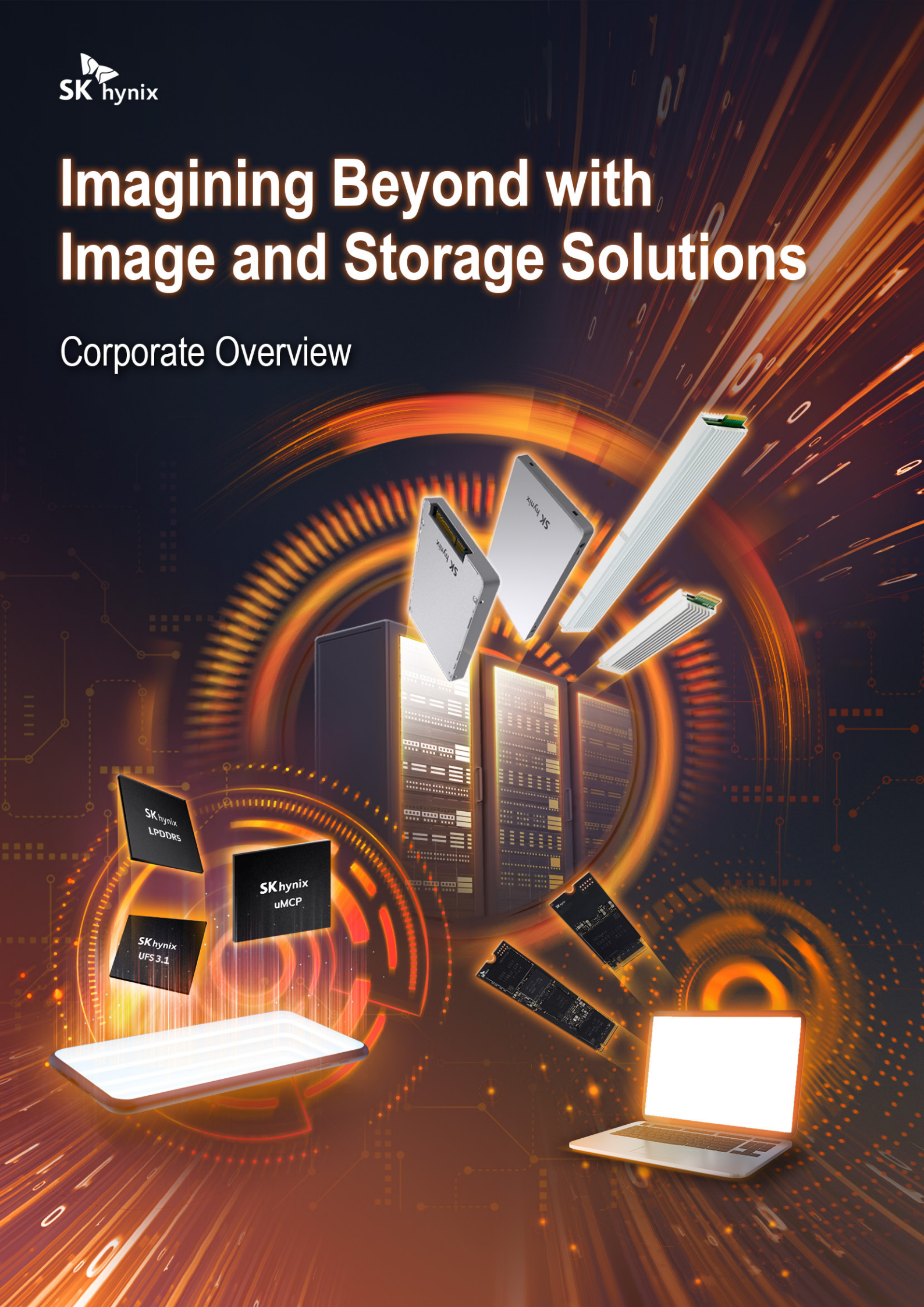
SK hynix

Imagining Beyond with Image and Storage Solutions

Corporate Overview



SK hynix Highlights

Since its inception in 1983, SK hynix has developed and marketed semiconductors with focus and dedication.

With industry-leading prowess in micro-processing technologies and a high value-added product portfolio built with continued R&D, SK hynix has constantly beat competitors to market with the world's smallest, fastest, and lowest-power solutions.

As a major global supplier of DRAM, NAND flash, and CMOS image sensors, SK hynix has positioned itself as the world's third-largest chipmaker with $25,854 million in annual revenues as of 2020.

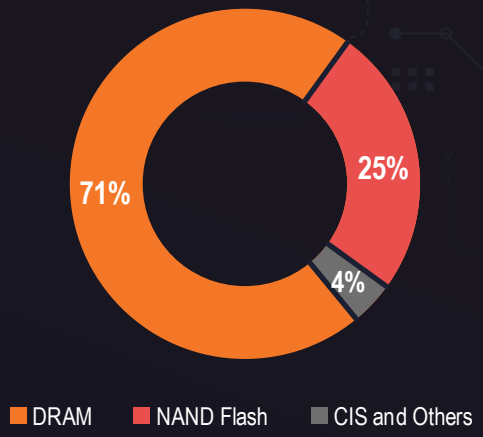
SK hynix strives for leadership in memory semiconductor solutions through continued change and innovation, which allows us to stay ahead in the ever-evolving market landscape.

Top 10 Semiconductor Makers by Revenue

CY19 Rank	CY20 Rank	Company	CY19 Revenue ($M)	CY20 Revenue ($M)
1	1	Intel	67,754	72,759
2	2	Samsung Electronics	52,191	57,729
3	3	SK hynix	22,297	25,854
4	4	Micron Technology	20,254	22,037
6	5	Qualcomm	13,613	17,632
5	6	Broadcom	15,322	15,754
7	7	Texas Instruments	13,364	13,619
13	8	Media Tek	7,958	10,988
16	9	NVIDIA	7,331	10,643
14	10	KIOXIA	7,827	10,374

Source : Gartner (March. 2021)

Sales Portion



[As of 2020]

SK hynix ESG Strategy

As part of its pursuit of a Double Bottom Line (DBL) that counts both the Economic Value (EV) and Social Value (SV) from its business, SK hynix measures and discloses the Social Value it creates each year.

In 2020, (1) "indirect economic contributions" including taxes, employment, and dividends amounted to 5,373.7 billion Korean won, (2) "business-driven societal contributions" in social (labor/shared growth) and environmental aspects were a 596.9 billion won deficit, and (3) "philanthropic social contributions" reached 110.6 billion won.

As it charts out its Financial Story based on ESG values, SK hynix will work to have its Social Value measurements reflected in SK Group affiliates' business strategy and decisions as part of broader ESG management.

1 Achievements in indirect contribution to the economy

Dividend | Employment | Tax payment

KRW 5,373.7 billion

2 Business achievements in social performance

Product /Service | Social (Labor/Shared Growth) | Environmental (Process)

KRW △596.9 billion

3 Achievements in social contribution

Social contribution | Donation | Volunteer work

KRW 110.6 billion

* SV measurements include 5 group affiliates and 4 Social Enterprises.

- Subsidiaries: SK hynix systemic, SK hystec, SK hyeng, Happymore Inc., Happy Narae Co. Ltd.
- Social Enterprises (SE): Happydosirak Coop., Happyschool, Happy2gether, Sk Hynix cleaning (Wuxi) Ltd.

Mobile Solution Lineup

LPDDR5

High-density | Maximum speed

No.	Part Number	Density	Supply Voltage	Speed	Operating Temp.
1	H58GG6MK6GX037	12GB	1.8V/1.05V/0.5V	6400Mbps	-30~105˚C
2	H9JKNNNFB3AECR-N6H	8GB	1.8V/1.05V/0.5V	6400Mbps	-30~105˚C

UFS 3.1 (UD310)

176-Layer | 4D NAND

No.	Part Number	Density	Package Size	SR	SW(Write Booster)
1	HN8T35DZHKX079	1TB	11x13	2050MB/s	1700MB/s
2	HN8T25DEHKX077	512GB	11x13	2050MB/s	1700MB/s
3	HN8T15DEHKX075	256GB	11x13	2050MB/s	1700MB/s
4	HN8T05DEHKX073	128GB	11x13	2050MB/s	1300MB/s

uMCP

High-density | Space-efficient

No.	Part Number	Density	Supply Voltage	Speed	Operating Temp.
1	H9HR56JFA3MEVR-K6M	512GB+8GB	DRAM: 1.8V/1.05V/0.5V NAND: 3.3V/1.2V	6400Mbps	-25~85˚C

CMOS Image Censor

Realistic Photos | Pixel Technology

No.	Product (Part Number)	Resolution	Optical Format	Pixel Size
1	Hi-6421 (AAA6421PXX)	64Mp	1/2”	0.7㎛
2	Hi-5021 (AAA5021PXX)	50Mp	1/2.5”	0.7㎛
3	Hi-4821 (AAA4821PXX)	48Mp	1/2”	0.8㎛
4	Hi-3221 (AAA3221PXX)	32Mp	1/2.74”	0.8㎛

Networking Solution Lineup

DDR5

World-first | Industrial Temperature grade support

No.	Part Number	Density	Supply Voltage	Speed	Operating Temp.
1	H5CG46MEBJX003N(X16)	16Gb	1.8V/1.1V/1.1V	4800Mbps	-40~95˚C
2	H5CG48MEBJX014N(X8)	16Gb	1.8V/1.1V/1.1V	4800Mbps	-40~95˚C

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PC Solution Lineup

Client SSD

PC801

Common Features

MTBF	1.5M hours	Power Consumption(W)	7W
UBER	1 error in 10^{15}	Idle(W)	‹ 50mW

Technical Specifications

Application	Storage	Interface	PCIe Gen4x4
NAND	SK hynix 3D V7 NAND		
Form Factor	M.2 2280, M.2 2242D		
Capacity	256/512GB, 1/2TB		

Capacity

	256GB	512GB	1TB	2TB
Random Read[4KB]	480K	960K	1500K	1500K
Random Write[4KB]	500K	1000K	1400K	1400K
Sequential Read [MB/s]	4400	7000	7000	7000
Sequential Write [MB/s]	2350	4700	6500	6500

BC901

Common Features

MTBF	1.5M hours	Power Consumption(W)	4.5W
UBER	1 error in 10^{15}	Idle(W)	‹ 50mW

Technical Specifications

Application	Storage	Interface	PCIe Gen4x4
NAND	SK hynix 3D V7 NAND		
Form Factor	M.2 2230/42/80		
Capacity	256/512GB, 1TB		

Capacity

	256GB	512GB	1TB
Random Read[4KB]	550K	900K	900K
Random Write[4KB]	600K	900K	900K
Sequential Read [MB/s]	4500	4900	5100
Sequential Write [MB/s]	2600	4500	4900

PB711(Gold P31)

Common Features

MTBF	1.5M hours	Power Consumption(W)	6.3W
UBER	1 error in 10^{15}	Idle(W)	‹ 50mW

Technical Specifications

Application	Storage	Interface	PCIe Gen3x4
NAND	SK hynix 3D V6 NAND		
Form Factor	M.2 2280		
Capacity	500GB, 1TB		

Capacity

	500GB	1TB
Random Read[4KB]	570K	570K
Random Write[4KB]	600K	600K
Sequential Read [MB/s]	3500	3500
Sequential Write [MB/s]	3100	3200

BC711

Common Features

MTBF	1.5M hours	Power Consumption(W)	3.5W
UBER	1 error in 10^{15}	Idle(W)	‹ 50mW

Technical Specifications

Application	Storage	Interface	PCIe Gen3x4
NAND	SK hynix 3D V6 NAND		
Form Factor	M.2 2230/42/80		
Capacity	128/256/512GB, 1TB		

Capacity

	128GB	256GB	512GB	1TB
Random Read[4KB]	240K	480K	520K	520K
Random Write[4KB]	200K	450K	530K	530K
Sequential Read [MB/s]	1600	3400	3500	3500
Sequential Write [MB/s]	900	2000	3000	3100

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Datacenter Solution Lineup

Enterprise SSD

PE8110 E1.S (RI)

Common Features

Endurance (DWPD)	1	**Power Consumption(W)**	Up to 20W
MTBF (Hours)	2.5Mhrs	**Idle(W)**	Up to 5W
UBER	<1 per 10^{17} bits Read	**Operating Temperature**	0℃~70℃

Technical Specifications

Application	Datacenter, Server (Read Intensive)		
Interface	PCIe Gen4x4	**Capacity**	2/4/8TB
NAND	SK hynix 4D V6 TLC		
Form Factor	E1.S 5.9mm(bare PCB) / 15mm		

Capacity

	UNIT	2TB	4TB	8TB
Random Read[4KB]	IOPS	1000K	1000K	1000K
Random Write[4KB]	IOPS	135K	155K	155K
Sequential Read [MB/s]	MB/s	6300	6300	6300
Sequential Write [MB/s]	MB/s	3500	4200	4200

PE8111 E1.L (RI)

Common Features

Endurance (DWPD)	0.3 (Ran.) 1.6 (Seq.)	**Power Consumption(W)**	Up to 20W
MTBF (Hours)	2.5Mhrs	**Idle(W)**	Up to 5.0W
UBER	<1 per 10^{17} bits Read	**Operating Temperature**	0℃~70℃

Technical Specifications

Application	Datacenter, Storage (Read Intensive)		
Interface	PCIe Gen3x4	**Capacity**	16TB
NAND	SK hynix 4D V6 TLC		
Form Factor	E1.L 18mm / 9.5mm		

Capacity

	UNIT	16TB
Random Read[4KB]	IOPS	700K
Random Write[4KB]	IOPS	100K
Sequential Read [MB/s]	MB/s	3400
Sequential Write [MB/s]	MB/s	3000

PE8010 U.2/3 (RI)

Common Features

Endurance (DWPD)	1	**Power Consumption(W)**	Up to 17W
MTBF (Hours)	2.0Mhrs	**Idle(W)**	Up to 5W
UBER	<1 per 10^{17} bits Read	**Operating Temperature**	0℃~70℃

Technical Specifications

Application	Datacenter, Server, Storage (Read Intensive)		
Interface	PCIe Gen4x4	**Capacity**	1/2/4/8TB
NAND	SK hynix 3D V5 TLC		
Form Factor	U.2/U.3 2.5” (15mm)		

Capacity

	UNIT	1TB	2TB	4TB	8TB
Random Read[4KB]	IOPS	500K	850K	1100K	1100K
Random Write[4KB]	IOPS	65K	120K	140K	145K
Sequential Read [MB/s]	MB/s	6000	6500	6500	6500
Sequential Write [MB/s]	MB/s	1450	2800	3700	3700

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SE5110 (RI)

Common Features

Endurance (DWPD)	1	**Power Consumption(W)**	Up to 6W
MTBF (Hours)	2.0Mhrs	**Idle(W)**	Up to 1.4W
UBER	<1 per 10^{17} bits Read	**Operating Temperature**	0℃~70℃

Technical Specifications

Application	Datacenter, Server, Storage (Read Intensive)		
Interface	SATA3 6Gbps	**Capacity**	0.5/1/2/4TB
NAND	SK hynix 4D V6 TLC		
Form Factor	Standard 2.5" (7mm)		

Capacity

	UNIT	0.5TB	1TB	2TB	4TB
Random Read[4KB]	IOPS	96K	96K	96K	96K
Random Write[4KB]	IOPS	26K	35K	35K	35K
Sequential Read [MB/s]	MB/s	555	555	555	555
Sequential Write [MB/s]	MB/s	510	530	530	530

Global Network

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