Investor Conference

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ememory

IPR Notice

Cautionary Statement

This presentation contains forward-looking statements, which are subject to risk factors associated with semiconductor and intellectual property business. It is believed that the expectations reflected in these statements are reasonable. But they may be affected by a variety of variables, many of which are beyond our control. These variables could cause actual results or trends to differ materially which include, but are not limited to: wafer price fluctuation, actual demand, rapid technology change, delays or failures of customers' tape-outs into wafer production, our ability to negotiate, monitor and enforce agreements for the determination and payment of royalties, any bug or fault in our technology which leads to significant damage to our technology and reputation, actual or potential litigation, semiconductor industry cycle and general economic conditions. Except as required by law, eMemory undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.

Contents

Review of Operations

Q4 2020 Financial Results

The EPS of Q4 2020 was 2.60 NTD, ROE was 41.8%

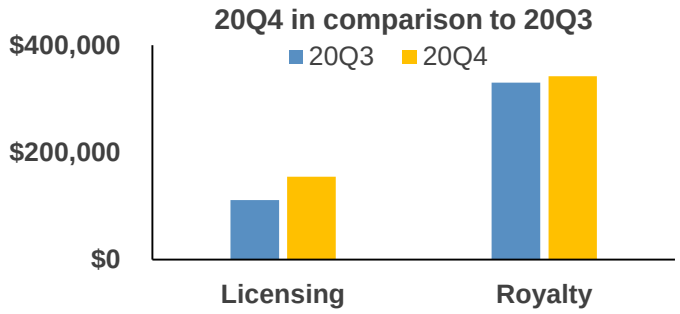
(thousands of NT dollars)

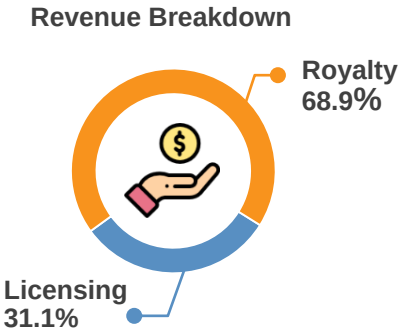
	Q4 2020	Q3 2020	Change (QoQ)	Q4 2019	Change (YoY)	FY 2020	FY 2019	Change (YoY)
Revenue	496,682	441,259	12.6%	361,896	37.2%	1,776,653	1,410,085	26.0%
Gross Margin	100%	100%	-	100%	-	100%	100%	-
Operating Expenses	261,327	243,913	7.1%	202,386	29.1%	954,067	788,762	21.0%
Operating Income	235,355	197,346	19.3%	159,510	47.5%	822,586	621,323	32.4%
Operating Margin	47.4%	44.7%	2.7 ppts	44.1%	3.3 ppts	46.3%	44.1%	2.2 ppts
Net Income Attributable to Owners of the Company	193,343	168,581	14.7%	129,653	49.1%	707,999	542,072	30.6%
Net Margin	38.7%	38.2%	0.5 ppt	35.8%	2.9 ppts	39.8%	38.4%	1.4 ppts
EPS (Unit: NTD)	2.60	2.26	15.0%	1.74	49.4%	9.52	7.30	30.4%
ROE	41.8%	38.8%	3.0 ppts	30.2%	11.6 ppts	38.3%	31.6%	6.7 ppts

Note: Revenue of Q4 2020 in terms of US$ is US$17.21 mil, up 15% QoQ, and up 45.3% YoY.

Revenue in Different Stream

Q4 revenue up 45.3% YoY in US dollar terms





Revenue

NT$ Thousands	Q4 2020	Q3 2020	QoQ	Q4 2019	YoY	FY 2020	FY 2019	YoY
Licensing	154,472	111,125	39.0%	115,944	33.2%	490,105	430,263	13.9%
Royalty	342,210	330,134	3.7%	245,952	39.1%	1,286,548	979,822	31.3%
Total	496,682	441,259	12.6%	361,896	37.2%	1,776,653	1,410,085	26.0%

US$ Thousands	Q4 2020	Q3 2020	QoQ	Q4 2019	YoY	FY 2020	FY 2019	YoY
Licensing	5,350	3,765	42.1%	3,798	40.9%	16,610	13,944	19.1%
Royalty	11,859	11,195	5.9%	8,047	47.4%	43,586	31,810	37.0%
Total	17,209	14,960	15.0%	11,845	45.3%	60,196	45,754	31.6%

Revenue by Technology

The royalty of NeoFuse has a growth of 119.8% YoY in 2020

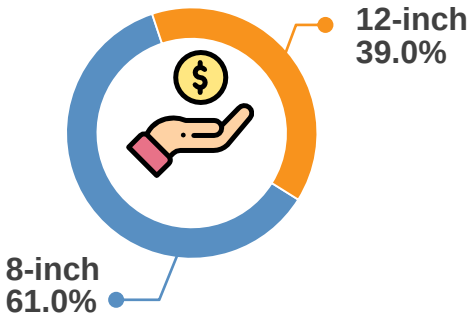
Technology	Q4 2020								
	Total Revenue			Licensing Revenue			Royalty Revenue		
	% of Q4 Revenue	Change (QoQ)	Change (YoY)	% of Q4 Licensing	Change (QoQ)	Change (YoY)	% of Q4 Royalty	Change (QoQ)	Change (YoY)
NeoBit	44.7%	-6.1%	12.2%	17.1%	6.2%	-17.1%	57.2%	-7.6%	17.8%
NeoFuse	49.5%	40.0%	81.2%	71.3%	60.6%	67.5%	39.6%	26.7%	94.1%
PUF-Based	0.5%	-58.7%	-40.1%	1.7%	-58.7%	-40.1%	0.0%	0.0%	0.0%
MTP	5.3%	14.9%	9.1%	9.9%	33.6%	9.3%	3.2%	-3.9%	8.9%

Technology	FY 2020					
	Total Revenue		Licensing Revenue		Royalty Revenue	
	% of 2020 Revenue	Change (YoY)	% of 2020 Licensing	Change (YoY)	% of 2020 Royalty	Change (YoY)
NeoBit	50.8%	5.6%	19.5%	-17.4%	62.7%	9.2%
NeoFuse	43.6%	74.7%	68.8%	38.0%	34.0%	119.8%
PUF-Based	0.7%	148.2%	2.5%	148.2%	0.0%	0.0%
MTP	4.9%	-18.1%	9.2%	-30.9%	3.3%	1.9%

Royalty Revenue by Wafer Size

12-inch wafer increased 80.9% YoY in Q4

Q4 Royalty Breakdown



- ✓ 12-inch wafers contributed 39% of royalty, increased 1.7% sequentially and 80.9% YoY.
- ✓ 8-inch wafers contributed 61% of royalty, increased 5% sequentially and 21.2% YoY.

Royalty

Wafer Size	Q4 2020			FY 2020	
	% of Q4	Change (QoQ)	Change (YoY)	% of 2020	Change (YoY)
8-Inch	61.0%	5.0%	21.2%	62.3%	18.0%
12-Inch	39.0%	1.7%	80.9%	37.7%	61.4%

Future Outlook

eMemory Embedded Everywhere

eMemory's IP seeks to penetrate across all the applications

Core Tech

✓ **Product Applications:**

eMemory's IP are already applied into different applications, which includes PMIC, LCD driver, Sensors, RFID, OLED Driver, Connectivity IC, DTV, STB, SSD Controller, Bluetooth, TDDI, MCU, Fingerprint Sensor, Smart Meters, Surveillance, ISP, CIS, DRAM, embedded Flash and FPGA.

✓ **Future Target:**

AP, GPU, CPU, Flash, IoT, AI, autonomous driving

Security

✓ **The Future in Security Chip IP:**

The rapid growth in AIoT and 5G drive the demand for hardware security. OTP and PUF are indispensable for root of trust in hardware security.

✓ **PUF-based Security Solutions:**

To satisfy the market needs, eMemory developed a new series of PUF-based security solution, including PUFrt, PUFiot, PUFse and PUFflash.

Our Perspectives

eMemory continue to create value for the industry and our shareholders

Licensing & Royalty

✓ **Licensing:**

- Licensing revenue will grow due to strong demand for NeoFuse, NeoPUF and MTP related (MTP, emerging memory and AI memory).

✓ **Royalty:**

- 8” royalties will grow due to PMIC content increase in 5G smartphone and demand pick-up for TDDI, automotive and IoT applications.
- 12” royalties will have a strong growth as customers are increasing production for ISP, OLED, DRAM, SSD Controller, Multimedia-related, Networking-related such as Bluetooth, WiFi 6, TWS and others.
- Royalties from 16nm and below have started to kick in.

Our Perspectives

eMemory continue to create value for the industry and our shareholders

✓ **For New Business Development:**

- NeoFuse in advanced process is adopted for secure key storage. This will be a trend for security requirement.
- Business activities of PUF-based security solutions are in progress in applications of IoT, IIoT, AI, Blockchain, FPGA, DPU, UFS, and automotives.
- PUFrt has been adopted by American customers.
- Partnership with ARM and RISC-V will extend our PUF-based security platform.

✓ **For New IP Technology Development:**

- Demonstrated 6nm silicon results successfully.
- 5nm plus (N5P) has been taped in Q4 and completion of silicon verification expected in 2021.
- Announced crypto processor, PUFiot, & joint-partnership with UMC on PUFflash.
- Develop PUF-based solution to be implemented in HSM.

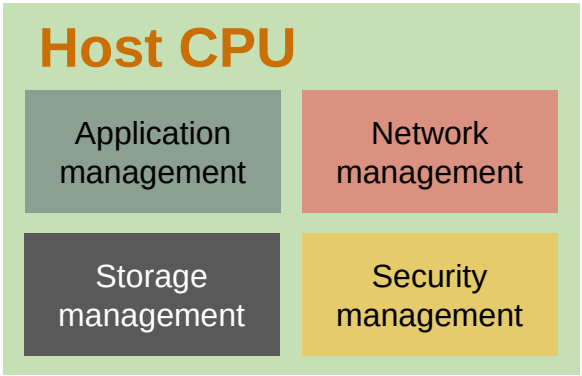
New Business & IP Technology Development

Applications of PUF-based Security Solutions in DPU

Why is DPU Required in Data Centers?

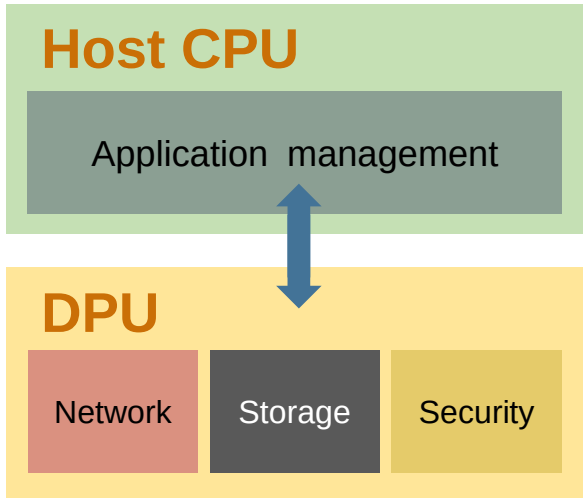
Conventional Data Center vs. DPU-powered Data Center

Conventional Data Center



CPU suffers lack of performance due to increased computation loading in APP, Network, and Storage.

DPU-powered Data Center



Offloading tasks to the DPU eases the workload of CPU and improves overall performance.

Why Does DPU Need Security Solutions?

Optimal Performance

Security can be carried out by specialized DPU, while CPU focus on applications.

Isolated Attack Surface

Each DPU forms its own Secure Enclave, which lowers the chance of a system breakdown.

Enhanced Security Level

An ideal DPU should safeguard the data under any circumstances, whether at-rest or in-transit.

Why is PUF-based HW Security the Solution?

Inborn and Genuine HW Root-of-Trust

- A firm foundation of security management
- Unique, Random, Robust, and tamper-proof

Best-in-class Key Generation

- Keys with high entropy generated on-demand
- PUF-entangled Untraceable key storage

Comprehensive Security Functions

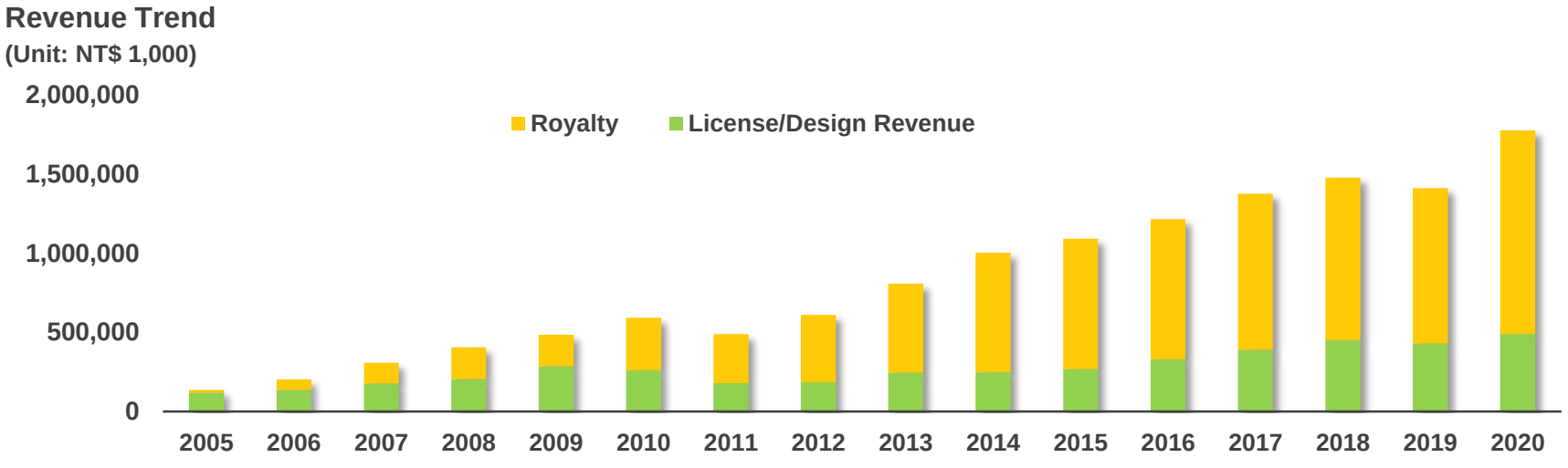
- Ensure Confidentiality, Integrity, & Authenticity
- Accelerated crypto within a secure boundary

Q&A

Appendix

Company Overview

eMemory is the global leader of embedded non-volatile memory IP



Founded
In 2000

Based in Hsinchu, Taiwan. IPO in 2011. Over 33M wafers shipped.

800+
Patents Issued

229 pending patents. 288 employees with 67% R&D personnel.

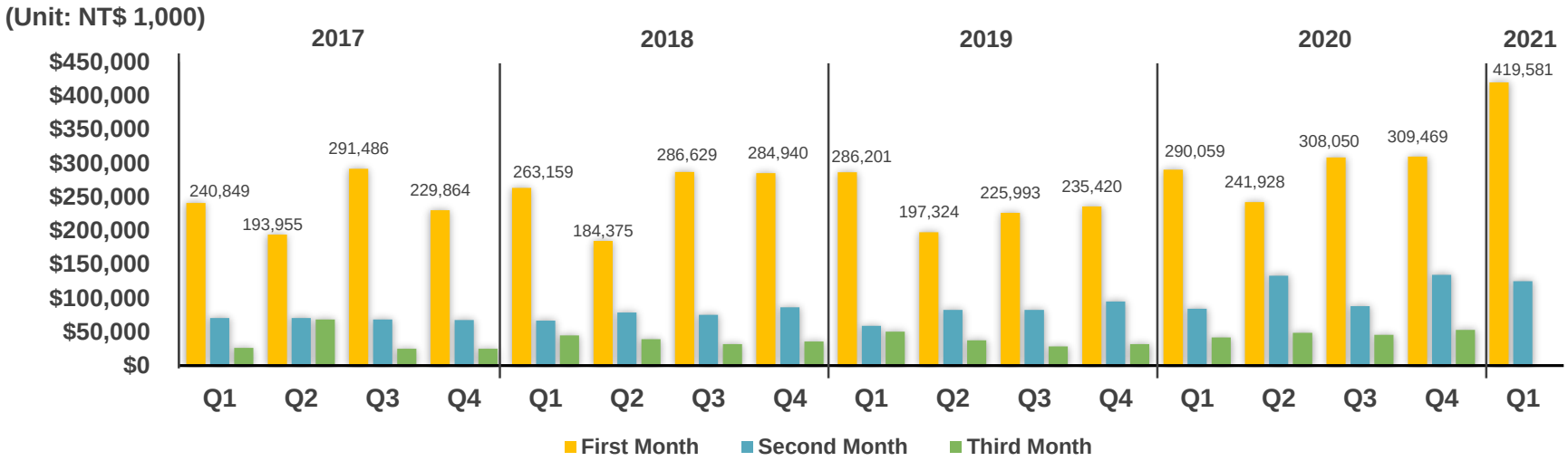
Best IP Partner
With TSMC

TSMC Best IP Partner Award since 2010.

Quarterly Revenue Pattern

eMemory's quarterly revenue pattern

- ✓ 1st month: Receive License Fees of the month and Royalty from most foundries on previous quarter's wafer shipments.
- ✓ 2nd month: Receive License Fees of the month and Royalty from other foundries.
- ✓ 3rd month: License Fees Only.



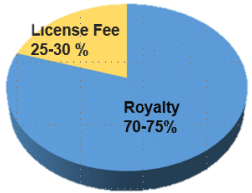
Worldwide Customers

Our IP solutions are adopted by leading foundries, IDMs and fabless worldwide

Country	Foundry	IDM	Fabless
Taiwan	4	1	302
China	8	0	812
Korea	4	0	87
Japan	4	7	64
North America	1	1	306
Europe	2	1	177
Others	1	0	76

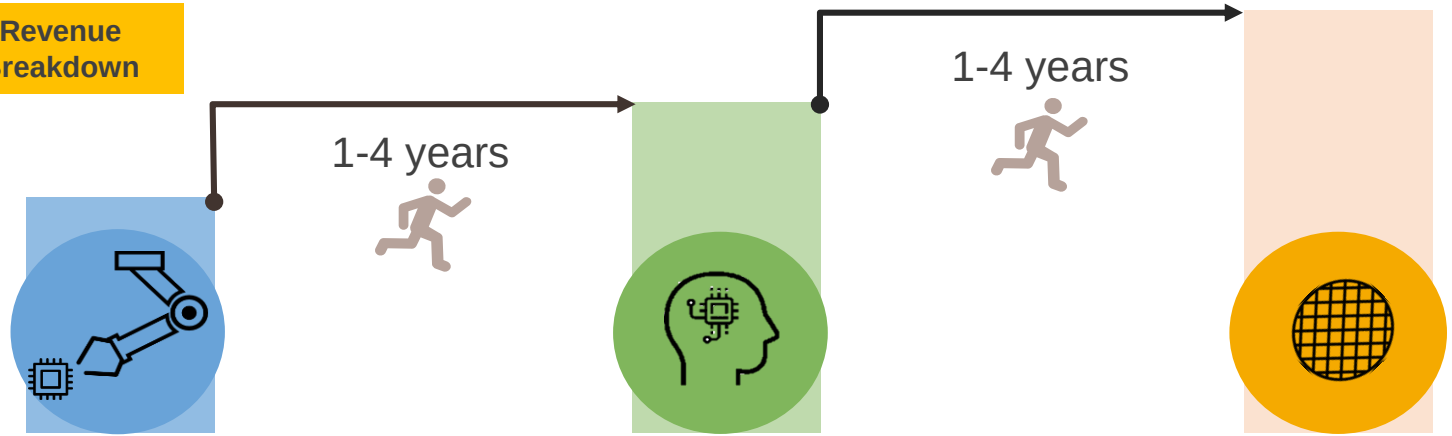
Business Model

Recurring royalty is the backbone of our business



Revenue Breakdown

- ✓ 70-75% revenue are from royalty based on wafer production
- ✓ More adoption = more volume shipment
- ✓ More advanced node wafers = higher ASP per wafer



License Fee
Foundries Process Development

Design License Fee
Fabless Product Development

Royalty
Wafer Mass Production

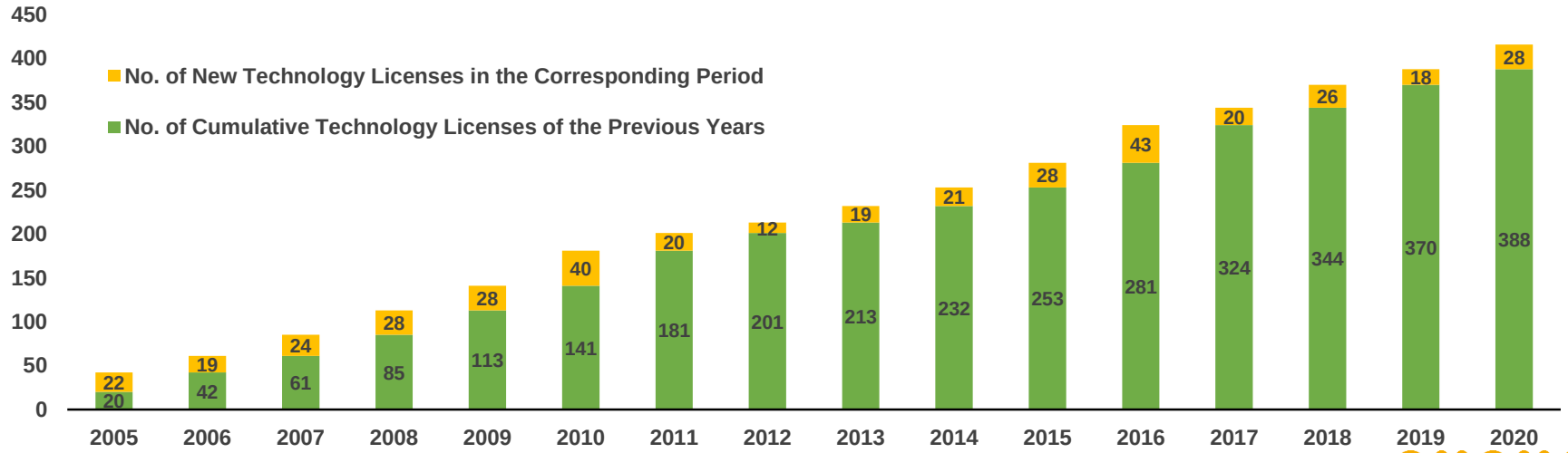
Technology Licenses

Cumulative technology licenses

Number of Licenses

Year	2016	2017	2018	2019	2020
License	43	20	26	18	28

Note: Terms (including number of process platforms and licensing fees) for each technology license are set contractually. Payments are made according to set milestones, and there are no particular seasonal factors involved.



New Technology Under Development

Products in different process nodes

- ✓ New technologies are being developed for 99 platforms by Q4 2020.
- ✓ 4 licensing contracts were signed, 3 for NeoFuse and 1 for NeoMTP.

Technology	5/6nm	7/10nm	12/16nm	22/28nm	40nm	55/65nm	80/90nm	0.11~ 0.13um	0.15~ 0.18um	>0.25um
NeoBit	-	-	-	-	-	1	2	9	11	1
NeoFuse	2	1	3	9	3	10	8	1	1	-
PUF-Based	2	-	2	2	2	1	-	-	-	-
MTP	-	-	-	-	-	3	4	9	12	-

Note: As of Dec 31st, 2020

Technology Development

Developments by process nodes

12" Fabs	Production	Development	IP Type	Process Type
5/6nm	0	4	OTP, PUF	FF
7/10nm	2	1	OTP	FF, FF+
12/16nm	3	5	OTP, PUF	FF, FF+
22/28nm	31	11	OTP, PUF	LP/ULP/ULL, HPC/HPC+, HV-OLED, DRAM, SOI
40nm	15	5	OTP, PUF	LP/ULP, E-Flash, HV-DDI/OLED
55/65nm	26	15	OTP, PUF, MTP	LP/ULP, E-Flash, HV-DDI/OLED, DRAM, CIS, BCD, PM
80/90nm	16	13	OTP, MTP	HV-DDI/OLED, LP, Generic, BCD, CIS
0.11/0.13um	17	3	OTP, MTP	HV-DDI, BCD, Generic
0.18um	1	3	OTP	BCD, Generic
Total	111	60		

8" Fabs	Development	IP Type	Process Type
90nm	1	OTP	HV-DDI, LL, BCD
0.11/0.13um	16	OTP, MTP	HV/HV-MR, BCD, LP/LL, CIS, Green, Flash, SOI, Generic
0.152/0.16/0.18um	21	OTP, MTP	HV/HV-MR, BCD, LP/LL, CIS, Green, Generic
0.25um	1	OTP	BCD
0.35um	0	OTP	UHV
Total	39		

Note: As of Dec 31st, 2020

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