image devices	13,697	10,559	77.1%
	HHP	83,400	54,361	65.2%

The DS Division and SDC respectively operate memory and display panel production in three shifts (covering 24 hours a day). Cumulative operating days including holidays were 90 days in 1Q23. 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].

Organization	Item	1Q23		
		Potential production time	Actual production time	Utilization rate
DS Division	Memory	21,600	21,600	100%
SDC	Display panel	10,800	10,800	100%

In 1Q23, Harman's utilization rate was 75.2% and was calculated as actual output relative to production capacity.

Organization	Item	1Q23		
		Production capacity	Output	Utilization rate
Harman	Digital cockpit	2,909	2,188	75.2%

## D. Production facilities and investment

### (Key facilities for production and operation)

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

#### [Operations]

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

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

The Company's property, plant and equipment include land, buildings and structures, machinery and equipment, and construction in progress. As of March 31, 2023, the total book value was KRW 171,857.5 billion, which is an increase of KRW 3,812.1 billion from year-end 2022.

							(KRW 100 mil)
Classification		Land	Buildings and structures	Machinery and equipment	Under construction	Other tangible assets	Total
Dec 31, 2022	Book value	98,922	407,069	797,146	336,076	41,241	1,680,454
	- Acquisition cost	100,246	677,138	3,030,006	336,076	132,485	4,275,951
	- Accumulated depreciation (including impairment loss)	-1,324	-270,069	-2,232,860	-	-91,244	-2,595,497
Change	General acquisition and capital expenditure	1,448	10,746	58,084	39,940	3,215	113,433
	Depreciation <sup>1)</sup>	-122	-9,318	-74,552	-	-4,017	-88,009
	Disposal/discard/impairment	-140	-1,717	-137	-	-85	-2,079
	Others <sup>2)</sup>	236	4,339	5,389	4,112	700	14,776
Mar 31, 2023	Book value	100,344	411,119	785,930	380,128	41,054	1,718,575
	- Acquisition cost	101,739	691,105	3,103,575	380,128	132,276	4,413,823
	- Accumulated depreciation (including impairment loss)	-1,395	-279,986	-2,317,645	-	-96,222	-2,695,248

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

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

2) Includes effects of FX rates and government subsidies.

## (Capex)

The Company's capex in 1Q23 was KRW 10.7 trillion, with investments concentrating on capacity expansions and migration to advanced nodes; and also on infrastructure for the DS Division and SDC. Amid deteriorated global market conditions, the Company in 2023 is pushing to continue investments to bolster future competitiveness and to ensure readiness for mid- to long-term demand. At the same time, the Company aims to boost investment efficiency to stabilize results.

### [Capex, by organization]

					(KRW 100 mil)
Organization	Purpose	Period	Assets	Investment	
DS division	Establishment, addition, upgrade	January–March 2023	Buildings, facilities, etc.	97,877	
SDC	Establishment, addition, upgrade	January– March 2023	Buildings, facilities, etc.	3,328	
Other	Establishment, addition, upgrade	January– March 2023	Buildings, facilities, etc.	6,183	
Total					107,388

## 4. Revenue and long-term contracts

### A. Revenue

In 1Q23, the Company recorded total revenue of KRW 63,745.4 billion, a decrease of 18.0% year-on-year. By organization, when compared to the same period last year, revenue of the DX Division, DS Division, and SDC decreased by 3.8%, 48.9%, and 17.0%, respectively, and revenue of Harman increased 18.7%.

Organization	Revenue types	Product categories	1Q23	2022	2021
DX Division	Goods, products, services, other	TVs, monitors, refrigerators, washing machines, air conditioners, HHPs, Network systems, computers, etc.	462,225	1,824,897	1,662,594
DS Division	Goods, products, services, other	DRAM, NAND flash, mobile APs, etc.	137,345	984,553	953,872
SDC	Goods, products, services, other	OLED panels for smartphones, etc.	66,142	343,826	317,125
Harman	Goods, products, services, other	Digital cockpit, telematics, speakers, etc.	31,659	132,137	100,399
Others	Overlapping internal transactions between Divisions		-59,917	-263,099	-237,942
Total			637,454	3,022,314	2,796,048

Includes inter-divisional transactions.

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

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

Classification	1Q23	2022	2021
Image devices	74,349	332,795	314,974
Mobile devices	307,446	1,154,254	1,046,806
Memory	89,170	685,349	726,022
Display panels	66,142	343,826	317,125

Includes inter-divisional transactions.

## (2) Revenue, by type

(KRW 100 mil)			
Classification	1Q23	2022	2021
Products	604,696	2,903,461	2,658,785
Services and other revenue	32,758	118,853	137,263
Total	637,454	3,022,314	2,796,048

Other revenue consists of royalty income, etc.

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

(KRW 100 mil)			
Classification	1Q23	2022	2021
Domestic	61,105	221,799	221,497
Export	Americas	134,083	659,617
	Europe	59,068	265,147
	Asia and Africa	88,278	425,114
	China	79,153	546,998
	Total	421,687	2,118,675

Domestic consumption and exports on a separate basis.

## B. Sales channels

### (1) Domestic

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

### (2) Overseas

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

### (3) Sales ratio (global), by channel

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

## C. Sales methods and conditions

### (1) Domestic

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

### (2) Overseas

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

## D. Sales strategy

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

## E. Major customers

In 1Q23, major customers (listed alphabetically) included Apple, AT&T, Deutsche Telekom, Qualcomm, and Verizon. Sales to the five major customers accounted for approximately 15% of total sales.

## F. Long-term contracts

As of March 31, 2023, there were no long-term contracts that have a significant impact on the Company's financial statement.

## **5. Risk management and derivative trading**

### **A. Financial risk management policy**

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

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

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

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

### **B. Major financial risks**

#### **(1) Market risk**

##### **(Foreign exchange risk)**

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

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

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

##### **(Interest rate risk)**

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

##### **(Price risk)**

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

As of March 31, 2023, a price fluctuation of marketable equity securities (listed stocks) of 1% changes ‘other comprehensive income’ (before income tax) by KRW 111,415 million and ‘profit before tax’ by KRW 5,354 million. The figures as of the same date in 2022 were KRW 107,834 million and KRW 3,750 million, respectively.

## **(2) Credit risk**

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

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

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

## **(3) Liquidity risk**

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

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

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

## **(4) Capital risk**

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

As of March 31, 2023, the Company has an AA- and Aa2 credit rating from S&P and Moody’s, respectively, and the figures for total liabilities and total equity are as follows:

	Mar 31, 2023	Dec 31, 2022
Total liabilities	94,292,361	93,674,903
Total equity	359,799,416	354,749,604
Total liabilities to equity ratio	26.2%	26.4%

### C. Derivative instruments and put options

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

As of March 31, 2023, the Company had 2,718 currency forward contracts involving 34 foreign currencies, including USD, EUR, JPY and the book value of assets and liabilities as well as valuation gain and loss were as follows:

	Assets	Liabilities	Valuation gain	Valuation loss
Currency forwards	142,276	176,174	253,249	311,539

According to the shareholders' agreement signed with Rainbow Robotics, its major shareholder, etc., the Company has the right, within a specific time period, to demand that the major shareholder, etc., sell all or part of their Rainbow Robotics shares to the Company or the third party designated by the Company. Moreover, the major shareholder, etc. of Rainbow Robotics has the right to demand that the Company sell all or part of the Company's Rainbow Robotics shares back to the major shareholder, etc., under certain conditions. Fair value of the above call option as of March 31, 2023, was evaluated by Deloitte Anjin LLC.

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

Samsung Display may exercise its put option to sell all or part of its shares of TCL China Star Optoelectronics Technology Co. Ltd. (CSOT) to TCL Technology Group Corporation (TCL), if CSOT remains unlisted within the listing period, according to the shareholders' agreement executed with TCL and CSOT on April 1, 2021.

Fair value of the above put option as of March 31, 2023, was evaluated by Earnest & Young Global Limited.

## 6. Major contracts and research and development activities

### A. Major contracts

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

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

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

## B. Summary of R&D activities and expenditures

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

As of March 31, 2023, the Company's R&D expenses were KRW 6,579.0 billion year-to-date. Among this, KRW 6,578.7 billion was recognized as expenditures, excluding government subsidies and capitalized expenses.

### (R&D expenses)

		(KRW mil)		
		1Q23	2022	2021
Total R&D expenditures		6,579,002	24,929,171	22,596,487
(Government subsidies)		-268	-9,973	-1,053
R&D expenditures		6,578,734	24,919,198	22,595,434
Accounting	Capitalization of development expenses (intangible asset)	-	-	-193,708
	R&D costs (expenses)	6,578,734	24,919,198	22,401,726
R&D expenses/revenue ratio <sup>1)</sup>		10.3%	8.2%	8.1%

On a consolidated basis.

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

## C. R&D organization and operations

### (Domestic)

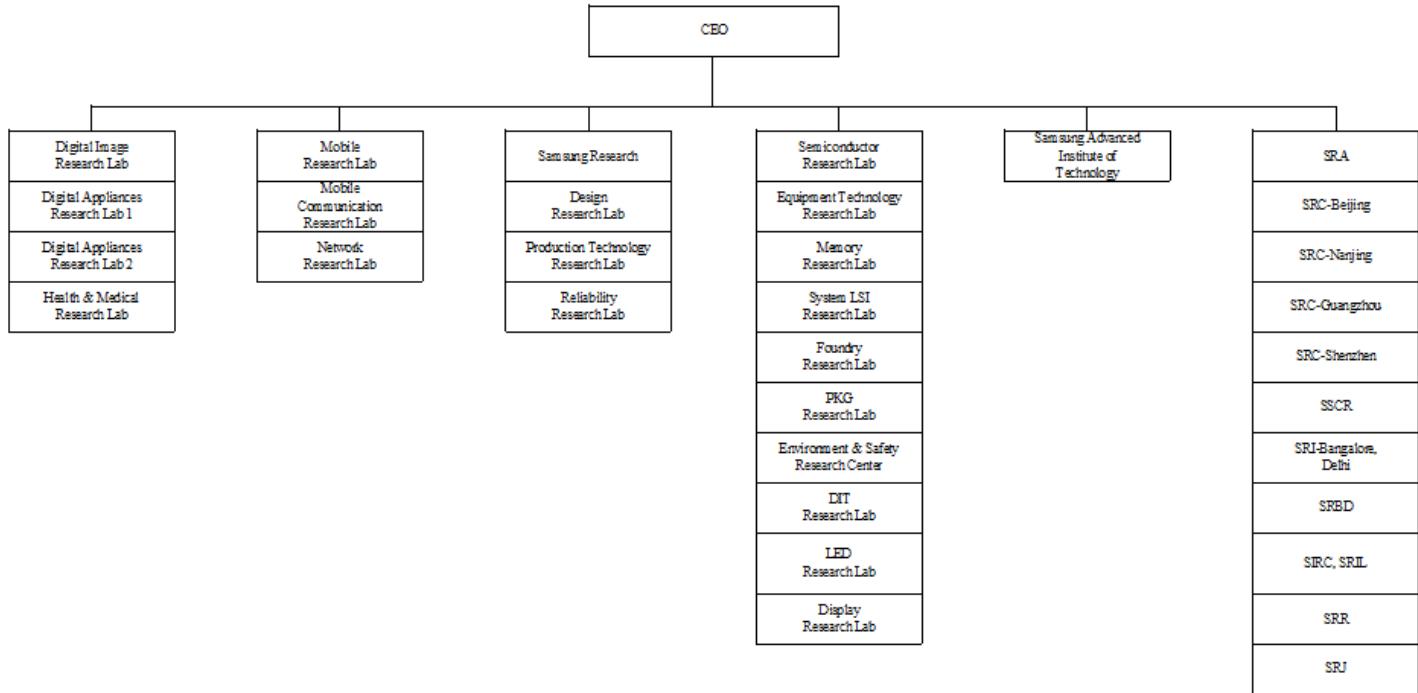
The Company operates three levels of R&D organizations: R&D teams of business units under each Division that develop market-ready technologies with a 1–2 year outlook; research institutes of each Division that develop mid- to long-term technology with a 3–5 year outlook; and the Samsung Advanced Institute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

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

### (Overseas)

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

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



As of March 31, 2023.

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

## D. R&D results

The Company's key R&D results by organization in 1Q23 are as follows:

DX Division	
Research project	Details
Vacuum cleaner	<ul style="list-style-type: none"> <li>Release of BESPOKE Jet AI 280W, a cordless stick vacuum with top-notch performance (suction power, run time, etc.)</li> </ul>
Galaxy S23	<ul style="list-style-type: none"> <li>Launch of Galaxy S23 · S23+ · S23 Ultra</li> </ul>
Galaxy A	<ul style="list-style-type: none"> <li>Rollout of A54 5G</li> <li>Release of A34 5G</li> <li>Launch of A14 LTE · 5G</li> </ul>
Galaxy Book	<ul style="list-style-type: none"> <li>Rollout of Galaxy Book3 Ultra</li> <li>Rollout of Galaxy Book3 Pro 360</li> <li>Release of Galaxy Book3 Pro</li> <li>Launch of Galaxy Book3 360</li> </ul>
Cell solution	<ul style="list-style-type: none"> <li>Development of Strand Small Cell (small cell solution designed to be installed on cables) for the first commercial use</li> </ul>
DS Division	
Research project	Details
SSD	<ul style="list-style-type: none"> <li>Mass production of PM9C1a, a high-performance PC SSD equipped with a 5nm controller</li> </ul>
Exynos	<ul style="list-style-type: none"> <li>Standardization of 5G non-terrestrial networks (NTN) modem technology for smartphone-satellite communication</li> <li>Release of Exynos Connect U100, a chipset for short-range wireless communication</li> </ul>
Image sensor	<ul style="list-style-type: none"> <li>Rollout of ultra-high resolution 200MP image sensor (HP2, 0.6um/200Mp)</li> </ul>

**SDC**

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

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 230,117 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 March 31, 2023]

(Unit: No. of patents)

	Korea	US	Europe	China	Japan	Others	Total
Number	53,672	89,594	42,245	21,030	8,960	14,616	230,117

In 1Q23, the Company invested KRW 6.6 trillion in R&D and registered 2,220 domestic and 2,268 US patents.

#### (Number of patent registrations per year)

(Unit: No. of patents)

	1Q23	2022	2021
Korea	2,220	9,136	8,437
US	2,268	8,490	8,565

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

The Company has 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. In 1Q23, the Company acquired 112 US design patents, in part for the aforementioned purposes.

### B. Environmental regulations

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

## **(Environmental regulation of products)**

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

Relevant laws are as follows:

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

## **(Environmental regulations in the workplace)**

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

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

Major Relevant Domestic and International Laws are as follows:

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

## (Greenhouse gas emission and energy consumption management)

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

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

(Unit: tCO<sub>2</sub>-eq, TJ)

	2022	2021	2020
Greenhouse gas (tCO <sub>2</sub> -eq)	19,568,505	19,267,835	17,234,522
Energy (TJ)	277,516	274,298	255,990

On a consolidated basis.

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

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

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

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

## C. Current status of each division

### [DX Division]

#### Industry overview

##### 1) TV Industry

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

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

##### 2) Mobile phone industry

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

Fifth generation mobile communication services, which will lead innovation alongside the fourth industrial revolution, was successfully launched in Korea and the US, and is now commercialized globally. As a result, 5G smartphones are accelerating the development of an ecosystem of mashup services and related industries, with the sales increasing sharply to 680 million units in 2022 from 270 million units in 2020 (Strategy Analytics, March 2023).

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

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

## □ Market condition

### 1) TV Industry

In 2022, TV demand declined compared to the previous year, falling to 203.26 million units sold due to the impacts of a decline in real household income triggered by the Russia-Ukraine war, increased supply instability of raw materials and energy, and expanded global inflation. However, in 2023, we project the market to grow slightly to 205.52 million units centering on emerging markets, such as Asia, Middle East, and Africa (*Omdia*, March 2023).

< Market share of TV >

Product	1Q23	2022	2021
TV	32.9%	29.7%	29.5%

Global market share in revenue; from Omdia. (Data for 1Q23 is an estimate from the Company.)

### 2) Mobile phone industry

The smartphone market is expected to slightly decline from 1.20 billion units in 2022 to 1.19 billion units in 2023 due to uncertainties such as continued geopolitical instability and inflation (Strategy Analytics, March 2023). The tablet market, which continued to trend downward due to weak replacement demand, grew to 180 million units in 2021 thanks to an increase in contactless demand triggered by COVID-19. In 2022, it dropped to 160 million units, and in 2023, it is projected to remain at a similar level (Strategy Analytics, March 2023).

< Market share of Smartphone >

Product	1Q23	2022	2021
Smartphone	25.2%	21.7%	20.0%

Global market share in quantity; data from research firm *Strategy Analytics*. (Figure for 1Q23 is estimate from *Strategy Analytics*.)

## Business condition

### 1) TV Industry

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

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

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

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

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

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

### 2) Mobile phone industry

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

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

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

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

craftsmanship, leading the foldable market.

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

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

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

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

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

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

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

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

## [DS Division]

### Industry overview

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

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

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

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

### Market condition

For the memory market, overall memory demand remained weak as a number of our customers continued to adjust inventory to solidify financial health and as consumer sentiment kept deteriorating under external uncertainties such as a global economic downturn. In particular, the inventory reduction trend continued mainly from hyperscalers, and reduced IT spending by enterprises resulted in sluggish demand for server and storage. We focused on securing DDR5 DRAM demand for server following the adoption of a new CPU, and at the same time, preemptively addressed demand for DRAM centering on high-density products by major mobile customers. For NAND, we also actively addressed demand for high-density products (512GB and above for flagship mobile products) across overall applications.

Growth in the foundry market slowed compared to the previous year, affected by weak demand triggered by the prolonged global economic downturn that continued from 2H22; and demand is likely to remain weak in 2Q. However, we expect the market to rebound gradually from 2H thanks to a boost in demand, including on effects related to alleviated monetary tightening in major economies and normalized conditions in the supply chain. Growth in the mid to long term is likely to stay on track thanks to increased penetration of 5G for mobile and heightened demand for high performance automotive-use SoCs (for autonomous driving) and high performance computing.

#### <Market share of DRAM >

Product	1Q23	2022	2021
DRAM	43.0%	43.1%	43.0%

Global market share in revenue; data from research firm *DRAMeXchange*. (Data for 1Q23 is an estimate from the Company.)

### Business condition

In 2Q23 for the memory business, demand growth is projected to be limited due to macroeconomic risks and conservative investments by server customers alongside healthy inventory levels at mainly mobile and PC customers. In response, for DRAM, we will address increasing demand for DDR5 and high-density products resulting from the release of a new CPU for server and increased AI demand while we actively address LPDDR5x mobile demand for high-end products. For NAND products, we will leverage our cost competitiveness to address demand from the high-density trend from our major

customers, and we will create new demand by expanding entry into the mobile QLC market.

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

In the Foundry business, we are preparing throughout our business areas to overcome the still-depressed market conditions and to ensure readiness for a potential market recovery from 2H. For advanced nodes, we continue to focus our capabilities on the timely development of 2nd generation 3-nano products. We secured stable yields for 2nd and 3rd generation 4-nano products as we did for 1st generation 5-nano and 4-nano products; and we project that we will produce and supply 2nd generation 4-nano products according to plan. And by boosting the technological competitiveness of our advanced nodes, we will concentrate on securing future growth. Meanwhile, we are striving to address customer demand through timely capacity expansions by establishing new fabs, including in Pyeongtaek and Taylor, and by improving our supply capabilities. For mature nodes, demand has continued to trend down, but we are taking a multifaceted approach to overcome market conditions, including by winning new customers and increasing sales to our current customers. In addition, we continue to enhance our process technology and cost competitiveness in the mid- to long term, and we are endeavoring to diversify our portfolio, expanding into and within various applications such as high-performance computing, automotive semiconductors, 5G, and IoT. Through these efforts, we are reinforcing our overall business structure by diversifying our non-mobile customer base to stabilize results and sustain growth in all market conditions.

## [SDC]

### Industry overview

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

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

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

### Market condition

The market for smartphone display panels is expected to slightly decrease to 1.36 billion units in 2023 from 1.38 billion units in 2022. However, for smartphone-use OLED panels, the market is expected to grow to 0.62 billion units in 2023 from 0.57 billion units in 2022, and the OLED portion of smartphone panels in 2023 is anticipated to increase to 46% from 41% in 2022 (*Omdia*, April 2023).

The market size for large display panels was 0.90 billion units in 2022, and the size is projected to remain similar in 2023 (*Omdia*, April 2023).

< Market share of smartphone panel >

Product	1Q23	2022	2021
Smartphone panels	49.2%	56.7%	51.4%

Global market share in revenue; figure for 1Q23 is estimate from research firm *Omdia*.

#### Business condition

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

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

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

Furthermore, we are diversifying our mobile panel business—which is concentrated on smartphones—as indicated by our announcement to invest in IT OLED lines in order to expand into IT, gaming, and automotive products and further solidify our business leadership.

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

#### **[Harman]**

#### Industry overview

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

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

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

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

## Market condition

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

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

< Market share of digital cockpit >

Product	1Q23	2022	2021
Digital cockpits	23.1%	24.7%	25.3%

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

## Business condition

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

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

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

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

## D. Financial summary, by organization

In 1Q23 by organization, DX accounted for 72.5% of revenue with reported revenue of KRW 46,222.5 billion; DS contributed approximately 21.5% with revenue of KRW 13,734.5 billion; SDC was responsible for 10.4% with revenue of KRW 6,614.2 billion; and Harman contributed 5.0% with revenue of KRW 3,165.9 billion.

In 1Q23, DX accounted for an operating profit of KRW 4,208.8 billion; DS with KRW -4,581.9 billion; SDC with a total operating profit of KRW 776.0 billion; and Harman with an operating profit of KRW 128.9 billion.

Organization	Classification	1Q23		2022		2021	
		Amount	Portion of corresponding total	Amount	Portion of corresponding total	Amount	Portion of corresponding total
DX Division	Revenue	462,225	72.5%	1,824,897	60.4%	1,662,594	59.5%
	Operating profit	42,088	657.4%	127,461	29.4%	173,866	33.7%
	Total assets	2,441,149	40.1%	2,279,669	38.6%	2,479,832	42.0%
DS Division	Revenue	137,345	21.5%	984,553	32.6%	953,872	34.1%
	Operating profit	-45,819	-715.7%	238,158	54.9%	291,920	56.5%
	Total assets	2,650,965	43.5%	2,620,558	44.3%	2,258,223	38.3%
SDC	Revenue	66,142	10.4%	343,826	11.4%	317,125	11.3%
	Operating profit	7,760	121.2%	59,530	13.7%	44,574	8.6%
	Total assets	71,685	11.8%	737,798	12.5%	668,836	11.3%
Harman	Revenue	31,659	5.0%	132,137	4.4%	100,399	3.6%
	Operating profit	1,289	20.1%	8,805	2.0%	5,991	1.2%
	Total assets	172,735	2.8%	171,023	2.9%	158,874	2.7%

Includes inter-divisional transactions.

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

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

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

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

### III. Financial Affairs

#### 1. Financial statements

##### A. Consolidated financial statements

(KRW mil)

Classification	First quarter of 55 <sup>th</sup> March 31, 2023	54th December 31, 2022	53rd December 31, 2021
<b>Current assets</b>	214,442,141	218,470,581	218,163,185
- Cash and cash equivalents	72,949,377	49,680,710	39,031,415
- Short-term financial instruments	35,200,184	65,102,886	81,708,986
- Other current financial assets	-	414,610	3,409,791
- Trade receivables	36,632,159	35,721,563	40,713,415
- Inventories	54,419,586	52,187,866	41,384,404
- Others	15,240,835	15,362,946	11,915,174
<b>Non-current assets</b>	239,649,636	229,953,926	208,457,973
- Other non-current financial assets	14,667,502	12,802,480	15,491,183
- Investment in associates and joint ventures	11,198,623	10,893,869	8,932,251
- Property, plant, and equipment	171,857,516	168,045,388	149,928,539
- Intangible assets	23,617,703	20,217,754	20,236,244
- Others	18,308,292	17,994,435	13,869,756
<b>Total assets</b>	454,091,777	448,424,507	426,621,158
<b>Current liabilities</b>	76,057,448	78,344,852	88,117,133
<b>Non-current liabilities</b>	18,234,913	15,330,051	33,604,094
<b>Total liabilities</b>	94,292,361	93,674,903	121,721,227
<b>Equity attributable to owners of the parent company</b>	350,019,928	345,186,142	296,237,697
- Capital stock	897,514	897,514	897,514
- Share premium	4,403,893	4,403,893	4,403,893
- Retained earnings	336,881,852	337,946,407	293,064,763
- Others	7,836,669	1,938,328	-2,128,473
<b>Non-controlling interests</b>	9,779,488	9,563,462	8,662,234
<b>Total Equity</b>	359,799,416	354,749,604	304,899,931
	Jan–Mar 2023	Jan–Dec 2022	Jan–Dec 2021
<b>Revenue</b>	63,745,371	302,231,360	279,604,799
<b>Operating profit</b>	640,178	43,376,630	51,633,856
<b>Profit for the period</b>	1,574,600	55,654,077	39,907,450
- Owners of the parent company	1,401,252	54,730,018	39,243,791
- Non-controlling interests	173,348	924,059	663,659
<b>Basic earnings per share (KRW)</b>	206	8,057	5,777
<b>Diluted earnings per share (KRW)</b>	206	8,057	5,777
Number of companies subject to consolidation accounting	230	232	229

Data shown in conformity with K-IFRS.

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

## B. Separate financial statements

(KRW mil)

Classification	First quarter of 55th	54th	53rd
	March 31, 2023	December 31, 2022	December 31, 2021
<b>Current assets</b>	67,947,428	59,062,658	73,553,416
- Cash and cash equivalents	8,414,405	3,921,593	3,918,872
- Short-term financial instruments	1,134	137	15,000,576
- Trade receivables	22,999,363	20,503,223	33,088,247
- Inventories	30,485,357	27,990,007	15,973,053
- Others	6,047,169	6,647,698	5,572,668
<b>Non-current assets</b>	206,462,959	201,021,092	177,558,768
- Other non-current financial assets	1,483,225	1,364,608	1,664,667
- Subsidiary, associate, and joint venture investments	57,354,868	57,397,249	56,225,599
- Property, plant and equipment	126,355,577	123,266,986	103,667,025
- Intangible assets	11,318,579	8,561,424	8,657,456
- Others	9,950,710	10,430,825	7,344,021
<b>Total assets</b>	274,410,387	260,083,750	251,112,184
<b>Current liabilities</b>	46,323,496	46,086,047	53,067,303
<b>Non-current liabilities</b>	17,118,387	4,581,512	4,851,149
<b>Total liabilities</b>	63,441,883	50,667,559	57,918,452
- Capital stock	897,514	897,514	897,514
- Share premium	4,403,893	4,403,893	4,403,893
- Retained earnings	206,093,134	204,388,016	188,774,335
- Others	-426,037	-273,232	-882,010
<b>Total Equity</b>	210,968,504	209,416,191	193,193,732
Evaluation method of subsidiary, associate, and joint venture investment securities	Cost methods	Cost methods	Cost methods
	Jan–Mar 2023	Jan–Dec 2022	Jan–Dec 2021
<b>Revenue</b>	42,168,679	211,867,483	199,744,705
<b>Operating profit</b>	-3,908,761	25,319,329	31,993,162
<b>Profit for the period</b>	4,158,095	25,418,778	30,970,954
<b>Basic earnings per share (KRW)</b>	612	3,742	4,559
<b>Diluted earnings per share (KRW)</b>	612	3,742	4,559

Data shown in conformity with K-IFRS.

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

## 2. Consolidated financial statements

Samsung Electronics Co., Ltd. and its subsidiaries

### INTERIM CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

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

	Notes	March 31, 2023	December 31, 2022	March 31, 2023	December 31, 2022
		KRW	KRW	USD	USD
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	3, 25	72,949,377	49,680,710	57,241,487	38,983,166
Short-term financial instruments	3, 25	35,200,184	65,102,886	27,620,673	51,084,548
Short-term financial assets at amortized cost	3, 25	-	414,610	-	325,334
Short-term financial assets at fair value through profit or loss	3, 4, 25	32,911	29,080	25,824	22,818
Trade receivables	3, 25	36,632,159	35,721,563	28,744,306	28,029,785
Non-trade receivables	3, 25	5,728,399	6,149,209	4,494,926	4,825,125
Prepaid expenses		3,416,279	2,867,823	2,680,666	2,250,306
Inventories	5	54,419,586	52,187,866	42,701,640	40,950,467
Other current assets	3, 25	6,063,246	6,316,834	4,757,671	4,956,657
		<b>214,442,141</b>	<b>218,470,581</b>	<b>168,267,193</b>	<b>171,428,206</b>
<b>Non-current assets</b>					
Financial assets at fair value through other comprehensive income	3, 4, 25	13,042,895	11,397,012	10,234,422	8,942,940
Financial assets at fair value through profit or loss	3, 4, 25	1,624,607	1,405,468	1,274,787	1,102,834
Investments in associates and joint ventures	6	11,198,623	10,893,869	8,787,269	8,548,137
Property, plant and equipment	7	171,857,516	168,045,388	134,852,141	131,860,863
Intangible assets	8	23,617,703	20,217,754	18,532,200	15,864,348
Net defined benefit assets	11	5,268,877	5,851,972	4,134,351	4,591,891
Deferred income tax assets		5,103,474	5,101,318	4,004,564	4,002,872
Other non-current assets	3, 25	7,935,941	7,041,145	6,227,127	5,525,005
		<b>239,649,636</b>	<b>229,953,926</b>	<b>188,046,861</b>	<b>180,438,890</b>
<b>Total assets</b>		<b>454,091,777</b>	<b>448,424,507</b>	<b>356,314,054</b>	<b>351,867,096</b>

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	March 31, 2023	December 31, 2022	March 31, 2023	December 31, 2022
		KRW	KRW	USD	USD
<b>Liabilities and Equity</b>					
<b>Current liabilities</b>					
Trade payables	3, 25	12,343,531	10,644,686	9,685,649	8,352,609
Short-term borrowings	3, 9, 25	4,442,640	5,147,315	3,486,025	4,038,965
Other payables	3, 25	19,081,329	17,592,366	14,972,625	13,804,274
Advances received	14	1,305,902	1,314,934	1,024,707	1,031,795
Withholdings	3, 25	792,748	1,298,244	622,049	1,018,698
Accrued expenses	3, 14, 25	24,628,404	29,211,487	19,325,271	22,921,497
Current income tax liabilities		3,357,886	4,250,397	2,634,846	3,335,176
Current portion of long-term liabilities	3, 9, 10, 25	1,197,522	1,089,162	939,664	854,637
Provisions	12	7,011,788	5,844,907	5,501,968	4,586,347
Other current liabilities	3, 14, 25	1,895,698	1,951,354	1,487,505	1,531,178
		<b>76,057,448</b>	<b>78,344,852</b>	<b>59,680,309</b>	<b>61,475,176</b>
<b>Non-current liabilities</b>					
Debentures	3, 10, 25	551,172	536,093	432,490	420,658
Long-term borrowings	3, 9, 25	3,750,644	3,560,672	2,943,033	2,793,967
Long-term other payables	3, 25	5,108,064	2,753,305	4,008,166	2,160,447
Net defined benefit liabilities	11	238,017	268,370	186,766	210,583
Deferred income tax liabilities		4,634,692	5,111,332	3,636,723	4,010,730
Long-term provisions	12	2,180,502	1,928,518	1,710,983	1,513,258
Other non-current liabilities	3, 14, 25	1,771,822	1,171,761	1,390,302	919,452
		<b>18,234,913</b>	<b>15,330,051</b>	<b>14,308,463</b>	<b>12,029,095</b>
<b>Total liabilities</b>		<b>94,292,361</b>	<b>93,674,903</b>	<b>73,988,772</b>	<b>73,504,271</b>

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	March 31, 2023	December 31, 2022	March 31, 2023	December 31, 2022
		KRW	KRW	USD	USD
<b>Equity attributable to owners of the Company</b>					
Preference shares	15	119,467	119,467	93,743	93,743
Ordinary shares	15	778,047	778,047	610,513	610,513
Share premium		4,403,893	4,403,893	3,455,621	3,455,621
Retained earnings	16	336,881,852	337,946,407	264,342,463	265,177,792
Other components of equity	17	7,836,669	1,938,328	6,149,231	1,520,955
		<b>350,019,928</b>	<b>345,186,142</b>	<b>274,651,571</b>	<b>270,858,624</b>
Non-controlling interests		9,779,488	9,563,462	7,673,711	7,504,201
<b>Total equity</b>		<b>359,799,416</b>	<b>354,749,604</b>	<b>282,325,282</b>	<b>278,362,825</b>
<b>Total liabilities and equity</b>		<b>454,091,777</b>	<b>448,424,507</b>	<b>356,314,054</b>	<b>351,867,096</b>

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	For the three-month periods ended March 31,			
		2023 KRW	2022 KRW	2023 USD	2022 USD
<b>Revenue</b>	26	63,745,371	77,781,498	50,019,341	61,033,127
<b>Cost of sales</b>	18	46,007,093	47,072,057	36,100,574	36,936,224
<b>Gross profit</b>		<b>17,738,278</b>	<b>30,709,441</b>	<b>13,918,767</b>	<b>24,096,903</b>
Selling and administrative expenses	18, 19	17,098,100	16,588,032	13,416,436	13,016,199
<b>Operating profit</b>	26	<b>640,178</b>	<b>14,121,409</b>	<b>502,331</b>	<b>11,080,704</b>
Other non-operating income	20	504,295	700,193	395,707	549,423
Other non-operating expense	20	203,982	453,110	160,059	355,544
Share of net profit of associates and joint ventures	6	213,841	232,477	167,795	182,419
Financial income	21	4,628,049	3,502,189	3,631,510	2,748,077
Financial expense	21	3,956,001	3,033,318	3,104,170	2,380,166
<b>Profit before income tax</b>		<b>1,826,380</b>	<b>15,069,840</b>	<b>1,433,114</b>	<b>11,824,913</b>
Income tax expense	22	251,780	3,745,212	197,566	2,938,771
<b>Profit for the period</b>		<b>1,574,600</b>	<b>11,324,628</b>	<b>1,235,548</b>	<b>8,886,142</b>
<b>Profit attributable to</b>					
Owners of the Company		1,401,252	11,129,094	1,099,526	8,732,712
Non-controlling interests		173,348	195,534	136,022	153,430
Earnings per share (in Korean won, in US dollars)	23				
- Basic		206	1,638	0.16	1.29
- Diluted		206	1,638	0.16	1.29

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 COMPREHENSIVE INCOME**

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

	Notes	For the three-months periods ended March 31,			
		2023	2022	2023	2022
		KRW	KRW	USD	USD
<b>Profit for the period</b>		<b>1,574,600</b>	<b>11,324,628</b>	<b>1,235,548</b>	<b>8,886,142</b>
<b>Other comprehensive income (loss)</b>					
<b>Items that will not be reclassified subsequently to profit or loss:</b>					
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	996,481	(604,180)	781,913	(474,084)
Share of other comprehensive income of associates and joint ventures, net of tax	17	29,888	3,752	23,452	2,944
Remeasurement of net defined benefit liabilities (assets), net of tax	17	(247,624)	(62,888)	(194,304)	(49,346)
<b>Items that may be reclassified subsequently to profit or loss:</b>					
Share of other comprehensive loss of associates and joint ventures, net of tax	17	135,760	(260,583)	106,528	(204,472)
Gain on overseas business translation, net of tax	17	5,056,887	2,437,033	3,968,008	1,912,276
Gain on valuation of cash flow hedge derivatives	17	8,108	6,342	6,362	4,976
<b>Other comprehensive income for the period, net of tax</b>		<b>5,979,500</b>	<b>1,519,476</b>	<b>4,691,959</b>	<b>1,192,294</b>
<b>Total comprehensive income for the period</b>		<b>7,554,100</b>	<b>12,844,104</b>	<b>5,927,507</b>	<b>10,078,436</b>
<b>Comprehensive income attributable to:</b>					
Owners of the Company		7,286,763	12,607,150	5,717,735	9,892,504
Non-controlling interests		267,337	236,954	209,772	185,932

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)

<b>For the three-month period ended March 31, 2022</b>	<b>Notes</b>	<b>Preference shares</b>	<b>Ordinary shares</b>	<b>Share premium</b>	<b>Retained earnings</b>	<b>Other components of equity</b>	<b>Equity attributable to owners of the parent company</b>	<b>Non-controlling interests</b>	<b>Total</b>
<b>Balance as of January 1, 2022</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>293,064,763</b>	<b>(2,128,473)</b>	<b>296,237,697</b>	<b>8,662,234</b>	<b>304,899,931</b>
Profit for the period	-	-	-	-	11,129,094	-	11,129,094	195,534	11,324,628
Gain (Loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	-	-	-	-	2,272	(615,197)	(612,925)	8,745	(604,180)
Share of other comprehensive loss of associates and joint ventures, net of tax	-	-	-	-	-	(257,360)	(257,360)	529	(256,831)
Gain on overseas business translation, net of tax	-	-	-	-	-	2,404,883	2,404,883	32,150	2,437,033
Remeasurement of net defined benefit liabilities (assets), net of tax	-	-	-	-	-	(62,884)	(62,884)	(4)	(62,888)
Gain on valuation of cash flow hedge derivatives	-	-	-	-	-	6,342	6,342	-	6,342
<b>Total comprehensive income for the period</b>	-	-	-	<b>11,131,366</b>	<b>1,475,784</b>	<b>12,607,150</b>	<b>236,954</b>	<b>12,844,104</b>	
Dividends declared	-	-	-	-	(2,452,977)	-	(2,452,977)	(527)	(2,453,504)
Capital transactions under common control	-	-	-	-	-	-	-	(228)	(228)
Others	-	-	-	-	-	-	-	616	616
<b>Total transactions with owners</b>	-	-	-	<b>(2,452,977)</b>	-	<b>(2,452,977)</b>	-	<b>(139)</b>	<b>(2,453,116)</b>
<b>Balance as of March 31, 2022</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>301,743,152</b>	<b>(652,689)</b>	<b>306,391,870</b>	<b>8,899,049</b>	<b>315,290,919</b>

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))

<b>For the three-month period ended March 31, 2022</b>	<b>Notes</b>	<b>Preference shares</b>	<b>Ordinary shares</b>	<b>Share premium</b>	<b>Retained earnings</b>	<b>Other components of equity</b>	<b>Equity attributable to owners of the parent company</b>	<b>Non-controlling interests</b>	<b>Total</b>
<b>Balance as of January 1, 2022</b>		<b>93,743</b>	<b>610,513</b>	<b>3,455,621</b>	<b>229,960,328</b>	<b>(1,670,158)</b>	<b>232,450,047</b>	<b>6,797,031</b>	<b>239,247,078</b>
Profit for the period	-	-	-	-	8,732,712	-	8,732,712	153,430	8,886,142
Gain (Loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	-	-	-	-	1,783	(482,730)	(480,947)	6,863	(474,084)
Share of other comprehensive loss of associates and joint ventures, net of tax	-	-	-	-	-	(201,943)	(201,943)	415	(201,528)
Gain on overseas business translation, net of tax	-	-	-	-	-	1,887,049	1,887,049	25,227	1,912,276
Remeasurement of net defined benefit liabilities (assets), net of tax	-	-	-	-	-	(49,343)	(49,343)	(3)	(49,346)
Gain on valuation of cash flow hedge derivatives	-	-	-	-	-	4,976	4,976	-	4,976
<b>Total comprehensive income for the period</b>	-	-	-	<b>8,734,495</b>	<b>1,158,009</b>	<b>9,892,504</b>	<b>185,932</b>	<b>10,078,436</b>	
Dividends declared	-	-	-	-	(1,924,788)	-	(1,924,788)	(414)	(1,925,202)
Capital transactions under common control	-	-	-	-	-	-	-	(179)	(179)
Others	-	-	-	-	-	-	-	483	483
<b>Total transactions with owners</b>	-	-	-	<b>(1,924,788)</b>	-	<b>(1,924,788)</b>	<b>(110)</b>	<b>(1,924,898)</b>	
<b>Balance as of March 31, 2022</b>		<b>93,743</b>	<b>610,513</b>	<b>3,455,621</b>	<b>236,770,035</b>	<b>(512,149)</b>	<b>240,417,763</b>	<b>6,982,853</b>	<b>247,400,616</b>

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

**Samsung Electronics Co., Ltd. and its subsidiaries**

**INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**

*(In millions of Korean won)*

For the three-month period ended March 31, 2023	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Equity attributable to owners of the parent company	Non-controlling interests	Total
<b>Balance as of January 1, 2023</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>337,946,407</b>	<b>1,938,328</b>	<b>345,186,142</b>	<b>9,563,462</b>	<b>354,749,604</b>
Profit for the period		-	-	-	1,401,252	-	1,401,252	173,348	1,574,600
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	(12,830)	986,324	973,494	22,987	996,481
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	-	-	-	-	159,976	159,976	5,672	165,648
Gain on overseas business translation, net of tax	17	-	-	-	-	4,991,533	4,991,533	65,354	5,056,887
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(247,600)	(247,600)	(24)	(247,624)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	8,108	8,108	-	8,108
<b>Total comprehensive income for the period</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>1,388,422</b>	<b>5,898,341</b>	<b>7,286,763</b>	<b>267,337</b>	<b>7,554,100</b>
Dividends declared		-	-	-	(2,452,977)	-	(2,452,977)	(50,097)	(2,503,074)
Capital transactions under common control		-	-	-	-	-	-	(948)	(948)
Others		-	-	-	-	-	-	(266)	(266)
<b>Total transactions with owners</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>(2,452,977)</b>	<b>-</b>	<b>(2,452,977)</b>	<b>(51,311)</b>	<b>(2,504,288)</b>
<b>Balance as of March 31, 2023</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>336,881,852</b>	<b>7,836,669</b>	<b>350,019,928</b>	<b>9,779,488</b>	<b>359,799,416</b>

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

**Samsung Electronics Co., Ltd. and its subsidiaries**

**INTERIM CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**

(In thousands of US dollars (Note 2.3))

For the three-month period ended March 31, 2023	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
<b>Balance as of January 1, 2023</b>		<b>93,743</b>	<b>610,513</b>	<b>3,455,621</b>	<b>265,177,792</b>	<b>1,520,955</b>		<b>270,858,624</b>	<b>7,504,201</b>	<b>278,362,825</b>
Profit for the period		-	-	-	1,099,526	-	-	1,099,526	136,022	1,235,548
Gain (Loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	(10,067)	773,943	-	763,876	18,037	781,913
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	17	-	-	-	-	125,529	-	125,529	4,451	129,980
Gain on overseas business translation, net of tax	17	-	-	-	-	3,916,727	-	3,916,727	51,281	3,968,008
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(194,285)	-	(194,285)	(19)	(194,304)
Gain on valuation of cash flow hedge derivatives	17	-	-	-	-	6,362	-	6,362	-	6,362
<b>Total comprehensive income for the period</b>		-	-	-	<b>1,089,459</b>	<b>4,628,276</b>		<b>5,717,735</b>	<b>209,772</b>	<b>5,927,507</b>
Dividends declared		-	-	-	(1,924,788)	-	-	(1,924,788)	(39,309)	(1,964,097)
Capital transactions under common control		-	-	-	-	-	-	-	(744)	(744)
Others		-	-	-	-	-	-	-	(209)	(209)
<b>Total transactions with owners</b>		-	-	-	<b>(1,924,788)</b>		-	<b>(1,924,788)</b>	<b>(40,262)</b>	<b>(1,965,050)</b>
<b>Balance as of March 31, 2023</b>		<b>93,743</b>	<b>610,513</b>	<b>3,455,621</b>	<b>264,342,463</b>	<b>6,149,231</b>		<b>274,651,571</b>	<b>7,673,711</b>	<b>282,325,282</b>

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 three-month period ended March 31,			
	2023	2022	2023	2022
	KRW	KRW	USD	USD
<b>Operating activities</b>				
Profit for the period	1,574,600	11,324,628	1,235,548	8,886,142
Adjustments	24	11,708,097	13,905,730	9,187,040
Changes in assets and liabilities arising from operating activities	24	(6,440,539)	(14,233,315)	(5,053,724)
<b>Cash generated from operations</b>	<b>6,842,158</b>	<b>10,997,043</b>	<b>5,368,864</b>	<b>8,629,095</b>
Interest received	1,085,460	334,026	851,732	262,102
Interest paid	(219,559)	(159,077)	(172,282)	(124,824)
Dividends received	38,957	50,084	30,569	39,300
Income tax paid	(1,455,242)	(769,007)	(1,141,891)	(603,421)
<b>Net cash from operating activities</b>	<b>6,291,774</b>	<b>10,453,069</b>	<b>4,936,992</b>	<b>8,202,252</b>
<b>Investing activities</b>				
Net decrease in short-term financial instruments	27,560,017	6,191,962	21,625,631	4,858,672
Net decrease in short-term financial assets at amortized cost	416,095	1,673,885	326,499	1,313,454
Net increase in short-term financial assets at fair value through profit or loss	(3,831)	(12,299)	(3,006)	(9,651)
Disposal of long-term financial instruments	2,960,801	4,035,852	2,323,264	3,166,829
Acquisition of long-term financial instruments	(534)	(2,843,388)	(419)	(2,231,133)
Disposal of financial assets at fair value through other comprehensive income	5,607	30	4,400	24
Acquisition of financial assets at fair value through other comprehensive income	(2,362)	(5,594)	(1,853)	(4,389)
Disposal of financial assets at fair value through profit or loss	17,096	20,629	13,415	16,187
Acquisition of financial assets at fair value through profit or loss	(11,284)	(54,931)	(8,854)	(43,103)
Disposal of investments in associates and joint ventures	4,661	5,300	3,657	4,159
Acquisition of investments in associates and joint ventures	(62,182)	(6,100)	(48,793)	(4,787)
Disposal of property, plant and equipment	44,774	68,730	35,133	53,931
Acquisition of property, plant and equipment	(13,243,589)	(8,706,839)	(10,391,901)	(6,832,031)
Disposal of intangible assets	6,142	126	4,819	99
Acquisition of intangible assets	(1,070,220)	(853,443)	(839,774)	(669,675)
Cash outflow from business combinations	-	(23,237)	-	(18,233)
Cash outflow from other investing activities	(149,721)	(127,194)	(117,482)	(99,806)
<b>Net cash provided by (used in) investing activities</b>	<b>16,471,470</b>	<b>(636,511)</b>	<b>12,924,736</b>	<b>(499,453)</b>

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 three-month period ended March 31,			
	2023 KRW	2022 KRW	2023 USD	2022 USD
<b>Financing activities</b>				
Net increase (decrease) in short-term borrowings	(777,531)	213,034	(610,108)	167,162
Increase in long-term borrowings	58,036	1,000	45,539	785
Repayment of debentures and long-term borrowings	(259,113)	(708,717)	(203,319)	(556,112)
Dividends paid	(243)	(461)	(191)	(362)
Net decrease in non-controlling interests	(948)	(202)	(744)	(158)
<b>Net cash used in financing activities</b>	<b>(979,799)</b>	<b>(495,346)</b>	<b>(768,823)</b>	<b>(388,685)</b>
Effect of foreign exchange rate changes	1,485,222	592,355	1,165,416	464,806
<b>Net increase in cash and cash equivalents</b>	<b>23,268,667</b>	<b>9,913,567</b>	<b>18,258,321</b>	<b>7,778,920</b>
<b>Cash and cash equivalents</b>				
Beginning of the period	49,680,710	39,031,415	38,983,166	30,626,940
<b>End of the period</b>	<b>72,949,377</b>	<b>48,944,982</b>	<b>57,241,487</b>	<b>38,405,860</b>

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

### **3. Notes to consolidated financial statements**

#### **1. General Information**

##### **1.1 Company Overview**

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

These consolidated financial statements have been prepared in accordance with Korean International Financial Reporting Standards (“Korean IFRS”) 1110, *Consolidated Financial Statements*. SEC, as the controlling company, consolidates its 230 subsidiaries, including Samsung Display and Samsung Electronics America. The Company also applies the equity method of accounting for its 38 associates and joint ventures, including Samsung Electro-Mechanics Co., Ltd.

##### **1.2 Consolidated Subsidiaries**

The consolidated subsidiaries as of March 31, 2023 are as follows:

<b>Area</b>	<b>Subsidiaries</b>	<b>Industry</b>	<b>Percentage of ownership (%)<sup>(*)</sup></b>
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
	Joyent, Inc.	Cloud services	100.0
	SmartThings, Inc.	Sale of smart home electronics	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	100.0
	Samsung Austin Semiconductor LLC. (SAS)	Manufacture of semiconductors	100.0
	Samsung Oak Holdings, Inc. (SHI)	Management of overseas subsidiaries	100.0

<sup>(\*)</sup> Ownership represents the Company’s ownership of the voting rights in each entity, including subsidiaries’ ownerships.

<b>Area</b>	<b>Subsidiaries</b>	<b>Industry</b>	<b>Percentage of ownership (%)<sup>(*)</sup></b>
America	SEMES America, Inc.	Semiconductor equipment	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
	Samsung Electronics Venezuela, C.A. (SEVEN)	Marketing and services	100.0
	Samsung Electronics Panama. S.A. (SEPA)	Consulting	100.0
	Harman International Industries, Inc.	Management of overseas subsidiaries	100.0
	Harman Becker Automotive Systems, Inc.	Manufacture and sale of audio products, R&D	100.0
	Harman Connected Services, Inc.	Connected service provider	100.0
	Harman Connected Services Engineering Corp.	Connected service provider	100.0
	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Manufacture and sale of audio products	100.0
	Harman de Mexico, S. de R.L. de C.V.	Manufacture of audio products	100.0
	Harman do Brasil Industria Eletronica e Participacoes Ltda.	Sale of audio products, R&D	100.0
	Harman Financial Group LLC	Management company	100.0
	Harman International Industries Canada Ltd.	Sale of audio products	100.0
	Harman International Mexico, S. de R.L. de C.V.	Sale of audio products	100.0
	Harman KG Holding, LLC	Management of overseas subsidiaries	100.0
	Harman Professional, Inc.	Sale of audio products, R&D	100.0
	Beijing Integrated Circuit Industry International Fund, L.P	Venture capital investments	61.4
	China Materialia New Materials 2016 Limited Partnership	Venture capital investments	99.0

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

<b>Area</b>	<b>Subsidiaries</b>	<b>Industry</b>	<b>Percentage of ownership (%)<sup>(*)</sup></b>
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 R&D Institute Ukraine (SRUKR)	R&D	100.0
	Samsung Electronics Central Eurasia LLP (SECE)	Sale of electronic devices	100.0
	Samsung Electronics Overseas B.V. (SEO)	Sale of electronic devices	100.0
	Samsung R&D Institute Rus LLC (SRR)	R&D	100.0
	Samsung Electronics Caucasus Co., Ltd. (SECC)	Marketing	100.0
	Samsung Electronics Uzbekistan Ltd. (SEUZ)	Marketing	100.0

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

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

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) <sup>(*)</sup>
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
Asia (Excluding China)	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
	DOWOOINSYS VINA COMPANY LIMITED	Manufacture of display components	100.0
	PT Samsung Electronics Indonesia (SEIN)	Manufacture and sale of electronic devices	100.0
	PT Samsung Telecommunications Indonesia (STIN)	Sale of electronic devices and services	100.0
	Thai Samsung Electronics Co., Ltd. (TSE)	Manufacture and sale of electronic devices	91.8
	Laos Samsung Electronics Sole Co., Ltd. (LSE)	Marketing	100.0
	Samsung Electronics Philippines Corporation (SEPCO)	Sale of electronic devices	100.0
	Samsung Electronics Australia Pty. Ltd. (SEAU)	Sale of electronic devices	100.0
	Samsung Electronics New Zealand Limited (SENZ)	Sale of electronic devices	100.0
	Samsung India Electronics Private Ltd. (SIEL)	Manufacture and sale of electronic devices	100.0
	Red Brick Lane Marketing Solutions Pvt. Ltd.	Marketing	100.0
	Samsung Display Noida Private Limited (SDN)	Manufacture of display panels	100.0
	Samsung R&D Institute India-Bangalore Private Limited (SRI-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

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

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

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

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

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

### 1.3 Summary of Financial Data of Major Consolidated Subsidiaries

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

(1) 2023

(In millions of Korean won)	As of March 31, 2023	For the three-month period ended March 31, 2023		
		Assets	Liabilities	Profit (loss) for the period
Samsung Display	57,490,961	5,786,950	5,590,642	1,533,158
Samsung Electronics America, Inc. (SEA)	39,029,811	12,418,449	10,820,272	215,264
Samsung Asia Pte. Ltd. (SAPL)	34,510,766	2,822,711	-	6,633,188
Samsung (China) Semiconductor Co., Ltd. (SCS)	17,417,206	2,361,678	2,570,175	326,822
Harman and its subsidiaries <sup>(*)2</sup>	17,273,540	6,019,121	3,162,476	80,823
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	13,612,599	2,961,949	8,617,574	296,034
Samsung (CHINA) Investment Co., Ltd. (SCIC)	11,263,419	9,798,648	871,611	165,215
Samsung Semiconductor, Inc. (SSI)	10,884,746	4,301,497	4,963,535	126,986
Samsung Austin Semiconductor LLC. (SAS)	10,065,132	1,241,827	955,210	104,118
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	9,524,792	3,967,425	-	8,475
Samsung Electronics Vietnam Co., Ltd. (SEV)	9,126,017	1,985,801	5,696,296	462,841
Samsung India Electronics Private Ltd. (SIEL)	7,619,966	3,962,155	3,813,918	333,280
Samsung Display Vietnam Co., Ltd. (SDV)	6,831,163	1,639,796	5,188,088	450,095
Samsung Eletronica da Amazonia Ltda. (SEDA)	5,223,412	1,607,744	1,915,702	132,232
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	5,030,052	2,663,020	2,919,973	64,077
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	3,939,900	906,593	1,497,391	198,526
Thai Samsung Electronics Co., Ltd. (TSE)	3,681,611	1,305,582	1,218,750	89,052
Samsung Electronics (UK) Ltd. (SEUK)	3,029,015	2,217,833	1,527,336	72,350
Samsung Electronics Europe Logistics B.V. (SELS)	2,814,887	2,439,926	4,242,449	184,428
Samsung International, Inc. (SII)	2,463,443	735,035	1,755,989	365,590
Samsung Electronics Mexico S.A. De C.V. (SEM)	2,238,272	1,267,288	842,543	59,287
Samsung Display Dongguan Co., Ltd. (SDD)	2,161,344	183,686	409,428	28,813
Samsung Electronics GmbH (SEG)	2,105,706	1,978,049	1,641,944	60,288
SEMES Co., Ltd.	2,077,994	592,326	726,353	24,283
Samsung Electronics Benelux B.V. (SEBN)	1,922,677	727,570	831,705	106,217

(\*)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.

Major subsidiaries <sup>(*)1</sup>	As of December 31, 2022		For the three-month period ended March 31, 2022	
	Assets	Liabilities	Sales	Profit (loss) for the period
Samsung Display	57,302,567	7,282,718	7,100,976	1,026,633
Samsung Electronics America, Inc. (SEA)	37,883,156	12,258,315	11,340,468	(45,635)
Samsung Asia Pte. Ltd. (SAPL)	26,894,611	2,678,285	-	11,563
Harman and its subsidiaries <sup>(*)2</sup>	17,102,324	6,380,456	2,662,741	89,844
Samsung (China) Semiconductor Co., Ltd. (SCS)	17,095,000	2,970,835	2,415,594	156,539
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	15,718,299	2,358,140	10,569,433	962,926
Samsung (CHINA) Investment Co., Ltd. (SCIC)	13,830,988	9,764,636	833,148	106,882
Samsung Semiconductor, Inc. (SSI)	12,199,102	5,930,369	10,911,004	42,241
Samsung Electronics Vietnam Co., Ltd. (SEV)	10,931,037	1,408,387	5,820,671	429,100
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	10,841,515	6,272,800	-	6,965
Samsung Austin Semiconductor LLC. (SAS)	9,301,017	828,494	788,621	(2,422)
Samsung Display Vietnam Co., Ltd. (SDV)	7,471,680	1,608,448	5,672,054	131,506
Samsung India Electronics Private Ltd. (SIEL)	6,772,537	3,571,863	4,200,020	202,283
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	5,067,891	2,858,382	6,550,636	75,728
Samsung Eletronica da Amazonia Ltda. (SEDA)	4,600,508	1,342,517	1,919,630	114,528
Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	3,732,057	980,448	1,952,034	202,206
Thai Samsung Electronics Co., Ltd. (TSE)	3,263,473	486,820	1,414,046	(16,599)
Samsung Electronics (UK) Ltd. (SEUK)	2,819,792	1,708,064	1,531,914	19,063
Samsung Electronics Benelux B.V. (SEBN)	2,377,730	597,044	807,471	6,902
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	2,374,317	452,628	1,324,347	80,930
Samsung Electronics Europe Logistics B.V. (SELS)	2,194,975	2,021,491	4,598,861	240,087
Samsung Display Dongguan Co., Ltd. (SDD)	2,135,132	265,835	807,150	49,629
SEMES Co., Ltd.	2,065,558	602,323	725,432	73,970
Samsung Electronics GmbH (SEG)	1,968,273	1,907,132	1,701,102	(57,461)
Samsung Electronics Mexico S.A. De C.V. (SEM)	1,816,895	996,002	676,163	35,166

(\*)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 three-month period ended March 31, 2023 are as follows:

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

## 2. Significant Accounting Policies

### 2.1 Basis of Presentation

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

The interim consolidated financial statements for the three-month period ended March 31, 2023 have been prepared in accordance with Korean IFRS 1034, *Interim Financial Reporting*. These interim consolidated financial statements have been prepared in accordance with the Korean IFRS which is effective as of March 31, 2023.

#### (A) New and amended standards adopted by the Company

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

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

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

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

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

##### Amendments to Korean IFRS 1012, *Income Taxes*

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

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

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

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

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

## **2.2 Accounting Policies**

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

### (A) Income tax expense

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

## **2.3 Convenience Translation into United States Dollar Amounts**

The US dollar amounts provided in the consolidated financial statements represent supplementary information solely for the convenience of the reader. All Korean won amounts are expressed in US dollars at the rate of ₩ 1,274.4 to \$1, the average exchange rate for the three-month period ended March 31, 2023. Such presentation is not in accordance with generally accepted accounting principles and should not be construed as a representation that the Korean won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

## **2.4 Material Accounting Estimates and Assumptions**

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

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

### 3. Financial Instruments by Category

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

(1) As of March 31, 2023

(In millions of Korean won)	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 <sup>(*)</sup>	Total
	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 <sup>(*)</sup>	Total
<b>Financial assets</b>					
Cash and cash equivalents	72,949,377	-	-	-	72,949,377
Short-term financial instruments	35,200,184	-	-	-	35,200,184
Short-term financial assets at amortized cost	-	-	-	-	-
Short-term financial assets at fair value through profit or loss	-	-	32,911	-	32,911
Trade receivables	36,632,159	-	-	-	36,632,159
Financial assets at fair value through other comprehensive income	-	13,042,895	-	-	13,042,895
Financial assets at fair value through profit or loss	-	-	1,624,607	-	1,624,607
Other	10,296,331	-	577,673	69,194	10,943,198
<b>Total</b>	<b>155,078,051</b>	<b>13,042,895</b>	<b>2,235,191</b>	<b>69,194</b>	<b>170,425,331</b>

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

(In millions of Korean won)	Financial liabilities measured at amortized cost	Financial liabilities measured at fair value through profit or loss	Other financial liabilities <sup>(*)</sup>	Total
	Financial liabilities measured at amortized cost	Financial liabilities measured at fair value through profit or loss	Other financial liabilities <sup>(*)</sup>	Total
<b>Financial liabilities</b>				
Trade payables	12,343,531	-	-	12,343,531
Short-term borrowings	980,391	-	3,462,249	4,442,640
Other payables	17,672,721	-	-	17,672,721
Current portion of long-term liabilities	250,124	-	947,398	1,197,522
Debentures	551,172	-	-	551,172
Long-term borrowings	58,049	-	3,692,595	3,750,644
Long-term other payables	4,643,841	-	-	4,643,841
Other	11,406,506	363,209	26,141	11,795,856
<b>Total</b>	<b>47,906,335</b>	<b>363,209</b>	<b>8,128,383</b>	<b>56,397,927</b>

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

(2) As of December 31, 2022

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

<sup>(\*)</sup> Other financial assets include derivatives designated as hedging instruments which are not subject to categorizations.

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

<sup>(\*)</sup> 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 March 31, 2023 and December 31, 2022 are as follows:

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Non-current		
Equity instruments	13,042,895	11,397,012

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Current		
Debt instruments	32,911	29,080
Non-current		
Equity instruments	998,663	773,063
Debt instruments	625,944	632,405
Subtotal	1,624,607	1,405,468
<b>Total</b>	<b>1,657,518</b>	<b>1,434,548</b>

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

<i>(In millions of Korean won, number of shares and percentage)</i>	Number of shares owned	Percentage of ownership <sup>(*)</sup> (%)	<b>March 31, 2023</b>		<b>December 31, 2022</b>	
			Acquisition cost	Carrying amount (Market value)	Carrying amount (Market value)	
SAMSUNG HEAVY INDUSTRIES CO.,LTD.	134,027,281	15.2	932,158	692,921	684,879	
HOTEL SHILLA CO.,LTD	2,004,717	5.1	13,957	163,384	166,592	
iMarketKorea Inc.	647,320	1.9	324	6,428	6,538	
SFA Engineering Corporation	3,644,000	10.2	38,262	143,209	132,642	
WONIK HOLDINGS CO.,LTD	3,518,342	4.6	30,821	13,264	11,945	
WONIK IPS CO., LTD.	3,701,872	7.5	32,428	129,751	91,621	
ASML Holding N.V	6,297,787	1.6	363,012	5,597,099	4,287,121	
Wacom Co., Ltd.	8,398,400	5.1	62,013	56,873	46,750	
BYD Company Limited	2,380,000	0.1	79,048	115,242	110,971	
Corning Incorporated	80,000,000	9.4	3,980,636	3,679,845	3,238,205	
Other			578,964	1,078,804	744,481	
<b>Total</b>			<b>6,111,623</b>	<b>11,676,820</b>	<b>9,521,745</b>	

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

## 5. Inventories

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

	March 31, 2023			December 31, 2022		
	Gross amount <i>(In millions of Korean won)</i>	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	18,224,024	(2,010,529)	16,213,495	17,526,178	(1,493,952)	16,032,226
Work in process	25,120,646	(3,007,636)	22,113,010	21,612,965	(1,535,446)	20,077,519
Raw materials and supplies	16,195,959	(1,377,546)	14,818,413	16,268,974	(1,289,694)	14,979,280
Materials in transit	1,274,668	-	1,274,668	1,098,841	-	1,098,841
<b>Total</b>	<b>60,815,297</b>	<b>(6,395,711)</b>	<b>54,419,586</b>	<b>56,506,958</b>	<b>(4,319,092)</b>	<b>52,187,866</b>

## 6. Investments in Associates and Joint Ventures

(A) Changes in investments in associates and joint ventures for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	10,893,869	8,932,251
Acquisition	62,182	6,100
Disposal	(4,661)	(5,153)
Share of profit	213,841	232,477
Other <sup>(*)</sup>	33,392	(324,070)
<b>Balance as of March 31</b>	<b>11,198,623</b>	<b>8,841,605</b>

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

(B) Major investments in associates and joint ventures as of March 31, 2023 are as follows:

(1) Investments in associates

Investee	Nature of relationship	Percentage of ownership(%) <sup>(*)1</sup>	Principal business location	Fiscal period-end
Samsung Electro-Mechanics Co., Ltd.	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
Samsung SDS Co., Ltd.	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
Samsung Biologics Co., Ltd.	Contract manufacturing of biopharmaceuticals, etc.	31.2	Korea	December
Samsung SDI Co., Ltd. <sup>(*)2</sup>	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide, Inc.	Advertising agency	25.2	Korea	December

(\*)<sup>1</sup> Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

(\*)<sup>2</sup> 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 (%) <sup>(*)</sup>	Principal business location	Fiscal period-end
Samsung Corning Advanced Glass LLC	Manufacture and supply industrial glass devices	50.0	Korea	December

<sup>(\*)</sup> 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 March 31, 2023 and December 31, 2022 are as follows:

(1) Investments in associates

<i>(In millions of Korean won)</i>		<b>March 31, 2023</b>	
<b>Investee</b>	<b>Acquisition cost</b>	<b>Net asset value of equity shares<sup>(*)</sup></b>	<b>Carrying amount</b>
Samsung Electro-Mechanics Co., Ltd.	359,237	1,776,645	1,773,987
Samsung SDS Co., Ltd.	147,963	1,868,944	1,881,818
Samsung Biologics Co., Ltd.	1,424,358	2,848,854	2,853,413
Samsung SDI Co., Ltd.	1,242,605	3,465,703	2,797,431
Cheil Worldwide, Inc.	506,162	334,196	634,693
Other	704,534	798,832	1,046,731
<b>Total</b>	<b>4,384,859</b>	<b>11,093,174</b>	<b>10,988,073</b>

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

<sup>(\*)</sup> The Company's portion of net asset value of associates is based on the Company's percentage of ownership.

(2) Investments in joint ventures

<i>(In millions of Korean won)</i>		<b>March 31, 2023</b>	
<b>Investee</b>	<b>Acquisition cost</b>	<b>Net asset value of equity shares<sup>(*)</sup></b>	<b>Carrying amount</b>
Samsung Corning Advanced Glass LLC	215,000	136,691	136,709
Other	259,994	71,701	73,841
<b>Total</b>	<b>474,994</b>	<b>208,392</b>	<b>210,550</b>

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

<i>(In millions of Korean won)</i>		<b>December 31, 2022</b>	
<b>Investee</b>	<b>Acquisition cost</b>	<b>Net asset value of equity shares<sup>(*)</sup></b>	<b>Carrying amount</b>
Samsung Corning Advanced Glass LLC	215,000	137,727	137,745
Other	259,994	67,632	65,147
<b>Total</b>	<b>474,994</b>	<b>205,359</b>	<b>202,892</b>

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

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

(1) For the three-month period ended March 31, 2023

<i>(In millions of Korean won)</i>	<b>Balance as of January 1</b>	<b>Share of profit (loss)</b>	<b>Share of other comprehensive income (loss)</b>	<b>Other<sup>(*)</sup></b>	<b>Balance as of March 31</b>
Samsung Electro-Mechanics Co., Ltd.	1,764,249	27,365	19,529	(37,156)	1,773,987
Samsung SDS Co., Ltd.	1,870,338	45,756	21,635	(55,911)	1,881,818
Samsung Biologics Co., Ltd.	2,808,673	44,686	54	-	2,853,413
Samsung SDI Co., Ltd.	2,691,223	60,907	59,168	(13,867)	2,797,431
Cheil Worldwide, Inc.	649,161	11,400	7,525	(33,393)	634,693
Samsung Corning Advanced Glass LLC	137,745	(1,036)	-	-	136,709
Other	972,480	24,763	57,737	65,592	1,120,572
<b>Total</b>	<b>10,893,869</b>	<b>213,841</b>	<b>165,648</b>	<b>(74,735)</b>	<b>11,198,623</b>

<sup>(\*)</sup> Other consists of acquisitions, disposals, dividends, impairment and reclassification.

(2) For the three-month period ended March 31, 2022

<i>(In millions of Korean won)</i>	<b>Balance as of January 1</b>	<b>Share of profit (loss)</b>	<b>Share of other comprehensive income (loss)</b>	<b>Other<sup>(*)</sup></b>	<b>Balance as of March 31</b>
Samsung Electro-Mechanics Co., Ltd.	1,556,386	75,698	13,090	(37,156)	1,608,018
Samsung SDS Co., Ltd.	1,652,155	43,126	9,846	(41,933)	1,663,194
Samsung Biologics Co., Ltd.	1,577,664	46,810	(257,052)	-	1,367,422
Samsung SDI Co., Ltd.	2,529,650	39,702	28,193	(13,462)	2,584,083
Cheil Worldwide, Inc.	621,292	12,850	2,559	(28,748)	607,953
Samsung Corning Advanced Glass LLC	135,580	1,848	-	-	137,428
Other	859,524	12,443	(53,467)	55,007	873,507
<b>Total</b>	<b>8,932,251</b>	<b>232,477</b>	<b>(256,831)</b>	<b>(66,292)</b>	<b>8,841,605</b>

<sup>(\*)</sup> 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 March 31, 2023 and December 31, 2022, and for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>				
	<b>Samsung Electro- Mechanics</b>	<b>Samsung SDS</b>	<b>Samsung Biologics</b>	<b>Samsung SDI</b>	<b>Cheil Worldwide</b>
<b>1. Condensed financial information</b>					
<b>Condensed statements of financial position:</b>					
Current assets	4,822,300	8,077,001	6,114,176	10,746,786	2,049,201
Non-current assets	6,177,789	3,956,490	10,267,531	21,660,568	565,730
Current liabilities	2,573,133	2,522,395	3,884,889	9,108,724	1,235,741
Non-current liabilities	670,383	989,614	3,370,406	5,299,437	203,140
Non-controlling interests	170,521	247,543	-	784,137	10,444
<b>Condensed statements of comprehensive income:</b>					
Revenue	2,021,763	3,400,923	720,922	5,354,845	941,601
Profit from continuing operations, net of tax <sup>(*)</sup>	118,079	202,485	141,755	439,283	39,753
Other comprehensive income <sup>(*)</sup>	103,812	95,781	182	358,999	30,281
Total comprehensive income <sup>(*)</sup>	221,891	298,266	141,937	798,282	70,034
<b>2. Dividends from associates</b>					
Dividends	37,155	55,911	-	13,867	33,394

<sup>(\*)</sup> Profit (loss) attributable to owners of the investee

<i>(In millions of Korean won)</i>	2022				
	Samsung Electro- Mechanics	Samsung SDS	Samsung Biologics	Samsung SDI	Cheil Worldwide
<b>1. Condensed financial information</b>					
<b>Condensed statements of financial position:</b>					
Current assets	4,888,319	8,005,764	6,457,657	9,651,702	2,193,979
Non-current assets	6,108,852	3,946,660	10,124,394	20,605,823	557,466
Current liabilities	2,525,123	2,493,323	4,181,542	8,006,939	1,335,643
Non-current liabilities	778,563	992,132	3,416,034	5,033,084	194,373
Non-controlling interests	154,991	243,777	-	731,779	9,388
<b>Condensed statements of comprehensive income:</b>					
Revenue	2,625,404	4,191,498	511,304	4,049,427	946,569
Profit from continuing operations, net of tax <sup>(*)</sup>	321,852	197,554	146,942	356,587	44,890
Profit (loss) from discontinued operation, net of tax <sup>(*)</sup>	-	-	-	-	-
Other comprehensive income (loss) <sup>(*)</sup>	106,951	43,587	(377)	167,584	10,032
Total comprehensive income <sup>(*)</sup>	428,803	241,141	146,565	524,171	54,922
<b>2. Dividends from associates</b>					
Dividends	37,155	41,933	-	13,463	28,748

<sup>(\*)</sup> Profit (loss) attributable to owners of the investee.

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

<i>(In millions of Korean won)</i>	<b>Samsung</b>	<b>Corning</b>	<b>Advanced Glass</b>
	<b>2023</b>	<b>2022</b>	
<b>Condensed financial information</b>			
<b>Condensed statements of financial position:</b>			
Current assets	106,894	170,103	
Non-current assets	202,164	125,507	
Current liabilities	34,991	19,794	
Non-current liabilities	685	363	
<b>Condensed statements of comprehensive income:</b>			
Revenue	22,099	42,485	
Profit (loss) from continuing operations, net of tax	(2,071)	3,696	
Other comprehensive income	-	-	
Total comprehensive income	(2,071)	3,696	
<b>Dividends from joint ventures</b>			
Dividends	-	-	

- (3) Profit (loss) attributable to owners of the parent company from associates and joint ventures which are not individually material for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>		
	<b>Associates</b>	<b>Joint ventures</b>	<b>Associates</b>	<b>Joint ventures</b>
Profit (loss) from continuing operations	24,199	564	13,042	(599)
Other comprehensive income (loss)	53,082	4,655	(52,025)	(1,442)
<b>Total comprehensive income (loss)</b>	<b>77,281</b>	<b>5,219</b>	<b>(38,983)</b>	<b>(2,041)</b>

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

<i>(In millions of Korean won and number of shares)</i>	March 31, 2023		December 31, 2022
	Number of shares held	Market value	Market value
Samsung Electro-Mechanics Co., Ltd.	17,693,084	2,701,734	2,308,947
Samsung SDS Co., Ltd.	17,472,110	2,026,765	2,149,070
Samsung Biologics Co., Ltd.	22,217,309	17,507,239	18,240,411
Samsung SDI Co., Ltd.	13,462,673	9,895,065	7,956,440
Cheil Worldwide, Inc.	29,038,075	540,689	669,328

(G) Other matters

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

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

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

## 7. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Balance as of January 1	168,045,388	149,928,539
Acquisition and capital expenditures	11,343,333	8,098,867
Depreciation	(8,800,895)	(9,009,031)
Disposals/scrap/impairment	(207,911)	(82,485)
Other <sup>(*)</sup>	1,477,601	682,129
<b>Balance as of March 31</b>	<b>171,857,516</b>	<b>149,618,019</b>

<sup>(\*)</sup> 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 three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Cost of sales	7,863,833	8,122,027
Selling and administrative expenses, and other	937,062	887,004
<b>Total</b>	<b>8,800,895</b>	<b>9,009,031</b>

(C) Right-of-use assets as of March 31, 2023 amount to ₩ 5,126,909 million (December 31, 2022: ₩ 4,917,609 million). During the three-month periods ended March 31, 2023 and 2022, newly recognized right-of-use assets amount to ₩ 604,534 million and ₩ 176,168 million, respectively, with relevant depreciation of ₩ 288,193 million and ₩ 253,084 million, respectively.

## 8. Intangible Assets

(A) Changes in intangible assets for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Balance as of January 1	20,217,754	20,236,244
External acquisitions	3,805,353	334,725
Amortization	(785,598)	(770,477)
Disposals/scrap/impairment	(15,204)	(3,408)
Other <sup>(*)</sup>	395,398	213,610
<b>Balance as of March 31</b>	<b>23,617,703</b>	<b>20,010,694</b>

<sup>(\*)</sup> Other includes the cumulative effect of changes in foreign currency exchange rates and business combinations.

(B) Details of amortization of intangible assets for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Cost of sales	552,375	531,875
Selling and administrative expenses and other	233,223	238,602
<b>Total</b>	<b>785,598</b>	<b>770,477</b>

## 9. Borrowings

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

(In millions of Korean won)	Financial institutions	Interest rates (%) as of March 31,		March 31, 2023	December 31, 2022
		2023	March 31, 2023		
<b>Short-term borrowings</b>					
Collateralized borrowings <sup>(*)1</sup>	Woori Bank and others	0.1~18.5		3,462,249	3,569,357
Non-collateralized borrowings	Citibank and others	0.1~51.0		980,391	1,577,958
<b>Total</b>				4,442,640	5,147,315
<b>Current portion of long-term borrowings</b>					
Bank borrowings	BNP Paribas	36.7~53.2		243,708	208,915
Lease liabilities <sup>(*)2</sup>	CSSD and others	4.0		947,398	874,019
<b>Total</b>				1,191,106	1,082,934
<b>Long-term borrowings</b>					
Bank borrowings	Industrial Bank of Korea	2.5~47.7		58,049	33,846
Lease liabilities <sup>(*)2</sup>	CSSD and others	4.0		3,692,595	3,526,826
<b>Total</b>				3,750,644	3,560,672

(\*)1 Collateralized borrowings are secured by trade receivables.

(\*)2 Interest expenses arising from the lease liabilities for the three-month periods ended March 31, 2023 and 2022 amounted to ₩ 45,462 million and ₩ 30,012 million, respectively, which were determined using the weighted average incremental borrowing rate. The right-of-use assets are pledged as collateral to the lessor in the event of default.

## 10. Debentures

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

(In millions of Korean won)	Issue date	Due date	Interest rates (%) as of Mar 31, 2023		March 31, 2023	December 31, 2022
			2023	March 31, 2023		
US dollar denominated straight bonds <sup>(*)1</sup>	1997.10.2	2027.10.1	7.7		32,595 (US \$ 25 million)	31,683 (US \$ 25 million)
US dollar denominated debentures <sup>(*)2</sup>	2015.5.11	2025.5.15	4.2		521,520 (US \$ 400 million)	506,920 (US \$ 400 million)
Less: Discounts					(512)	(543)
Add: Premium					3,985	4,261
Less: Current portion					(6,416)	(6,228)
<b>Total</b>					551,172	536,093

(\*)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 debentures. These debentures are repaid on the maturity and interest is paid semi-annually.

## 11. Net Defined Benefit Liabilities (Assets)

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Present value of funded defined benefit obligations	14,064,523	13,639,460
Present value of unfunded defined benefit obligations	352,976	370,848
<b>Subtotal</b>	<b>14,417,499</b>	<b>14,010,308</b>
Fair value of plan assets	(19,448,359)	(19,593,910)
<b>Total</b>	<b>(5,030,860)</b>	<b>(5,583,602)</b>

- (B) The components of defined benefit costs recognized in profit or loss for the three-month periods ended March 31, 2023 and 2022 relating to defined benefit plans are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Current service cost	323,685	347,661
Net interest income	(89,746)	(24,885)
Past service cost	(255)	(77)
Other	7,929	1,573
<b>Total</b>	<b>241,613</b>	<b>324,272</b>

- (C) The expenses related to defined benefit plans recognized in the statements of profit or loss for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Cost of sales	103,181	139,754
Selling and administrative expenses and other	138,432	184,518
<b>Total</b>	<b>241,613</b>	<b>324,272</b>

## 12. Provisions

Changes in the provisions for the three-month period ended March 31, 2023 are as follows:

<i>(In millions of Korean won)</i>	<b>Warranty (A)</b>	<b>Royalty expenses (B)</b>	<b>Long-term incentives (C)</b>	<b>Other (D, E)</b>	<b>Total</b>
Balance as of January 1	2,309,726	1,546,606	783,263	3,133,830	7,773,425
Charged to profit or loss	649,953	179,511	71,119	1,247,489	2,148,072
Payment	(538,256)	(112,439)	(44,757)	(165,459)	(860,911)
Other <sup>(*)</sup>	69,749	(15,241)	4,278	72,918	131,704
<b>Balance as of March 31</b>	<b>2,491,172</b>	<b>1,598,437</b>	<b>813,903</b>	<b>4,288,778</b>	<b>9,192,290</b>

<sup>(\*)</sup> Other includes effects of changes in foreign currency exchange rates.

- (A) The Company accrues warranty reserves for estimated costs of quality assurance, exchanges, repairs, recalls, and future services based on historical experience and terms of warranty programs.
- (B) The Company recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing and amount of payment depend on the settlement of the negotiations.
- (C) The Company has a long-term incentive plan for its executives based on a three-year management performance criteria and recognizes a provision for the estimated incentive cost.
- (D) The Company records provisions for future expenses expected to be incurred for products that have been discontinued from manufacturing and sales.
- (E) The Company makes provisions for the emission in excess of the emission rights held by the Company for the applicable years. Details of emission rights and liabilities as of March 31, 2023 are as follows:

- (1) The amount of emission rights allocated free of charge in the current commitment period and the estimated volume of emission as of March 31, 2023 are as follows:

<i>(In ten thousand metric tons)</i>	<b>March 31, 2023</b>	
Emission rights allocated free of charge		1,711
Estimated volume of emission		1,903

- (2) Changes in the emission rights for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Balance as of January 1	19,567	46,074
Increase (decrease)	-	-
<b>Balance as of March 31</b>	<b>19,567</b>	<b>46,074</b>

- (3) Changes in emissions liabilities for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Balance as of January 1	32,838	45,049
Charged to profit or loss	(1)	12,462
Submission	-	-
<b>Balance as of March 31</b>	<b>32,837</b>	<b>57,511</b>

### 13. Commitments and Contingencies

As of March 31, 2023, the Company is involved in various claims, disputes, and investigations conducted by regulatory bodies that arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, the Company believes the outcome will not have a material impact on the financial position of the Company.

### 14. Contract Liabilities

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Contract liabilities <sup>(*)</sup>	12,193,798	13,255,682

<sup>(\*)</sup> Contract liabilities include advances received, accrued expenses, other current liabilities and others.

### 15. Share Capital

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

### 16. Retained Earnings

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Discretionary reserve, etc.	207,927,112	192,294,496
Unappropriated retained earnings	128,954,740	145,651,911
<b>Total</b>	<b>336,881,852</b>	<b>337,946,407</b>

(B) Details of interim dividends are as follows:

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

## 17. Other Components of Equity

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Gain on valuation of financial assets at fair value through other comprehensive income	3,735,433	2,749,109
Share of other comprehensive gain (loss) of associates and joint ventures	274,963	114,987
Gain on overseas business translation	6,030,730	1,039,197
Remeasurement of net defined benefit liabilities (assets)	(2,299,210)	(2,051,610)
Other	94,753	86,645
<b>Total</b>	<b>7,836,669</b>	<b>1,938,328</b>

## 18. Expenses by Nature

Expenses by nature for the three-month periods ended March 31, 2023 and 2022 consist of the following:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Changes in finished goods, work in process, and other	(2,216,760)	(2,559,003)
Raw materials used, merchandise purchased, and other	27,196,920	28,066,242
Wages and salaries	7,901,166	7,732,949
Post-employment benefit	278,289	350,896
Depreciation	8,800,895	9,009,031
Amortization	785,598	770,477
Welfare	1,541,276	1,401,936
Utilities	1,861,110	1,398,568
Outsourcing	1,680,919	1,482,533
Advertising	1,145,343	1,467,701
Sales promotion	1,672,952	1,823,398
Other	12,457,485	12,715,361
<b>Total<sup>(*)</sup></b>	<b>63,105,193</b>	<b>63,660,089</b>

<sup>(\*)</sup> 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-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
<b>Selling and administrative expenses</b>		
Wages and salaries	2,072,409	1,995,353
Post-employment benefit	69,512	77,294
Commissions	2,103,924	1,730,391
Depreciation	403,646	378,741
Amortization	168,939	168,494
Advertising	1,145,343	1,467,701
Sales promotion	1,672,952	1,823,398
Transportation	414,405	857,633
Service charges	1,021,736	893,544
Other	1,446,500	1,273,251
<b>Subtotal</b>	<b>10,519,366</b>	<b>10,665,800</b>
<b>Research and development expenses</b>		
Research and development	6,578,734	5,922,232
<b>Total</b>	<b>17,098,100</b>	<b>16,588,032</b>

## 20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
<b>Other non-operating income</b>		
Dividend income	47,894	268,509
Rental income	37,942	34,584
Gain on disposal of property, plant and equipment	34,449	50,420
Other	384,010	346,680
<b>Total</b>	<b>504,295</b>	<b>700,193</b>
 <b>Other non-operating expenses</b>		
Loss on disposal of property, plant and equipment	9,392	4,196
Donations	73,083	89,560
Other	121,507	359,354
<b>Total</b>	<b>203,982</b>	<b>453,110</b>

## 21. Financial Income and Expenses

Details of financial income and expenses for the three-month periods ended March 31, 2023 and 2022 are as follows:

(In millions of Korean won)	2023	2022
<b>Financial income</b>		
Interest income	1,060,446	369,032
Interest income from financial assets measured at amortized cost	1,060,380	368,967
Interest income from financial assets measured at fair value through profit or loss	66	65
Foreign exchange differences	3,120,012	2,608,603
Gains from derivatives	447,591	524,554
<b>Total</b>	<b>4,628,049</b>	<b>3,502,189</b>
 (In millions of Korean won)		
<b>Financial expenses</b>		
Interest expenses	291,677	149,231
Interest expenses from financial liabilities measured at amortized cost	151,856	74,663
Other financial liabilities	139,821	74,568
Foreign exchange differences	3,375,878	2,460,682
Losses from derivatives	288,446	423,405
<b>Total</b>	<b>3,956,001</b>	<b>3,033,318</b>

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 March 31, 2023 to be effective for the year ended December 31, 2023 is 13.8%.

## **23. Earnings per Share**

### (A) Basic earnings per share

Basic earnings per share for the three-month periods ended March 31, 2023 and 2022 are calculated as follows:

#### (1) Ordinary shares

<i>(In millions of Korean won, thousands of number of shares)</i>	<b>2023</b>	<b>2022</b>
Profit for the period attributable to owners of the parent company	1,401,252	11,129,094
Profit for the period available for ordinary shares	1,231,500	9,780,878
Weighted-average number of ordinary shares outstanding	5,969,783	5,969,783
<b>Basic earnings per ordinary share (in Korean won)</b>	<b>206</b>	<b>1,638</b>

#### (2) Preference shares

<i>(In millions of Korean won, thousands of number of shares)</i>	<b>2023</b>	<b>2022</b>
Profit for the period attributable to owners of the parent company	1,401,252	11,129,094
Profit for the period available for preference shares	169,752	1,348,216
Weighted-average number of preference shares outstanding	822,887	822,887
<b>Basic earnings per preference share (in Korean won)</b>	<b>206</b>	<b>1,638</b>

### (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-month periods ended March 31, 2023 and 2022.

## 24. Statements of Cash Flows

The Company used the indirect method to present cash flows from operating activities. Adjustments and changes in assets and liabilities arising from operating activities for the three-month periods ended March 31, 2023 and 2022 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	2023	2022
Adjustments:		
Income tax expense	251,780	3,745,212
Financial income	(2,267,376)	(1,745,834)
Financial expenses	1,797,505	1,462,863
Post-employment benefits	278,289	350,896
Depreciation	8,800,895	9,009,031
Amortization	785,598	770,477
Bad debt expenses	67,557	11,425
Dividend income	(47,894)	(268,509)
Share of profit of associates and joint ventures	(213,841)	(232,477)
Gain on disposal of property, plant and equipment	(34,449)	(50,420)
Loss on disposal of property, plant and equipment	9,392	4,196
Loss on valuation of inventories	2,475,649	772,044
Others	(195,008)	76,826
<b>Total</b>	<b>11,708,097</b>	<b>13,905,730</b>

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	2023	2022
Changes in assets and liabilities :		
Decrease (increase) in trade receivables	411,960	(2,369,191)
Decrease (increase) in non-trade receivables	1,151,428	(566,904)
Increase in prepaid expenses	(422,761)	(520,881)
Increase in inventories	(3,731,787)	(6,407,793)
Increase in trade payables	1,071,670	616,577
Decrease in other payables	(4,473)	(1,164,358)
Increase (decrease) in advances received	(47,042)	223,193
Decrease in withholdings	(528,193)	(385,713)
Decrease in accrued expenses	(5,169,031)	(3,120,255)
Increase in provisions	1,287,161	406,978
Payment of post-employment benefits	(162,758)	(142,330)
Other	(296,713)	(802,638)
<b>Total</b>	<b>(6,440,539)</b>	<b>(14,233,315)</b>

For the three-month periods ended March 31, 2023 and 2022, cash outflows from principal portion of lease liabilities (financial activities) amount to ₩ 261,755 million and ₩ 238,374 million, respectively, and cash outflows due to interest expenses (operating activities) in relation to the lease liabilities amount to ₩ 45,462 million and ₩ 30,012 million, respectively.

## **25. Financial Risk Management**

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

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

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

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

(A) Market risk

(1) Foreign exchange risk

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

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

(2) Interest rate risk

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

(3) Price risk

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

As of March 31, 2023 and 2022, price fluctuation of marketable equity securities (listed stocks) by 1% would result in changes in other comprehensive income (before income tax) of ₩ 111,415 million and ₩ 107,834 million, respectively, and changes in profit before tax of ₩ 5,354 million and ₩ 3,750 million, respectively.

(B) Credit risk

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

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

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

(C) Liquidity risk

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

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

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

(D) Capital risk management

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

The Company has maintained an AA- credit rating from S&P and Aa2 from Moody's as of March 31, 2023.

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Total liabilities	94,292,361	93,674,903
Total equity	359,799,416	354,749,604
<b>Debt ratio</b>	26.2%	26.4%

(E) Fair value measurement

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

(In millions of Korean won)	March 31, 2023		December 31, 2022	
	Carrying amount	Fair value	Carrying amount	Fair value
<b>Financial assets</b>				
Cash and cash equivalents	72,949,377	(*) <sup>1</sup>	49,680,710	(*) <sup>1</sup>
Short-term financial instruments	35,200,184	(*) <sup>1</sup>	65,102,886	(*) <sup>1</sup>
Short-term financial assets at amortized cost	-	(*) <sup>1</sup>	414,610	(*) <sup>1</sup>
Short-term financial assets at fair value through profit or loss	32,911	32,911	29,080	29,080
Trade receivables	36,632,159	(*) <sup>1</sup>	35,721,563	(*) <sup>1</sup>
Financial assets at fair value through other comprehensive income	13,042,895	13,042,895	11,397,012	11,397,012
Financial assets at fair value through profit or loss	1,624,607	1,624,607	1,405,468	1,405,468
Other <sup>(*)<sup>2</sup></sup>	10,943,198	646,867	10,340,876	395,667
<b>Total financial assets</b>	<b>170,425,331</b>		<b>174,092,205</b>	
<b>Financial liabilities</b>				
Trade payables	12,343,531	(*) <sup>1</sup>	10,644,686	(*) <sup>1</sup>
Short-term borrowings	4,442,640	(*) <sup>1</sup>	5,147,315	(*) <sup>1</sup>
Other payables	17,672,721	(*) <sup>1</sup>	16,328,237	(*) <sup>1</sup>
Current portion of long-term liabilities	1,197,522	6,888	1,089,162	6,580
- Current portion of long-term borrowings	1,191,106	(*) <sup>1</sup> (*) <sup>3</sup>	1,082,934	(*) <sup>1</sup> (*) <sup>3</sup>
- Current portion of debentures	6,416	6,888	6,228	6,580
Debentures	551,172	540,830	536,093	521,129
Long-term borrowings	3,750,644	(*) <sup>1</sup> (*) <sup>3</sup>	3,560,672	(*) <sup>1</sup> (*) <sup>3</sup>
Long-term other payables	4,643,841	(*) <sup>1</sup>	2,289,236	(*) <sup>1</sup>
Other <sup>(*)<sup>2</sup></sup>	11,795,856	389,350	12,409,529	361,768
<b>Total financial liabilities</b>	<b>56,397,927</b>		<b>52,004,930</b>	

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

(\*)<sup>2</sup> Assets measured at the cost of ₩ 10,296,331 million (December 31, 2022: ₩ 9,945,209 million) and liabilities measured at the cost of ₩ 11,406,506 million (December 31, 2022: ₩ 12,047,761 million) are excluded as the carrying amount is a reasonable estimation of fair value.

(\*)<sup>3</sup> 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 March 31, 2023 and December 31, 2022 are as follows:

(In millions of Korean won)	March 31, 2023			
	Level 1	Level 2	Level 3	Total balance
<b>1) Assets</b>				
Short-term financial assets at fair value through profit or loss	-	29,347	3,564	32,911
Financial assets at fair value through other comprehensive income	11,141,470	-	1,901,425	13,042,895
Financial assets at fair value through profit or loss	535,350	-	1,089,257	1,624,607
Other	-	357,647	289,220	646,867
<b>2) Liabilities</b>				
Current portion of debentures	-	6,888	-	6,888
Debentures	-	540,830	-	540,830
Other	-	381,946	7,404	389,350

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

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

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

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

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

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

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

Specific valuation techniques used to value financial instruments include:

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

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

### (3) Valuation technique and the inputs

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

The following table presents the valuation technique and the inputs used for major financial instruments classified as Level 3 as of March 31, 2023.

*(In millions of Korean won and percentage)*

Classification	Fair value	Valuation technique	Level 3 inputs	Input range
<b>Financial assets at fair value through other comprehensive income</b>				
Samsung Venture Investment	31,357	Discounted cash flow	Permanent growth rate	1.0%
			Weighted average cost of capital	19.8%
MiCo Ceramics Co., Ltd.	30,022	Discounted cash flow and others	Permanent growth rate	0.0%
			Weighted average cost of capital	14.2%
TCL China Star Optoelectronics Technology Co., Ltd. (CSOT)	968,287	Discounted cash flow	Permanent growth rate	0.0%
			Weighted average cost of capital	11.2%
China Star Optoelectronics Semiconductor Display Technology Ltd. (CSOSDT)	225,002	Discounted cash flow	Permanent growth rate	0.0%
			Weighted average cost of capital	11.2%
<b>Others</b>				
Call option on equity instruments	263,536	Binomial model	Risk-free discount rate	3.3%
			Price volatility	57.4%
Put option on equity instruments	25,684	Binomial model	Risk-free discount rate	3.6%~4.4%, 2.5%
			Price volatility	26.9%, 30.4%

(4) Changes in Level 3 instruments for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
<b>Financial assets</b>		
Balance as of January 1	3,303,227	3,430,214
Acquisitions	45,261	76,803
Disposals	(22,638)	(20,629)
Amount recognized in profit for the period	256,578	59,233
Amount recognized in other comprehensive income	(298,342)	51,749
Other	(620)	(14,303)
Balance as of March 31	3,283,466	3,583,067

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
<b>Financial liabilities</b>		
Balance as of January 1	7,404	5,438
Amount recognized in profit for the period	-	-
Other	-	-
Balance as of March 31	7,404	5,438

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

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

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

<i>(In millions of Korean won)</i>	<b>Favorable changes</b>		<b>Unfavorable changes</b>	
	<b>Classification</b>	<b>Profit or loss</b>	<b>Equity</b>	<b>Profit or loss</b>
Financial assets at fair value through other comprehensive income <sup>(*)1</sup>	-	130,128	-	(91,747)
Others <sup>(*)2</sup>	79,135	-	(70,752)	-

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

<sup>(\*)2</sup> Changes in fair value were calculated based on the correlation between underlying asset price (20%) and price volatility (10%), which are significant unobservable inputs.

## 26. Segment Information

### (A) Operating segment information

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

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

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

#### (1) For the three-month period ended March 31, 2023

<i>(In millions of Korean won)</i>	<b>DX</b>	<b>DS</b>	<b>SDC</b>	<b>Harman</b>	<b>Intercompany reconciliations</b>	<b>Total<sup>(*)</sup></b>
Net revenue	46,222,513	13,734,475	6,614,151	3,165,897	(5,991,665)	63,745,371
Depreciation	615,404	7,222,761	832,834	80,028	-	8,800,895
Amortization	417,358	206,609	55,023	49,103	-	785,598
Operating profit	4,208,760	(4,581,854)	776,016	128,949	-	640,178

<sup>(\*)</sup> Other operating segments are not separately disclosed.

Net revenue by major product for the three-month period ended March 31, 2023 are as follows:

<i>(In millions of Korean won)</i>	<b>Image devices</b>	<b>Mobile devices</b>	<b>Memory</b>	<b>Display panels</b>	<b>Total<sup>(*)</sup></b>
Net revenue	7,434,935	30,744,551	8,916,997	6,614,151	63,745,371

<sup>(\*)</sup> Other operating segments are not separately disclosed.

#### (2) For the three-month period ended March 31, 2022

<i>(In millions of Korean won)</i>	<b>DX</b>	<b>DS</b>	<b>SDC</b>	<b>Harman</b>	<b>Intercompany reconciliations</b>	<b>Total<sup>(*)</sup></b>
Net revenue	48,068,667	26,867,414	7,970,491	2,666,346	(7,791,420)	77,781,498
Depreciation	604,849	6,884,322	1,399,564	78,371	-	9,009,031
Amortization	393,762	207,287	59,388	57,526	-	770,477
Operating profit	4,555,461	8,450,131	1,092,864	101,560	-	14,121,409

<sup>(\*)</sup> Other operating segments are not separately disclosed.

Net revenue by major product for the three-month period ended March 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>Image devices</b>	<b>Mobile devices</b>	<b>Memory</b>	<b>Display panels</b>	<b>Total<sup>(*)</sup></b>
Net revenue	8,718,021	31,227,757	20,091,464	7,970,491	77,781,498

<sup>(\*)</sup> Other operating segments are not separately disclosed.

**(B) Regional information**

The regional information provided to the Management Committee for the reportable segments as of and for the three-month periods ended March 31, 2023 and 2022 are as follows:

**(1) As of and for the period ended March 31, 2023**

<i>(In millions of Korean won)</i>	<b>Korea</b>	<b>America</b>	<b>Europe</b>	<b>Asia and Africa</b>	<b>China</b>	<b>Intercompany elimination</b>	<b>Total</b>
Net segment revenue	11,300,428	22,762,451	12,582,923	11,534,339	5,565,230	-	63,745,371
Non-current assets <sup>(*)</sup>	150,663,992	15,167,060	6,135,315	9,249,314	15,224,391	(964,853)	195,475,219

<sup>(\*)</sup> Financial instruments, deferred tax assets, and investments in associates and joint ventures are excluded from non-current assets.

**(2) As of and for the period ended March 31, 2022**

<i>(In millions of Korean won)</i>	<b>Korea</b>	<b>America</b>	<b>Europe</b>	<b>Asia and Africa</b>	<b>China</b>	<b>Intercompany elimination</b>	<b>Total</b>
Net segment revenue	12,073,694	29,093,973	13,243,901	12,903,394	10,466,536	-	77,781,498
Non-current assets <sup>(*)</sup>	126,618,363	11,036,417	5,863,349	9,047,693	17,930,153	(867,262)	169,628,713

<sup>(\*)</sup> 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 three-month periods ended March 31, 2023 and 2022 are as follows:

		2023				
(In millions of Korean won)		Name of company <sup>(*)1</sup>	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS Co.,Ltd	74,499	-	485,177	82,168	
	Samsung Electro-Mechanics Co., Ltd	43,706	-	328,465	60	
	Samsung SDI Co., Ltd	41,404	-	197,264	2,072	
	Cheil Worldwide Inc	34,213	-	235,243	76	
	Other	250,843	-	3,350,585	28,046	
	<b>Total</b>	<b>444,665</b>	<b>-</b>	<b>4,596,734</b>	<b>112,422</b>	
Other related parties	Samsung C&T Co., Ltd	8,878	70	62,594	799,655	
	Other	153,664	-	559,486	645,636	
	<b>Total</b>	<b>162,542</b>	<b>70</b>	<b>622,080</b>	<b>1,445,291</b>	
Other <sup>(*)2</sup>	Samsung Engineering Co., Ltd	439	-	212	310,139	
	S-1	2,827	-	129,859	3,449	
	Other	29,662	-	178,822	84,196	
	<b>Total</b>	<b>32,928</b>	<b>-</b>	<b>308,893</b>	<b>397,784</b>	

(\*)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.

		2022				
(In millions of Korean won)		Name of company <sup>(*)1</sup>	Sales	Disposal of non-current assets	Purchases	Purchase of non-current assets
Associates and joint ventures	Samsung SDS Co.,Ltd	70,007	-	437,991	95,006	
	Samsung Electro-Mechanics Co., Ltd	43,421	-	390,747	-	
	Samsung SDI Co., Ltd	28,489	-	193,174	546	
	Cheil Worldwide Inc	29,498	-	217,332	-	
	Other	313,103	-	3,731,873	28,342	
	<b>Total</b>	<b>484,518</b>	<b>-</b>	<b>4,971,117</b>	<b>123,894</b>	
Other related parties	Samsung C&T Co., Ltd	12,416	-	128,300	1,187,351	
	Other	118,703	-	380,595	46,274	
	<b>Total</b>	<b>131,119</b>	<b>-</b>	<b>508,895</b>	<b>1,233,625</b>	
Other <sup>(*)2</sup>	Samsung Engineering Co., Ltd	138	-	1,353	277,553	
	S-1	2,558	-	122,482	7,729	
	Other	48,115	-	65,256	74,363	
	<b>Total</b>	<b>50,811</b>	<b>-</b>	<b>189,091</b>	<b>359,645</b>	

(\*)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 March 31, 2023 and December 31, 2022 are as follows:

		March 31, 2023		
(In millions of Korean won)		Name of company <sup>(*)1</sup>	Receivables	Payables <sup>(*)2</sup>
Associates and joint ventures	Samsung SDS Co.,Ltd		53,807	584,941
	Samsung Electro-Mechanics Co., Ltd		39,298	214,651
	Samsung SDI Co., Ltd		139,444	61,773
	Cheil Worldwide Inc		33,687	311,050
	Other		231,616	1,268,520
	<b>Total</b>		497,852	2,440,935
Other related parties	Samsung C&T Co., Ltd		210,537	1,229,886
	Other		33,716	319,141
	<b>Total</b>		244,253	1,549,027
Other <sup>(*)3</sup>	Samsung Engineering Co., Ltd		468	620,166
	S-1		1,868	35,487
	Other		14,853	341,381
	<b>Total</b>		17,189	997,034

(\*)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.

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

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

(\*)2 Payables and others include lease liabilities.

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

- (C) For the three-month periods ended March 31, 2023 and 2022, the Company invested ₩ 62,182 million and ₩ 6,100 million, respectively, in associates and joint ventures. In addition, the Company recovered ₩ 4,661 million and ₩ 5,153 million, respectively, of investments in associates and joint ventures for the three-month periods ended March 31, 2023 and 2022.
- (D) For the three-month periods ended March 31, 2023 and 2022, the Company declared dividend of ₩ 412,942 million and ₩ 421,609 million, respectively, to related parties. As of March 31, 2023, the dividend payable to related parties amounted to ₩ 412,942 million. In addition, for the three-month periods ended March 31, 2023 and 2022, the Company declared dividends of ₩ 32,058 million and ₩ 32,058 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 March 31, 2023, dividend payables to the entities that are not in scope of Korean IFRS 1024 amounted to ₩ 32,058 million.
- (E) For the three-month period ended March 31, 2023, the Company entered into new lease agreements with its related parties amounted to ₩ 50 million (none for the three-month period ended March 31, 2022), and the lease payments made to the related parties amounted to ₩ 5,089 million and ₩ 6,180 million, respectively.
- (F) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the three-month periods ended March 31, 2023 and 2022 consists of:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Short-term employee benefits	3,330	3,415
Post-employment benefits	139	127
Other long-term employee benefits	1,959	2,072

## 4. Non-consolidated financial statements

Samsung Electronics Co., Ltd.

### INTERIM SEPARATE STATEMENTS OF FINANCIAL POSITION

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

	Notes	March 31, 2023	December 31, 2022	March 31, 2023	December 31, 2022
		KRW	KRW	USD	USD
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	3, 25	8,414,405	3,921,593	6,602,566	3,077,172
Short-term financial instruments	3, 25	1,134	137	890	108
Trade receivables	3, 25	22,999,363	20,503,223	18,047,004	16,088,348
Non-trade receivables	3, 25	2,387,565	2,925,006	1,873,460	2,295,176
Prepaid expenses		1,322,039	1,047,900	1,037,370	822,260
Inventories	5	30,485,357	27,990,007	23,921,070	21,963,033
Other current assets	3, 25	2,337,565	2,674,792	1,834,227	2,098,840
		<b>67,947,428</b>	<b>59,062,658</b>	<b>53,316,587</b>	<b>46,344,937</b>
<b>Non-current assets</b>					
Financial assets at fair value through other comprehensive income	3, 4, 25	1,482,942	1,364,325	1,163,626	1,070,550
Financial assets at fair value through profit or loss	3, 4, 25	283	283	222	222
Investments in subsidiaries, associates and joint ventures	6	57,354,868	57,397,249	45,004,879	45,038,135
Property, plant and equipment	7	126,355,577	123,266,986	99,147,948	96,724,411
Intangible assets	8	11,318,579	8,561,424	8,881,396	6,717,928
Net defined benefit assets	11	3,922,244	4,410,223	3,077,683	3,460,588
Deferred income tax assets		1,929,282	2,142,512	1,513,858	1,681,174
Other non-current assets	3, 25	4,099,184	3,878,090	3,216,524	3,043,037
		<b>206,462,959</b>	<b>201,021,092</b>	<b>162,006,136</b>	<b>157,736,045</b>
<b>Total assets</b>		<b>274,410,387</b>	<b>260,083,750</b>	<b>215,322,723</b>	<b>204,080,982</b>

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	March 31,	December 31,	March 31,	December 31,
		2023	2022	2023	2022
		KRW	KRW	USD	USD
<b>Liabilities and Equity</b>					
<b>Current liabilities</b>					
Trade payables	3, 25	12,128,382	8,729,315	9,516,827	6,849,667
Short-term borrowings	3, 9, 25	3,181,693	2,381,512	2,496,592	1,868,711
Other payables	3, 25	17,663,387	18,554,543	13,860,002	14,559,269
Advances received	14	333,971	320,689	262,058	251,636
Withholdings	3, 25	384,422	523,354	301,646	410,662
Accrued expenses	3, 14, 25	5,699,663	8,359,296	4,472,378	6,559,323
Current income tax liabilities		1,309,850	2,533,481	1,027,805	1,987,957
Current portion of long-term liabilities	3, 9, 10, 25	174,758	135,753	137,128	106,522
Provisions	12	5,011,131	4,059,491	3,932,105	3,185,377
Other current liabilities	14	436,239	488,613	342,305	383,402
		<b>46,323,496</b>	<b>46,086,047</b>	<b>36,348,846</b>	<b>36,162,526</b>
<b>Non-current liabilities</b>					
Debentures	3, 10, 25	25,667	24,912	20,140	19,548
Long-term borrowings	3, 9, 25	10,771,941	654,979	8,452,463	513,945
Long-term other payables	3, 25	4,476,135	2,439,232	3,512,307	1,914,002
Long-term provisions	12	1,775,310	1,423,165	1,393,040	1,116,721
Other non-current liabilities		69,334	39,224	54,405	30,778
		<b>17,118,387</b>	<b>4,581,512</b>	<b>13,432,355</b>	<b>3,594,994</b>
<b>Total liabilities</b>		<b>63,441,883</b>	<b>50,667,559</b>	<b>49,781,201</b>	<b>39,757,520</b>

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	March 31,	December 31,	March 31,	December 31,
		2023 KRW	2022 KRW	2023 USD	2022 USD
<b>Equity</b>					
Preference shares	15	119,467	119,467	93,743	93,743
Ordinary shares	15	778,047	778,047	610,513	610,513
Share premium		4,403,893	4,403,893	3,455,621	3,455,621
Retained earnings	16	206,093,134	204,388,016	161,715,944	160,377,982
Other components of equity	17	(426,037)	(273,232)	(334,299)	(214,397)
<b>Total equity</b>		<b>210,968,504</b>	<b>209,416,191</b>	<b>165,541,522</b>	<b>164,323,462</b>
<b>Total liabilities and equity</b>		<b>274,410,387</b>	<b>260,083,750</b>	<b>215,322,723</b>	<b>204,080,982</b>

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

**Samsung Electronics Co., Ltd.**

**INTERIM SEPARATE STATEMENTS OF PROFIT OR LOSS**

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

	Notes	For the three-month periods ended March 31,			
		2023 KRW	2022 KRW	2023 USD	2022 USD
<b>Revenue</b>	26	42,168,679	56,724,258	33,088,670	44,510,056
<b>Cost of sales</b>	18	37,113,489	39,184,912	29,121,993	30,747,385
<b>Gross profit</b>		<b>5,055,190</b>	<b>17,539,346</b>	<b>3,966,677</b>	<b>13,762,671</b>
Selling and administrative expenses	18, 19	8,963,951	8,387,515	7,033,780	6,581,466
<b>Operating profit (loss)</b>	26	<b>(3,908,761)</b>	<b>9,151,831</b>	<b>(3,067,103)</b>	<b>7,181,205</b>
Other non-operating income	20	8,569,984	283,271	6,724,644	222,275
Other non-operating expense	20	92,240	54,609	72,378	42,850
Financial income	21	2,153,358	1,739,895	1,689,684	1,365,251
Financial expense	21	2,320,148	1,442,368	1,820,560	1,131,789
<b>Profit before income tax</b>		<b>4,402,193</b>	<b>9,678,020</b>	<b>3,454,287</b>	<b>7,594,092</b>
Income tax expense	22	244,098	2,026,077	191,537	1,589,811
<b>Profit for the period</b>		<b>4,158,095</b>	<b>7,651,943</b>	<b>3,262,750</b>	<b>6,004,281</b>
Earnings per share	23				
(in Korean won, in US dollars)					
- Basic		612	1,127	0.48	0.88
- Diluted		612	1,127	0.48	0.88

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

**Samsung Electronics Co., Ltd.**

**INTERIM SEPARATE STATEMENTS OF COMPREHENSIVE INCOME**

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

Notes	For the three-month periods ended March 31,			
	2023 KRW	2022 KRW	2023 USD	2022 USD
<b>Profit for the period</b>	<b>4,158,095</b>	<b>7,651,943</b>	<b>3,262,750</b>	<b>6,004,281</b>
<b>Other comprehensive income (loss)</b>				
<b>Items that will not be reclassified subsequently to profit or loss:</b>				
Gain (loss) on valuation of financial assets at fair value through other comprehensive income, net of tax	17	87,319	(53,901)	68,517
Remeasurement of net defined benefit assets, net of tax	17	(240,124)	(63,027)	(188,419)
<b>Items that may be reclassified subsequently to profit or loss</b>	-	-	-	-
<b>Other comprehensive income (loss) for the period, net of tax</b>	<b>(152,805)</b>	<b>(116,928)</b>	<b>(119,902)</b>	<b>(91,750)</b>
<b>Total comprehensive income for the period</b>	<b>4,005,290</b>	<b>7,535,015</b>	<b>3,142,848</b>	<b>5,912,531</b>

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

**Samsung Electronics Co., Ltd.**

**INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY**

*(In millions of Korean won)*

For the three-month period ended March 31, 2022	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
<b>Balance as of January 1, 2022</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>188,774,335</b>	<b>(882,010)</b>	<b>193,193,732</b>
Profit for the period		-	-	-	7,651,943	-	7,651,943
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	-	(53,901)	(53,901)
Remeasurement of net defined benefit liabilities (assets), net of tax		-	-	-	-	(63,027)	(63,027)
<b>Total comprehensive income for the period</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>7,651,943</b>	<b>(116,928)</b>	<b>7,535,015</b>
Dividends declared		-	-	-	(2,452,977)	-	(2,452,977)
<b>Total transactions with owners</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>(2,452,977)</b>	<b>-</b>	<b>(2,452,977)</b>
<b>Balance as of March 31, 2022</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>193,973,301</b>	<b>(998,938)</b>	<b>198,275,770</b>

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

**Samsung Electronics Co., Ltd.**

**INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY**

*(In thousands of US dollars (Note 2.3))*

For the three-month period ended March 31, 2022	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
<b>Balance as of January 1, 2022</b>		93,743	610,513	3,455,621	148,126,331	(692,090)	<b>151,594,118</b>
Profit for the period		-	-	-	6,004,281	-	6,004,281
Loss on valuation of financial assets at fair value through other comprehensive income, net of tax		-	-	-	-	(42,295)	(42,295)
Remeasurement of net defined benefit liabilities (assets), net of tax		-	-	-	-	(49,455)	(49,455)
<b>Total comprehensive income for the period</b>		-	-	-	<b>6,004,281</b>	<b>(91,750)</b>	<b>5,912,531</b>
Dividends declared		-	-	-	(1,924,788)	-	(1,924,788)
<b>Total transactions with owners</b>		-	-	-	<b>(1,924,788)</b>	-	<b>(1,924,788)</b>
<b>Balance as of March 31, 2022</b>		93,743	610,513	3,455,621	152,205,824	(783,840)	<b>155,581,861</b>

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

**Samsung Electronics Co., Ltd.**

**INTERIM SEPARATE STATEMENTS OF CHANGES IN EQUITY**

*(In millions of Korean won)*

For the three-month period ended March 31, 2023	Notes	Preference shares	Ordinary shares	Share premium	Retained earnings	Other components of equity	Total
<b>Balance as of January 1, 2023</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>204,388,016</b>	<b>(273,232)</b>	<b>209,416,191</b>
Profit for the period		-	-	-	4,158,095	-	4,158,095
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	-	87,319	87,319
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(240,124)	(240,124)
<b>Total comprehensive income for the period</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>4,158,095</b>	<b>(152,805)</b>	<b>4,005,290</b>
Dividends declared		-	-	-	(2,452,977)	-	(2,452,977)
<b>Total transactions with owners</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>(2,452,977)</b>	<b>-</b>	<b>(2,452,977)</b>
<b>Balance as of March 31, 2023</b>		<b>119,467</b>	<b>778,047</b>	<b>4,403,893</b>	<b>206,093,134</b>	<b>(426,037)</b>	<b>210,968,504</b>

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))

<b>For the three-month period ended March 31, 2023</b>	<b>Notes</b>	<b>Preference shares</b>	<b>Ordinary shares</b>	<b>Share premium</b>	<b>Retained earnings</b>	<b>Other components of equity</b>	<b>Total</b>
<b>Balance as of January 1, 2023</b>		<b>93,743</b>	<b>610,513</b>	<b>3,455,621</b>	<b>160,377,982</b>	<b>(214,397)</b>	<b>164,323,462</b>
Profit for the period		-	-	-	3,262,750	-	3,262,750
Gain on valuation of financial assets at fair value through other comprehensive income, net of tax	17	-	-	-	-	68,517	68,517
Remeasurement of net defined benefit liabilities (assets), net of tax	17	-	-	-	-	(188,419)	(188,419)
<b>Total comprehensive income for the period</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>3,262,750</b>	<b>(119,902)</b>	<b>3,142,848</b>
Dividends declared		-	-	-	(1,924,788)	-	(1,924,788)
<b>Total transactions with owners</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>(1,924,788)</b>	<b>-</b>	<b>(1,924,788)</b>
<b>Balance as of March 31, 2023</b>		<b>93,743</b>	<b>610,513</b>	<b>3,455,621</b>	<b>161,715,944</b>	<b>(334,299)</b>	<b>165,541,522</b>

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 three-month periods ended March 31,			
	2023	2022	2023	2022
	KRW	KRW	USD	USD
<b>Operating activities</b>				
Profit for the period	4,158,095	7,651,943	3,262,750	6,004,281
Adjustments	24	1,420,168	8,705,638	1,114,369
Changes in assets and liabilities arising from operating activities	24	(7,173,527)	(6,561,441)	(5,628,881)
<b>Cash generated from operations</b>	<b>(1,595,264)</b>	<b>9,796,140</b>	<b>(1,251,762)</b>	<b>7,686,777</b>
Interest received	45,168	57,351	35,442	45,002
Interest paid	(90,232)	(50,096)	(70,803)	(39,309)
Dividends received	8,119,231	676	6,370,950	530
Income tax paid	(595,352)	(67,223)	(467,157)	(52,748)
<b>Net cash from operating activities</b>	<b>5,883,551</b>	<b>9,736,848</b>	<b>4,616,670</b>	<b>7,640,252</b>
<b>Investing activities</b>				
Net decrease (increase) in short-term financial instruments	(997)	2,198,224	(782)	1,724,889
Disposal of financial assets at fair value through other comprehensive income	22	-	17	-
Disposal of financial assets at fair value through profit or loss	-	150	-	118
Disposal of investments in subsidiaries, associates and joint ventures	107,710	75,028	84,517	58,873
Acquisition of investments in subsidiaries, associates and joint ventures	(65,354)	(45,495)	(51,282)	(35,699)
Disposal of property, plant and equipment	52,599	55,545	41,273	43,585
Acquisition of property, plant and equipment	(11,093,859)	(6,939,519)	(8,705,064)	(5,445,261)
Disposal of intangible assets	6,496	197	5,097	155
Acquisition of intangible assets	(1,031,652)	(863,935)	(809,511)	(677,907)
Cash outflow from other investing activities	(48,418)	(14,552)	(37,992)	(11,419)
<b>Net cash used in investing activities</b>	<b>(12,073,453)</b>	<b>(5,534,357)</b>	<b>(9,473,727)</b>	<b>(4,342,666)</b>

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 three-month periods ended March 31,			
		2023 KRW	2022 KRW	2023 USD	2022 USD
<b>Financing activities</b>					
Net increase (decrease) in short-term borrowings		720,314	1,043,408	565,212	818,735
Increase in long-term borrowings		10,000,000	-	7,846,741	-
Repayment of debentures and long-term borrowings		(39,266)	(34,731)	(30,811)	(27,253)
Dividends paid		(243)	(245)	(191)	(192)
<b>Net cash provided by financing activities</b>		<b>10,680,805</b>	<b>1,008,432</b>	<b>8,380,951</b>	<b>791,290</b>
Effect of foreign exchange rate changes		1,909	-	1,500	-
<b>Net increase in cash and cash equivalents</b>		<b>4,492,812</b>	<b>5,210,923</b>	<b>3,525,394</b>	<b>4,088,876</b>
<b>Cash and cash equivalents</b>					
Beginning of the period		3,921,593	3,918,872	3,077,172	3,075,037
<b>End of the period</b>		<b>8,414,405</b>	<b>9,129,795</b>	<b>6,602,566</b>	<b>7,163,913</b>

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

## **5. Non 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 two business divisions: Device eXperience (“DX”) and Device Solutions (“DS”). DX division comprises businesses for digital TVs, refrigerators, mobile phones, and communication systems. DS division 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 International Financial Reporting Standards (“Korean IFRS”) 1027, *Separate Financial Statements*.

### **2. Significant Accounting Policies**

#### **2.1 Basis of Presentation**

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

The interim separate financial statements for the three-month period ended March 31, 2023 have been prepared in accordance with Korean IFRS 1034, *Interim Financial Reporting*. These interim separate financial statements have been prepared in accordance with the Korean IFRS which is effective as of March 31, 2023.

(A) New and amended standards adopted by the Company

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

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

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

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

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

Amendments to Korean IFRS 1012, *Income Taxes*

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

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

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

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

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

## 2.2 Accounting Policies

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

(A) Income tax expense

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

## 2.3 Convenience Translation into United States Dollar Amounts

The US dollar amounts provided in the financial statements represent supplementary information solely for the convenience of the reader. All Korean won amounts are expressed in US dollars at the rate of ₩ 1,274.4 to \$1, the average exchange rate for the three-month period ended March 31, 2023. Such presentation is not in accordance with generally accepted accounting principles, and should not be construed as a representation that the Korean won amounts shown could be readily converted, realized or settled in US dollars at this or at any other rate.

## **2.4 Material Accounting Estimates and Assumptions**

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

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

### 3. Financial Instruments by Category

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

(1) As of March 31, 2023

(In millions of Korean won)	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
<b>Financial assets</b>				
Cash and cash equivalents	8,414,405	-	-	8,414,405
Short-term financial instruments	1,134	-	-	1,134
Trade receivables	22,999,363	-	-	22,999,363
Financial assets at fair value through other comprehensive income	-	1,482,942	-	1,482,942
Financial assets at fair value through profit or loss	-	-	283	283
Other	5,358,236	-	263,536	5,621,772
<b>Total</b>	<b>36,773,138</b>	<b>1,482,942</b>	<b>263,819</b>	<b>38,519,899</b>

(In millions of Korean won)	Financial liabilities measured at amortized cost	Other financial liabilities <sup>(*)</sup>	Total
<b>Financial liabilities</b>			
Trade payables	12,128,382	-	12,128,382
Short-term borrowings	-	3,181,693	3,181,693
Other payables	17,425,374	-	17,425,374
Current portion of long-term liabilities	6,416	168,342	174,758
Debentures	25,667	-	25,667
Long-term borrowings	10,000,000	771,941	10,771,941
Long-term other payables	4,121,993	-	4,121,993
Other	3,268,660	-	3,268,660
<b>Total</b>	<b>46,976,492</b>	<b>4,121,976</b>	<b>51,098,468</b>

<sup>(\*)</sup> Other financial liabilities include lease liabilities which are not subject to categorizations.

(2) As of December 31, 2022

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

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

<sup>(\*)</sup> Other financial liabilities include lease liabilities which are not subject to categorizations.

#### 4. Financial Assets at Fair Value

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

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Equity instruments	1,482,942	1,364,325

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Debt instruments	283	283

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

<i>(In millions of Korean won, number of shares and percentage)</i>	<b>March 31, 2023</b>			<b>December 31, 2022</b>	
	<b>Number of shares owned</b>	<b>Percentage of ownership<sup>(*)</sup> (%)</b>	<b>Acquisition cost</b>	<b>Carrying amount (Market value)</b>	<b>Carrying amount (Market value)</b>
SAMSUNG HEAVY INDUSTRIES CO.,LTD	134,027,281	15.2	932,158	692,921	684,879
HOTEL SHILLA CO.,LTD	2,004,717	5.1	13,957	163,384	166,592
iMarketKorea Inc.	647,320	1.9	324	6,428	6,538
KT Skylife Co.,Ltd	240,000	0.5	3,344	1,874	1,954
YONG PYONG RESORT CORPORATION	400,000	0.8	1,869	1,276	1,412
A-Tech Solution CO., LTD.	1,592,000	15.9	26,348	20,075	12,879
WONIK HOLDINGS CO.,LTD.	1,759,171	2.3	15,410	6,632	5,972
WONIK IPS CO., LTD.	1,850,936	3.8	16,214	64,875	45,811
DONGJIN SEMICHEM CO., LTD.	2,467,894	4.8	48,277	81,441	73,913
Soulbrain Holdings Co., Ltd.	461,741	2.2	30,752	12,929	10,989
Soulbrain Co., Ltd.	373,368	4.8	24,866	87,741	81,357
S&S TECH CORPORATION	1,716,116	8.0	65,933	69,417	45,220
YIK Corporation	9,601,617	11.7	47,336	40,999	26,933
KCTECH CO., LTD	1,022,216	4.9	20,720	21,160	15,129
LOTVacuum.Co.,Ltd.	1,267,668	7.1	18,990	16,836	14,326
New Power Plasma Co.,Ltd	2,140,939	4.9	12,739	10,983	7,579
FINE SEMITECH Corp.	1,522,975	7.0	43,009	39,064	23,758
DNFCo.,Ltd.	810,030	7.0	20,964	13,811	10,692
Marvell	173,187	0.0	11,705	9,777	8,129
SoundHound AI, Inc.	1,702,957	0.9	13,719	6,128	3,820
<b>Total</b>			<b>1,368,634</b>	<b>1,367,751</b>	<b>1,247,882</b>

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

## 5. Inventories

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

	March 31, 2023			December 31, 2022		
	Gross amount <i>(In millions of Korean won)</i>	Valuation allowance	Carrying amount	Gross amount	Valuation allowance	Carrying amount
Finished goods	9,489,157	(1,408,299)	8,080,858	8,589,879	(956,427)	7,633,452
Work in process	20,221,469	(2,610,120)	17,611,349	16,738,121	(1,216,059)	15,522,062
Raw materials and supplies	5,051,668	(601,077)	4,450,591	4,891,951	(492,006)	4,399,945
Materials in transit	342,559	-	342,559	434,548	-	434,548
<b>Total</b>	<b>35,104,853</b>	<b>(4,619,496)</b>	<b>30,485,357</b>	<b>30,654,499</b>	<b>(2,664,492)</b>	<b>27,990,007</b>

## 6. Investments in Subsidiaries, Associates and Joint Ventures

- (A) Changes in investments in subsidiaries, associates and joint ventures for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	2023	2022
Balance as of January 1	57,397,249	56,225,599
Acquisition	65,354	45,495
Disposal	(107,735)	(74,448)
<b>Balance as of March 31</b>	<b>57,354,868</b>	<b>56,196,646</b>

- (B) Major investments in associates as of March 31, 2023 are as follows (refer to Note 27 for the list of subsidiaries):

Investee	Nature of relationship	Percentage of ownership (%) <sup>(*)1)</sup>	Principal business location	Fiscal period-end
SAMSUNG ELECTRO-MECHANICS CO.,LTD	Manufacture and supply electronic components including passive components, circuit boards, and modules	23.7	Korea	December
SAMSUNG SDS CO., LTD.	Provide IT services including computer programming, system integration and management and logistical services	22.6	Korea	December
SAMSUNG BIOLOGICS CO.,LTD.	Contract manufacturing of biopharmaceuticals, etc	31.2	Korea	December
SAMSUNG SDI CO.,LTD <sup>(*)2)</sup>	Manufacture and supply electronics including secondary cell batteries	19.6	Korea	December
Cheil Worldwide, Inc	Advertising agency	25.2	Korea	December

<sup>(\*)1)</sup> Ownership represents the Company's ownership of the total ordinary shares issued by each entity.

<sup>(\*)2)</sup> The Company's ownership of ordinary shares outstanding is 20.6%.

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

<i>(In millions of Korean won and number of shares)</i>	March 31, 2023		December 31, 2022		
	Number of shares held	Market value	Carrying amount	Market value	Carrying amount
Samsung Electro-Mechanics	17,693,084	2,701,734	445,244	2,308,947	445,244
Samsung SDS	17,472,110	2,026,765	560,827	2,149,070	560,827
Samsung Biologics	22,217,309	17,507,239	1,595,892	18,240,411	1,595,892
Samsung SDI	13,462,673	9,895,065	1,242,605	7,956,440	1,242,605
Cheil Worldwide	29,038,075	540,689	491,599	669,328	491,599

## 7. Property, Plant and Equipment

(A) Changes in property, plant and equipment for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Balance as of January 1	123,266,986	103,667,025
Acquisition and capital expenditures	9,399,398	6,311,543
Depreciation	(6,278,126)	(5,927,470)
Disposals/scrap/impairment	(31,758)	(27,029)
Other	(923)	8,493
<b>Balance as of March 31</b>	<b>126,355,577</b>	<b>104,032,562</b>

(B) Details of depreciation of property, plant and equipment for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Cost of sales	5,803,397	5,488,037
Selling and administrative expenses and other	474,729	439,433
<b>Total</b>	<b>6,278,126</b>	<b>5,927,470</b>

(C) Right-of-use assets as of March 31, 2023 amount to ₩ 1,381,006 million (December 31, 2022: ₩ 1,236,013 million). During the three-month periods ended March 31, 2023 and 2022, newly recognized right-of-use assets amount to ₩ 204,006 million and ₩ 22,317 million, respectively, with relevant depreciation of ₩ 50,880 million and ₩ 39,202 million, respectively.

## 8. Intangible Assets

(A) Changes in intangible assets for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Balance as of January 1	8,561,424	8,657,456
External acquisitions	3,410,160	303,200
Amortization	(657,121)	(628,517)
Disposals/scrap/impairment	(15,006)	(3,150)
Other	19,122	4,507
<b>Balance as of March 31</b>	<b>11,318,579</b>	<b>8,333,496</b>

(B) Details of amortization of intangible assets for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Cost of sales	506,898	480,529
Selling and administrative expenses and other	150,223	147,988
<b>Total</b>	<b>657,121</b>	<b>628,517</b>

## 9. Borrowings

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

(In millions of Korean won)	Financial institutions	Due date	Interest rates (%)		
			as of Mar 31, 2023	March 31, 2023	December 31, 2022
<b>Short-term borrowings</b>					
Collateralized borrowings <sup>(*)1</sup>	Woori Bank and other		0.2~18.5	3,181,693	2,381,512
<b>Total</b>				3,181,693	2,381,512
<b>Current portion of long-term borrowings</b>					
Lease liabilities <sup>(*)2</sup>	-		2.4	168,342	129,525
<b>Total</b>				168,342	129,525
<b>Long-term borrowings</b>					
Lease liabilities <sup>(*)3</sup>	-		2.4	771,941	654,979
Non-collateralized borrowings <sup>3</sup>	Samsung Display Co., Ltd.	Aug 16, 2025	4.6	10,000,000	-
<b>Total</b>				10,771,941	654,979

(\*)1 Collateralized borrowings are secured by trade receivables.

(\*)2 Interest expenses arising from the lease liabilities for the three-month periods ended March 31, 2023 and 2022 amounted to ₩ 5,227 million and ₩ 2,310 million, respectively, which were determined using the weighted average incremental borrowing rate.

(\*)3 An agreement has been signed with the total amount of the loan being ₩ 20 trillion, which will be paid in instalments according to the circumstances of both companies, but the loan will be repaid in one lump sum at the end of the term.

## 10. Debentures

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

(In millions of Korean won)	Issue date	Due date	Interest rate (%)		
			as of Mar 31, 2023	March 31, 2023	December 31, 2022
US dollar denominated straight bonds <sup>(*)</sup>	Oct 2, 1997	Oct 1, 2027	7.7	32,595 (USD 25 million)	31,683 (USD 25 million)
Less: Discounts				(512)	(543)
Less: Current Portion				(6,416)	(6,228)
<b>Total</b>				25,667	24,912

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

Interest is paid semi-annually.

## 11. Net Defined Benefit Liabilities (Assets)

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Present value of funded defined benefit obligations	11,025,601	10,729,126
Present value of unfunded defined benefit obligations	30,363	29,546
<b>Subtotal</b>	<b>11,055,964</b>	<b>10,758,672</b>
Fair value of plan assets	(14,978,208)	(15,168,895)
<b>Total</b>	<b>(3,922,244)</b>	<b>(4,410,223)</b>

- (B) The components of defined benefit costs recognized in profit or loss for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Current service cost	240,592	257,508
Net interest income	(68,812)	(22,976)
<b>Total</b>	<b>171,780</b>	<b>234,532</b>

- (C) The expenses related to defined benefit plans recognized in the statements of profit or loss for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Cost of sales	69,079	93,630
Selling and administrative expenses and other	102,701	140,902
<b>Total</b>	<b>171,780</b>	<b>234,532</b>

## 12. Provisions

Changes in the provisions for the three-month period ended March 31, 2023 are as follows:

(In millions of Korean won)	Warranty (A)	Royalty expenses (B)	Long-term incentives (C)	Other (D, E)	Total
Balance as of January 1	587,665	1,546,606	549,181	2,799,204	5,482,656
Charged to profit or loss	258,085	174,089	48,143	1,224,439	1,704,756
Payment	(179,537)	(112,439)	-	(163,556)	(455,532)
Other	-	(15,242)	-	69,803	54,561
<b>Balance as of March 31</b>	<b>666,213</b>	<b>1,593,014</b>	<b>597,324</b>	<b>3,929,890</b>	<b>6,786,441</b>

- (A) The Company accrues warranty reserves for estimated costs of quality assurance, exchanges, repairs, recalls, and future services based on historical experience and terms of warranty programs.
- (B) The Company recognizes provisions for the estimated royalty expenses that are under negotiation with counterparties. The timing and amount of payment depend on the settlement of the negotiations.
- (C) The Company has a long-term incentive plan for its executives based on a three-year management performance criteria and recognizes a provision for the estimated incentive cost.
- (D) The Company records provisions for future expenses expected to be incurred for products that have been discontinued from manufacturing and sales.
- (E) The Company makes provisions for and the emission in excess of the emission rights held by the Company for the applicable years. Details of emission rights and liabilities as of March 31, 2023 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 March 31, 2023 are as follows:

(In ten thousand metric tons)	March 31, 2023
Emission rights allocated free of charge	1,123
Estimated volume of emission	1,467

- (2) Changes in the emission rights for the three-month periods ended March 31, 2023 and 2022 are as follows:

(In millions of Korean won)	2023	2022
Balance as of January 1	19,567	46,073
Acquisition	-	-
<b>Balance as of March 31</b>	<b>19,567</b>	<b>46,073</b>

- (3) Changes in the emission liabilities for the three-months period ended March 31, 2023 and 2022 are as follows:

(In millions of Korean won)	2023	2022
Balance as of January 1	32,825	45,049
Charged to profit or loss	-	12,454
<b>Balance as of March 31</b>	<b>32,825</b>	<b>57,503</b>

### 13. Commitments and Contingencies

#### (A) Guarantees

- (1) Debt guarantees provided by the Company for overseas subsidiaries as of March 31, 2023 are as follows:

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

Debtor	Creditor	Date of maturity	Borrowed amounts	Guaranteed amount
Samsung Electronics Turkiye (SETK)	BNP and other	December 16, 2023	382,727	1,013,053
Samsung Electronics Industry and Commerce Ltd. (SETK-P)	BNP and other	December 16, 2023	32,630	169,494
Samsung Electronics Israel Ltd. (SEIL)	Citibank	December 16, 2023	12,327	20,339
Other	Other		-	9,418,927
<b>Total</b>			427,684	10,621,813
			USD 328,012	USD 8,146,811

- (2) The ceiling amount of guarantees provided by the Company for the execution of contracts by overseas subsidiaries is ₩ 482,446 million as of March 31, 2023.
- (3) The Company has not been provided any collateral or guarantees from its related parties as of March 31, 2023.

#### (B) Litigation

As of March 31, 2023, the Company is involved in various claims, disputes, and investigations conducted by regulatory bodies that arose during the normal course of business with numerous entities. Although the outflow of resources and timing of these matters are uncertain, the Company believes the outcome will not have a material impact on the financial position of the Company.

#### (C) Joint liabilities related to the divestiture

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

## **14. Contract Liabilities**

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Contract liabilities <sup>(*)</sup>	1,079,654	1,133,426

<sup>(\*)</sup> Contract liabilities include advances received, accrued expenses, other current liabilities and others.

## **15. Share Capital**

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

## 16. Retained Earnings

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Legal reserves	450,789	450,789
Discretionary reserves, etc.	205,642,345	203,937,227
<b>Total</b>	<b>206,093,134</b>	<b>204,388,016</b>

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

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

## 17. Other Components of Equity

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Loss on valuation of financial assets at fair value through other comprehensive income	(35,325)	(122,644)
Remeasurement of net defined benefit liabilities (assets)	(2,151,120)	(1,910,996)
Others	1,760,408	1,760,408
<b>Total</b>	<b>(426,037)</b>	<b>(273,232)</b>

## 18. Expenses by Nature

Expenses by nature for the three-month periods ended March 31, 2023 and 2022 consist of the following:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Changes in finished goods, work in process, and other	(2,536,693)	(2,089,589)
Raw materials used, merchandise purchased, and other	25,714,241	27,637,597
Wages and salaries	4,082,252	4,240,048
Post-employment benefit	173,669	236,336
Depreciation	6,278,126	5,927,470
Amortization	657,121	628,517
Welfare	764,552	680,291
Utilities	1,228,172	832,675
Outsourcing	931,459	803,742
Advertising	273,022	353,048
Sales promotion expenses	292,124	405,396
Other	8,219,395	7,916,896
<b>Total<sup>(*)</sup></b>	<b>46,077,440</b>	<b>47,572,427</b>

<sup>(\*)</sup> Equal to the sum of cost of sales and selling and administrative expenses in the statements of profit or loss.

## **19. Selling and Administrative Expenses**

Selling and administrative expenses for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
<b>Selling and administrative expenses</b>		
Wages and salaries	736,282	728,659
Post-employment benefit	30,975	41,455
Commissions	901,887	660,812
Depreciation	112,775	98,783
Amortization	95,712	88,795
Advertising	273,022	353,048
Sales promotion	292,124	405,396
Transportation	135,831	261,485
Service charges	273,760	275,303
Other	496,322	439,996
<b>Subtotal</b>	<b>3,348,690</b>	<b>3,353,732</b>
<b>Research and development expenses</b>		
Research and development	5,615,261	5,033,783
<b>Total</b>	<b>8,963,951</b>	<b>8,387,515</b>

## 20. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the three-month periods ended March 31, 2023 and 2022 are as follows:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
<b>Other non-operating income</b>		
Dividend income	8,439,845	127,508
Rental income	45,897	43,238
Gain on disposal of property, plant and equipment	31,902	48,098
Other	52,340	64,427
<b>Total</b>	<b>8,569,984</b>	<b>283,271</b>

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
<b>Other non-operating expenses</b>		
Loss on disposal of property, plant and equipment	3,166	934
Donations	57,347	52,457
Other	31,727	1,218
<b>Total</b>	<b>92,240</b>	<b>54,609</b>

## 21. Financial Income and Expenses

Details of financial income and expenses for the three-month periods ended March 31, 2023 and 2022 are as follows:

(In millions of Korean won)	2023	2022
<b>Financial income</b>		
Interest income	61,775	83,458
Interest income from financial assets measured at amortized cost	61,775	83,458
Foreign exchange differences	1,855,830	1,396,907
Gain from derivatives	235,753	259,530
<b>Total</b>	<b>2,153,358</b>	<b>1,739,895</b>

(In millions of Korean won)	2023	2022
<b>Financial expenses</b>		
Interest expenses	161,503	53,921
Interest expenses from financial liabilities measured at amortized cost	78,712	11,817
Other financial liabilities	82,791	42,104
Foreign exchange differences	2,158,645	1,388,447
<b>Total</b>	<b>2,320,148</b>	<b>1,442,368</b>

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 March 31, 2023 to be effective for the year ended December 31, 2023 is 5.5%.

## 23. Earnings per Share

### (A) Basic earnings per share

Basic earnings per share for the three-month periods ended March 31, 2023 and 2022 are calculated as follows:

#### (1) Ordinary shares

<i>(In millions of Korean won, thousands of number of shares)</i>	<b>2023</b>	<b>2022</b>
Profit for the period	4,158,095	7,651,943
Profit for the period available for ordinary shares	3,654,369	6,724,961
Weighted-average number of ordinary shares outstanding	5,969,783	5,969,783
<b>Basic earnings per ordinary share (in Korean won)</b>	<b>612</b>	<b>1,127</b>

#### (2) Preference shares

<i>(In millions of Korean won, thousands of number of shares)</i>	<b>2023</b>	<b>2022</b>
Profit for the period	4,158,095	7,651,943
Profit for the period available for preference shares	503,726	926,982
Weighted-average number of preference shares outstanding	822,887	822,887
<b>Basic earnings per preference share (in Korean won)</b>	<b>612</b>	<b>1,127</b>

### (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-month periods ended March 31, 2023 and 2022.

## 24. Statements of Cash Flows

(A) The Company used the indirect method to present cash flows from operating activities. Adjustments and changes in assets and liabilities arising from operating activities for the three-month periods ended March 31, 2023 and 2022 are as follows:

- Adjustments

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Adjustments :		
Income tax expense	244,098	2,026,077
Financial income	(666,230)	(787,805)
Financial expenses	1,131,568	566,791
Post-employment benefits	173,669	236,336
Depreciation	6,278,126	5,927,470
Amortization	657,121	628,517
Bad debt expenses	10,512	4,586
Dividend income	(8,439,845)	(127,508)
Gain on disposal of property, plant and equipment	(31,902)	(48,098)
Loss on disposal of property, plant and equipment	3,166	934
Loss on valuation of inventories	2,051,227	275,743
Others	8,658	2,595
<b>Total</b>	<b>1,420,168</b>	<b>8,705,638</b>

- Changes in assets and liabilities arising from operating activities

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Changes in assets and liabilities :		
Increase in trade receivables	(2,255,442)	(1,568,826)
Decrease in non-trade receivables	866,298	410,934
Increase in prepaid expenses	(286,879)	(313,005)
Increase in inventories	(4,492,698)	(2,968,903)
Increase in trade payables	3,306,093	1,903,747
Decrease in other payables	(2,759,686)	(1,499,235)
Increase (decrease) in advances received	13,282	(99,472)
Decrease in withholdings	(138,933)	(224,466)
Decrease in accrued expenses	(2,751,744)	(2,286,705)
Increase in provisions	1,249,224	476,276
Payment of post-employment benefits	(99,540)	(90,289)
Other	176,498	(301,497)
<b>Total</b>	<b>(7,173,527)</b>	<b>(6,561,441)</b>

(B) For the three-month periods ended March 31, 2023 and 2022, cash outflows from principal portion of lease liabilities (financial activities) were ₩ 39,266 million and ₩ 34,731 million, respectively, and cash outflows due to interest expenses (operating activities) in relation to the lease liabilities amount to ₩ 5,227 million and ₩ 2,310 million, respectively.

## **25. Financial Risk Management**

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

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

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

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

### (A) Market risk

#### (1) Foreign exchange risk

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

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

#### (2) Interest rate risk

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

(3) Price risk

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

As of March 31, 2023 and 2022, price fluctuation of marketable equity securities (listed stocks) by 1% would result in changes in other comprehensive income (before income tax) of ₩ 13,678 million and ₩ 14,639 million, respectively.

(B) Credit risk

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

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

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

(C) Liquidity risk

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

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

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

(D) Capital risk management

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

The Company has maintained an AA- credit rating from S&P and Aa2 from Moody's as of March 31, 2023.

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>	<b>December 31, 2022</b>
Total liabilities	63,441,883	50,667,559
Total equity	210,968,504	209,416,191
<b>Debt ratio</b>	<b>30.1%</b>	<b>24.2%</b>

(E) Fair value measurement

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

<i>(In millions of Korean won)</i>	<b>March 31, 2023</b>		<b>December 31, 2022</b>	
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Carrying amount</b>	<b>Fair value</b>
<b>Financial assets</b>				
Cash and cash equivalents	8,414,405	(*)	3,921,593	(*)
Short-term financial instruments	1,134	(*)	137	(*)
Trade receivables	22,999,363	(*)	20,503,223	(*)
Financial assets at fair value through other comprehensive income	1,482,942	1,482,942	1,364,325	1,364,325
Financial assets at fair value through profit or loss	283	283	283	283
Other <sup>(*)2</sup>	5,621,772	263,536	5,470,355	(*)
<b>Total financial assets</b>	<b>38,519,899</b>		<b>31,259,916</b>	
<b>Financial liabilities</b>				
Trade payables	12,128,382	(*)	8,729,315	(*)
Short-term borrowings	3,181,693	(*)	2,381,512	(*)
Other payables	17,425,374	(*)	18,324,604	(*)
Current portion of long-term liabilities	174,758	6,888	135,753	6,580
- Current portion of long-term borrowings	168,342	(*)	129,525	(*)
- Current portion of debentures	6,416	6,888	6,228	6,580
Debentures	25,667	29,845	24,912	27,845
Long-term borrowings	10,771,941	(*) <sup>(*)3</sup>	654,979	(*)
Long-term other payables	4,121,993	(*)	2,083,790	(*)
Other	3,268,660	(*)	3,145,473	(*)
<b>Total financial liabilities</b>	<b>51,098,468</b>		<b>35,480,338</b>	

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

(\*)<sup>2</sup> Assets measured at the cost of ₩ 5,358,236 million is excluded as the carrying amount is a reasonable estimation of fair value.

(\*)<sup>3</sup> 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 March 31, 2023 and December 31, 2022 are as follows:

<i>(In millions of Korean won)</i>	March 31, 2023			
	Level 1	Level 2	Level 3	Total balance
<b>1) Assets</b>				
Financial assets at fair value through other comprehensive income	1,367,751	-	115,191	1,482,942
Financial assets at fair value through profit or loss	-	-	283	283
Other	-	-	263,536	263,536
<b>2) Liabilities</b>				
Current portion of debentures	-	6,888	-	6,888
Debentures	-	29,845	-	29,845

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

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

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

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

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

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

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

Specific valuation techniques used to value financial instruments include:

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

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

#### (3) Valuation technique and the inputs

The Company utilizes a present value technique to discount future cash flows using respective proper interest rates 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 March 31, 2023.

*(In millions of Korean won, and percentage)*

Classification	Fair value	Valuation technique	Level 3 inputs	Input range
<b>Financial assets at fair value through other comprehensive income</b>				
Samsung Venture Investment	31,357	Discounted cash flow	Permanent growth rate	1%
			Weighted average cost of capital	19.8%
MiCo Ceramics Co., Ltd.,	30,022	Discounted cash flows and others	Permanent growth rate	0
			Weighted average cost of capital	14.2%
Other				
Call option	263,536	Binomial model	Risk-free discount rate	3.3%
			Price volatility	57.4%

#### (4) Changes in Level 3 instruments:

*(In millions of Korean won)*

	2023	2022
<b>Financial assets</b>		
Balance as of January 1	116,726	120,347
Acquisitions	27,784	-
Disposals	(61)	(150)
Amount recognized in profit for the period	234,641	-
Amount recognized in other comprehensive income	(80)	6,163
Other	-	(110)
<b>Balance as of March 31</b>	<b>379,010</b>	<b>126,250</b>

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

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

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

<i>(In millions of Korean won)</i>	Favorable changes		Unfavorable changes		
	Classification	Profit or loss	Equity	Profit or loss	Equity
Financial assets at fair value through other comprehensive income <sup>(*)1</sup>		-	2,912	-	(2,788)
Other <sup>(*)2</sup>		76,167	-	(66,387)	-

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

<sup>(\*)2</sup> Changes in fair value were calculated based on the correlation between underlying asset price (20%) and price volatility (10%), which are significant unobservable inputs.

## 26. Segment Information

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

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

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

(1) For the three-month period ended March 31, 2023

<i>(In millions of Korean won)</i>	<b>DX</b>	<b>DS</b>	<b>Total<sup>(*)</sup></b>
Revenue	29,236,174	13,344,621	42,168,679
Depreciation	135,333	6,092,841	6,278,126
Amortization	406,889	192,726	657,121
Operating profit	1,221,642	(4,982,377)	(3,908,761)

<sup>(\*)</sup> Other operating segments are not separately disclosed.

(2) For the three-month period ended March 31, 2022

<i>(In millions of Korean won)</i>	<b>DX</b>	<b>DS</b>	<b>Total<sup>(*)</sup></b>
Revenue	31,116,363	26,376,300	56,724,258
Depreciation	136,120	5,749,389	5,927,470
Amortization	382,201	193,802	628,517
Operating profit	1,195,200	7,952,821	9,151,831

<sup>(\*)</sup> Other operating segments are not separately disclosed.

## 27. Related Party Transactions

### (A) Subsidiaries

List of subsidiaries as of March 31, 2023 is as follows:

Area	Subsidiaries	Industry	Percentage of ownership (%) <sup>(*)</sup>
America	Samsung Electronics America, Inc. (SEA)	Sale of electronic devices	100.0
	Samsung International, Inc. (SII)	Manufacture of TV and monitors	100.0
	Samsung Mexicana S.A. de C.V (SAMEX)	Manufacture of electronic devices	100.0
	Samsung Electronics Home Appliances America, LLC (SEHA)	Manufacture of home appliances	100.0
	Samsung Research America, Inc (SRA)	R&D	100.0
	SAMSUNG NEXT LLC (SNX)	Management of overseas subsidiaries	100.0
	SAMSUNG NEXT FUND LLC (SNXF)	Technology business, venture capital investments	100.0
	NeuroLogica Corp.	Manufacture and sale of medical equipment	100.0
	Samsung HVAC America, LLC	Sale of air conditioning products	100.0
	Joyent, Inc.	Cloud services	100.0
	SmartThings, Inc.	Sale of smart home electronics	100.0
	TeleWorld Solutions, Inc. (TWS)	Installation of network devices	100.0
	Samsung Semiconductor, Inc. (SSI)	Sale of semiconductor and display panels	100.0
	Samsung Austin Semiconductor LLC. (SAS)	Manufacture of semiconductors	100.0
	Samsung Oak Holdings, Inc. (SHI)	Management of overseas subsidiaries	100.0
	SEMES America, Inc.	Semiconductor equipment	100.0
	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
	Samsung Electronics Venezuela, C.A. (SEVEN)	Marketing and services	100.0
	Samsung Electronics Panama. S.A. (SEPA)	Consulting	100.0
	Harman International Industries, Inc.	Management of overseas subsidiaries	100.0
	Harman Becker Automotive Systems, Inc.	Manufacture and sale of audio products, R&D	100.0
	Harman Connected Services, Inc.	Connected service provider	100.0
	Harman Connected Services Engineering Corp.	Connected service provider	100.0
	Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Manufacture and sale of audio products	100.0
	Harman de Mexico, S. de R.L. de C.V.	Manufacture of audio products	100.0
	Harman do Brasil Industria Eletronica e Participacoes Ltda.	Sale of audio products, R&D	100.0
	Harman Financial Group LLC	Management company	100.0
	Harman International Industries Canada Ltd.	Sale of audio products	100.0
	Harman International Mexico, S. de R.L. de C.V.	Sale of audio products	100.0
	Harman KG Holding, LLC	Management of overseas subsidiaries	100.0
	Harman Professional, Inc.	Sale of audio products, R&D	100.0
	Beijing Integrated Circuit Industry International Fund, L.P	Venture capital investments	61.4
	China Materialia New Materials 2016 Limited Partnership	Venture capital investments	99.0

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

<b>Area</b>	<b>Subsidiaries</b>	<b>Industry</b>	<b>Percentage of ownership (%)<sup>(*)</sup></b>
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
	SAMSUNG Zhilabs, S.L.	Development and sale of network solutions	100.0
	FOODIENT LTD.	R&D	100.0
	Samsung Electronics Rus Company LLC (SERC)	Sale of electronic devices	100.0
	Samsung Electronics Rus Kaluga LLC (SERK)	Manufacture of TV	100.0
	Samsung Electronics Ukraine Company LLC (SEUC)	Sale of electronic devices	100.0
	Samsung R&D Institute Ukraine (SRUKR)	R&D	100.0
	Samsung Electronics Central Eurasia LLP (SECE)	Sale of electronic devices	100.0
	Samsung Electronics Overseas B.V. (SEO)	Sale of electronic devices	100.0
	Samsung R&D Institute Rus LLC (SRR)	R&D	100.0
	Samsung Electronics Caucasus Co. Ltd (SECC)	Marketing	100.0
	Samsung Electronics Uzbekistan Ltd. (SEUZ)	Marketing	100.0

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

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

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

Area	Subsidiaries	Industry	Percentage of ownership (%) <sup>(*)</sup>
Middle East & Africa	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
Asia (Excluding China)	Red Bend Ltd.	Manufacture of audio products	100.0
	Samsung Asia Pte. Ltd. (SAPL)	Sale of electronic devices	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
	DOWOOINSYS VINA COMPANY LIMITED	Manufacture of display components	100.0
	PT Samsung Electronics Indonesia (SEIN)	Manufacture and sale of electronic devices	100.0
	PT Samsung Telecommunications Indonesia (STIN)	Sale of electronic devices and services	100.0
	Thai Samsung Electronics Co., Ltd. (TSE)	Manufacture and sale of electronic devices	91.8
	Laos Samsung Electronics Sole Co., Ltd (LSE)	Marketing	100.0
	Samsung Electronics Philippines Corporation (SEPCO)	Sale of electronic devices	100.0
	Samsung Electronics Australia Pty. Ltd. (SEAU)	Sale of electronic devices	100.0
	Samsung Electronics New Zealand Limited (SENZ)	Sale of electronic devices	100.0
	Samsung India Electronics Private Ltd. (SIEL)	Manufacture and sale of electronic devices	100.0
	Red Brick Lane Marketing Solutions Pvt. Ltd.	Marketing	100.0
	Samsung Display Noida Private Limited (SDN)	Manufacture of display panels	100.0
	Samsung R&D Institute India Bangalore Private Limited(SRI-Bangalore)	R&D	100.0
	Samsung R&D Institute BanglaDesh Limited (SRBD)	R&D	100.0
	Samsung Nepal Services Pvt, Ltd (SNSL)	Service	100.0
	Samsung Japan Corporation (SJC)	Sale of semiconductor and display panels	100.0
	Samsung R&D Institute Japan Co. Ltd. (SRJ)	R&D	100.0
	Samsung Electronics Japan Co., Ltd. (SEJ)	Sale of electronic devices	100.0
	Harman Connected Services Corp. India Pvt. Ltd.	Connected service provider	100.0
	Harman International (India) Private Limited	Sale of audio products, R&D	100.0
	Harman International Industries PTY Ltd.	Sale of electronic devices	100.0
	Harman International Japan Co., Ltd.	Sale of audio products, R&D	100.0
	Harman Singapore Pte. Ltd.	Sale of audio products	100.0

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

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

<sup>(\*)</sup> Ownership represents the Company's ownership of the voting rights in each entity, including subsidiaries' ownerships.

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

<sup>(\*)</sup> 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 three-month periods ended March 31, 2023 and 2022 are as follows:

(In millions of Korean won)	Name of company	2023			
		Sales and other	Disposal of non-current assets	Purchases and other	Purchase of non-current assets
	Samsung Display Co., Ltd.	70,280	-	246,945	-
	Samsung Electronics America, Inc. (SEA)	7,948,315	-	47,891	-
	Samsung Asia Pte. Ltd. (SAPL)	25	-	7,247	-
	Samsung (China) Semiconductor Co., Ltd. (SCS)	26,771	7,746	2,568,002	4,519
	Harman and its subsidiaries <sup>(*1)</sup>	-	-	16,155	-
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	1,197,919	-	5,882,577	55
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	3,396,290	-	2,170	-
	Samsung Semiconductor, Inc. (SSI)	4,462,782	-	163,588	-
	Samsung Austin Semiconductor LLC. (SAS)	15	-	955,210	296
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	-	-	-	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	752,605	-	3,777,503	767
	Samsung India Electronics Private Ltd. (SIEL)	743,963	-	1,154,941	-
	Samsung Display Vietnam Co., Ltd. (SDV)	363,141	-	-	-
Subsidiaries	Samsung Eletronica da Amazonia Ltda. (SEDA)	368,998	-	1,548	-
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	2,351,702	-	-	-
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	116,420	1	1,227,542	-
	Thai Samsung Electronics Co., Ltd. (TSE)	1,066,940	-	576,597	-
	Samsung Electronics (UK) Ltd. (SEUK)	694,744	-	28,431	-
	Samsung Electronics Europe Logistics B.V. (SELS)	1,280,262	-	1,682	-
	Samsung International, Inc. (SII)	68,340	-	1,712,017	-
	Samsung Electronics Mexico S.A. De C.V. (SEM)	661,264	-	1,428	-
	Samsung Display Dongguan Co., Ltd. (SDD)	22,374	-	-	-
	Samsung Electronics GmbH (SEG)	931,103	-	1,690	-
	SEMES Co., Ltd.	3,090	-	651,390	-
	Samsung Electronics Benelux B.V. (SEBN)	967,576	-	387	-
	Other	16,044,657	372	3,331,760	-
	<b>Total</b>	<b>43,539,576</b>	<b>8,119</b>	<b>22,356,701</b>	<b>5,637</b>
Associates and joint ventures	Samsung SDS Co.,Ltd	74,142	-	436,230	80,134
	Samsung Electro-Mechanics Co., Ltd	42,941	-	245,333	-
	Samsung SDI Co., Ltd	29,407	-	107,443	2,072
	Cheil Worldwide Inc	34,011	-	228,990	76
	Other	166,772	-	206,284	1,811
	<b>Total</b>	<b>347,273</b>	<b>-</b>	<b>1,224,280</b>	<b>84,093</b>
Other related parties	Samsung C&T Co., Ltd	5,204	70	12,947	726,138
	Other	127,304	-	309,789	61,757
	<b>Total</b>	<b>132,508</b>	<b>70</b>	<b>322,736</b>	<b>787,895</b>
Other <sup>(*2)</sup>	Samsung Engineering Co., Ltd	402	-	108	306,488
	S-1	1,529	-	109,148	3,194
	Other	21,933	-	66,671	44,620
	<b>Total</b>	<b>23,864</b>	<b>-</b>	<b>175,927</b>	<b>354,302</b>

<sup>(\*1)</sup> Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

<sup>(\*2)</sup> Although these entities are not related parties of the Company in accordance with *Korean IFRS 1024*, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

		2022			
(In millions of Korean won)	Name of company	Sales and other	Disposal of non-current assets	Purchases and other	Purchase of non-current assets
Subsidiaries	Samsung Display Co., Ltd.	68,306	-	218,362	-
	Samsung Electronics America, Inc. (SEA)	8,790,030	-	47,925	-
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	1,928,760	-	7,439,252	12
	Samsung (China) Semiconductor Co., Ltd. (SCS)	65,823	1,970	2,415,594	1,326
	Harman and its subsidiaries <sup>(*)1</sup>	-	-	20,459	-
	Samsung Asia Pte. Ltd. (SAPL)	8	-	7,589	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	1,013,161	-	3,998,238	-
	Samsung Semiconductor, Inc. (SSI)	10,414,888	-	116,713	-
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	-	-	-	-
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	526,535	-	1,917	-
	Samsung India Electronics Private Ltd. (SIEL)	1,548,535	-	1,413,072	-
	Samsung Austin Semiconductor LLC. (SAS)	7	-	788,621	1,430
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	5,111,265	-	47	-
	Samsung Display Vietnam Co., Ltd. (SDV)	404,843	-	-	-
	Samsung Eletronica da Amazonia Ltda. (SEDA)	321,289	-	8,070	-
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	198,892	2,774	1,553,285	355
	Samsung Electronics (UK) Ltd. (SEUK)	403,602	-	23,931	-
	Thai Samsung Electronics Co., Ltd. (TSE)	510,329	-	757,380	-
	Samsung Electronics Europe Logistics B.V. (SELS)	1,268,572	-	317	-
	SEMES Co., Ltd.	139,262	-	644	-
	Samsung Electronics Benelux B.V. (SEBN)	187,508	-	651	-
	Samsung International, Inc. (SII)	96,852	211	2,239,227	-
	Samsung Electronics Taiwan Co., Ltd. (SET)	1,455,427	-	290	-
	Samsung Electronics GmbH (SEG)	969,533	-	2,015	-
	Samsung Display Dongguan Co., Ltd. (SDD)	82,045	-	-	-
	Other	13,756,062	1,296	3,935,276	1,621
<b>Total</b>		<b>49,261,534</b>	<b>6,251</b>	<b>24,988,875</b>	<b>4,744</b>
Associates and joint ventures	Samsung SDS Co., Ltd	69,649	-	390,598	90,780
	Samsung Electro-Mechanics Co., Ltd	43,051	-	263,361	-
	Samsung SDI Co., Ltd	24,265	-	98,263	546
	Cheil Worldwide Inc.	29,336	-	213,423	-
	Other	114,486	-	176,608	-
<b>Total</b>		<b>280,787</b>	<b>-</b>	<b>1,142,253</b>	<b>91,326</b>
Other related parties	Samsung C&T Corporation	10,250	-	14,653	1,045,938
	Other	103,636	-	162,697	11,123
	<b>Total</b>	<b>113,886</b>	<b>-</b>	<b>177,350</b>	<b>1,057,061</b>
Other <sup>(*)2</sup>	Samsung Engineering Corporation	90	-	624	243,864
	S-1	1,274	-	102,865	5,668
	Other	40,280	-	37,565	23,034
	<b>Total</b>	<b>41,644</b>	<b>-</b>	<b>141,054</b>	<b>272,566</b>

<sup>(\*)1</sup> Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

<sup>(\*)2</sup> 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) Balances of receivables and payables

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

<i>(In millions of Korean won)</i>	<b>Name of company</b>	<b>March 31, 2023</b>	
		<b>Receivables and other<sup>(*1)</sup></b>	<b>Payables and other<sup>(*2)</sup></b>
	Samsung Display Co., Ltd.	18,178	87,546
	Samsung Electronics America, Inc. (SEA)	1,527,471	-
	Samsung Asia Pte. Ltd. (SAPL)	676	1,726
	Samsung (China) Semiconductor Co., Ltd. (SCS)	59,492	934,118
	Harman and its subsidiaries <sup>(*3)</sup>	-	11,894
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	911,612	3,919,198
	Samsung (CHINA) Investment Co., Ltd. (SCIC)	183,817	1,471
	Samsung Semiconductor, Inc. (SSI)	3,551,403	262,850
	Samsung Austin Semiconductor LLC. (SAS)	2,595	336,257
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	-	-
	Samsung Electronics Vietnam Co., Ltd. (SEV)	539,067	2,580,954
	Samsung India Electronics Private Ltd. (SIEL)	1,417,246	634,066
	Samsung Display Vietnam Co., Ltd. (SDV)	252,808	-
Subsidiaries	Samsung Eletronica da Amazonia Ltda. (SEDA)	308,939	4,357
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)	1,952,156	1,728
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	82,602	508,239
	Thai Samsung Electronics Co., Ltd. (TSE)	1,297,813	216,395
	Samsung Electronics (UK) Ltd. (SEUK)	93,262	1,389
	Samsung Electronics Europe Logistics B.V. (SELS)	479,087	1,279
	Samsung International, Inc. (SII)	52,251	427,484
	Samsung Electronics Mexico S.A. De C.V. (SEM)	461,307	777
	Samsung Display Dongguan Co., Ltd. (SDD)	12,103	-
	Samsung Electronics GmbH (SEG)	106,945	-
	SEMES Co., Ltd.	41,153	935,618
	Samsung Electronics Benelux B.V. (SEBN)	32,451	-
	Other	7,344,942	1,533,693
<b>Total</b>		20,729,376	12,401,039
Associates and joint ventures	Samsung SDS Co., Ltd	53,532	548,217
	Samsung Electro-Mechanics Co., Ltd	37,355	161,427
	Samsung SDI Co., Ltd	135,509	36,134
	Cheil Worldwide Inc.	33,453	307,404
	Other	87,390	111,656
<b>Total</b>		347,239	1,164,838
Other related parties	Samsung C&T Corporation	187,660	1,124,698
	Other	27,922	223,013
<b>Total</b>		215,582	1,347,711
Other <sup>(*4)</sup>	Samsung Engineering Co., Ltd	423	620,125
	S-1 Corporation	1,402	25,136
	Other	4,576	298,792
<b>Total</b>		6,401	944,053

<sup>(\*1)</sup> The Company has not recognized bad debt allowance in relation to the receivables due from subsidiaries as of December 31, 2022.

<sup>(\*2)</sup> Payables and others include lease liabilities.

<sup>(\*3)</sup> Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

<sup>(\*4)</sup> 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.

			December 31, 2022	
		Name of Company	Receivables and other <sup>(*1)</sup>	Payables and other <sup>(*2)</sup>
Subsidiaries	Samsung Display Co., Ltd.		32,521	108,011
	Samsung Electronics America, Inc. (SEA)		868,937	983,709
	Samsung Asia Pte. Ltd. (SAPL)		1,604	1,812
	Harman and its subsidiaries <sup>(*3)</sup>		-	6,537
	Samsung (China) Semiconductor Co., Ltd. (SCS)		57,423	751,693
	Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)		606,030	2,396,411
	Samsung (CHINA) Investment Co., Ltd. (SCIC)		131,285	283,459
	Samsung Semiconductor, Inc. (SSI)		4,700,427	263,757
	Samsung Electronics Vietnam Co., Ltd. (SEV)		369,380	1,748,670
	Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)		693	-
	Samsung Austin Semiconductor LLC. (SAS)		21,309	386,640
	Samsung Display Vietnam Co., Ltd. (SDV)		196,643	7
	Samsung India Electronics Private Ltd. (SIEL)		1,219,298	312,243
	Shanghai Samsung Semiconductor Co., Ltd. (SSS)		1,623,968	77
	Samsung Eletronica da Amazonia Ltda. (SEDA)		227,180	3,037
	Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)		234,870	358,082
	Thai Samsung Electronics Co., Ltd. (TSE)		115,103	379,098
	Samsung Electronics (UK) Ltd. (SEUK)		76,264	-
	Samsung Electronics Benelux B.V. (SEBN)		18,403	-
	Samsung Electronics Hungarian Private Co. Ltd. (SEH)		11,449	-
	Samsung Electronics Europe Logistics B.V. (SELS)		273,816	506,872
	Samsung Display Dongguan Co., Ltd. (SDD)		20,177	11
	SEMES Co., Ltd.		54,327	561,368
	Samsung Electronics GmbH (SEG)		10,607	-
	Samsung Electronics Mexico S.A. De C.V. ( SEM)		230,508	1,093
	Other		6,565,258	2,226,116
<b>Total</b>			<b>17,667,480</b>	<b>11,278,703</b>
Associates and joint ventures	Samsung SDS Co., Ltd		49,439	468,830
	Samsung Electro-Mechanics Co., Ltd		385	101,960
	Samsung SDI Co., Ltd		114,618	51,199
	Cheil Worldwide Inc.		43	444,017
	Other		203,575	159,668
<b>Total</b>			<b>368,060</b>	<b>1,225,674</b>
Other related parties	Samsung C&T Corporation		194,539	2,718,294
	Other		14,679	160,305
	<b>Total</b>		<b>209,218</b>	<b>2,878,599</b>
Other <sup>(*4)</sup>	Samsung Engineering Co., Ltd		286	1,181,947
	S-1 Corporation		3,085	59,352
	Other		4,113	478,136
<b>Total</b>			<b>7,484</b>	<b>1,719,435</b>

<sup>(\*2)</sup> The Company has not recognized any bad debt allowance in relation to the receivables due from subsidiaries as of December 31, 2022.

<sup>(\*3)</sup> Payables and others include lease liabilities.

<sup>(\*4)</sup> Transactions with the intermediate parent company, including Harman International Industries, Inc. and its subsidiaries.

<sup>(\*5)</sup> Although these entities are not related parties of the Company in accordance with Korean IFRS 1024, they belong to the same large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

- (D) For the three-month period ended March 31, 2023 and 2022, the Company had no lendings to its subsidiaries, but had borrowing from its subsidiaries amounting to ₩ 10,000,000 million ₩ 0 million, respectively. In addition, the Company had no lendings to or borrowings from associates and joint ventures during the three-month periods ended March 31, 2023 and 2022.
- (E) For the three-month periods ended March 31, 2023 and 2022, the Company invested ₩ 6,372 million and ₩ 45,495 million, respectively, in its subsidiaries, and received ₩ 107,217 million and ₩ 74,448 million in return of investments, respectively. In addition, the Company invested ₩ 58,982 million in associates and joint ventures for the three-month period ended March 31, 2023, and received ₩ 518 million in return of investments.
- (F) For the three-month periods ended March 31, 2023 and 2022, the Company declared dividend of ₩ 412,942 million and ₩ 421,609 million, respectively, to related parties. As of March 31, 2023, the dividend payable to related parties amounted to ₩ 412,942 million. In addition, for the three-month periods ended March 31, 2023 and 2022, the Company declared dividends of ₩ 32,058 million and ₩ 32,058 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 March 31, 2023, dividend payables to the entities that are not in scope of Korean IFRS 1024 amounted to ₩ 32,058 million.
- (G) For the three-month period ended March 31, 2023, the Company entered into new lease agreements with its related parties amounted to ₩ 20 million (none for the three-month period ended March 31, 2022),, and lease payments made to the related parties amounted to ₩ 6,313 million and ₩ 11,817 million, respectively.
- (H) As of March 31, 2023, the Company provides guarantees in relation to borrowings of the related parties (refer to Note 13)
- (I) Key management compensation

The compensation paid or payable to key management (executive directors) for their services for the three-month periods ended March 31, 2023 and 2022 consists of:

<i>(In millions of Korean won)</i>	<b>2023</b>	<b>2022</b>
Short-term employee benefits	3,330	3,415
Post-employment benefits	139	127
Other long-term employee benefits	1,959	2,072

## 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		1Q23	2022	2021
Par value per share (KRW)		100	100	100
Consolidated net profit <sup>1)</sup> (KRW mil)		1,401,252	54,730,018	39,243,791
Separate net profit (KRW mil)		4,158,095	25,418,778	30,970,954
EPS <sup>2)</sup> (KRW)		206	8,057	5,777
Total cash dividend (KRW mil)		2,452,154	9,809,438	9,809,438
Total stock dividend (KRW mil)		-	-	-
Dividend payout ratio (%)		175.0	17.9	25.0
Cash dividend yield (%)	Common	0.6	2.5	1.8
	Preferred	0.7	2.7	2.0
Stock dividend yield (%)	Common	-	-	-
	Preferred	-	-	-
Cash dividend per share (KRW)	Common	361	1,444	1,444
	Preferred	361	1,445	1,445
Stock dividend per share (share)	Common	-	-	-
	Preferred	-	-	-

Dividends were KRW 2,452,154 million or KRW 361 per share in the first quarter of 2023 and the first three quarters of 2022 and 2021. For further information relating to total cash dividend, see retained earnings in 『3. Note to Consolidated Financial Statements』 in 『III. Financial Affairs』 .

1) Equity attributable to owners of the parent.

2) Basic earnings per common share on a consolidated basis. For further information relating to the calculation of basic EPS, see Earnings Per Share in 『3. Note to Consolidated Financial Statements』 in 『III. Financial Affairs』 .

The history of dividend payouts is as follows:

Number of continuous dividend payments		Average dividend yield	
Quarterly/biannual dividends	End-year dividends	Past 3 years	Past 5 years
37	42	2.7%	2.9%

The number of continuous dividend payments includes the quarterly dividend for the quarter and the end-year dividend for the recent business year. Continuous payment of the end-year dividend started in 1981, biannual dividend in 1999, and quarterly dividend in 2017.

The average dividend yield is based on common shares. The average dividend yield of preferred shares for the past 3 years and past 5 years are 3.0% and 3.3% respectively.

The “past 3 years” refers to the period from 2020 to 2022, and the “past 5 years” refers to the period from 2018 to 2022. For the dividend yield of 1Q23, please refer to the table of key dividends above (common shares at 0.6%, preferred shares at 0.7%).

## **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 March 31, 2023)

(KRW mil, %)

Issuing company	Type of securities	Issuance method	Date of Issuance	Total nominal amount	Interest rate	Rating (rating institution)	Maturity date	Payment status	Management company
Samsung Electronics	Corporate bonds	Public offering	Oct 2, 1997	130,380	7.7	Aa2(Moody's), AA-(S&P)	Oct 1, 2027	Partial redemption	Goldman Sachs et al.
Harman International Industries, Inc	Corporate bonds	Public offering	May 11, 2015	521,520	4.2	Baa1 (Moody's), A- (S&P)	May 15, 2025	Unredeemed	J.P.Morgan et al.
Dowooinsys Co., Ltd	Corporate bonds	Private placement	Feb 28, 2020	23,000	0.5	-	Feb 28, 2025	Unredeemed	-
Dowooinsys Co., Ltd	Corporate bonds	Private placement	Dec 8, 2022	42,000	0.5	-	Dec 8, 2027	Unredeemed	-
SEMES	Commercial paper	Private placement	Jan 30, 2023	30,000	4.1	A1	Feb 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Jan 30, 2023	50,000	4.0	A1	Feb 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 10, 2023	70,000	3.9	A1	Mar 10, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 28, 2023	1,000	4.0	A1	Mar 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Feb 28, 2023	9,000	4.0	A1	Mar 28, 2023	Redeemed	-
SEMES	Commercial paper	Private placement	Mar 10, 2023	70,000	4.1	A1	Apr 10, 2023	Unredeemed	-
SEMES	Commercial paper	Private placement	Mar 28, 2023	45,000	4.0	A1	Apr 28, 2023	Unredeemed	-
<b>Total</b>	-	-	-	991,900	-	-	-	-	-

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

## B. Commercial Paper Unredeemed Balance

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 10 days	Above 10 days / under 30 days	Above 30 days / under 90 days	Above 90 days / under 180 days	Above 180 days / under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-	-
	Private	70,000	45,000	-	-	-	-	-	-	115,000
	Total	70,000	45,000	-	-	-	-	-	-	115,000

## C. Short-term Bond Unredeemed Balance

Not Applicable

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 10 days	Above 10 days / under 30 days	Above 30 days / under 90 days	Above 90 days / under 180 days	Above 180 days / under 1 year	Total	Issue limit	Balance limit
Unredeemed balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

## D. Corporate Bond Unredeemed Balance

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	6,519	6,519	528,039	6,519	6,519	-	-	554,115
	Private	-	23,000	-	-	42,000	-	-	65,000
	Total	6,519	29,519	528,039	6,519	48,519	-	-	619,115

\* Based on consolidated financial statements

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

\* Unredeemed balance of corporate bonds of Dowooinsys are intercompany balances eliminated in consolidated financial statements

- Corporate Bond Unredeemed Balance (Samsung Electronics)

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	6,519	6,519	6,519	6,519	6,519	-	-	32,595
	Total	6,519	6,519	6,519	6,519	6,519	-	-	32,595

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

- Corporate Bond Unredeemed Balance (Harman)

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Public	-	-	521,520	-	-	-	-	521,520
	Total	-	-	521,520	-	-	-	-	521,520

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

- Corporate Bond Unredeemed Balance (Dowooinsys)

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years	Total
Unredeemed balance	Private	-	23,000	-	-	42,000	-	-	65,000
	Total	-	23,000	-	-	42,000	-	-	65,000

\* Unredeemed balance of corporate bonds of Dowooinsys are intercompany balances eliminated in consolidated financial statements

## E. Hybrid Bond Unredeemed Balance

Not Applicable

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 5 years	Above 5 years / under 10 years	Above 10 years / under 15 years	Above 15 years / under 20 years	Above 20 years / under 30 years	Above 30 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

## F. Contingent Convertible Bond Unredeemed Balance

Not Applicable

(Reporting Date: March 31, 2023)

(KRW mil)

Maturity		Under 1 year	Above 1 year / under 2 years	Above 2 years / under 3 years	Above 3 years / under 4 years	Above 4 years / under 5 years	Above 5 years / under 10 years	Above 10 years / under 20 years	Above 20 years / under 30 years	Above 30 years	Total
Unredeemed balance	Public	-	-	-	-	-	-	-	-	-	-
	Private	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-

## G. Details and Compliance of the Bond Management Contract (Samsung Electronics)

(Reporting Date: March 31, 2023)

(KRW mil, %)<sup>1</sup>

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	130,380	Oct 2, 1997	The Bank of New York Mellon Trust Company, N.A.

(Reporting Date: March 31, 2023)

Financial ratios	Contract details	Not applicable
	Implementation status	Not applicable
Constraint on collateral	Contract details	Less than 10% of net tangible assets
	Implementation status	Compliant (there is no collateral for the relevant assets)
Constraint on disposal of assets	Contract details	Certain requirements, such as transfer of obligations on the bond, must be satisfied to dispose all or most of an asset
	Implementation status	Compliant (disposed assets accounted for 0.1% of the total assets during 2023 1Q)
Constraint on governance	Contract Details	Not applicable
	Implementation status	Not applicable
Submission of implementation report	Implementation status	Not applicable

- ※ The exchange rate as of the base date has been applied.
- ※ The date of the bond management contract was signed on the same day as the Fiscal Agency Agreement; accordingly, the Bank of New York Mellon Trust Company, N.A. is under the authority of the Fiscal Agent.
- ※ The net tangible assets subjected to the limitation of collaterals are production facilities and stocks owned by the Company.
- ※ The reporting date is the date when most recent financial statements were prepared, which are used to determine the status of implementation.
- ※ The constraint on governance is as of the reporting date.

## **7-2 Use of funds financed through the issuance of securities**

Not applicable

## **8. Other financial information**

### **A. Restatement of financial statements and other matters to note**

- (1) Restatement of financial statements: Not Applicable
- (2) Acquisition, divestment, asset sales, and sale of business

The major acquisition, divestment and transfer of business during past three years are as follows.

#### **[Sale of SSL, SSM]**

On August 28, 2020, Samsung Display Co., Ltd., the Company's subsidiary, decided to sell its 100% ownership in Samsung Suzhou Module Co., Ltd. ("SSM") and 60% ownership in Samsung Suzhou LCD Co., Ltd. ("SSL") to TCL China Star Optoelectronics Technologies Co. Ltd. ("CSOT"). The sales were completed on April 1, 2021.

- (3) Information on the accounting treatment of the sales of assets related to asset backed securities and contingent liabilities

#### **Accounting Treatment of the sale of assets related to asset backed securities:**

- Not applicable

#### **Litigation**

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

#### **Debt guarantee**

- Domestic: Not applicable

- Overseas:

(USD thousand)

Company	Relationship	Creditor	Guarantee	Transactions			Limit of guarantee
			Expiry date	Beginning of period	Increase/decrease	End of period	
SEA	Subsidiary	BOA etc.	Dec 16, 2023	-	-	-	1,278,000
SEM	Subsidiary	BBVA etc.	Mar 27, 2024	-	-	-	715,000
SAMCOL	Subsidiary	Citibank etc.	Dec 16, 2023	-	-	-	210,000
SEDA	Subsidiary	BRADESCO etc.	Dec 16, 2023	-	-	-	409,000
SECH	Subsidiary	Citibank etc.	Dec 16, 2023	-	-	-	62,000
SEPR	Subsidiary	BBVA etc.	Dec 16, 2023	-	-	-	150,000
SSA	Subsidiary	SCB etc.	Dec 16, 2023	-	-	-	318,000
SEMAC	Subsidiary	SocGen etc.	Dec 16, 2023	-	-	-	110,000
SETK	Subsidiary	BNP etc.	Dec 16, 2023	239,395	53,928	293,323	777,000
SETK-P	Subsidiary	BNP etc.	Dec 16, 2023	25,649	-641	25,008	130,000
SECE	Subsidiary	Citibank	Dec 16, 2023	-	-	-	100,000
SEEG	Subsidiary	HSBC	Jun 13, 2023	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	Nov 08, 2023	-	-	-	70,000
SJC	Subsidiary	Mizuho Bank etc.	Dec 16, 2023	-	-	-	832,811
SEUC	Subsidiary	Credit Agricole etc.	Dec 16, 2023	-	-	-	125,000
SEDAM	Subsidiary	Citibank etc.	Dec 16, 2023	155,768	-155,768	-	537,000
SECA	Subsidiary	BoA	Nov 08, 2023	-	-	-	70,000
SELA	Subsidiary	Citibank	Dec 16, 2023	-	-	-	60,000
SEEH	Subsidiary	HSBC etc.	Dec 16, 2023	-	-	-	888,400
SERK	Subsidiary	SMBC	Nov 8, 2023	-	-	-	20,000
SELV	Subsidiary	Citibank	Dec 16, 2023	-	-	-	10,000
SEIL	Subsidiary	Citibank	Dec 16, 2023	9,664	-209	9,455	15,600
SAPL	Subsidiary	BOA etc.	Dec 16, 2023	-	-	-	404,000
SAVINA	Subsidiary	HSBC	Jun 13, 2023	-	-	-	51,000
SCIC	Subsidiary	HSBC etc.	Dec 16, 2023	-	-	-	300,000
SME	Subsidiary	SCB	Nov 08, 2023	-	-	-	110,000
SAMEX	Subsidiary	Citibank	Dec 16, 2023	-	-	-	5,000
SEASA	Subsidiary	Citibank	Dec 16, 2023	-	-	-	2,000
SSAP	Subsidiary	SCB	Nov 08, 2023	-	-	-	35,000
SEPM	Subsidiary	HSBC	Jun 13, 2023	-	-	-	35,000
SESAR	Subsidiary	HSBC	Jun 13, 2023	-	-	-	20,000
SEUZ	Subsidiary	Citibank	Dec 16, 2023	-	-	-	10,000
AdGear Technologies Inc.	Subsidiary	BOA	Nov 08, 2023	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	Jun 13, 2023	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Nov 08, 2023	-	-	-	25,000
Harman Holding Limited	Subsidiary	HSBC	Jun 13, 2023	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Nov 08, 2023	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.	Subsidiary	HSBC	Jun 13, 2023	-	-	-	30,000
Harman International Industries Limited	Subsidiary	HSBC	Feb 19, 2026	513,366	4,295	517,661	609,013
SDN	Subsidiary	SIEL	The date of debt expiration	-	-	-	340,000
SAS	Subsidiary	Epcor	Nov 09, 2025	20,000	-	20,000	20,000
DOWOOINSYS VINA COMPANY LIMITED	Subsidiary	ANZ	Total	963,842	-98,395	865,447	9,115,824

※ Information above are prepared on a consolidated basis. Debt guarantees for SDN are provided by Samsung Display Co., Ltd, SAS by SEA, and DOWOOINSYS VINA COMPANY LIMITED by Dowooinsys, respectively.

※ SEC requires Board approval for individual guarantees exceeding 2.5% of total equity. When the guarantee amount is between 0.1% and/or less than 2.5%, the approval decision is delegated to the Management Committee. Samsung Display Co., Ltd requires Board approval for individual guarantees over KRW 10,000 million.

※ SEC claims fees on the debt guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc. In 2022, the Company claimed approximately USD 547,000 in guarantee fees and collected the amount in 2023. In 2022, Samsung Display Co., Ltd. claimed approximately USD 3,080,000 in guarantee fees to SDN and collected the amount in 2023.

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

#### (4) Other matters requiring attention in relation to the use of the financial statements

##### A. Emphasis of matter and key audit matter in Independent auditor's report

Period	Emphasis of matter	Key audit matter
1Q23	Not applicable	Not applicable
2022	Not applicable	(Consolidated financial statement) 1. Sales deduction related to the Sales promotion activities of products  (Separate financial statement) 1. Sales deduction related to the Sales promotion activities of products
2021	Not applicable	(Consolidated financial statement) 1. Sales deduction related to the Sales promotion activities of products  (Separate financial statement) 1. Sales deduction related to the Sales promotion activities of products

## B. Allowance for bad debt

The allowances for bad debt by account over the past 3 years are as follows:

Period	Account	Receivables amount	Allowance amount	(KRW mil, %)
1Q23	Trade receivables	37,013,463	381,304	1.0%
	Short-term loans	21,864	208	1.0%
	Other receivables	5,812,353	83,954	1.4%
	Advances	2,006,226	3,196	0.2%
	Trade receivables (long-term)	237,942	-	0.0%
	Other receivables (long-term)	930,221	239	0.0%
	Advances (long-term)	2,765,358	10,544	0.4%
	Long-term loans	240,146	1,220	0.5%
	Total	49,027,573	480,665	1.0%
2022	Trade receivables	36,033,784	312,221	0.9%
	Short-term loans	22,403	215	1.0%
	Other receivables	6,227,068	77,859	1.3%
	Advances	1,741,031	3,965	0.2%
	Trade receivables (long-term)	204,248	-	0.0%
	Other receivables (long-term)	824,468	242	0.0%
	Advances (long-term)	2,382,711	10,969	0.5%
	Long-term loans	225,983	1,206	0.5%
	Total	47,661,696	406,677	0.9%
2021	Trade receivables	41,024,295	310,880	0.8%
	Short-term loans	17,895	73	0.4%
	Other receivables	4,569,772	72,515	1.6%
	Advances	1,122,660	3,847	0.3%
	Trade receivables (long-term)	225,739	-	0.0%
	Other receivables (long-term)	1,002,404	290	0.0%
	Advances (long-term)	1,770,999	9,003	0.5%
	Long-term loans	199,577	917	0.5%
	Total	49,933,341	397,525	0.8%

※ Based on consolidated financial statements

※ Receivables amount represents the value after deducting present value discount account

## Allowance for bad debt by year

(KRW mil)

	1Q23	2022	2021
1. Allowance for bad debt (beginning balance)	406,677	397,525	388,943
2. Net bad debt expense (① – ②+③)	-8,123	16,658	25,926
① Bad debt expense, etc (Write-off)	-6,276	9,711	22,400
② Bad debt recovered	-	-	-
③ Others	-1,847	6,947	3,526
3. Bad debts expense	65,865	25,810	34,508
4. Allowance for bad debts (Ending balance)	480,665	406,677	397,525

\* Based on consolidated financial statements.

## The guideline for bad debt allowances for trade receivables

### (1) Calculation of bad debt allowance

- Bad debt allowance is calculated using an expected credit loss impairment model which is based on write-off experience rate and future expected bad debt amount.

### (2) Calculation basis of write-off experience rate and future expected bad debt:

- Write-off experience rate for each aging group of receivables is calculated based on the actual rate of credit losses to three-year average receivables balance.
- Future expected bad debt is determined taking into consideration cases of debtor bankruptcy, compulsory execution, death, disappearance, credit information of debtor and forward-looking information.

### [Bad debt allowance by circumstance]

Circumstance	Rate of allowance
Dispute or conflict	25%
Receivable through utilization of third party collection agency	50%
Receivable under litigation	75%
Customer filed or in the process of filing bankruptcy	100%

(3) Instruction: Write-off is recorded when trade receivables contain the following characteristics:

- Objective proof of bad debts, such as bankruptcy, compulsory execution, discontinuance of business, debtor's death or disappearance
- Legal action has failed or the right of collection has been extinguished.
- When the third party collection agency notifies that collection is not possible.
- When the collateral is sold or insurance is received.
- When collection expense exceeds receivables amount.

### The outstanding period of trade receivables

(Reporting Date: March 31, 2023)

(KRW mil, %)

	Less than 6 months	6 months ~ 1 year	1 year ~ 3 years	More than 3 years	Total
Amount	37,117,410	9,039	13,921	111,035	37,251,405
Ratio	99.7%	0.0%	0.0%	0.3%	100.0%

※ Base on consolidated financial statements

※ Receivables amount represents the value after deducting present value discount account

## C. Inventory

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

Division	Category	1Q23	2022	2021	Note
DX	Finished goods	7,724,185	7,712,885	8,894,766	
	Work in process	756,260	1,013,606	799,218	
	Raw material	10,255,331	10,520,293	11,384,887	
	Material in transit	1,085,112	943,322	1,299,624	
	Total	19,820,888	20,190,106	22,378,495	
DS	Finished goods	6,987,082	6,601,087	2,490,097	
	Work in process	21,111,213	18,756,104	11,809,911	
	Raw material	3,788,383	3,639,061	2,118,424	
	Material in transit	61,458	61,352	36,685	
	Total	31,948,136	29,057,604	16,455,117	
SDC	Finished goods	457,367	811,518	294,777	
	Work in process	456,287	542,473	874,229	
	Raw material	759,094	788,521	810,325	
	Material in transit	28,747	23,626	48,253	
	Total	1,701,495	2,166,138	2,027,584	
Harman	Finished goods	816,729	799,919	533,008	
	Work in process	121,621	119,890	105,271	
	Raw material	905,976	913,085	736,109	
	Material in transit	363,983	269,715	321,128	
	Total	2,208,309	2,102,609	1,695,516	
Total	Finished goods	16,213,495	16,032,226	12,280,579	
	Work in process	22,113,010	20,077,519	13,473,618	
	Raw material	14,818,413	14,979,280	14,184,841	
	Material in transit	1,274,668	1,098,841	1,445,366	
	Total	54,419,586	52,187,866	41,384,404	
Inventory ratio (%) [Inventory ÷ Total Assets] × 100		12.0%	11.6%	9.7%	
Inventory turnover (x) [Yearly COGS ÷ {(Beginning of inventory + End of inventory)÷2}]		3.5	4.1	4.5	

※ Based on consolidated financial statements

## Inventory counts

### (1) Inspection date

- End of May and November (twice a year)
- For the difference in inventories between the inspection date and at the end of the year, the Company checks all the warehouse record during the period in order to confirm the existence of the inventories as of the date of the financial statements.

### (2) Inspection method

- Internal warehouse: Closed & entire quantity inspection
- ※ Sample inspection for semi-conductor and DP work-in-progress inventories, SVC materials
- Outside warehouse
  - Perform check for the possession confirmation documents and sample tests at the third party warehouse and inventory-in-transit.
  - External auditors join and observe the inspection and carry out sample tests to check the existence and completeness.
- ※ For the HQ, the most recent inventory inspection was conducted from Nov 26 to Dec 5, 2022, and the subsidiaries conducted the inventory inspection during the same period as HQ.

## Inventory aging and valuation

Inventories are stated at the lower of cost or net realizable value. Inventory as of March 31, 2023 are as follows:

Category	Acquisition cost	Inventory valuation reserve	Balance	Note
Finished goods	18,224,024	-2,010,529	16,213,495	
Work in process	25,120,646	-3,007,636	22,113,010	
Raw material	16,195,959	-1,377,546	14,818,413	
Material in transit	1,274,668	-	1,274,668	
Total	60,815,297	-6,395,711	54,419,586	

※ Based on consolidated financial statements

## D. Fair value estimation

Refer to 3. Financial Instruments by Category and 25. Financial Risk Management in 『III. Financial Affairs』.

## **IV. Management Discussion and Analysis**

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Management Discussion and Analysis section, reported in the full-year business report, is not included in the interim reports.

## V. Auditor's Report

### 1. Introduction

Samjong KPMG conducted a review and audit on the consolidated/separate financial statements of financial position of the Company as of March 31, 2023, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the period then ended. The consolidated/separate financial statements for the period ended March 31, 2023, are presented fairly, in all material respects, in accordance with Korean IFRS 1034 Interim Financial Reporting.

Deloitte Anjin conducted audits on the consolidated/separate financial statements of financial position of the Company as of December 31, 2022, and December 31, 2021, and the related consolidated/separate statements of profit or loss, comprehensive income, changes in equity and cash flows for the years then ended and expressed an unqualified opinion on those financial statements.

All of the Company's subsidiaries received unqualified opinion for the periods ended December 31, 2022, and December 31, 2021.

Period end	Company Auditor	Audit Opinion	Emphasis of Matter	Key Audit Matter(s)
Mar 31, 2023	Samjong KPMG	Not applicable	Not applicable	Not applicable
Dec 31, 2022	Deloitte Anjin	Unqualified	Not applicable	(Consolidated) 1. Sales deduction related to the sales promotion activities of products (Separate) 1. Sales deduction related to the sales promotion activities of products
Dec 31, 2021	Deloitte Anjin	Unqualified	Not applicable	(Consolidated) 1. Sales deduction related to the sales promotion activities of products (Separate) 1. Sales deduction related to the sales promotion activities of products

※ Audit opinion on both separate and consolidated financial statements.

## [Audit Contract Description]

(KRW mil)

Fiscal Period	Auditor	Description	Contract		Actual	
			Audit fee	Total Hours	Fee Claimed	Hours spent
Quarter ended Mar 31, 2023	Samjong KPMG	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of separate/consolidated Internal Control over Financial Reporting	7,800	85,700	1,277	14,032
Year ended Dec 31, 2022	Deloitte Anjin	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	8,424	78,000	8,424	78,146
Year ended Dec 31, 2021	Deloitte Anjin	- Review of the interim separate/consolidated financial statements - Audit of separate/consolidated financial statements - Audit of Internal Control over Financial Reporting (ICFR)	7,900	76,741	7,900	76,999

&lt;Review plan for the period ended March 31, 2023&gt;

Review Period		Planned Dates
2023 1Q	Pre-review	Mar 6, 2023 ~ Mar 29, 2023
	Review	Apr 7, 2023 ~ May 12, 2023

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

## [Non-Audit Service Contract Description]

(KRW mil)

Fiscal Period	Contract Date	Non-audit Service Description	Period for Service	Compensation	Note
Quarter ended Mar 31, 2023	Sep 2018	Tax advisory services	Jan – Mar 2023	27	Samjong KPMG
Year ended Dec 31, 2022	-	-	-	-	-
Year ended Dec 31, 2021	Jun 2017	E-discovery advisory services	Jan – Dec 2021	394	Deloitte Anjin

## [Details of internal audit committee's discussion with Auditors]

No.	Date	Participants	Method	Details of discussion
1	Jan 27, 2023	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 4 others	Face-to-face meeting	- Key Audit Matters and others audit focus areas - Progress of audit of Internal Control over Financial Reporting - Other required communications at the completion stage of the audit
2	Apr 25, 2023	Audit Committee: 3 members Company: Head of Audit Team Auditor: Signing partner and 5 others	Face-to-face meeting	- Reporting on progress of quarterly review - Audit plan for the year ending December 31, 2023 - Other required communications at the planning stage of the audit

## **2. Change of Independent Auditor**

Upon termination of the contract with previous auditor, Deloitte Anjin, the audit committee has newly appointed Samjong KPMG as the Company's external auditor for three years from 2023 to 2025, in accordance with Article 10 (1), (3) and (4) of the "Act on External Audit of Stock Companies, Etc.". As a result, the Company's external auditor has been changed from Deloitte Anjin to Samjong KPMG from the beginning of this period.

There are 230 subsidiaries as at March 31, 2023. For the period ending March 31, 2023, 8 domestic subsidiaries, including Samsung Display Co., Ltd., changed external auditor from Deloitte Anjin to Samjong KPMG and SU Materials Co., Ltd. changed E&Y Hanyoung to Samjong KPMG. 30 overseas subsidiaries, including Samsung Electronics America, Inc. (SEA), changed Deloitte to KPMG, 65 overseas subsidiaries, including Samsung (China) Semiconductor Co., Ltd. (SCS), changed PwC to KPMG and 6 overseas subsidiaries, including Samsung Electronics Benelux B.V. (SEBN), changed E&Y to KPMG, Laos Samsung Electronics Sole Co., Ltd (LSE) changed KPP Co., Ltd to KPMG. Samsung Electronics Uzbekistan Ltd. (SEUZ), DOWOOINSYS VINA COMPANY LIMITED appointed KPMG, and Samsung Venture Capital Union SVIC No. 62 appointed Samjong KPMG as their new external auditors, respectively.

These changes in external auditors were to improve efficiency in audit of consolidated financial statements due to the change of the Company's external auditor. Appointment of auditor was decided at the entities' own discretion.

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

Subsidiaries	Previous auditor	Current Auditor
Samsung Display Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Service Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Service CS Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Sales Co., Ltd.	Deloitte Anjin	Samjong KPMG
Samsung Electronics Logitech Co., Ltd.	Deloitte Anjin	Samjong KPMG
Dowooinsys Co., Ltd.	Deloitte Anjin	Samjong KPMG
Gf-System Co., Ltd.	Deloitte Anjin	Samjong KPMG
Mirero System Co., Ltd.	Deloitte Anjin	Samjong KPMG
SU Materials Co., Ltd.	E&Y Hanyoung	Samjong KPMG
Samsung Electronics America, Inc. (SEA)	Deloitte	KPMG
Samsung Semiconductor, Inc. (SSI)	Deloitte	KPMG
Samsung Mexicana S.A. de C.V (SAMEX)	Deloitte	KPMG
Samsung International, Inc. (SII)	Deloitte	KPMG
Samsung Austin Semiconductor LLC. (SAS)	Deloitte	KPMG
Samsung Electronics Mexico S.A. De C.V. (SEM)	Deloitte	KPMG
Samsung Electronics (UK) Ltd. (SEUK)	Deloitte	KPMG
Samsung Electronics Holding GmbH (SEHG)	Deloitte	KPMG
Samsung Semiconductor Europe GmbH (SSEG)	Deloitte	KPMG
Samsung Electronics GmbH (SEG)	Deloitte	KPMG
Samsung Semiconductor Europe Limited (SSEL)	Deloitte	KPMG
Samsung Vina Electronics Co., Ltd. (SAVINA)	Deloitte	KPMG
Samsung Electronics Singapore Pte. Ltd. (SESP)	Deloitte	KPMG
Samsung Asia Pte. Ltd. (SAPL)	Deloitte	KPMG
Samsung Electronics Australia Pty. Ltd. (SEAU)	Deloitte	KPMG
Thai Samsung Electronics Co., Ltd. (TSE)	Deloitte	KPMG
Samsung Display Vietnam Co., Ltd. (SDV)	Deloitte	KPMG
Samsung R&D Institute BanglaDesh Limited (SRBD)	Deloitte	KPMG
Samsung Electronics Vietnam Co., Ltd. (SEV)	Deloitte	KPMG
Samsung Electronics Vietnam THAINGUYEN Co., Ltd. (SEVT)	Deloitte	KPMG

Samsung Electronics HCMC CE Complex Co., Ltd. (SEHC)	Deloitte	KPMG
Samsung (CHINA) Investment Co., Ltd. (SCIC)	Deloitte	KPMG
Samsung Electronics Taiwan Co., Ltd. (SET)	Deloitte	KPMG
Shanghai Samsung Semiconductor Co., Ltd. (SSS)	Deloitte	KPMG
Samsung Gulf Electronics Co., Ltd. (SGE)	Deloitte	KPMG
Samsung Electronics Saudi Arabia Ltd. (SESAR)	Deloitte	KPMG
Samsung Electronics South Africa(Pty) Ltd. (SSA)	Deloitte	KPMG
Samsung Electronics Turkiye (SETK)	Deloitte	KPMG
Samsung Electronics Industry and Commerce Ltd. (SETK-P)	Deloitte	KPMG
Samsung Eletronica da Amazonia Ltda. (SEDA)	Deloitte	KPMG
Samsung Japan Corporation (SJC)	PwC	KPMG
Samsung R&D Institute Japan Co. Ltd. (SRJ)	PwC	KPMG
Samsung Electronics Japan Co., Ltd. (SEJ)	PwC	KPMG
Samsung Oak Holdings, Inc. (SHI)	PwC	KPMG
Samsung Electronics Canada, Inc. (SECA)	PwC	KPMG
Samsung Research America, Inc (SRA)	PwC	KPMG
SAMSUNG NEXT LLC (SNX)	PwC	KPMG
SAMSUNG NEXT FUND LLC (SNXF)	PwC	KPMG
Samsung Electronics Home Appliances America, LLC (SEHA)	PwC	KPMG
Samsung Electronics Digital Appliance Mexico, SA de CV (SEDAM)	PwC	KPMG
Samsung Electronics Latinoamerica Miami, Inc. (SEMI)	PwC	KPMG
Samsung Electronics France S.A.S (SEF)	PwC	KPMG
Samsung Electronics Hungarian Private Co. Ltd. (SEH)	PwC	KPMG
Samsung Electronics Czech and Slovak s.r.o. (SECZ)	PwC	KPMG
Samsung Electronics Italia S.P.A. (SEI)	PwC	KPMG
Samsung Electronics Europe Logistics B.V. (SELS)	PwC	KPMG
Samsung Electronics Romania LLC (SEROM)	PwC	KPMG
Samsung Electronics Overseas B.V. (SEO)	PwC	KPMG
Samsung Electronics Polska, SP.Zo.o (SEPOL)	PwC	KPMG
Samsung Electronics Nordic Aktiebolag (SENA)	PwC	KPMG
Samsung Electronics Austria GmbH (SEAG)	PwC	KPMG
Samsung Electronics Switzerland GmbH (SESG)	PwC	KPMG
SAMSUNG ELECTRONICS BALTICS SIA (SEB)	PwC	KPMG
Samsung Electronics Europe Holding Cooperatief U.A. (SEEH)	PwC	KPMG
Samsung Electronics Poland Manufacturing SP.Zo.o (SEPM)	PwC	KPMG
Samsung Electronics Greece S.M.S.A (SEGR)	PwC	KPMG
Samsung Nanoradio Design Center (SNDC)	PwC	KPMG
Samsung Electronics Air Conditioner Europe B.V. (SEACE)	PwC	KPMG
Samsung Denmark Research Center ApS (SDRC)	PwC	KPMG
Samsung Cambridge Solution Centre Limited (SCSC)	PwC	KPMG
Samsung R&D Institute India-Bangalore Private Limited (SRI-Bangalore)	PwC	KPMG
Samsung Electronics New Zealand Limited (SENZ)	PwC	KPMG
PT Samsung Electronics Indonesia (SEIN)	PwC	KPMG
PT Samsung Telecommunications Indonesia (STIN)	PwC	KPMG
Samsung Display Noida Private Limited (SDN)	PwC	KPMG
Samsung Display Dongguan Co., Ltd. (SDD)	PwC	KPMG
Samsung Display Tianjin Co., Ltd. (SDT)	PwC	KPMG

Samsung Electronics Hong Kong Co., Ltd. (SEHK)	PwC	KPMG
Suzhou Samsung Electronics Co., Ltd. (SSEC)	PwC	KPMG
Samsung Suzhou Electronics Export Co., Ltd. (SSEC-E)	PwC	KPMG
Samsung Mobile R&D Center China-Guangzhou (SRC-Guangzhou)	PwC	KPMG
Samsung R&D Institute China-Shenzhen (SRC-Shenzhen)	PwC	KPMG
Samsung Electronics Suzhou Semiconductor Co., Ltd. (SESS)	PwC	KPMG
SEMES (XIAN) Co., Ltd.	PwC	KPMG
Beijing Samsung Telecom R&D Center (SRC-Beijing)	PwC	KPMG
Samsung Electronics Suzhou Computer Co., Ltd. (SESC)	PwC	KPMG
Samsung Semiconductor (China) R&D Co., Ltd. (SSCR)	PwC	KPMG
Samsung Electronics China R&D Center (SRC-Nanjing)	PwC	KPMG
Samsung (China) Semiconductor Co., Ltd. (SCS)	PwC	KPMG
Samsung SemiConductor Xian Co., Ltd. (SSCX)	PwC	KPMG
Samsung Electronics West Africa Ltd. (SEWA)	PwC	KPMG
Samsung Electronics East Africa Ltd. (SEEA)	PwC	KPMG
Samsung Electronics Israel Ltd. (SEIL)	PwC	KPMG
Samsung Electronics Tunisia S.A.R.L (SETN)	PwC	KPMG
Samsung Electronics Pakistan(Private) Ltd. (SEPAK)	PwC	KPMG
Samsung Electronics South Africa Production (pty) Ltd. (SSAP)	PwC	KPMG
Samsung Semiconductor Israel R&D Center, Ltd. (SIRC)	PwC	KPMG
Samsung Electronics Maghreb Arab (SEMAG)	PwC	KPMG
Samsung Electronics Latinoamerica(Zona Libre), S. A. (SELA)	PwC	KPMG
Samsung Electronica Colombia S.A. (SAMCOL)	PwC	KPMG
Samsung Electronics Chile Limitada (SECH)	PwC	KPMG
Samsung Electronics Peru S.A.C. (SEPR)	PwC	KPMG
Samsung Electronics Ukraine Company LLC (SEUC)	PwC	KPMG
Samsung R&D Institute Ukraine (SRUKR)	PwC	KPMG
Samsung Electronics Central Eurasia LLP (SECE)	PwC	KPMG
Samsung Electronics Iberia, S.A. (SESA)	E&Y	KPMG
Samsung Electronics Benelux B.V. (SEBN)	E&Y	KPMG
Samsung Electronics Portuguesa, Unipessoal, Lda. (SEP)	E&Y	KPMG
Samsung Electronics Philippines Corporation (SEPCO)	E&Y	KPMG
Samsung Electronics Levant Co.,Ltd. (SELV)	E&Y	KPMG
Samsung Electronics Caucasus Co. Ltd (SECC)	E&Y	KPMG
Laos Samsung Electronics Sole Co., Ltd (LSE)	KPP Co., Ltd	KPMG

There are 232 subsidiaries as of December 31, 2022, and Samsung R&D Institute Ukraine (SRUKR) newly appointed PwC, and Samsung Venture Capital Union SVIC No. 52, No. 55, No. 56, and No. 57 appointed KPMG as the external auditor, respectively.

There are 228 subsidiaries as of December 31, 2021. Samsung Electronics Singapore Pte. Ltd. (SESP) and Samsung Electronics Industry and Commerce Ltd (SETK-P) newly appointed Deloitte, and Gf-System Co., Ltd. newly appointed Anjin as the external auditor. And Samsung Electronics Benelux B.V. (SEBN) have changed the external auditor to E&Y from Deloitte, and Dowooinsys Co., Ltd to Anjin from Samduk, respectively. Appointment of auditor was decided at the entities' own discretion.

### 3. Regarding Internal Control

Pursuant to the reporting guidelines set forth by the *Financial Supervisory Service* of South Korea, the Internal Control section, reported in the half-year and full-year Business Report, is not included in the 1Q and 3Q reports.

## **VI. Corporate Governance**

### ***1. Board of Directors***

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Board of Directors section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

### ***2. Audit System***

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Audit System section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

### ***3. General meeting of shareholders***

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the General meeting of shareholders section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## VII. Information on Shareholders

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

[As of March 31, 2023]

Name	Relationship <sup>1)</sup>	Type of share	Ownership				Notes	
			Period start		Period end			
			Shares	Stake (%)	Shares	Stake (%)		
Samsung Life Insurance	Major shareholder	Common	508,157,148	8.51	508,157,148	8.51	-	
		Preferred	43,950	0.01	43,950	0.01	-	
Samsung Life Insurance (special accounts)	Major shareholder	Common	10,246,942	0.17	10,014,852	0.17	Open market transactions	
		Preferred	403,278	0.05	540,188	0.07	Open market transactions	
Samsung C&T	Affiliate	Common	298,818,100	5.01	298,818,100	5.01	-	
Samsung Fire & Marine Insurance	Affiliate	Common	88,802,052	1.49	88,802,052	1.49	-	
Samsung Welfare Foundation	Funded foundation	Common	4,484,150	0.08	4,484,150	0.08	-	
Samsung Foundation Of Culture	Funded foundation	Common	1,880,750	0.03	1,880,750	0.03	-	
Ra-hee Hong	Related party of the major shareholder	Common	117,302,806	1.96	117,302,806	1.96	-	
		Preferred	206,633	0.03	206,633	0.03	-	
Jae-yong Lee	Related party of the major shareholder	Common	97,414,196	1.63	97,414,196	1.63	-	
		Preferred	137,757	0.02	137,757	0.02	-	
Boo-jin Lee	Executive member of affiliate	Common	55,394,044	0.93	55,394,044	0.93	-	
		Preferred	137,755	0.02	137,755	0.02	-	
Seo-hyun Lee	Related party of the major shareholder	Common	55,394,044	0.93	55,394,044	0.93	-	
		Preferred	137,755	0.02	137,755	0.02	-	
Jong-hee Han	Executive member of affiliate	Common	15,000	0.00	15,000	0.00	-	
Kye-hyun Kyung	Executive member of affiliate	Common	18,050	0.00	21,050	0.00	Open market transactions	
Tae-moon Roh	Executive member of affiliate	Common	13,000	0.00	13,000	0.00	-	
Hark-kyu Park	Executive member of affiliate	Common	22,500	0.00	22,500	0.00	-	

Name	Relationship <sup>1)</sup>	Type of share	Ownership				Notes	
			Period start		Period end			
			Shares	Stake (%)	Shares	Stake (%)		
Jung-bae Lee	Executive member of affiliate	Common	15,000	0.00	15,000	0.00	-	
Han-jo Kim	Executive member of affiliate	Common	3,655	0.00	3,655	0.00	-	
Total		Common	1,237,981,437	20.74	1,237,752,347	20.73	-	
		Preferred	1,067,128	0.13	1,204,038	0.15	-	

Common shares carry full voting rights while preferred shares do not. (Owners of certain common shares have limited voting rights in accordance with relevant laws.)

For changes after March 31, 2023, please refer to 'Ownership status of securities, etc. of executives and major shareholder' published in Korean in DART (<https://dart.fss.or.kr>).

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

## 2. Matters related to the major shareholder

### A. Overview of the major shareholder (corporation or organization)

(1) Basic information of the major shareholder (Samsung Life Insurance Co., Ltd.)

1) Legal, commercial name: Samsung Life Insurance Co., Ltd.

2) Date of establishment: April 24, 1957

3) Address, phone number, and English language website of the corporate headquarters

- Address: 11, Seocho-daero 74-gil, Seocho-gu, Seoul, Republic of Korea

- Phone: +82-2-1588-3114

- Website: <https://www.samsunglife.com>

4) CEO and major shareholder of the major shareholder (Samsung Life Insurance)

Name	Number of investors	CEO		Major shareholder	
		Name	Share ratio (%)	Name	Share ratio (%)
Samsung Life Insurance Co., Ltd	101,544	Young-muk Jeon	0.00	Samsung C&T	19.34

As of March 31, 2023, based on common shares.

5) Changes to the CEO and major shareholder of the major shareholder (Samsung Life Insurance)

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

Apr 29, 2021: The major shareholder changed to Samsung C&T as the shares of the previous major shareholder (who passed away on October 25, 2020) were inherited.

(2) Financial status of the recent settlement term of the major shareholder (Samsung Life Insurance)

(KRW mil)

Classification	
Name of the corporation or organization	Samsung Life Insurance Co., Ltd
Total assets	299,795,300
Total liabilities	259,982,000
Total equity	39,813,300
Revenue	9,987,530
Operating profit	881,845
Net profit	739,077

The financial status is as of March 31, 2023, based on the consolidated K-IFRS financial statements.

(3) Business conditions of the major shareholder (Samsung Life Insurance)

Samsung Life Insurance is a company in which life insurance and its related reinsurance contract are the key purpose of business operations, and it operates businesses in accordance with the Insurance Business Act and other related laws.

Its key subsidiary, Samsung Card, is a specialized credit finance business company that operates specialized credit finance businesses (including credit card business, facility leasing business, and installment financing business) in accordance with the Specialized Credit Finance Business Act and other related laws.

☞ Please refer to the business report (interim and half-year) of Samsung Life Insurance published in DART (<https://dart.fss.or.kr>) for more details of the major shareholder.

## B. Certain transaction that may cause changes in the major shareholder

N/A

## C. Overview of the major shareholder of the major shareholder

(1) Basic information of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

1) Legal, commercial name: Samsung C&T Corporation

2) Date of establishment and period of existence: Dongwha Real Estate was first established on December 23, 1963, and the company name was changed to Cheil Industries in July 2014. It merged with Samsung C&T Corporation (founded as Samsung Sanghoe on March 1, 1938, and established as Samsung C&T in January 1951) and changed the company name to Samsung C&T Corporation on September 2, 2015 (merger registration date).

3) Address, phone number, and English language website of the corporate headquarters

- Address: 26, Sangil-ro 6-gil, Gangdong-gu, Seoul, Republic of Korea
- Phone: +82-2-2145-5114
- Website: <https://www.samsungcnt.com>

4) CEO and major shareholder of the major shareholder (Samsung C&T) of the major shareholder

Name	Number of investors	CEO		Major shareholder	
		Name	Share ratio (%)	Name	Share ratio (%)
Samsung C&T	179,926	Jung-suk Koh	0.00	Jae-yong Lee	18.13
		Se-chul Oh	0.00		
		Hai-lin Jeong	0.00		

As of March 31, 2023, based on common shares

5) Changes to the CEO and major shareholder of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

Date of change	CEO		Major shareholder	
	Name	Share ratio (%)	Name	Share ratio (%)
Mar 19, 2021	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 17, 2023	Seung-hwan Han	-	-	-
Mar 17, 2023	Hai-lin Jeong	0.00	-	-

Mar 19, 2021: Young-ho Lee and Keum-yong Chung resigned from their positions as CEO, Executive Directors Se-chul Oh and Seung-hwan Han were appointed as CEOs, and Jung-suk Koh was reappointed as CEO.

Apr 29, 2021: The share ratio (common share) of the major shareholder was changed (17.48%→18.13%) as the shares were inherited (by Jae-yong Lee and three others).

Mar 17, 2023: Seung-hwan Han resigned from his position as CEO, and Executive Director Hai-lin Jeong was appointed as CEO.

(2) Financial status of the recent settlement term of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

Classification	(KRW mil)
Name of the corporation or organization	Samsung C&T
Total assets	61,862,057
Total liabilities	27,592,798
Total equity	34,269,260
Revenue	10,238,589
Operating profit	640,517
Net profit	751,911

The financial status is as of March 31, 2023, based on the consolidated K-IFRS financial statements.

### (3) Business conditions of the major shareholder (Samsung C&T) of the major shareholder (Samsung Life Insurance)

Samsung C&T is consisted of Engineering & Construction, Trading & Investment, Fashion, and Resort Groups as well as biomedicine OEM and biosimilar businesses. The Engineering & Construction Group operates businesses in building, civil infrastructure, plant, and housing areas domestically and globally; Trading & Investment trades internationally in various fields, including resource development, steel, chemical, industrial materials, and textiles. The Fashion Group manufactures and sells clothing, and processes and sells wool products (fabric). The Resort Group manages landscaping business, Everland (dry park), Caribbean Bay (water park), golf course, food supply services, and food distribution business (Samsung Welstory).

☞ Please refer to the business report (interim and half-year) of Samsung C&T published in DART (<https://dart.fss.or.kr>) for more details of the major shareholder of the major shareholder.

## VIII. Executives and Employees

### 1. Executives and employees

#### A. Registered Executives

[As of March 31, 2023]

(Shares)

Name	Gender	Date of birth	Position	Registered Executive	Full/part-time	Responsibility	Major career	Number of shares owned <sup>1)</sup>		Relationship with the major shareholder <sup>2)</sup>	Length of service (months)	Term expiration
								Common	Preferred			
Jong-hee Han	M	Mar 1962	Vice Chairman	Executive Director	Full	- CEO (head of the DX Division)	- Bachelor's degree in Electronic Engineering from Inha University - Head of DX Division	15,000		- Executive Member of an affiliate	37	Mar 15, 2026
Kye-hyun Kyung	M	Mar 1963	President	Executive Director	Full	- CEO (head of the DS Division)	- Doctor's degree in Control and Measurement Engineering from Seoul National University - Head of DS Division	21,050		- Executive Member of an affiliate	13	Mar 15, 2025
Tae-moon Roh	M	Sep 1968	President	Executive Director	Full	- Head of MX Business	- Doctor's degree in Electrical Engineering from Pohang University of Science and Technology - Head of MX Business	13,000		- Executive Member of an affiliate	13	Mar 15, 2025
Hark-kyu Park	M	Nov 1964	President	Executive Director	Full	- CFO	- Master's degree in Business and Technology Management from Korea Advanced Institute of Science and Technology - Head of Corporate Management Office	22,500		- Executive Member of an affiliate	13	Mar 15, 2025
Jung-bae Lee	M	Feb 1967	President	Executive Director	Full	- Head of Memory Business	- Doctor's degree in Electronic Engineering from Seoul National University - Head of Memory Business	15,000		- Executive Member of an affiliate	13	Mar 15, 2025
Han-jo Kim	M	Jul 1956	Director	Independent Director	Part	- Board Chair - Head of Audit Committee - Related Party Transactions Committee Member - Compensation Committee Member - Head of Sustainability Committee	- Bachelor's degree in French language and Literature from Yonsei University - Chairman of Hana Foundation	3,655		- Executive Member of an affiliate	49	Mar 19, 2025
Sun-uk Kim	F	Dec 1952	Director	Independent Director	Part	- Audit Committee Member - Head of the Related Party Transactions Committee - Independent Director Recommendation	- Doctor's degree in Administrative Law from University of Konstanz - Professor Emeritus at Ewha Womans University	-		- Executive Member of an affiliate	61	Mar 22, 2024

						Committee Member - Sustainability Committee Member					
Jeong Kim	M	Aug 1960	Director	Independent Director	Part	- Audit Committee Member - Related Party Transactions Committee Member - Head of Compensation Committee - Sustainability Committee Member	- Doctor's degree in Reliability Engineering from the University of Maryland - President of Kiswe Mobile	-	- Executive Member of an affiliate	61	Mar 22, 2024
Jun-sung Kim	M	Oct 1967	Director	Independent Director	Part	- Compensation Committee Member - Sustainability Committee Member	- Bachelor's degree in Economics & Business Administration from Carnegie Mellon University - Managing Director of Government of Singapore Investment Corporation (GIC) Total Return Group	-	- Executive Member of an affiliate	13	Mar 15, 2025
Eun-nyeong Heo	M	Aug 1964	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Sustainability Committee Member	- Doctor's degree in Mineral Economics from The Pennsylvania State University - Professor of College of Engineering at Seoul National University	-	- Executive Member of an affiliate	5	Nov 2, 2025
Myung-hee Yoo	F	Jun 1967	Director	Independent Director	Part	- Independent Director Recommendation Committee Member - Sustainability Committee Member	- Doctor's degree in Administrative Law from Vanderbilt University - Visiting Professor of Graduate School of International Studies at Seoul National University	-	- Executive Member of an affiliate	5	Nov 2, 2025

1) As of the reporting date; for changes after the reporting date, please refer to 'Ownership status of securities, etc. of executives and major shareholder' published in Korean in DART (<https://dart.fss.or.kr>).

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

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

Mar 16, 2022: Kye-hyun Kyung, Tae-moon Roh, Hark-kyu Park, and Jung-bae Lee were newly appointed as Executive Directors; Wha-jin Han and Jun-sung Kim were newly appointed as Independent Directors; and Han-jo Kim was reappointed as Independent Director at the AGM.

Mar 16, 2022: Ki-nam Kim, Hyun-suk Kim, and Dong-jin Koh resigned from their positions as Executive Director.

Mar 16, 2022: Executive Director Kye-hyun Kyung was appointed as CEO at the Board meeting.

Mar 19, 2022: Terms of Jae-wan Bahk and Curie Ahn as Independent Director expired.

Apr 20, 2022: Wha-jin Han resigned from her position as Independent Director.

May 17, 2022: Independent Director Byung-gook Park passed away.

Nov 3, 2022: Eun-nyeong Heo and Myung-hee Yoo were newly appointed as Independent Directors at the EGM.

Mar 15, 2023: Jong-hee Han was reappointed as an Independent Director at the AGM.

## B. Registered Executives with concurrent positions

[As of Mar 31, 2023]

Concurrent office holder		Company		
Name	Position	Name of company	Position	Period
Jeong Kim	Independent Director	Kiswe Mobile	Chairman	2013–present
Myung-hee Yoo	Independent Director	Hyundai Construction Equipment	Independent Director	2022–present

## 2. Remuneration for Directors

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Remuneration for Directors section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## **IX. Affiliates and Subsidiaries**

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Affiliates and Subsidiaries section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## X. Transactions with Affiliates and Subsidiaries

### 1. Credit offerings for affiliates and subsidiaries

As of Mar 31, 2023, SEC provides a debt guarantee for financing of subsidiaries, including Samsung Electronics America, Inc. (SEA) and other subsidiaries as listed below.

(USD thousand)

Company	Relationship	Creditor	Type	Purpose	Guarantee start date	Guarantee expiry date	Limit of guarantee		Transactions			Interest Rate (%)
							Beginning of period	End of period	Beginning of period	Increase/decrease	End of period	
SEA	Subsidiary	BOA etc.	Payment guarantee	Operating fund	Apr 16, 2022	Dec 16, 2023	1,278,000	1,278,000	-	-	-	
SEM	Subsidiary	BBVA etc.	Payment guarantee	Operating fund	Jun 14, 2022	Mar 27, 2024	715,000	715,000	-	-	-	
SAMCOL	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	210,000	210,000	-	-	-	
SEDA	Subsidiary	BRADESCO etc.	Payment guarantee	Operating fund	Oct 1, 2022	Dec 16, 2023	409,000	409,000	-	-	-	
SECH	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	62,000	62,000	-	-	-	
SEPR	Subsidiary	BBVA etc.	Payment guarantee	Operating fund	Jun 1, 2022	Dec 16, 2023	150,000	150,000	-	-	-	
SSA	Subsidiary	SCB etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	318,000	318,000	-	-	-	
SEMAG	Subsidiary	SocGen etc.	Payment guarantee	Operating fund	Nov 9, 2022	Dec 16, 2023	110,000	110,000	-	-	-	
SETK	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	777,000	777,000	239,395	53,928	293,323	36.8%
SETK-P	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Nov 9, 2022	Dec 16, 2023	130,000	130,000	25,649	-641	25,008	34.4%
SECE	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	60,000	100,000	-	-	-	
SEEG	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	85,000	85,000	-	-	-	
SEIN	Subsidiary	BNP etc.	Payment guarantee	Operating fund	Jun 14, 2022	Nov 8, 2023	70,000	70,000	-	-	-	
SJC	Subsidiary	Mizuho Bank etc.	Payment guarantee	Operating fund	Apr 28, 2022	Dec 16, 2023	832,572	832,811	-	-	-	
SEUC	Subsidiary	Credit Agricole etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	150,000	125,000	-	-	-	
SEDAM	Subsidiary	Citibank etc.	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	537,000	537,000	155,768	-155,768	-	
SECA	Subsidiary	BoA	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	70,000	70,000	-	-	-	
SELA	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	60,000	60,000	-	-	-	
SEEH	Subsidiary	HSBC etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	888,400	888,400	-	-	-	
SERK	Subsidiary	SMBC	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	45,000	20,000	-	-	-	
SELV	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	10,000	10,000	-	-	-	
SEIL	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	15,600	15,600	9,664	-209	9,455	5.4%
SAPL	Subsidiary	BOA etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	404,000	404,000	-	-	-	
SAVINA	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	51,000	51,000	-	-	-	
SCIC	Subsidiary	HSBC etc.	Payment guarantee	Operating fund	Jun 14, 2022	Dec 16, 2023	300,000	300,000	-	-	-	
SME	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	110,000	110,000	-	-	-	
SAMEX	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	5,000	5,000	-	-	-	
SEASA	Subsidiary	Citibank	Payment guarantee	Operating fund	Dec 17, 2022	Dec 16, 2023	2,000	2,000	-	-	-	
SSAP	Subsidiary	SCB	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	35,000	35,000	-	-	-	
SEPM	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	35,000	35,000	-	-	-	
SESAR	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	20,000	20,000	-	-	-	

SEUZ	Subsidiary	Citibank	Payment guarantee	Operating fund	Jan 18, 2023	Dec 16, 2023	-	10,000				
AdGear Technologies Inc.	Subsidiary	BOA	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	2,000	2,000	-	-	-	-
Harman International Industries, Inc.	Subsidiary	JP Morgan	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	100,000	100,000	-	-	-	-
Harman International Japan Co., Ltd.	Subsidiary	MUFG	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	25,000	25,000	-	-	-	-
Harman Holding Limited	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	30,000	30,000	-	-	-	-
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	Payment guarantee	Operating fund	Nov 9, 2022	Nov 8, 2023	15,000	15,000	-	-	-	-
Harman da Amazonia Industria Eletronica e Participacoes Ltda.												
Harman International Industries Limited	Subsidiary	HSBC	Payment guarantee	Operating fund	Jun 14, 2022	Jun 13, 2023	30,000	30,000	-	-	-	-
Total							8,146,572	8,146,811	430,476	-102,690	327,786	

Separate basis.

The approval decision is resolved by the Management Committee when the guarantee amount per transaction is between 0.1% and/or less than 2.5%, and by the Board of Directors when the guarantee amount per transaction is 2.5% and above.

SEC receives fees on the debt it guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc.

The Company claimed approximately USD 547 thousand in guarantee fees in 2022 and received it in 2023.

## 2. Acquisitions and disposals of assets with affiliates and subsidiaries

In 1Q23, the Company sold assets to affiliates, including Samsung (China) Semiconductor Co., Ltd. (SCS), to increase production capacity of such affiliates. Also, the Company acquired assets including facility equipment from affiliates to improve efficiency of production.

(KRW mil)

Company	Relationship	Transaction type	Transaction date <sup>1)</sup>	Asset	Purpose of transaction	Amount <sup>2)</sup>	Gain or loss on disposal
SCS	Affiliates	Asset sale/purchase	Mar 31, 2023	Machinery, etc.	Enhance capacity and production efficiency	12,266	3,923
SEV	Affiliates	Asset purchase	Mar 23, 2023	Machinery, etc.	Enhance capacity and production efficiency	767	-
TSLED	Affiliates	Asset sale	Mar 19, 2023	Machinery, etc.	Enhance capacity and production efficiency	372	361

Separate basis

The above acquisition and disposal transactions of assets are not subject to the Board's approval.

1) Most recent transaction.

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

Transactions worth less than KRW 100 million were excluded according to Corporate Disclosure Guidelines.

### **3. Business transactions with affiliates and subsidiaries**

In 1Q23, there is no business transaction with affiliates and subsidiaries that are subject to public disclosure.

(KRW mil)

Company	Relationship	Type of transaction	Date	Details	Amount
-	-	-	-	-	-

Separate basis; Transactions worth 5% and above of revenue of the current business year are subject to public disclosure.

## XI. Other Information

### **1. Changes in public disclosure**

- N/A

### **2. Contingent liabilities**

#### **A. Litigation**

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

Samsung Electronics and SDC are liable to fulfill in solidarity the debts of SDC which relate to the periods prior to SDC's separation from the Company.

For information related to other contingent liabilities and commitments, see retained earnings in 『3. Notes to consolidated financial statements』 and 『5. Notes to non-consolidated financial statements』 in 『III. Financial Affairs』.

#### **B. Guarantees**

(USD thousand)

Company	Relationship	Creditor	Guarantee Expiry date	Transactions				Limit of guarantee
				Beginning of period	Increase	Decrease	End of period	
SEA	Subsidiary	BOA etc.	16-Dec-23	-	-	-	-	1,278,000
SEM	Subsidiary	BBVA etc.	27-Mar-24	-	-	-	-	715,000
SAMCOL	Subsidiary	Citibank etc.	16-Dec-23	-	-	-	-	210,000
SEDA	Subsidiary	BRADESCO etc.	16-Dec-23	-	-	-	-	409,000
SECH	Subsidiary	Citibank etc.	16-Dec-23	-	-	-	-	62,000
SEPR	Subsidiary	BBVA etc.	16-Dec-23	-	-	-	-	150,000
SSA	Subsidiary	SCB etc.	16-Dec-23	-	-	-	-	318,000
SEMAG	Subsidiary	SocGen etc.	16-Dec-23	-	-	-	-	110,000
SETK	Subsidiary	BNP etc.	16-Dec-23	239,395	53,928	-	293,323	777,000
SETK-P	Subsidiary	BNP etc.	16-Dec-23	25,649	-	-641	25,008	130,000
SECE	Subsidiary	Citibank etc.	16-Dec-23	-	-	-	-	100,000
SEEG	Subsidiary	HSBC	13-Jun-23	-	-	-	-	85,000
SEIN	Subsidiary	BNP etc.	08-Nov-23	-	-	-	-	70,000
SJC	Subsidiary	Mizuho Bank etc.	16-Dec-23	-	-	-	-	832,811
SEUC	Subsidiary	Credit Agricole etc.	16-Dec-23	-	-	-	-	125,000
SEDAM	Subsidiary	Citibank etc.	16-Dec-23	155,768	-	-155,768	-	537,000
SECA	Subsidiary	BoA	08-Nov-23	-	-	-	-	70,000
SELA	Subsidiary	Citibank	16-Dec-23	-	-	-	-	60,000
SEEH	Subsidiary	HSBC etc.	16-Dec-23	-	-	-	-	888,400
SERK	Subsidiary	SOCGEN etc.	8-Nov-23	-	-	-	-	20,000
SELV	Subsidiary	Citibank	16-Dec-23	-	-	-	-	10,000
SEIL	Subsidiary	Citibank	16-Dec-23	9,664	-	-209	9,455	15,600
SAPL	Subsidiary	BOA etc.	16-Dec-23	-	-	-	-	404,000
SAVINA	Subsidiary	HSBC	13-Jun-23	-	-	-	-	51,000
SCIC	Subsidiary	HSBC etc.	16-Dec-23	-	-	-	-	300,000
SME	Subsidiary	SCB	08-Nov-23	-	-	-	-	110,000
SAMEX	Subsidiary	Citibank	16-Dec-23	-	-	-	-	5,000
SEASA	Subsidiary	Citibank	16-Dec-23	-	-	-	-	2,000

SSAP	Subsidiary	SCB	08-Nov-23	-	-	-	-	-	35,000
SEPM	Subsidiary	HSBC	13-Jun-23	-	-	-	-	-	35,000
SESAR	Subsidiary	HSBC	13-Jun-23	-	-	-	-	-	20,000
SEUZ	Subsidiary	Citibank	16-Dec-23	-	-	-	-	-	10,000
AdGear Technologies Inc.	Subsidiary	BOA	08-Nov-23	-	-	-	-	-	2,000
Harman International Industries, Inc.	Subsidiary	JP Morgan	13-Jun-23	-	-	-	-	-	100,000
Harman International Japan Co., Ltd.	Subsidiary	MUFG	08-Nov-23	-	-	-	-	-	25,000
Harman Holding Limited	Subsidiary	HSBC	13-Jun-23	-	-	-	-	-	30,000
Harman do Brasil Industria Eletronica e Participacoes Ltda.	Subsidiary	SocGen	08-Nov-23	-	-	-	-	-	15,000
Harman da Amazonia Industria Eletronica e Participacoes Ltda.									
Harman International Industries Limited	Subsidiary	HSBC	13-Jun-23	-	-	-	-	-	30,000
SDN	Subsidiary	SIEL	19-Feb-26	513,366	4,295	-	517,661	609,013	
SAS	Subsidiary	Epcor	The date of debt expiration	-	-	-	-	-	340,000
DOWOOINSYS VINA COMPANY LIMITED	Subsidiary	ANZ	09-Nov-25	20,000	-	-	20,000	20,000	
Total				963,842	58,223	-156,618	865,447	9,115,824	

Consolidated basis.

Debt guarantees for SDN are provided by SDC, SAS by SEA, and DOWOOINSYS VINA COMPANY LIMITED by Dowooinssy Co., Ltd. SEC requires Board approval for individual guarantees exceeding 2.5% of total equity; the approval decision is delegated to the Management Committee when the guarantee amount is between 0.1% and/or less than 2.5%.

SDC requires Board approval for individual guarantees over KRW 10,000 million.

SEC claims fees on the debt guarantees depending on the maturity date of each debt guarantee, general loan interest rate, etc.: the Company in 2022 claimed approximately USD 547,000 as guarantee fee and collected the amount in 2023; and SDC in 2022 claimed approximately USD 3,080,000 as guarantee fee to SDN and has collected the amount in 2023.

### **3. Sanctions and others**

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Sanctions and others section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

### **4. Subsequent events and other matters**

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Subsequent events and other matters section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## **XII. Appendix**

### ***1. Subsidiaries subject to consolidated financial statements (detailed)***

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Subsidiaries subject to consolidated financial statements (detailed) section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

### ***2. Affiliates & subsidiaries (detailed)***

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Affiliates & subsidiaries (detailed) section, reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

### ***3. Equity investments in other corporations (detailed)***

Pursuant to the reporting guidelines set forth by the FSS of South Korea, the Equity investments in other corporations (detailed), reported in the half-year and full-year business reports, is not included in the 1Q and 3Q reports.

## 4. R&D results (detailed)

DX Division	
Research project	Details
<b>Visual Display</b>	
Neo QLED 8K March 2021–March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ultra high-resolution, slim 8K TV based on Mini LED technology (65 · 75 · 85")           <ul style="list-style-type: none"> <li>- QN900 (65 · 75 · 85") / QN800 (65 · 75 · 85") / QN700 (55 · 65 · 75 ")</li> <li>- QLED 8K resolution offers real-life viewing experience with enhanced contrast of sophisticated Mini LED</li> <li>- Added the feature of OTS Pro (Object Tracking Sound Pro)</li> </ul> </li> </ul>
Neo QLED 4K March 2021–March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mini LED-based products come in 3 series and up to 7 sizes (43 · 50 · 55 · 65 · 75 · 85 · 98")</li> <li><input type="checkbox"/> Slim design by adopting Mini LED, premium look with bezel-less/metal design           <ul style="list-style-type: none"> <li>- New LED with Quantum Nano-Layer Multi-Cell structure, enabling slim design, high luminance efficiency, luminance profile control</li> <li>- Enhanced gradation by four times; expresses bright and dark areas more elaborately</li> </ul> </li> </ul>
QD-Display TV ~March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Quantum-Dot-based self-emitting Display Flat 4K TV (55 · 65 · 77")           <ul style="list-style-type: none"> <li>- S95(55 · 65 · 77")/S90(55 · 65 · 77")</li> <li>- QD-Display TV that provides TV's true value with full applications from Quantum-Dot-based high-definition self-emitting Display and sleek Blade Slim Design to OTS and True Ch. ATMOS</li> </ul> </li> </ul>
QLED TV ~March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Flat QLED 4K TV (43 · 50 · 55 · 60 · 65 · 70 · 75 · 82 · 85 · 98")</li> <li><input type="checkbox"/> Specs and features           <ul style="list-style-type: none"> <li>- Flagship QLED maximizes viewing experience with unrivaled picture quality within 4K (AI/brightness/viewing angle) and sound quality (OTS)</li> <li>- Maximizes immersive experience with ideal brightness contrast, free viewing angle, life-like color, and optimal brightness</li> <li>- Optimizes viewing experience by identifying user context based on voice recognition and AI technologies</li> <li>- Convenient calibration of picture quality with the touch of a button from a mobile device without expensive, professional equipment</li> <li>- Upgraded gaming experience for casual gamers through Game Bar 3.0</li> </ul> </li> </ul>
UHD TV ~March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Flat UHD TV (43 · 50 · 55 · 58 · 65 · 70 · 75 · 82 · 85")</li> <li><input type="checkbox"/> Specs and features           <ul style="list-style-type: none"> <li>- UHD Smart TV with slim, bezel-less design provides colors close to real-life</li> <li>- UHD picture quality expresses picture quality of original content through Dynamic Crystal Color and Dual LED</li> <li>- Provides a multi-media screen experience, rich content, and complete smart experience via smart home experience</li> <li>- Enhanced Smart experiences with the addition of Game Home, IoT Hub, and Watch/Chat together functions</li> </ul> </li> </ul>
Lifestyle TV ~March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> The SERO (43")</li> <li><input type="checkbox"/> The Frame (32 · 43 · 50 · 55 · 65 · 75 · 85")</li> <li><input type="checkbox"/> The Serif (43 · 49 · 55 · 65")</li> <li><input type="checkbox"/> The Terrace (55 · 65 · 75")</li> <li><input type="checkbox"/> The Premiere (100–130")</li> <li><input type="checkbox"/> The Freestyle (30–100")</li> </ul>

DX Division	
Research project	Details
Micro-LED TV ~January 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> The Wall 2.0 (110") <ul style="list-style-type: none"> <li>- Released completed version of Micro-LED to strengthen technology leadership and dominance of Micro-LED market</li> <li>- Ultra-large Home Screen that reproduces the real world on display</li> <li>- Micro-LED picture quality with a sense of space and depth that seems like the real thing without limitation on resolution</li> </ul> </li> </ul>
Sound Bar ~March 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Soundbar <ul style="list-style-type: none"> <li>- Bar-shaped audio product well suited to TVs</li> <li>- Adopted AI solution enabling voice recognition</li> <li>- Adopted 3D surround system, creating enriching sounds close to first-hand experiences</li> </ul> </li> <li><input type="checkbox"/> Sound Bar Q990B <ul style="list-style-type: none"> <li>- Industry's first wireless ATMOS transmission from TV to soundbar</li> <li>- Provides the optimal Cinema True ATMOS just like in the cinema, utilizing all channels of TV and soundbar</li> <li>- Equipped with soundbar room-correction technology</li> </ul> </li> </ul>
Monitor January 2021–December 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Space monitor <ul style="list-style-type: none"> <li>- Application of integrated arm stand that minimizes space needed for the monitor</li> </ul> </li> <li><input type="checkbox"/> Neo QLED Gaming monitor (49") <ul style="list-style-type: none"> <li>- Strengthened black gamut based on enhanced brightness contrast by applying Neo QLED</li> <li>- More immersive gaming experience with 1000R curvature—the world's highest</li> </ul> </li> <li><input type="checkbox"/> High-resolution QHD monitor (34") <ul style="list-style-type: none"> <li>- Offers picture solution comfortable to the eye with Intelligent Eye Care solution, etc.</li> </ul> </li> <li><input type="checkbox"/> LCD Smart monitor <ul style="list-style-type: none"> <li>- Enjoy VOD services without using a PC via Smart TV services (Netflix, YouTube, etc.)</li> </ul> </li> <li><input type="checkbox"/> Smart monitor M80B (32") <ul style="list-style-type: none"> <li>- Ultra-slim, flat back, lifestyle design that adopts Warm White color</li> <li>- Includes magnetic-mount webcam</li> <li>- Strengthened smart experiences (watching VOD/connecting mobile devices/PC-less function/IoT/communication/game)</li> </ul> </li> <li><input type="checkbox"/> Gaming monitor G85NB (32") <ul style="list-style-type: none"> <li>- World's first UHD 240Hz 1ms (GTG) gaming monitor with premium gaming performance features (1000R Curved)</li> <li>- Odyssey Neo that offers a new level of picture quality experience (Mini LED, Quantum HDR2000)</li> </ul> </li> <li><input type="checkbox"/> World's first 1000R large game screen G97NB (55") <ul style="list-style-type: none"> <li>- Offers top-notch immersive experience with a large screen-size without viewing-angle limitations—even near-field viewing angles—via 1000R, 16:9, 55" Big Curved Screen</li> <li>- Provides a new immersive experience, almost like sitting in the cockpit of a space shuttle, by allowing users to rotate the screen vertically and in any direction</li> <li>- Game-exclusive panel that offers a 4K 165Hz refresh rate and 1ms response time</li> </ul> </li> <li><input type="checkbox"/> QD-OLED gaming monitor (G85SB 34") <ul style="list-style-type: none"> <li>- Exquisite expression of various colors with the combination of True RGB self-luminous display and quantum dot technology</li> <li>- Can play games with an extremely fast response time of 0.1ms and clear screen with 175Hz refresh rate</li> <li>- Implemented an all-in-one game streaming discovery platform, including cloud gaming and consoles, with the adoption of the Samsung Gaming Hub</li> </ul> </li> </ul>
Signage ~December 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> LCD-based B2B Smart Signage (LFD, Video Wall, etc.) (49 · 55 · 65 · 75 · 85 · 98")</li> <li><input type="checkbox"/> Indoor/outdoor signage using LED</li> <li><input type="checkbox"/> All-in-one Kiosk (24"), all additional equipment embedded <ul style="list-style-type: none"> <li>- Payment platform for developing Tizen payment module and ordering app, antibacterial finishing</li> </ul> </li> <li><input type="checkbox"/> Flip-edu (75 · 85") interactive feature for education</li> </ul>

DX Division	
Research project	Details
<b>Home appliances</b>	
Refrigerators ~March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> New TMF in North/Latin America <ul style="list-style-type: none"> <li>- Strengthened competitiveness and offered differentiation with large capacity (440L/480L), specialized storage compartments, and new design</li> <li>- Flex Zone (fridge 1°C / chilled -1°C / soft freezing) &amp; Quick Chill Smart Alarm</li> <li>- Strengthened competitiveness with flat door &amp; Bespoke CMF, capacity (20L more), and optimal size</li> <li>- Dual voltage, auto ice maker, water dispenser, Big Box, Hygienic</li> </ul> </li> <li><input type="checkbox"/> 1-Door Premium Kitchen Fit Refrigerator (freezer/fridge/kimchi/wine) <ul style="list-style-type: none"> <li>- Adopted premium Bespoke design and new CMF</li> <li>- Automatic door opening technology</li> <li>- Applied Water &amp; Ice Solution: Auto Fill Pitcher, Dual Auto Ice Maker (cocktail ice, standard ice)</li> </ul> </li> <li><input type="checkbox"/> 177cm one-door built-in fridge enters the European market <ul style="list-style-type: none"> <li>- Expanded lineup of built-in packages</li> <li>- Highest energy rating based on new standards</li> <li>- Secured superior capacity of the indirect cooling system</li> <li>- Differentiated features of fresh storage of food (high-humidity refrigeration) and temperature flexibility (freezer→refrigerator)</li> </ul> </li> <li><input type="checkbox"/> Address replacement demand and new demand for 48" refrigerators in the North American market <ul style="list-style-type: none"> <li>- Large capacity of 27.4cf for a built-in refrigerator</li> <li>- Differentiated Ice &amp; Water Solution (Auto Fill Water Pitcher, Dual Auto Ice Maker)</li> <li>- Soft-closing doors give the product an high-quality, luxurious ambience</li> </ul> </li> </ul>
Washer ~January 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Bespoke washer &amp; dryer <ul style="list-style-type: none"> <li>- Bespoke flat design that perfectly fits into your space</li> <li>- Korea's highest capacity all-in-one Control UX design</li> <li>- AI clothing care (AI tailored washing and drying) from washing to drying</li> <li>- Hygiene management solution from 99.9% sterilization to dehumidification of laundry room</li> </ul> </li> <li><input type="checkbox"/> Agitator washer <ul style="list-style-type: none"> <li>- Entrance to the North American market for Agitator (occupied 50% of the Top Loader market)</li> <li>- Implementation of ActiveWave™ Agitator which enables heavy washing along with the reduction of noise, vibration, and entanglement</li> <li>- Implementation of Active Water Jet which enables pretreating of soiled or heavily stained clothes</li> </ul> </li> <li><input type="checkbox"/> Eco-friendly dryer with new refrigerant for Europe <ul style="list-style-type: none"> <li>- Eco-friendly refrigerant: applied environmentally friendly R290 to reduce GHG emissions</li> <li>- Energy label of A+++: achieved the highest energy rating in Europe</li> <li>- Sensor Dry: senses the degree of dryness during the drying process, capable of automatically adjusting from additional drying to ending the process</li> <li>- Simple UX: improved product usability (delivery of detailed information on drying and customized panel setting)</li> <li>- Hygiene Care: eliminates over 99% of three common types of harmful bacteria (Bacillus pyocyanus, Escherichia coli, and Staphylococcus aureus)</li> </ul> </li> <li><input type="checkbox"/> Grande AI 24kg washer <ul style="list-style-type: none"> <li>- 24kg, Flat Design (glass type)</li> <li>- Features pet-care cycle (removes stains, smell, and allergens)</li> <li>- Applied auto door opening (door opens automatically after the washing cycle ends)</li> </ul> </li> <li><input type="checkbox"/> BESPOKE Grande AI 20kg dryer <ul style="list-style-type: none"> <li>- Largest available and first 20kg dryer in Korean market, flat design</li> <li>- Features pet-care cycle (specialized in removing fur)</li> <li>- Applied auto door opening (door opens automatically after the drying cycle ends)</li> <li>- Added temperature/humidity sensor to provide dehumidification solutions that sense humidity in the laundry room</li> </ul> </li> </ul>

## DX Division

Research project	Details
Air conditioner ~August 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Wind-Free™ Gallery Floor-standing (56.9 · 62.6 · 75.5 · 81.8 · 92.5 m<sup>2</sup>)           <ul style="list-style-type: none"> <li>- Developed next-gen wind-free platform with exceptionally high energy efficiency (56.9 m<sup>2</sup> single duct model achieved energy efficiency grade 2)</li> <li>- Equipped with wind-free panel 1.5 times larger than previous model and strong booster wind</li> <li>- Booster purification: Filter with 99.95% dust collection efficiency, Design resembling that of furniture, fits comfortably into the surroundings</li> </ul> </li> <li><input type="checkbox"/> Wind-Free™ Gallery Wide air conditioner (24.4 · 29.3 · 39.6 · 49.5 m<sup>2</sup>)           <ul style="list-style-type: none"> <li>- Secured cost competitiveness by developing new integrated QMD-based platform, strengthened product competitiveness</li> <li>- 12% larger fans cools air faster</li> <li>- Wind-free ultra-energy-efficient technology saves up to 77% on electricity</li> <li>- PM1.0 wind-free filtration system removing particles as small as ultra-fine dust</li> </ul> </li> <li><input type="checkbox"/> Bespoke Window Fit air conditioner (17m<sup>2</sup>, green/blue/pink/beige/gray)           <ul style="list-style-type: none"> <li>- Convenient self-installation with the integrated indoor/outdoor unit</li> <li>- Strong rotational cooling with double wings which quickly circulate cold air</li> <li>- Twin inverter compressor that enables low noise and vibration level of 37dB, as quiet as a library</li> <li>- Up to 70% lower power consumption in silent mode</li> </ul> </li> <li><input type="checkbox"/> Increased revenue in the European market with an enhanced lineup that adopts the new EHS platform           <ul style="list-style-type: none"> <li>- Low-frequency noise regulation: met limits for noise regulation of each European country, centering on Germany</li> <li>- Reinforced low-temperature performance: full heating performance at -25°C</li> <li>- High-temperature discharged water: discharged water of up to 70°C in a single heat pump cycle</li> <li>- Differentiated design: deep dark color 1 fan outdoor AC unit that harmoniously blends in with the living environment</li> </ul> </li> </ul>
Vacuums ~March 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Bespoke Jet Stick Vacuum (up to 210W suction)           <ul style="list-style-type: none"> <li>- Embedded auto-empty dustbin, smart display of information via LCD Display</li> <li>- Wet Brush dispenses water, thinner cotton-flannel brush</li> </ul> </li> <li><input type="checkbox"/> Jet Bot AI Robot Vacuum           <ul style="list-style-type: none"> <li>- Seamless navigation with the realization of world's best object recognition capability (up to 1 cm<sup>3</sup>) by developing Active 3D sensor and applying it—a world's first</li> <li>- AI autonomous navigation that recognizes house structure and types of objects</li> <li>- Strong suction with jet cyclone and digital inverter motor</li> <li>- Integrated Clean Station which automatically empties dustbin when the Jet Bot starts charging</li> <li>- More convenient cleaning with SmartThings (AI Smart Control)</li> </ul> </li> <li><input type="checkbox"/> Bespoke Slim Stick Vacuum           <ul style="list-style-type: none"> <li>- Up to 150W suction with a strong cyclone and digital inverter mode</li> <li>- Self-standing, convenient emptying of the dustbin without having to bend over (Pop &amp; Shoot)</li> <li>- Easy cleaning without pressure on the wrist (ergonomic design)</li> </ul> </li> <li><input type="checkbox"/> Bespoke Jet AI Vacuum (up to 280W suction)           <ul style="list-style-type: none"> <li>- Continued to enhance suction power and the original POD (Clean Station); increased market share</li> <li>- Enabled world's strongest suction power of up to 280W, which ensures powerful and hygienic cleaning</li> <li>- Auto setting of the optimal cleaning mode and provides maintenance guidance based on self-diagnosis</li> </ul> </li> </ul>
Cooking appliances March 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Bespoke Qooker           <ul style="list-style-type: none"> <li>- Multi-cook function allows cooking multiple dishes with different heat sources, temperatures, and cooking times.</li> <li>- Cook more than one dish and finish at the same time with Multi-cook mode</li> <li>- Collaborated with eight food companies to apply Qooker-exclusive algorithm</li> <li>- Easy automatic cooking with just one scan using SmartThings</li> <li>- Oven interior material changed from enamel to STS for more heat-efficient, sophisticated design.</li> </ul> </li> </ul>
Range hoods February 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Expanded lineup of premium hoods for home           <ul style="list-style-type: none"> <li>- Unparalleled performance compared to existing products               <ul style="list-style-type: none"> <li>• Optimal air flow with a smart monitoring ventilation system equipped with Triple Air Sensor</li> <li>• Industry's strongest suction power of 780CMH; industry's lowest noise (29dB, Quiet Mark certification)</li> </ul> </li> <li>- Improved user convenience by pairing with an electric range and by adopting stainless steel filters with easy-to-clean coatings</li> <li>- Design that reflects various needs of consumers (Bespoke colors)</li> <li>- Entered the B2C market with easy-to-install products and adoption of installment process</li> </ul> </li> </ul>

## DX Division

Research project	Details
Water Purifier March 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Water Purifier for homes <ul style="list-style-type: none"> <li>- Modularized water purifier upgradable and customizable to customer's lifestyle; includes auto-care feature</li> <li>- May be modularized to users' needs (ambient/cold/hot water)</li> <li>- Smart AI care, filter received highest number of NSF certification for tankless water purifier</li> <li>- Bespoke water purifier, customized to users' lifestyle and space</li> </ul> </li> </ul>
Clothing Care Machine ~May 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Shoe Dresser <ul style="list-style-type: none"> <li>- Powerful odor elimination with Air Wash and UV odor decomposing filter</li> <li>- Low temperature, delicate drying to make your everyday shoes a pleasure to wear.</li> <li>- 99.9% sterilization with the application of a Xenon UVC disinfection system—a first for home appliances in Korea</li> <li>- Tailored care and management of various types of shoes with Jet Shoe Tree</li> </ul> </li> </ul>
Inverter dehumidifier May 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ultra-quiet inverter dehumidifier with first-class energy efficiency rating in Korea <ul style="list-style-type: none"> <li>- Fast and strong large-capacity dehumidifier with a wide blade</li> <li>- Smart space care that keeps spaces from bathroom to dressing room pleasant</li> <li>- Dries a wide range of clothing—even delicate items—with swing blade</li> <li>- Simple design and compact size that fits anywhere</li> <li>- Low-noise mode that remains quiet throughout extended hours of use</li> </ul> </li> </ul>
Dishwasher June 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> In-house technology platform that has a competitive edge in the European/Korean markets <ul style="list-style-type: none"> <li>- Fit for Tall Tubs for the European market</li> <li>- Secured competitiveness with top-notch energy/water/low-noise specifications</li> <li>- Strengthened premium experiences via differentiating features, such as an automatic dispenser (for Korean detergents) and a simple UX</li> <li>- Differentiated specifications of Z-wash, Smart, Flexible Basket</li> </ul> </li> </ul>
<b>Mobile eXperience</b>	
Galaxy Foldable ~August 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Z Fold 3 5G (August 2021) <ul style="list-style-type: none"> <li>- Screen: Main display 7.6", cover display 6.2"</li> <li>- 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</li> <li>- Platform (H/W, S/W): 5nm 64-bit octa-core processor, Android 11, One UI 3.1.1</li> <li>- 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</li> <li>- Strengthened durability with the application of Armor Aluminum and tempered glass of Corning Gorilla Glass Victus</li> <li>- Equipped with 7.6" Infinity Flex Display and applied Under Display Camera</li> <li>- Display screen approximately 29% brighter with the new Eco<sup>2</sup> technology</li> <li>- Main/cover display all support 120Hz screen refresh rate</li> <li>- Applied S-pen for the first time for foldables</li> <li>- Supports both top and bottom half of the screen at any angle with Flex mode panel feature even for apps that are not optimized</li> <li>- Supports Multi Active Window, which splits the screen and allows using up to three apps at once</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Z Flip 3 5G (August 2021) <ul style="list-style-type: none"> <li>- Screen: Main display 6.7", cover display 1.9"</li> <li>- Size (W x H x D): (folded) 72.2mm x 86.4mm x 15.9~17.1mm (unfolded) 72.2mm x 166mm x 6.9mm</li> <li>- Platform (H/W, S/W): 5nm 64-bit octa-core processor, Android 11, One UI 3.1.1</li> <li>- 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</li> <li>- Strengthened durability with the application of Armor Aluminum and tempered glass of Corning Gorilla Glass Victus</li> <li>- 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</li> <li>- Enhanced Flex mode: supports Auto Framing, which automatically adjusts the frame according to the number of people within the frame, and Dual Preview</li> <li>- Main display supports 120Hz screen refresh rate</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Z Fold 4 (August 2022) <ul style="list-style-type: none"> <li>- Screen: Main display 7.6", cover display 6.2"</li> <li>- Size (W x H x D): (folded) 155.1mm x 67.1mm x 14.2~15.8mm (unfolded) 155.1mm x 130.1mm x 6.3mm</li> <li>- Platform (H/W, S/W): SM8475, Android 12.0, One UI 4.1.1</li> <li>- Improved camera experience via Nightography picture/video, high-resolution (50M/8K), Space Zoom (30X) lens</li> <li>- Easier and faster multi-tasking with the new Taskbar feature</li> <li>- Easy-to-use Multi window thanks to various entry points</li> <li>- AI-based recommendation of related features after recognition of text from an image</li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Z Flip 4 (August 2022) <ul style="list-style-type: none"> <li>- Screen: Main display 6.7", cover display 1.9"</li> <li>- Size (W x H x D): (folded) 71.9mm x 84.9mm x 15.9–17.1mm (unfolded) 71.9mm x 165.2mm x 6.9mm</li> <li>- Platform (H/W, S/W): SM8475, Android 12.0, One UI 4.1.1</li> <li>- Supports 25W charging and offers 3700mAh battery</li> <li>- Supports FlexCam, optimized for taking pictures/videos from various angles</li> <li>- Easy and quick switch to and manipulation of applications in Flex mode</li> <li>- Expanded the Cover screen function (simple reply, Samsung Wallet platform, increased Quick settings, etc.)</li> </ul> </li> </ul>
Galaxy S ~February 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy S21 5G • S21+ 5G • S21 Ultra 5G (January 2021) <ul style="list-style-type: none"> <li>- Design: Iconic and premium full metal camera housing, bezel-less design</li> <li>- Screen: S21 5G 6.2", S21+ 5G 6.7", S21 Ultra 5G 6.8"</li> <li>- 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</li> <li>- Platform (H/W, S/W): Exynos2100   SDM888, Android 11.0, One UI 3.1</li> <li>- Supports ultra-high speed 5G, Wi-Fi 6E, high-resolution camera <ul style="list-style-type: none"> <li>• Camera: S21 Ultra 108MP, S21+ 64MP, Multi Camera Recording function</li> <li>• Dynamic AMOLED 2X Infinity-O display with maximum adaptive frequency of 120Hz</li> <li>• Easy registration and finding objects synced with SmartTag</li> <li>• Supports Digital Car Key service (S21+ 5G • S21 Ultra 5G only)</li> </ul> </li> <li>- Supports S Pen (S21 Ultra 5G only)</li> </ul> </li> <li><input type="checkbox"/> Galaxy S22 • S22+ • S22 Ultra (February 2022) <ul style="list-style-type: none"> <li>- Design: Enhanced Galaxy Design attractiveness with geometric bold design and integrity on quality</li> <li>- Screen: S22 6.1", S22+ 6.6", S22 Ultra 6.8"</li> <li>- Size (W x H x D): S22 70.6mm x 146.0mm x 7.6 mm, S22+ 75.8mm x 157.4mm x 7.6 mm, S22 Ultra 77.9mm x 163.3mm x 8.9 mm</li> <li>- Platform (H/W, S/W): SM8450   Exynos2200, Android 12.0, One UI 4.1</li> <li>- Strengthened camera video filming and low-light function performance <ul style="list-style-type: none"> <li>• Video: Improved HDR and OIS+AI Stabilizer performance to support rich colors and minimize shaking/jittering</li> <li>• Enhanced low-light performance: Applies Big Pixel sensor and On-device AI algorithm</li> </ul> </li> <li>- Integrated Ultra/Note by equipping with S Pen * Optimized latency : 5.6ms (S21 Ultra) → 2.8ms (S22 Ultra)</li> <li>- Improved outdoor visibility of display * Peak brightness: 1,500nit (S21 Ultra) → 1,750nit (S22 Ultra)</li> <li>- Battery that can be used all-day and 45W ultra-fast charging speed (S22 Ultra/S22+)</li> <li>- Enhanced durability: Adopts Amor AL and Victus+ Glass with a 10% improvement in durability</li> <li>- Improved completion of Galaxy foundation experience <ul style="list-style-type: none"> <li>• One UI 4.1: sophisticated, sensible interaction experience and personal experience of users</li> <li>• Galaxy Eco: improved end-to-end completion and enhanced convenient experience</li> </ul> </li> </ul> </li> </ul>

## DX Division

Research project	Details
	<p><input type="checkbox"/> Galaxy S23 • S23+ • S23 Ultra (February 2023)</p> <ul style="list-style-type: none"> <li>- Design: Ultimate Premium Experience designed for today and beyond           <ul style="list-style-type: none"> <li>* Unrivalled Camera, Ultimate Gaming, Eco-conscious Design</li> </ul> </li> <li>- Screen: S23 6.1", S23+ 6.6", S23 Ultra 6.8"</li> <li>- Size (W x H x D): S23 70.9 x 146.3 x 7.6 mm, 168g, S23+ 76.2 x 157.8 x 7.6 mm, 195g S23 Ultra 78.1 x 163.4 x 8.9 mm, 233g</li> <li>- Platform (H/W, S/W): SM8550   Snapdragon 8 Gen 2, Android 13, One UI 5.1</li> <li>- Enhanced low-light performance based on AI and improved video experience           <ul style="list-style-type: none"> <li>• Capable of expressing precise color and tone in portrait mode even in the dark with improved color solutions leveraging AI-based scene optimization technology</li> <li>• Less camera shake for videos thanks to increased Optical Image Stabilization (OIS) correction angle (S22 Ultra 1.5° → S23 Ultra 3°)</li> </ul> </li> <li>- Offers crisp and clear, high-resolution details and high-resolution camera experience           <ul style="list-style-type: none"> <li>• S23 Ultra adopted ultra-high-resolution 200MP camera</li> <li>• Provides optimal picture quality with auto adjustment of pixel size for sections with different lighting conditions</li> </ul> </li> <li>- Improved basic performance, such as heat dissipation and durability against drops           <ul style="list-style-type: none"> <li>• Offers seamless gaming experience by enhancing heat dissipation performance, including improved power efficiency and revamped heat dissipation structure</li> <li>• Greater drop protection with adoption of Victus 2 Glass with durability enhanced by 21%</li> </ul> </li> <li>- S23 Ultra offers top-notch productivity experience with S-pen           <ul style="list-style-type: none"> <li>• AI-based recommendation of related features after text recognition from an image/video</li> </ul> </li> <li>- Improved connected experience with multiple devices (phone-PC)           <ul style="list-style-type: none"> <li>• Capable of mirroring the smartphone screen on a PC and continuing browsing on the same webpage</li> </ul> </li> <li>- Adds to our sustainability story with the adoption of eco-friendly materials overall from dyes to the actual materials           <ul style="list-style-type: none"> <li>• Packaging box is 100% recycled paper</li> <li>• Adopts recycled PBT resin to bond metal (10%), recycled metal materials adopted in side keys (30%), etc.</li> <li>• Incorporated recycled glass into the front and back glass panels (25%), natural dyes when processing metals, recycled PET films, etc.</li> </ul> </li> <li>- Strengthened privacy and security           <ul style="list-style-type: none"> <li>• Visualization of security status; notification of sensitive information when sharing images; and limiting access to private information when repairing products</li> </ul> </li> </ul>
Galaxy Tab ~February 2022	<p><input type="checkbox"/> Galaxy Tab S7 FE (June 2021)</p> <ul style="list-style-type: none"> <li>- Screen: 12.4" WQXGA (2560x1600)</li> <li>- Size (W x H x D) &amp; weight: 284.8mm x 185.0mm x 6.3mm, 608g (based on the LTE model)</li> <li>- Immersive display with 12.4" large-screen display and slim bezel</li> <li>- Long play time (10,090mAh, up to 13 hours of video play)</li> <li>- Rich sound with the application of Dolby Atmos</li> <li>- Enhanced usability of Samsung Note           <ul style="list-style-type: none"> <li>• Simple conversion of handwriting to text</li> <li>• Direct input with S Pen into the input box</li> </ul> </li> <li>- Enhanced function of PENUP Drawing           <ul style="list-style-type: none"> <li>• Applies layer structure and provides coloring and live drawing</li> </ul> </li> <li>- Lightweight keyboard cover (330g)</li> <li>- Delivery of clear voice with 50% reduction of background noise through 3 Mic</li> <li>- Stronger device connectivity           <ul style="list-style-type: none"> <li>• Second screen: using tablet as a supplementary monitor of PC</li> <li>• Hands off: sending and continuing what you were doing on your phone to your tablet (Internet, Samsung Notes)</li> <li>• Copy &amp; paste: copy &amp; paste of texts and images between Phone-Tablet</li> </ul> </li> <li>- Auto switching: auto-buds switching between Phone-Tablet</li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li>□ Galaxy Tab A8 (December 2021) <ul style="list-style-type: none"> <li>- Screen: 10.5" WUXGA (1920 x 1200)</li> <li>- Size (W x H x D) &amp; weight: 246.8mm x 161.9mm x 6.9mm, 508 g</li> <li>- Platform (H/W, S/W): UniSOC T618(12nm) processor, Android 11, One UI 3</li> <li>- Memory : 3GB + 32GB / 4GB + 64GB / 4GB + 128GB, microSD up to 1TB <ul style="list-style-type: none"> <li>Provides new options of RAM 4GB and ROM 128GB compared to previous model</li> </ul> </li> <li>- Established and applied the Company's Tablet Design ID (Samsung Logo, shape and location of camera, symmetrical sides and front &amp; back), same colors as the Tab S8 Flagship Family (Gray, Silver, Pink Gold)</li> <li>- Applies the Company's standard tablet display ratio of 16:10, provides immersive multimedia experience with 10.5" large-screen display and slim bezel</li> <li>- Supports Dolby Atmos and features Quad Speaker, free load of apps that specialize in contents such as Samsung TV Plus (offers free Live Streaming and VOD)</li> <li>- Supports 2 Split Windows and Pop-up view with Multi-Active Window, enhanced multi-tasking experience with the support of Drag &amp; Split function—applied in Fold3—for the first time for tablets</li> <li>- Improved usability for online classes with the support of Screen Recorder for the first time among Tab A series <ul style="list-style-type: none"> <li>• Wider support of One UI 3.1.1 Galaxy Experience (Copy&amp;Paste, Auto Sync, Auto Switch)</li> </ul> </li> </ul> </li> <li>□ Galaxy Tab S8 · S8+ · S8 Ultra (February 2022) <ul style="list-style-type: none"> <li>- Screen: Tab S8 11" WQXGA+ (2560 x 1600) Tab S8+ 12.4" WQXGA+ (2800 x 1752) Tab S8 Ultra 14.6" WQXGA+ (2960 x 1848)</li> <li>- Size (W x H x D) &amp; weight: Tab S8 253.8mm x 165.3mm x 6.3mm, 503g Tab S8+ 285.0mm x 185.0mm x 5.7mm, 567g Tab S8 Ultra 326.4mm x 208.6mm x 5.5mm, 726g</li> <li>- Platform (H/W, S/W): SM8450 processor, Android 12, One UI 4.1</li> <li>- Memory : 8GB+128GB / 8GB+256GB / 12GB+256GB / 16G+512G, microSD up to 1TB</li> <li>- Enhanced video call experienced <ul style="list-style-type: none"> <li>[Tab S8 Ultra] Provides dual front cameras (12M 80-degrees, 12M 120-degrees) and Auto Framing function</li> <li>[Tab S8+ / Tab S8] Provides 12M 120-degree front camera and Auto Framing function</li> </ul> </li> <li>- Enhanced AP Sustain performance by improving heat sink design (gpu 70%, cpu 25%↑ compared to previous model), enhanced gaming performance</li> <li>- Improved S pen latency (5.6ms → 2.65ms) and optimized prediction algorithm <ul style="list-style-type: none"> <li>Provides seamless and precise writing experience when writing &amp; drawing, just like a real pen, enhancements to lessen the parallax effect</li> </ul> </li> <li>- Enhanced the audio experience of video calls by upgrading 3 MIC noise cancellation performance (3 types of noise cancellation mode)</li> <li>- Equipped with WiFi 6E function—a first for a tablet—and improved big data transmission time between devices</li> <li>- Reduced charging time of Phone Power Share by half compared to the previous model by adopting D2D 15W charging function</li> </ul> </li> </ul>
Galaxy A ~March 2023	<ul style="list-style-type: none"> <li>□ Galaxy A52 LTE · 5G (March 2021) <ul style="list-style-type: none"> <li>- Offers enhanced user experience and increased competitiveness via strengthened core features</li> <li>- Screen: 6.5" FHD+ sAMOLED HID (2,400 x 1,080)</li> <li>- Size (W x H x D): 75.1mm x 159.9mm x 8.4mm</li> <li>- Platform (H/W, S/W): SDM750G (5G)/SDM720G (LTE), Android 11, One UI 3.1</li> <li>- Supreme smooth UX/Dynamic refresh rate and Brightest (6.5" sAMOLED with 120Hz (5G)/90Hz (LTE), 800nit)</li> <li>- High-resolution 64MP Quad Camera (64M OIS/12M UW/5M Depth/5M Macro)</li> <li>- Powerful AP with High Capacity Battery (4,500mAh)</li> </ul> </li> <li>□ Galaxy A72 (March 2021) <ul style="list-style-type: none"> <li>- Offers enhanced user experience and increase competitiveness via strengthened core features</li> <li>- Screen: 6.7" FHD+ sAMOLED HID (2,400 x 1,080)</li> <li>- Size (W x H x D): 77.4mm x 165.0mm x 8.4mm</li> <li>- Platform (H/W, S/W): SDM720G, Android 11, One UI 3.1</li> <li>- High refresh Rate Brightest Display (6.7" FHD+ sAMOLED with 90Hz, 800nit)</li> <li>- Advanced High-res/Multi Camera, More detail with blur-less (64M OIS/12M UW/8M Tele/5M Macro)</li> <li>- Long-lasting Battery with bigger capacity (5,000mAh)</li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li>□ Galaxy A32 LTE + 5G (LTE: March 2021; 5G: January 2021)           <ul style="list-style-type: none"> <li>- Offer enhanced user experience and increase competitiveness by strengthening core features</li> <li>- Screen: LTE 6.4" FHD+ sAMOLED (2,400 x 1,080)/5G 6.5" HD+ TFT (1,600 x 720)</li> <li>- Size (W x H x D): LTE 73.6mm x 158.9mm x 8.4mm/5G 76.1mm x 164.2mm x 9.1mm</li> <li>- Platform (H/W, S/W): LTE MT6769T/5G MT6853V, Android 11, One UI 3.1</li> <li>- LTE               <ul style="list-style-type: none"> <li>• Brightest Display: 800nit Super AMOLED</li> <li>• High Resolution Camera: 64MP Quad (64M W/8M UW/5M Macro/5M Depth)</li> <li>• High Capacity Battery: 5,000mAh</li> </ul> </li> <li>- 5G               <ul style="list-style-type: none"> <li>• Rich Camera Experience of 48MP Quad, Penta Mode Camera (48M W/8M UW/5M Macro/2M Depth)</li> </ul> </li> <li>- High Capacity Battery: 5000mAh</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy Quantum2 A82 (April 2021)           <ul style="list-style-type: none"> <li>- Screen: 6.7" QHD+ (3,200 x 1,440)</li> <li>- Size (W x H x D) &amp; weight: 161.9mm x 73.8mm x 8.1mm, 176g</li> <li>- Platform (H/W, S/W): SDM855+, Android 11, One UI 3.1</li> <li>- Applied QRNG security chip set</li> <li>- Supports expansive large-screen and smooth screen transition of 120Hz               <ul style="list-style-type: none"> <li>• Powerful camera that enables photographing on a professional level (ultra-wide 12MP, main 64MP, close-up 5MP)</li> </ul> </li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A03-Core (December 2021)           <ul style="list-style-type: none"> <li>- Screen: 6.5" HD+(1480 x 720) TFT 60Hz</li> <li>- Size (W x H x D) &amp; weight: 164.2mm x 75.9mm x 9.1mm, 211g</li> <li>- Platform (H/W, S/W): 28nm octa-core processor, Android 11(Android GO)               <ul style="list-style-type: none"> <li>• Enhanced CPU performance compared to previous model A01-Core (28nm quad-core processor)</li> </ul> </li> <li>- Highly price efficient product that applies large-screen/high-capacity battery to address the entry market</li> <li>- Enhanced display (5.3"→6.5" HD+) and battery (3,000→5,000mAh) compared to previous model A01-Core</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A23 (March 2022)           <ul style="list-style-type: none"> <li>- Screen: 6.6" FHD+ (2408 x 1080) 90Hz</li> <li>- Size (W x H x D) &amp; weight: 76.9mm x 165.4mm x 8.4mm, 195g</li> <li>- Platform (H/W, S/W): SDM680, Android 12, One UI 4.1</li> <li>- 6.6" FHD+ display, supports 90Hz screen refresh rate (previous model: A22 6.4" HD+ 90Hz)</li> <li>- Vivid pictures in the dark without camera shake with the adoption of high-definition 50MP OIS camera               <ul style="list-style-type: none"> <li>• Adoption of high-capacity 5,000mAh battery and supports 25W ultra-fast charging</li> </ul> </li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A13 5G (January 2022)           <ul style="list-style-type: none"> <li>- Screen: 6.5" HD+ (1600 x 720) 90Hz</li> <li>- Size (W x H x D) &amp; weight: 76.5mm x 164.5mm x 8.8mm, 195g</li> <li>- 6.5" HD+ display, supports 90Hz screen refresh rate (previous model: A12 6.5" HD+ 60Hz)</li> <li>- Super-low priced 5G model for LTE user migration and expansion of the 5G market</li> <li>- Strengthened AP (5G) AP (MT6765 → MT6833v) to address entry market</li> <li>- Higher definition of pictures compared to the previous model (A12 16MP) with the application of 50MP camera</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A13 LTE (March 2022)           <ul style="list-style-type: none"> <li>- Screen: 6.6" FHD+ (2400 x 1080) 60Hz</li> <li>- Size (W x H x D) &amp; weight: 76.4mm x 165.1mm x 8.8mm, 195g</li> <li>- Platform (H/W, S/W): 8nm octa-core processor, Android 12, One UI Core 4.1</li> <li>- Provides better large screen experience compared to the previous model (A12 6.5" HD+) by adopting 6.6" FHD+ display</li> <li>- Higher definition of pictures compared to the previous model (A12 48MP) by adopting 50MP camera</li> <li>- Able to use up to two days on a single charge by applying 5,000mAh high-capacity battery and AI Power mode</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A73 5G (April 2022)           <ul style="list-style-type: none"> <li>- Screen: 6.7" FHD+ Super AMOLED+ (1080 x 2400) 120Hz</li> <li>- Size (W x H x D) &amp; weight: 76.1mm x 163.7mm x 7.6mm, 181g</li> <li>- Platform (H/W, S/W): SDM778G, Android 12, One UI 4.1</li> <li>- Vivid pictures in the dark without camera shake with the support of 108MP high-resolution picture quality and OIS</li> <li>- Soft and clear screen experience with the adoption of high refresh rate of 120Hz and sAMOLED display</li> <li>- Adopts 5,000mAh high-capacity battery (2-day battery life) and supports 25W ultra-fast charging speed</li> <li>- Offers strong durability with the adoption of Gorilla Glass 5 and IP67 rating</li> <li>- Provides the latest flagship experience with the support of One UI 4.1</li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li>□ Galaxy A53 5G (April 2022) <ul style="list-style-type: none"> <li>- Screen: 6.5" FHD+ Super AMOLED (1080 x 2400) 120Hz</li> <li>- Size (W x H x D) &amp; weight: 74.8mm x 159.6mm x 8.1mm, 189g</li> <li>- Platform (H/W, S/W): Exynos1280, Android 12, One UI 4.1</li> <li>- 8.1t slim design and 5,000 mAh high-capacity battery (0.3t↓, 500 mAh↑ compared to previous model)</li> <li>- Soft and clear screen experience provided by the combination of high refresh rate of 120Hz and fast response speed of sAMOLED</li> <li>- Enhanced glass durability with the adoption of Gorilla Glass 5</li> <li>- Provides the latest flagship experience with the support of One UI 4.1</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A33 5G (April 2022) <ul style="list-style-type: none"> <li>- Screen: 6.4" FHD+ Super AMOLED (1080 x 2400) 90Hz</li> <li>- Size (W x H x D) &amp; weight: 74.0mm x 159.7mm x 8.1mm, 186g</li> <li>- Platform (H/W, S/W): Exynos1280, Android 12, One UI 4.1</li> <li>- Delivers enhanced screen experience with the support of 6.4" FHD+ display and 90Hz (previous model: A32-5G HD+ TFT 60Hz)</li> <li>- High-definition pictures without camera shake with the adoption of 48MP OIS camera</li> <li>- Enhanced durability with the adoption of Gorilla Glass 5 and support of IP67 rating for dust and water resistance</li> <li>- Adopts 5,000 mAh high-capacity battery (2-day battery) and supports 25W ultra-fast charging speed</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A23 5G (September 2022) <ul style="list-style-type: none"> <li>- Screen: 6.6" FHD+ TFT LCD (1080 x 2400) 120Hz</li> <li>- Size (W x H x D) &amp; weight: 76.9mm x 165.4mm x 8.4mm, 197g</li> <li>- Platform (H/W, S/W): SDM695, Android 12, One UI 4.1</li> <li>- Upgraded AP performance compared to previous model (A22-5G MT6833V) with the application of SDM695</li> <li>- High-resolution pictures without camera shake with the adoption of 50MP OIS camera (OIS is not supported in the North America region)</li> <li>- Provides enhanced large-screen experience compared to previous model (A22-5G 6.6" HD+ 90Hz) by adopting 6.6" FHD+</li> <li>- Applies 5,000mAh large-capacity battery (2-day battery) and supports 25W ultra-fast charging</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A14 5G (January 2023) <ul style="list-style-type: none"> <li>- Screen: 6.6" FHD+ TFT LCD (2408 x 1080) 90Hz</li> <li>- Size (W x H x D) &amp; weight: 78.0 x 167.7 x 9.1mm, 205g</li> <li>- Platform(H/W, S/W) : MT6833V/Exynos1330, Android 13, One UI core 5.1</li> <li>- High-resolution pictures (5MP → 13MP) with adoption of higher spec front camera compared to previous model (A13-5G)</li> <li>- Enhanced screen experience compared to previous model (A13-5G 6.5" HD+) with adoption of 6.6" FHD+ large-screen display</li> <li>- Applies 5,000mAh large-capacity battery</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A54 5G (March 2023) <ul style="list-style-type: none"> <li>- Screen: 6.4" FHD+ Super AMOLED (2340 x 1080) 19.5:9 120Hz</li> <li>- Size (W x H x D) &amp; weight: 76.7 x 158.2 x 8.2mm, 202 g</li> <li>- Platform (H/W, S/W) : Exynos1380, Android 13, One UI 5.1</li> <li>- Improved visibility through enhanced performance of AP picture quality, fine-tuning by light condition, and peak brightness of 1,000nit</li> <li>- Maximized performance by offering optimal refresh rate of 120Hz and boosted battery efficiency</li> <li>- Provides rich haptics experience thanks to elaborate adjustment of linear motor vibration</li> <li>- Enhanced balanced design and premium CMF (adopts 6.4", 19.5:9)</li> <li>- Offers the latest flagship experience with One UI 5.1</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy A34 5G (March 2023) <ul style="list-style-type: none"> <li>- Screen: 6.6" FHD+ Super AMOLED (2340 x 1080) 120Hz</li> <li>- Size (W x H x D) &amp; weight: 78.1 x 161.3 x 8.2mm, 199g</li> <li>- Platform (H/W, S/W) : MT6877V, Android 13, One UI 5.1</li> <li>- Offers enhanced screen experience by featuring 6.6" FHD+, 1,000nit brightness, and 120Hz refresh rate</li> <li>- High-resolution pictures without camera shake with adoption of 48MP OIS camera</li> <li>- Equipped with a linear motor, which provides haptics experience of a flagship model</li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li>□ Galaxy A14 (March 2023) <ul style="list-style-type: none"> <li>- Screen: 6.6" FHD+ TFT LCD (2408 x 1080) 60Hz</li> <li>- Size (W x H x D) &amp; weight: 78.0 x 167.7 x 9.1mm, 201g</li> <li>- Platform(H/W, S/W) : Exynos850/MT6769V, Android 13, One UI core 5.1</li> <li>- Offers enhanced selfie experience (8MP → 13MP) with adoption of higher spec front camera compared to previous model (A13)</li> <li>- Applies 5,000mAh large-capacity battery</li> </ul> </li> </ul>
Galaxy Book ~February 2023	<ul style="list-style-type: none"> <li>□ Galaxy Book Go (April 2021) <ul style="list-style-type: none"> <li>- Screen: 14" FHD (1920 x 1080)</li> <li>- Size (W x H x D) &amp; weight: 323.9mm x 224.8mm x 14.9mm, 1,380g</li> <li>- Platform: 2nd-generation Snapdragon 7C, Windows 10</li> <li>- Supports LTE that enables Internet anywhere anytime</li> <li>- Slim design optimized for portability (14.9mm thick)</li> <li>- Rich sound with the application of Dolby Atmos</li> <li>- Long play time (up to 18 hours of battery life)</li> <li>- Stronger connectivity between Tablet-Phone <ul style="list-style-type: none"> <li>• Quick Share: easy share of files between phone and tablet</li> <li>• Second Screen: using tablet as a supplementary monitor of PC</li> <li>• Galaxy Book Smart Switch: simple sending of data from the previous notebook</li> <li>• SmartThings: syncing smart devices</li> </ul> </li> </ul> </li> <li>□ Galaxy Book2 Pro 360 (April 2022) <ul style="list-style-type: none"> <li>- Screen: 15.6" FHD Super AMOLED (16:9), up to 500nit (HDR), Color Volume 120% 13.3" FHD Super AMOLED (16:9), up to 500nit (HDR), Color Volume 120%</li> <li>- Size (W x H x D) &amp; weight: 15.6" 354.85 x 227.97 x 11.9mm, 1.41kg 13.3" 302.5 x 202 x 11.5 mm, 1.04kg</li> <li>- Platform, OS: 12th Gen Intel CPU (EVO Verified by Intel), Windows 11</li> <li>- sAMOLED: Default 370nit/HDR 500nit, Color volume 120%</li> <li>- S Pen &amp; Touchscreen support</li> <li>- 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen)</li> <li>- SSD: Gen4 SSD, Expendable SSD (M.2 2230)</li> <li>- Supports WiFi 6E</li> <li>- Battery: 15.6" 68Wh (21hrs), 13.3" 63Wh (21hrs)</li> <li>- Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, etc. <ul style="list-style-type: none"> <li>• QR Sign-in: logs into Galaxy Book with a QR scan linked to the account on your phone</li> <li>• Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software</li> </ul> </li> </ul> </li> <li>□ Galaxy Book2 Pro (April 2022) <ul style="list-style-type: none"> <li>- Screen: 15.6" FHD AMOLED (16:9), up to 500nit (HDR), Color Volume 120% 13.3" FHD AMOLED (16:9), up to 500nit (HDR), Color Volume 120%</li> <li>- Size (W x H x D) &amp; weight: 15.6" 355.4 x 225.8 x 11.7mm, 1.11kg 13.3" 304.4 x 199.8 x 11.2mm, 0.87kg</li> <li>- Platform, OS: 12th Gen Intel CPU (EVO Verified by Intel), Windows 11</li> <li>- AMOLED: Default 400nit/HDR 500nit, Color volume 120%</li> <li>- 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen)</li> <li>- SSD: Gen4 SSD, Expendable SSD (15.6" Only, M.2 2280)</li> <li>- Supports WiFi 6E, 5G Sub6 (15.6" Only)</li> <li>- Battery: 15.6" 68Wh (21hrs), 13.3" 63Wh (21hrs)</li> <li>- Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, etc. <ul style="list-style-type: none"> <li>• QR Sign-in: logs into Galaxy Book with a QR scan linked to the account on your phone</li> <li>• Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software</li> </ul> </li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li>□ Galaxy Book2 Go 5G (December 2022) <ul style="list-style-type: none"> <li>- Screen: 14" IPS (1920 x 1080)</li> <li>- Size (W x H x D): 323.6mm x 224.8mm x 15.5mm</li> <li>- Platform: WoA 7C+ Gen3, Window 11</li> <li>- Developed Mass WoA product adopting 7C+ Gen3 (CPU 63%↑, GPU 102%↑ compared to 7C Gen2)</li> <li>- Improved picture quality of display (TN →IPS)</li> <li>- Supports WiFi 6E, 5G Sub6</li> <li>- Adopted 5G model for the mass market which supports ENDC/eSIM</li> <li>- Supports 45W charging</li> <li>- Completed eight tests from the MIL-STD-810H certification <ul style="list-style-type: none"> <li>• Shock, high/low temperature, thermal shock, dust, vibration, low pressure, humidity</li> </ul> </li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy Book2 Pro 360 (December 2022) <ul style="list-style-type: none"> <li>- Screen: 13.3" FHD AMOLED (16:9), Touch Screen, Color Volume (DCI-P3) 100%, S Pen</li> <li>- Size (W x H x D) &amp; weight: 13.3" 302.5 x 202.0 x 11.5mm, 1.04kg</li> <li>- Platform, OS: Qualcomm Snapdragon 8cx Gen3, Windows 11 Home</li> <li>- AMOLED: 13.3" FHD Super AMOLED (16:9), Color Volume (DCI-P3) 100%, up to 370nit, S Pen</li> <li>- Speakers: Stereo 2 x 4W (Smart AMP), AKG, Dolby Atmos</li> <li>- SSD: eUFS on board, 256GB</li> <li>- WiFi 6E (802.11ax)</li> <li>- Battery: 63Wh (Video Play 35hrs↑)</li> <li>- Galaxy ecosystem: Smart Switch, Samsung Account, Samsung Apps, Keyboard &amp; Touch Pad Sharing between Galaxy devices</li> <li>- Security: fingerprint recognition, Secured Core PC (Level 3, H/W &amp; F/W Protection)</li> <li>- AI: Noise Reduction, Video Call with Neural Engine</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy Book3 Ultra (February 2023) <ul style="list-style-type: none"> <li>- Screen: 16.0" OLED 120Hz, 370nit/500nit, 16:10 (2880 x 1800, 3K)</li> <li>- Size (W x D x H): 355.4 x 250.5 x 16.5mm, 1.79kg,</li> <li>- Intel RPL-H i7/i9, Win 11, LPDDR5, Nvidia® RTX 4050/4070, 76W Battery, FHD MIPI Camera, A/C/D AI, B Glass, TA 100W</li> <li>- Adopts 13th Gen Intel® Core™ H-series mobile processor and next-generation Nvidia® GeForce RTX™ 40 Series graphics</li> <li>- 3K high-resolution display that adopts WQXGA+; color volume 120%</li> <li>- Touch pad 39% larger in size (compared to Galaxy Book 2 Pro 33.7 cm / 39.6cm)</li> <li>- Fast charging speed of 100W; charges 55% of battery in 30 minutes</li> <li>- Quad Speaker: features AKG and Dolby Atmos</li> <li>- Supports Galaxy Ecosystem <ul style="list-style-type: none"> <li>• Multi Control: capable of using keyboard and mouse on a smartphone and a tablet; can transfer files or copy and paste files and images between devices</li> <li>• Second Screen: using Galaxy Tab as a dual monitor; capable of extending or replicating PC screen</li> <li>• Quick Share: wireless file sharing between Galaxy devices, such as phone and tablet</li> </ul> </li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>□ Galaxy Book3 Pro 360 (February 2023) <ul style="list-style-type: none"> <li>- Screen: 16.0" WQXGA+ AMOLED (16:10) 2880 x 1800, Touch Screen, DCI-P3 100%, S Pen</li> <li>- Size (W x H x D) &amp; weight: 16.0" 355.4 x 252.2 x 12.8mm, 1.69kg</li> <li>- Platform, OS: Intel 13th Gen CPU (EVO Verified by Intel), Windows 11</li> <li>- Dynamic AMOLED 2X: 3K (2880x1800), 500nit (HDR), 120Hz, DCI-P3 120%</li> <li>- S Pen &amp; Touchscreen support</li> <li>- 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen)</li> <li>- Quad SPK (AKG/Dolby, Max 5Wx2, 2Wx2), Studio Grade Dual Mic</li> <li>- SSD: Gen4 SSD</li> <li>- Supports WiFi 6E</li> <li>- Battery: 76Wh</li> <li>- Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, Samsung Pass, etc.</li> <li>- Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software</li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Book3 Pro (February 2023) <ul style="list-style-type: none"> <li>- Screen: 16" WQXGA+ AMOLED (16:10), up to 500nit(HDR), 120Hz, DCI-P3 120% <ul style="list-style-type: none"> <li>14" WQXGA+ AMOLED (16:10), up to 500nit(HDR), 120Hz, DCI-P3 120%</li> </ul> </li> <li>- Size (W x H x D) &amp; weight: 16" 355.4 x 250.4 x 12.5mm, 1.56kg 14" 313.3 x 223.8 x 11.3mm, 1.17kg</li> <li>- Platform, OS: Intel 13th Gen CPU (EVO Verified by Intel), Windows 11</li> <li>- Dynamic AMOLED 2X: 3K (2880 x 1800), 500nit (HDR), 120Hz, DCI-P3 120%</li> <li>- 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen)</li> <li>- Quad SPK (AKG/Dolby, Max 5Wx2, 2Wx2), Studio Grade Dual Mic</li> <li>- SSD: Gen4 SSD, Expendable SSD (M.2 2280)</li> <li>- Supports WiFi 6E</li> <li>- Battery: 16" 76Wh, 14" 63Wh</li> <li>- Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, Samsung Pass, etc.</li> <li>- Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Book3 360 (February 2023) <ul style="list-style-type: none"> <li>- Screen: 15.6" FHD Super AMOLED (16:9), up to 500nit (HDR), DCI-P3 120% <ul style="list-style-type: none"> <li>13.3" FHD Super AMOLED (16:9), up to 500nit (HDR), DCI-P3 120%</li> </ul> </li> <li>- Size (W x H x D) &amp; weight: 15.6" 355.4 x 228.0 x 13.7mm, 1.46kg 13.3" 304.4 x 202.0 x 12.9 mm, 1.16kg</li> <li>- Platform, OS: Intel 13th Gen CPU (EVO Verified by Intel), Windows 11</li> <li>- sAMOLED: 1080p FHD, 500nit (HDR), 60Hz, DCI-P3 120%</li> <li>- S Pen &amp; Touchscreen support</li> <li>- 1080p FHD Camera (87-degree wide angle, supports Auto Framing, which recognizes users and adjusts them to the center of the screen)</li> <li>- Stereo SPK (Dolby, 2Wx2), Studio Grade Dual Mic</li> <li>- SSD: Gen4 DRAM-less SSD, Expendable SSD (15.6")</li> <li>- Supports WiFi 6E</li> <li>- Battery: 15.6" 68Wh, 13.3" 61.1Wh</li> <li>- Galaxy Apps: Quick Share, 2nd Screen, Multi-Control, Samsung Pass, etc.</li> <li>- Security: supports Secured-Core PC with enhanced security for each stage for hardware, firmware, and software</li> </ul> </li> </ul>
Galaxy Watch ~August 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Watch4 &amp; Galaxy Watch4 Classic (August 2021) <ul style="list-style-type: none"> <li>- 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)</li> <li>- 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</li> <li>- Platform (H/W, S/W): AP Exynos W920 (5nm 64-bit Dual-Core), Wear OS Powered By Samsung, One UI Watch or Wear OS 3.0</li> <li>- Memory: improved performance and increased storage with 1.5GB RAM + 16GB ROM</li> <li>- Higher resolution 330 ppi display</li> <li>- Pursuing differentiation by featuring body composition measurement for the first time and enhancing usability</li> <li>- Advanced sleep tracking, including blood oxygen level measurement and snore detection</li> <li>- Wider app ecosystem and enhanced sync experience based on Wear OS <ul style="list-style-type: none"> <li>• Provides key services of Google, including Play Store/Google Map/YT Music</li> <li>• Supports specialized fitness apps and other various service apps</li> </ul> </li> </ul> </li> </ul>

## DX Division

Research project	Details
	<p><input type="checkbox"/> Galaxy Watch5 &amp; Galaxy Watch5 Pro (August 2022)</p> <ul style="list-style-type: none"> <li>- Display: Watch5 Pro (46mm) : 34.6mm AMOLED (450 x 450) 330PPI</li> <li>    Watch5 (44mm) : 34.6mm AMOLED (450 x 450) 330PPI</li> <li>    Watch5 (40mm) : 30.4mm AMOLED (396 x 396) 330PPI</li> <li>- Size (W x H x D) &amp; weight: Watch5 Pro (46mm) → 45.4 x 45.4 x 10.5 mm, 46.5g</li> <li>    Watch5 (44mm) → 44.4 x 43.3 x 9.8 mm, 33.5g</li> <li>    Watch5 (40mm) → 40.4 x 39.3 x 9.8 mm, 28.7g</li> <li>- Platform (H/W, S/W): Exynos W920, Wear OS Powered by Samsung (Wear OS 3.5)</li> <li>- Signature circular design with adoption of sapphire crystal glass</li> <li>- Enhanced integrated health monitoring function equipped with the advanced BioActive Sensor <ul style="list-style-type: none"> <li>• Improved accuracy of body composition, heart rate, blood pressure, and ECG; and advanced sleep monitoring function</li> </ul> </li> <li>- Equipped with One UI Watch 4.5 based on Wear OS, which enables various Google mobile services and apps</li> <li>- Premium titanium body; optimized for outdoor activities with enhanced GPS tracking features (Watch5 Pro) <ul style="list-style-type: none"> <li>• Enhanced performance and durability for better utilization in outdoor activities, such as hiking and cycling</li> <li>• Provides Magnetic D-Buckle Sport Band, which offers better durability, convenience, and style</li> <li>• Save and share workout journey using Route Workout and GPS Exchange Format (GPX) files</li> <li>• Provides turn-by-turn navigation along previous routes through the Track Back feature</li> <li>• Enables lengthy use for outdoor activities via the adoption of large-capacity battery (590mAh)</li> </ul> </li> </ul>
Galaxy buds ~August 2022	<p><input type="checkbox"/> Galaxy Buds Pro (January 2021)</p> <ul style="list-style-type: none"> <li>- Design: Premium TWS, in-ear type with Intelligent ANC feature</li> <li>- Size (W x H x D): (earbuds) 20.5 x 19.5 x 20.8mm, (cradle) 50 x 50.2 x 27.8mm</li> <li>- Platform (H/W, S/W): BCM43015, RTOS</li> <li>- 2Way (woofer + tweeter) 11mm speaker offers enhanced sound quality <ul style="list-style-type: none"> <li>• High-quality phone call sound with 3 mics and accelerometer (voice pickup sensor)</li> <li>• In-ear type, Intelligent ANC and voice detect function instantly switches from ANC to Ambient sound when it hears your voice</li> <li>• 3D Audio provides a truly immersive experience resembling that of a movie theater</li> </ul> </li> <li>- IPx7-level water resistant</li> </ul> <p><input type="checkbox"/> Galaxy Buds 2 (August 2021)</p> <ul style="list-style-type: none"> <li>- Enhanced competitiveness of the Buds mass-market model by enhancing basic functions and adding ANC</li> <li>- 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</li> <li>- BES2500 ZP-83 (BT + Codec + Flash) new low-power management solution* <ul style="list-style-type: none"> <li>• Provides ANC</li> <li>• Play time of up to 29 hours (based on streaming, with ANC off)</li> <li>• Optimized RF frequency performance by applying integrated Touch + BT Antenna FPCB</li> <li>• Enhanced audio performance of canal-type wireless earbuds <ul style="list-style-type: none"> <li>• Applied algorithm that maximizes noise cancelling performance by utilizing DNN (DNN + 3-Mic +VPU) <ul style="list-style-type: none"> <li>* DNN: Deep Neural Network , VPU: Voice Pickup Unit</li> </ul> </li> <li>• Improved latency of switching to Ambient Sound Mode (3.2ms→0.65ms)</li> <li>• Better low frequency sounds by applying new materials to the woofer cone</li> <li>• Better noise cancelling of the microphone with the adoption of flawless microphone</li> <li>• Enhanced ANC and sound quality by changing the density of the ventilation duct and improving the pipe conduit of feedback mic</li> <li>• Reduced wind noise by maximizing and optimizing the location of the chamber space of the microphone</li> </ul> </li> </ul> </li> </ul>

## DX Division

Research project	Details
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Galaxy Buds 2 Pro (August 2022) <ul style="list-style-type: none"> <li>- Kernel-type premium TWS that offers high-quality 24bit Hi-Fi audio and comfortable fit</li> <li>- Size (W x H x D): Earbuds 21.6mm x 19.9mm x 18.7mm Cradle 50.2mm x 50.1mm x 27.7mm</li> <li>- Platform (H/W, S/W): BES2700YP 1Chip solution, RTOS <ul style="list-style-type: none"> <li>• First Samsung Buds to apply 24bit/48kHz Hi-Fi technologies to offer a high-quality audio experience by minimizing loss of sound quality of the original recording; Intelligence ANC which adopts All High-SNR MIC, noise cancelling solution, and voice detect technology</li> <li>• Strengthened listening experience of the immersive 360 Audio feature via multi-channel audio and enhanced technology that tracks head movements</li> <li>• Provides clear and upgraded call quality through improved VPU and personalized beamforming technology</li> </ul> </li> <li>- Offers comfortable and stable fit thanks to the ergonomic design <ul style="list-style-type: none"> <li>• Improved fit through smaller size—15% size reduction compared to previous model—and enhanced structure of vent holes</li> </ul> </li> <li>- Strengthened user experience via easy connection between Galaxy Devices <ul style="list-style-type: none"> <li>• Expanded the Auto Switch feature from smartphones, tablets, and watches to TVs, and the transition between devices is made easier and faster</li> </ul> </li> </ul> </li> </ul>
<b>Network</b>	
RAN S/W Package–June 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> SVR21B NR vDU SW package (June 2021) <ul style="list-style-type: none"> <li>- TDD-based C-Band vDU <ul style="list-style-type: none"> <li>• Flexible base station upgrade without H/W change and resource allocation</li> </ul> </li> </ul> </li> </ul> <p>* vDU (virtual DU): realizing the function of 5G base station by developing commercial server-based S/W</p>
Base stations February 2021–November 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Developed MMU Beam Forming SoC (February 2021) <ul style="list-style-type: none"> <li>- SoC performs functions that Beam Forming FPGA, within MMU board, performs</li> <li>- 30% more power efficient than previous model (Maximum power consumption: less than 40W)</li> </ul> </li> <li><input type="checkbox"/> Developed 5 types of ORAN* RU for the US (September 2021) <ul style="list-style-type: none"> <li>- Defined DU-RU standard interface, which allows to connect any vendor DU to any vendor RU</li> <li>- AWS/PCS, two types of 700/850 4T4R 40W, two types of 320W, C-Band 8T8R 320W</li> </ul> </li> <li><input type="checkbox"/> AWS/PCS Dual Band 16T16R FDD MMU for North America (October 2021) <ul style="list-style-type: none"> <li>- The Company's first commercialized 16T16R FDD dual band MMU product that applies our in-house-developed chip</li> </ul> </li> <li><input type="checkbox"/> Domestic 3.5GHz NR 32T32R TDD MMU (February 2022) <ul style="list-style-type: none"> <li>- Applied Mechanical PSA (phase shift antenna) for the first time <ul style="list-style-type: none"> <li>* Automatically controls the antenna angle (tilt 0-12°) inside the MMU with a motor</li> </ul> </li> </ul> </li> <li><input type="checkbox"/> Developed high-performance RFIC + DFE integrated chip (April 2022) <ul style="list-style-type: none"> <li>* RFIC (Radio Frequency Integrated Circuit): high-frequency integrated circuit suitable for wireless communication</li> <li>* DFE (Digital Front End): last stage of digital signal processing for communication</li> </ul> </li> <li><input type="checkbox"/> Two types of FDD RU for Dish (Dual Band/Tri Band RU) (September 2022) <ul style="list-style-type: none"> <li>- Developed 5G FDD RU product that complies with the O-RAN standard and supports multiple frequency bands at the same time</li> </ul> </li> </ul> <p>* frequency supported by RU: n71(600MHz), n29(700MHz), n66(AWS: 1.7GHz/2.1GHz), n70(AWS: 1.7GHz/1.9GHz)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Gen.3 Dual Band NR 2T2R AU (October 2022) <ul style="list-style-type: none"> <li>- Developed the world's first Dual Band (28GHz+39GHz) AU</li> <li>- Upgraded product performance by increasing output and capacity twofold with the same size compared to the existing 2nd generation AU</li> </ul> </li> <li><input type="checkbox"/> Domestic 3.5GHz NR 64T64R MMU (November 2022) <ul style="list-style-type: none"> <li>- Developed 64T64R Massive MIMO MMU, which was commercialized in the domestic market for the first time</li> <li>- Increased antenna elements twofold and output by 2.7 times compared to the existing 32T32R MMU (old model) for the domestic market</li> </ul> </li> <li><input type="checkbox"/> 3.5GHz CBRS NR Strand Smallcell (March 2023) <ul style="list-style-type: none"> <li>- Developed Strand Small Cell (small cell solution designed to be installed on cables) for the first commercial use</li> <li>- Cell solution that integrates baseband, radio, and antenna into a single form factor</li> <li>- Equipped with the Company's newest in-house chipset—2nd generation 5G modem SoC—and its small size enables installation on cables</li> </ul> </li> </ul>

DS Division	
Research project	Details
<b>Memory</b>	
DRAM for mobile November 2021–October 2022	<ul style="list-style-type: none"> <li>□ Development of LPDDR5X DRAM <ul style="list-style-type: none"> <li>- Improved speed by over 30% and power efficiency by approximately 20% compared to previous model</li> <li>- Based on 14nm; expansion of application areas that use high performance, low power consumption memory from mobile to server and automotives, with expansion to up to 64GB per memory package</li> <li>- Verified the industry-leading operating speed (8.5Gbps) by mounting the 8GB LPDDR5X DRAM package on Qualcomm's Snapdragon mobile platform</li> </ul> </li> </ul>
DRAM for server March 2021–December 2022	<ul style="list-style-type: none"> <li>□ Development of high-capacity DDR5 memory applying HKMG process—an industry first <ul style="list-style-type: none"> <li>- Realization of 512GB DDR5 module with the application of High-K Metal Gate and 8-stack TSV</li> <li>- Reduced power consumption by around 13% and more than double performance compared to the existing process</li> <li>- Planning to apply it in the next-generation computing, super computers, and high capacity data centers</li> </ul> </li> <li>□ Development of the highly advanced 12nm-class DRAM <ul style="list-style-type: none"> <li>- Developed industry's first 12nm-class 16Gb DDR5 DRAM; offers high-performance and low-power, which are optimized for the next-generation computing services</li> <li>- Reduced power consumption by approximately 23% and enhanced productivity by approximately 20% compared to the existing model</li> <li>- Upon mass production in 2023, it is expected to provide memory solutions optimized for our customers' next-generation systems and to expand application areas in datacenters, AI, next-generation computing, etc.</li> </ul> </li> </ul>
Graphic DRAM July 2022–November 2022	<ul style="list-style-type: none"> <li>□ Development of GDDR6 DRAM, industry's one of the fastest graphic DRAMs <ul style="list-style-type: none"> <li>- First in the industry to deliver speeds up to 24Gbps by applying 3rd generation 10nm-class (1z) process</li> <li>- Met customer needs by enhancing performance by more than 30% compared to the previous product, leading to processing speeds of up to 1.1TB per second; supporting operation voltage of 1.1V; and improving power efficiency by 20%</li> <li>- Secured compatibility by being fully compliant with specifications of JEDEC, an international semiconductor standardization body</li> <li>- Expanded applications, including next-generation graphics cards, AI, and HPC</li> </ul> </li> <li>□ Development of GDDR6W, graphics memory that applies advanced packaging technology <ul style="list-style-type: none"> <li>- GDDR6W is manufactured by introducing Fan-Out Wafer-Level Packaging (FOWLP) technology—a construction and stacking technology—without developing a new memory die</li> <li>- Increased performance (bandwidth) and capacity by twofold while maintaining the same packaging size of GDDR6</li> </ul> </li> </ul>
HBM DRAM February 2021–October 2022	<ul style="list-style-type: none"> <li>□ Developed world's first AI HBM-PIM with an AI engine <ul style="list-style-type: none"> <li>- More than two times the performance compared to previous HBM2, system energy reduced by approximately 70%.</li> <li>- Unveiled academic paper in Feb 2021 at conference held by ISSCC, a highly reputable organization in the semiconductor industry</li> <li>- Enables application without changing the system by using existing memory interface</li> <li>- Cooperate with data center and AI customers on standardization of PIM and establishing eco system.</li> </ul> </li> <li>□ 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"> <li>- 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%)</li> <li>- AXDIMM, a DRAM module with an AI engine, offers twice the performance and a 40% decrease in energy usage</li> <li>- Unveiled LPDDR5-PIM that integrated mobile DRAM and PIM technology</li> </ul> </li> <li>□ Developed AI-accelerator equipped with HBM-PIM and GPU <ul style="list-style-type: none"> <li>- Materialized HBM-PIM Cluster by installing HBM-PIM memory in AMD's GPU accelerator</li> <li>- Compared to existing GPU accelerators, on average, the addition of HBM-PIM improved performance by more than double and reduced energy consumption by more than 50%</li> <li>- In preparation to provide software that supports accelerators equipped with HBM-PIM, so consumers are expected to be able to use PIM memory solutions in an integrated software environment</li> </ul> </li> </ul>

DS Division	
Research project	Details
NAND November 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of 8th generation V-NAND <ul style="list-style-type: none"> <li>- Mass production of 1Tb 8th generation V-NAND, which is among the highest capacities in the world</li> <li>- Significantly enhanced bit productivity per wafer and secured one of the industry's highest bit density</li> <li>- Enhanced performance by 1.2 times compared to existing model, featuring an input and output (I/O) speed of up to 2.4Gbps with the adoption of a next-generation interface</li> <li>- Expected to lead the trend of expanding storage capacity in next-generation enterprise servers and extend use into the automotive market, in which reliability is critical</li> </ul> </li> </ul>
eStorage –May 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Development of highly advanced UFS 4.0 <ul style="list-style-type: none"> <li>- Improved reading/writing speed by approximately twofold compared to UFS 3.1 product</li> <li>- Enhanced power efficiency by approximately 46% for processing the same amount of data, which allows longer hours of use</li> <li>- Improved a function that reads and saves customer's important data by adopting the latest security technologies</li> <li>- Expected to expand into consumer devices, such as smartphones, automotives, and VR/AR</li> </ul> </li> </ul>
SSD for server February 2021–July 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of high-performance OCP SSD specialized for data centers <ul style="list-style-type: none"> <li>- Mass production of OCP SSD, the first in the industry for 6th-generation V-NAND</li> <li>- Satisfies performance, power efficiency, reliability, and security demanded by the data center industry</li> <li>- Contributes to cost reduction and carbon emission reduction with industry's most power efficient feature</li> </ul> </li> <li><input type="checkbox"/> Mass production of industry's highest performing SAS 24Gbps SSD for server <ul style="list-style-type: none"> <li>- Supports speed that is around two times faster than the previous generation SSD</li> <li>- Provides high capacity from 800GB to 30.72TB based on 6th generation V-NAND</li> <li>- Expected to reduce server operation cost and carbon emission via a 40% improvement in power efficiency</li> </ul> </li> <li><input type="checkbox"/> Industry's first mass production of next-generation ZNS SSD for company server <ul style="list-style-type: none"> <li>- Applies ZNS technology, which categorizes and saves data by zone depending on characteristics</li> <li>- Lifespan and maximum utilization of SSD capacity increased compared to existing SSDs</li> <li>- 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</li> </ul> </li> <li><input type="checkbox"/> Development of PCIe 5.0-based high-performance SSD PM1743 <ul style="list-style-type: none"> <li>- Improved reading/writing speed by approximately twofold and power efficiency by approximately 30% compared to PCIe 4.0-based SSD</li> <li>- Stability of server operation guaranteed with the support of dual-port and application of latest security technologies</li> </ul> </li> <li><input type="checkbox"/> Development of '2nd generation smart SSD' with upgraded processing functionality <ul style="list-style-type: none"> <li>- Enhances processing functionality by twofold and cuts processing time by over 50%, energy consumption by up to 70%, and CPU utilization by up to 97%</li> <li>- Processes data directly, thereby improving system performance and energy efficiency at the same time</li> <li>- Actively address various market needs, including database and video transcoding</li> <li>- Lead standardization of computational storage and increase development of next-generation storage products</li> </ul> </li> </ul>
SSD for Client January 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of PM9C1a, a high-performance PC SSD equipped with a 5nm controller <ul style="list-style-type: none"> <li>- Elevated performance with a new 5nm controller and 7th generation V-NAND</li> <li>- Enhanced speed by up to 1.8 times and power efficiency by up to 70% vs the previous generation</li> <li>- Supports device authentication and verification technology with strengthened security solutions such as the new adoption of the Device Identifier Composition Engine (DICE) security standard</li> </ul> </li> </ul>
Brand SSD January 2021–August 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Global launch of SATA SSD 870 EVO for consumers <ul style="list-style-type: none"> <li>- Latest V-NAND and controller included, intelligent turbelight technology</li> <li>- Highest durability in the industry, run time enhanced by more than 30%</li> <li>- Five models in 250GB to 4TB range, introduced in steps in Korea, US, Germany, and China</li> </ul> </li> <li><input type="checkbox"/> Launched NVMe SSD 980, which boasts high performance and is economical. <ul style="list-style-type: none"> <li>- 6th-generation V-NAND, maximum 6 times the speed compared to SATA SSD</li> <li>- DRAM-less design to save cost, applied optimization technology for controllers and firmware</li> <li>- Heat-control feature, applied to high-end products</li> <li>- Power efficiency enhanced by 56%, compared to 970 EVO, allowing "good consumption" for consumers</li> </ul> </li> <li><input type="checkbox"/> Released portable SSD 'T7 Shield' for experts that offers both performance and durability <ul style="list-style-type: none"> <li>- Built with dust and water resistance and drop resistance up to 3m</li> <li>- Transmits data stably without performance degradation, including when recording and editing high-resolution videos</li> </ul> </li> <li><input type="checkbox"/> Unveiled high-performance SSD '990 PRO' optimized for gaming <ul style="list-style-type: none"> <li>- Offers unparalleled performance by featuring the latest V-NAND technology and a new proprietary controller</li> <li>- Enhanced speed by up to 55% and power efficiency by up to 50% compared to previous model</li> <li>- Offers optimal performance for an environment in which ultra-high speed data processing is required, such as high-performance graphic games and 4K/8K high-resolution videos</li> </ul> </li> </ul>

DS Division	
Research project	Details
EUV -October 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of 14nm EUV DDR5 DRAM <ul style="list-style-type: none"> <li>- Enhanced productivity by approximately 20% with multilayer EUV implementation and realization of industry's highest DRAM bit density</li> <li>- Enhanced speed by twofold compared to DDR4 and improved power consumption by approximately 20% compared to previous process</li> </ul> </li> </ul>
CXL May 2021-October 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Development of industry's first CXL-based DRAM memory <ul style="list-style-type: none"> <li>- 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</li> <li>- Supports interface converting, error management, etc. through CXL controller</li> <li>- Development of controller and software technology optimized for CXL DRAM memory by collaborating with data centers and server and chipset companies</li> </ul> </li> <li><input type="checkbox"/> Development of industry's first open-source software solution for CXL memory <ul style="list-style-type: none"> <li>- Enables expansion of system memory's performance/capacity by enabling the main memory and the CXL memory to work seamlessly</li> </ul> </li> <li><input type="checkbox"/> Development of industry's first high-capacity 512GB CXL DRAM <ul style="list-style-type: none"> <li>- Enhanced capacity of CXL DRAM by four times, which allows expansion of over tens of terabytes per server</li> <li>- Equipped with CXL-exclusive controller, reducing data latency by 1/5</li> </ul> </li> <li><input type="checkbox"/> Development of CXL-based PNM solution for high-capacity AI models <ul style="list-style-type: none"> <li>- PNM's (Processing-near-Memory) computational functions are performed closer to the memory to reduce the bottleneck between the CPU and memory data transference and to improve system performance</li> <li>- Enhanced performance by approximately twofold in applications, such as recommendation systems or in-memory databases, that require high memory bandwidth</li> </ul> </li> </ul>
Multi-chip June 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of industry's best performing UMC5 (LPDDR5 + UFS3.1) multi-chip package <ul style="list-style-type: none"> <li>- Speed upgrade by 1.5 times compared to the existing LPDDR4X, 2 times compared to UFS2.2</li> <li>- Spearhead popularization of 5G by installing them into low- to mid-priced 5G smartphones</li> </ul> </li> </ul>
Brand Card September 2021-May 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Released a new micro SD card product with enhanced performance and stability <ul style="list-style-type: none"> <li>- 'PRO Plus' provides 1.6 times faster read speed and 1.3 times faster write speed than the previous generation</li> <li>- 'EVO Plus' provides 1.3 times faster read speed than the previous generation</li> <li>- 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</li> </ul> </li> <li><input type="checkbox"/> Released memory card 'PRO Endurance' with enhanced performance and durability <ul style="list-style-type: none"> <li>- Adopts high-quality server-level NAND durability that allows up to 16 years of continuous recording time</li> <li>- Optimized for high-resolution (4K, Full HD) video recording equipment, such as surveillance video and black box</li> <li>- Keeps stable recording performance even in tough conditions, applies 6-proof protection</li> <li>- Supports speed of Class 10, UHS Class U3, and video speed of Class V30; can continuously record Full HD • 4K high-resolution videos</li> </ul> </li> </ul>
Automotives December 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of memory total solutions for automotives <ul style="list-style-type: none"> <li>- 256GB SSD and 2GB DDR4/GDDR6 for IVI; 2GB GDDR6 and 128GB UFS for AD</li> <li>- Supplies high performance SSDs and graphics DRAM delivering server-level performance and capacity; and secures high stability that is required in the automotive semiconductor market (operation is guaranteed in the -40°C-105°C range)</li> </ul> </li> </ul>

## DS Division

Research project	Details
System LSI	
Image Sensor January 2021–March 2023	<ul style="list-style-type: none"> <li>□ Introduced ISOCELL HM3, 108MP premium image sensor (HM3, 0.8um/108Mp) <ul style="list-style-type: none"> <li>- Concentrated 108 million 0.8 <math>\mu\text{m}</math>-size pixels in 1/1.33 inch</li> <li>- Minimizes afterimage with Smart ISO Pro, enabling bright, vivid images</li> <li>- Lens optimal for autofocus with Super PD Plus, enhanced phase detection ability by 50%</li> <li>- Optimal design saves approximately 6% of power under preview mode, compared to previous model</li> </ul> </li> <li>□ Introduced image sensor ISOCELL GN2, operating similar to human eyes (GN2, 1.4um/50Mp) <ul style="list-style-type: none"> <li>- Dual Pixel Pro splits pixels diagonally—a world's first</li> <li>- 1.4um pixel delivers brighter and more vivid images</li> <li>- Staggered HDR saves power by approximately 24% compared to previous model</li> </ul> </li> <li>□ Introduced ISOCELL JN1 with the industry's first 0.64um pixel (JN1, 0.64um/50Mp) <ul style="list-style-type: none"> <li>- Mass production of ultra-small pixel size, applies high-resolution mobile camera slim design</li> <li>- Applies the most advanced image sensor technology that enhances sensitivity in the dark</li> <li>- Cooperation with camera lens module manufacturers, establishes the ecosystem that is compatible with 1/2.8" products</li> </ul> </li> <li>□ Released automotive image sensor ISOCELL Auto 4AC (4AC, 3.0um/1.2Mp) <ul style="list-style-type: none"> <li>- Designed for surround view monitors or rear-view cameras</li> <li>- A safety solution that supports drivers even in tough conditions and minimizes blind spots</li> </ul> </li> <li>□ Unveiled a new super-gap mobile image sensor technology (HP1, 0.64um/200Mp and GN5, 1.0um/50Mp) <ul style="list-style-type: none"> <li>- Industry's first "200 million pixels" ISOCELL HP1</li> <li>- Industry's smallest-sized dual pixel image cell ISOCELL GN5</li> </ul> </li> <li>□ Unveiled 200 million pixel image sensor, industry's smallest pixel size (HP3, 0.56um/200Mp) <ul style="list-style-type: none"> <li>- Reduced camera module area by up to 20% with 12% smaller pixels compared to the previous HP1(0.64um)</li> <li>- With the Super Quad Phase Detection (QPD) technology, enables auto-focusing feature for all 200 megapixels</li> <li>- Utilizes Tetra2pixel technology, which offers vivid picture quality even in low-light environments</li> </ul> </li> <li>□ Launched 200 million pixel image sensor combined with ultra-high resolution technologies (HP2, 0.6um/200Mp) <ul style="list-style-type: none"> <li>- Applied Dual Vertical Transfer Gate technology—industry's first—and enhanced color expression and picture quality</li> <li>- Leveraged Tetra2pixel technology, offering vivid picture quality even in low-lit environments</li> <li>- Adopted Dual Slope Gain, creating an HDR image as high as 50MP—industry's first</li> <li>- Applied Super QPD, which allows the sensor to use all its pixels for auto-focusing</li> </ul> </li> </ul>

## DS Division

Research project	Details
Exynos January 2021–March 2023	<ul style="list-style-type: none"> <li>□ Launched Exynos 2100, 5G-integrated premium mobile AP <ul style="list-style-type: none"> <li>- Applied state-of-the-art 5nm EUV process and the latest CPU/GPU, enhancing performance significantly</li> <li>- Optimal design improves performance compared to previous model: more than 30% for CPU, more than 40% for GPU</li> <li>- Enhanced on-device AI function, performs 26 trillion operations per second</li> <li>- Saves power consumption by maximum 20%, features its own power management solution AMIGO</li> <li>- Supports ultrahigh-frequency 5G network, operates maximum 6 image sensors</li> </ul> </li> <li>□ Released Exynos W920 built on EUV process for wearable devices <ul style="list-style-type: none"> <li>- Improved performance and power-efficiency by applying advanced 5nm EUV process and design technology</li> <li>- Comes in the smallest package currently available for wearables by applying the most advanced packaging technologies</li> <li>- 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</li> <li>- Improved power consumption of the processor by 97% under AOD (Always On Display) mode by applying low-power cores for display</li> </ul> </li> <li>□ Released Exynos Auto T5123, communications chip for automotives that provide 5G communications service <ul style="list-style-type: none"> <li>- Supports download speed of 5.1Gb/sec, enables seamless access high-capacity, high-definition content even while driving</li> <li>- Equipped with the latest 5G-based multi-mode communication chip that supports both 5G single net and LTE combined net</li> </ul> </li> <li>□ Released Exynos Auto V7, processor for automotive infotainment <ul style="list-style-type: none"> <li>- Applies the latest automotive technologies, including Neural Processing Unit (NPU), technology that corrects bad pixel and lens distortion of camera sensors, and image compression technology</li> <li>- GPU supports four independent displays, including digital dashboard, Center Information Display (CID), and Head Up Display (HUD), and up to 12 camera sensors</li> <li>- Equipped with security processor which offers technology that safely stores and prevents physical replication of key information of the car</li> </ul> </li> <li>□ Released premium mobile AP 'Exynos 2200' <ul style="list-style-type: none"> <li>- Adopted the next-generation GPU Xclipse jointly developed with AMD, maximized gaming performance and power efficiency</li> <li>- Enabled Ray Tracing technology based on hardware on mobile devices—a first in the industry</li> <li>- Strengthened performance and security by adopting the core based on the latest ARM CPU architecture 'Armv9'</li> <li>- Enhanced NPU performance by more than twofold compared to the previous model, significantly enhanced machine learning performance</li> </ul> </li> <li>□ Secured internationally standardized 5G non-terrestrial networks (NTN) modem technology for satellite communications <ul style="list-style-type: none"> <li>- Reflects the latest standard (Release-17) of 3GPP, which unites telecommunications standard development organizations</li> <li>- Adopted technologies that accurately predict low Earth orbit satellite locations and minimize frequency offsets</li> <li>- Supports two-way transmission of large-capacity data, including text messaging and video sharing</li> </ul> </li> <li>□ Unveiled Exynos Connect U100, an ultra-wideband (UWB) chipset for short-range wireless communications <ul style="list-style-type: none"> <li>- Provides an accuracy of single-digit centimeters and 5-degrees and under</li> <li>- Low-power, one-chip solution optimized for various mobile, automotive, and IoT devices</li> <li>- Equipped with a scrambled timestamp sequence (STS) function and a secure hardware encryption engine to prevent external hacking</li> <li>- Certified by FiRa Consortium, an organization that certifies UWB products for conformity to interoperability standards</li> </ul> </li> </ul>
LSI January 2021–March 2023	<ul style="list-style-type: none"> <li>□ Power management IC for DDR5 DRAM modules (S2FPD01, S2FPD02, S2FPC01) <ul style="list-style-type: none"> <li>- Essential for the next-generation device performance improvement and power saving, three types of power management IC</li> <li>- Applies our own technology of reducing power consumption and overheating, improves operational efficiency up to 91%</li> <li>- Continued expansion of the lineup for power management IC for memory and strengthen technology leadership</li> </ul> </li> <li>□ Power management IC for processor for automotive infotainment (S2VPS01) <ul style="list-style-type: none"> <li>- Certified with ASIL-B, a safety standard for automotive systems, and strengthened functional safety</li> <li>- Strengthened stability of the system, including heat prevention and auto-diagnostic functions</li> </ul> </li> <li>□ Released all-in-one fingerprint security IC for biometric payment cards (S3B512C) <ul style="list-style-type: none"> <li>- Combines hardware security chip (SE, Secure Element), fingerprint sensor, and Secure Processor in one IC</li> <li>- Received globally accredited certifications in security, EAL6+ from Common Criteria (CC) and global online card payment technical standard (EMVCo) and proved security in line with Mastercard's Biometric Evaluation Plan Summary.</li> </ul> </li> </ul>

## DS Division

Research project	Details
<b>Foundry</b>	
2.5D packaging technology 'I-Cube4' May 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Realized logic chip and four HBM chips into one package to operate it like one semiconductor chip</li> <li><input type="checkbox"/> Supplied electricity stably and realized ultra-thin electrical wires applying silicon interposer           <ul style="list-style-type: none"> <li>- Applied semiconductor process/manufacturing knowhow that prevents the deformation of thin interposers 100µm thick</li> </ul> </li> <li><input type="checkbox"/> Reduced production time and enhanced yield with our distinctive structure that has excellent thermal release performance</li> </ul>
8nm RF process June 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Radio Frequency (RF) process for 5G communication that supports sub-6GHz and millimeter frequency           <ul style="list-style-type: none"> <li>- Provides small, low-power, high quality communication with one-chip solution that supports multi-channel and multi-antenna</li> </ul> </li> <li><input type="checkbox"/> 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"> <li>- Maximized electrons' movement characteristics by physically stimulating the neighboring areas of channels, which are electrons' moving path</li> </ul> </li> <li><input type="checkbox"/> Power efficiency increased by 35%, analogue circuit area decreased by 35% compared to the previous generation 14nm RF process           <ul style="list-style-type: none"> <li>- Total number of transistors of chips decreased with the drastic improvement of RFeFET performance</li> </ul> </li> </ul>
2.5D packaging technology 'H-Cube' November 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> 2.5D solution 'Hybrid Cube', which applies silicon interposer technology and hybrid-substrate structure           <ul style="list-style-type: none"> <li>- Logic chips and high-bandwidth memory (HBM) are placed on top of a silicon interposer, integrating up to 6HBMs</li> <li>- The hybrid substrate is a dual structure in which the high-end main substrate at the top connects logic/memory chips, and the subsidiary substrate at the bottom that is easy to implement in large-area connects the system board</li> <li>- Minimized the size of the substrate by decreasing the pitch of solder ball, which electrically connects two substrates</li> <li>- Applied chip analysis technology to stably supply power while minimizing signal distortion and loss</li> <li>- Specialized for semiconductors for data center, AI, and network products that require high-performance and large-area packaging technology</li> </ul> </li> </ul>
World's first 3nm process that adopts GAA technology June 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> World's first mass production of 3nm process that adopts Gate-All-Around (GAA) transistor technology           <ul style="list-style-type: none"> <li>- Maximized power efficiency and performance by implementing 'MBCFET', our in-house GAA technology that utilizes nanosheets</li> <li>- 1st-generation 3nm process reduced power consumption by 45%, improved performance by 23%, and reduced surface area by 16% compared to 5nm</li> </ul> </li> <li><input type="checkbox"/> GAA technology overcomes the performance limitations of FinFET, allowing to continue to make smaller chips           <ul style="list-style-type: none"> <li>- The gate surrounds all four faces of the channel, which enables finer control of current flow and reduces operating voltage and power consumption</li> <li>- The structure in which the channels are piled up vertically boosts performance as it increases channel width per unit area and allows greater amount of current to flow</li> <li>- The width of channels can be adjusted, giving better design flexibility</li> </ul> </li> <li><input type="checkbox"/> Providing verified 3nm design infrastructure and services with ecosystem partners</li> <li><input type="checkbox"/> Planning to expand adoption into high-performance, low-power system semiconductors for HPC, mobile SoCs, etc.</li> </ul>

## SDC

Research project	Details
<b>Display panel</b>	
Power-efficient OLED for Galaxy S21 January 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mass production of innovative power-efficient, high-luminance OLED displays           <ul style="list-style-type: none"> <li>- S21: 6.24"/6.67"/6.81" QHD+(3,200×1,440)</li> <li>- New organic material improves luminance efficiency: improved power efficiency by 16% compared to previous model</li> <li>- Enhanced luminance and contrast offers good visibility outdoors (Max/HBM 420/800 → 500/1100nit, Peak 1,785nit)             <ul style="list-style-type: none"> <li>→ Sunlight Visibility certification by UL (global safety solutions company)</li> </ul> </li> </ul> </li> </ul>
Foldable OLED for Galaxy Z Fold3 August 2021	<ul style="list-style-type: none"> <li><input type="checkbox"/> Application of various new technologies to foldables for the first time           <ul style="list-style-type: none"> <li>- 7.6" QXGA+7.55" (2,208×1,768)</li> <li>- Removed screen blind spots with the Under Panel Camera technology</li> <li>- Reduced battery consumption compared to its predecessor with the Eco<sup>2</sup> technology</li> </ul> </li> </ul>
55/65" QD-Display January 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> World's first QD-Display for TV (55" UHD, 65" UHD)           <ul style="list-style-type: none"> <li>- Exceptional wide color gamut of BT2020 90%</li> <li>- Expresses outstanding brightness and color at any angle with QD display which emits light evenly across all directions</li> <li>- Excellent HDR performance, deep and detailed black expression</li> </ul> </li> </ul>

## SDC

Research project	Details
34" QD-Display March 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> World's first QD-Display for monitor (34" QHD) <ul style="list-style-type: none"> <li>- Provides superb gaming experience by supporting 175Hz, 0.1ms, 1800r, HDR True Black, and G-Sync</li> <li>- Outstanding color, viewing angle, and contrast ratio and minimized exposure to blue light</li> </ul> </li> </ul>
Foldable OLED for Galaxy Z Fold 4 August 2022	<ul style="list-style-type: none"> <li><input type="checkbox"/> Promoting additional improvements compared to previous model <ul style="list-style-type: none"> <li>- Significantly improved display quality in the location of the Under Panel Camera while maintaining camera performance and emphasized large-screen experience</li> <li>- Enhanced energy efficiency with Eco2 OLED Plus with improved transmittance efficiency</li> <li>- Reduced costs and weight via integrated FRP-Digitizer panel</li> </ul> </li> </ul>
3.36" 850ppi ultra-high-resolution VR display February 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ultra-high-resolution (850ppi) OLED display for VR <ul style="list-style-type: none"> <li>- Adoption of a screen-door-effect-free solution makes users feel like the resolution is 1,100 ppi</li> <li>- Round shape enhances flexibility of set designs compared to the previous square shape</li> </ul> </li> </ul>
14/16" OLED for Galaxy Book 3 Pro February 2023	<ul style="list-style-type: none"> <li><input type="checkbox"/> Development of the world's first large-sized (16") OCTA technology <ul style="list-style-type: none"> <li>- Expanded the application of OCTA—touch-integrated technology—from smartphone OLED to middle-sized laptop OLED panels</li> <li>- Minimized the dead space of panels via development of new materials and process technologies</li> <li>- Reduced power consumption with the first adoption of OLED notebooks with refresh rate of 48–120Hz</li> </ul> </li> </ul>