Q3 2023 Investor Conference

November 8th, 2023

Embedded Wisely, Embedded Widely

ememory

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Contents

Review of Operations

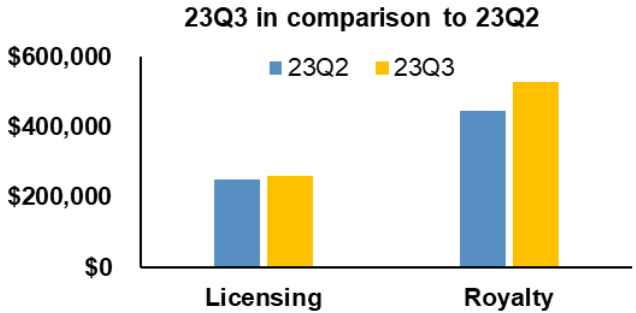
Q3 2023 **Financial Results**

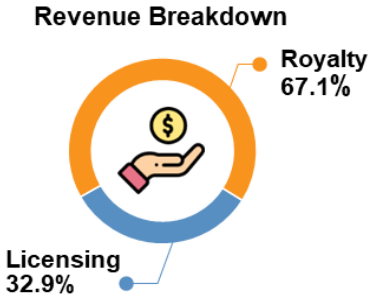
(thousands of NT dollars)

	Q3 2023	Q2 2023	QoQ	Q3 2022	YoY
Revenue	787,091	696,625	13.0%	790,608	-0.4%
Gross Margin	100%	100%	-	100%	-
Operating Expenses	369,873	327,865	12.8%	345,160	7.2%
Operating Income	417,218	368,760	13.1%	445,448	-6.3%
Operating Margin	53.0%	52.9%	0.1ppt	56.3%	-3.3ppts
*Net Income	405,903	351,697	15.4%	406,430	-0.1%
Net Margin	51.5%	50.2%	1.3ppts	50.9%	0.6ppt
EPS (NT$)	5.44	4.71	15.5%	5.45	-0.2%
ROE	57.2%	53.5%	3.7ppts	63.7%	-6.5ppts

*Net income attributable to Shareholders of the Company

Revenue across **Different Streams**





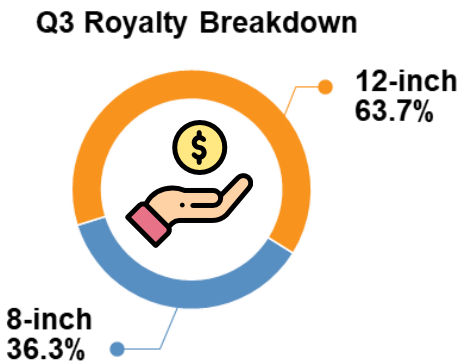
Revenue

NT$ Thousands	Q3 2023	Q2 2023	Change (QoQ)	Q3 2022	Change (YoY)
Licensing	259,151	249,711	3.8%	144,631	79.2%
Royalty	527,940	446,914	18.1%	645,977	-18.3%
Total	787,091	696,625	13.0%	790,608	-0.4%

Revenue by **Technology**

Technology	Q3 2023								
	Total Revenue			Licensing Revenue			Royalty Revenue		
	% of Q3 Revenue	Change (QoQ)	Change (YoY)	% of Q3 Licensing	Change (QoQ)	Change (YoY)	% of Q3 Royalty	Change (QoQ)	Change (YoY)
NeoBit	23.8%	-2.8%	-30.9%	27.4%	25.5%	87.4%	22.1%	-14.5%	-50.1%
NeoFuse	63.4%	20.2%	9.4%	38.4%	-12.3%	48.0%	75.6%	32.5%	2.7%
PUF-Based	7.3%	104.7%	161.6%	22.1%	108.7%	189.4%	0.0%	-91.5%	-97.8%
MTP	5.5%	-28.7%	5.4%	12.1%	-39.9%	59.0%	2.3%	39.0%	-44.0%

Royalty Revenue by **Wafer Size**



- 8-inch wafers contributed 36.3% of royalty, down 3.8% sequentially and down 36.5% yearly.
- 12-inch wafers contributed 63.7% of royalty, up 35.7% QoQ but down 2.3% YoY.

Wafer Size	Q3 2023		
	% of Q3	Change (QoQ)	Change (YoY)
8-Inch	36.3%	-3.8%	-36.5%
12-Inch	63.7%	35.7%	-2.3%

Future Outlook

Future Outlook

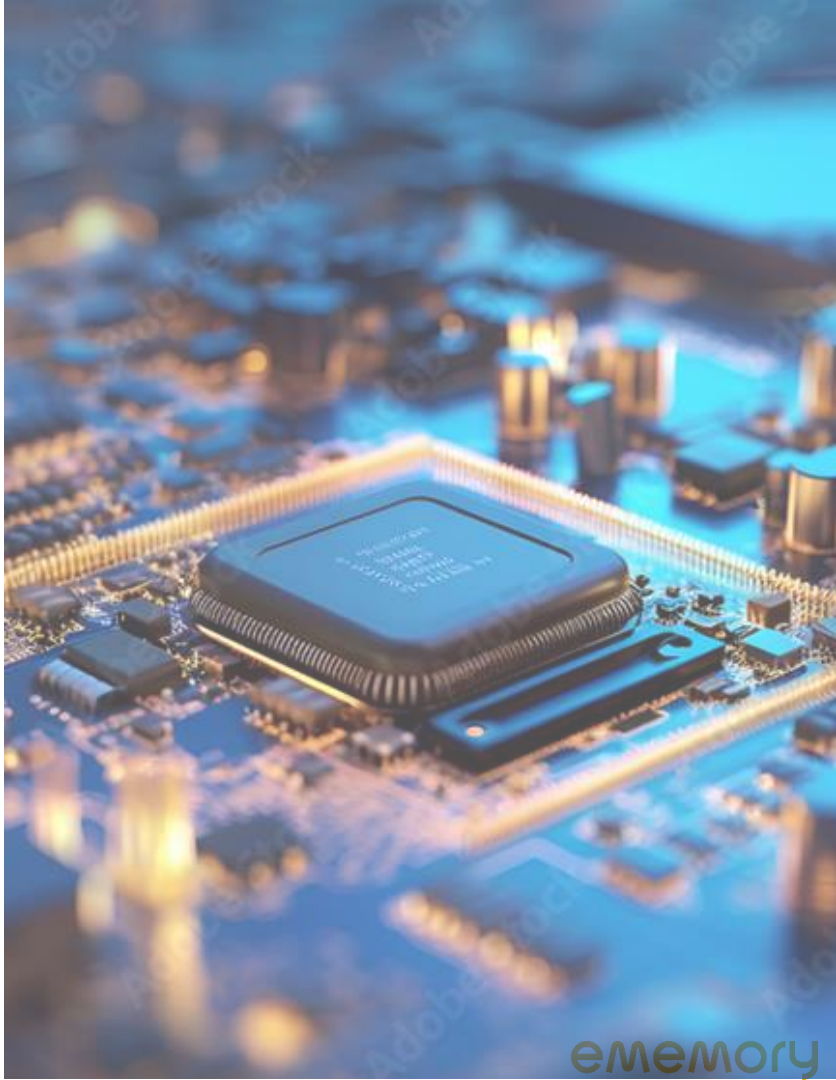
Licensing & Royalty:

- Strong licensing demand will continue to drive the growth momentum of licensing fees.
- We expect royalties to regain growth momentum as new processes and applications enter production.

New IP Technology & Business Development:

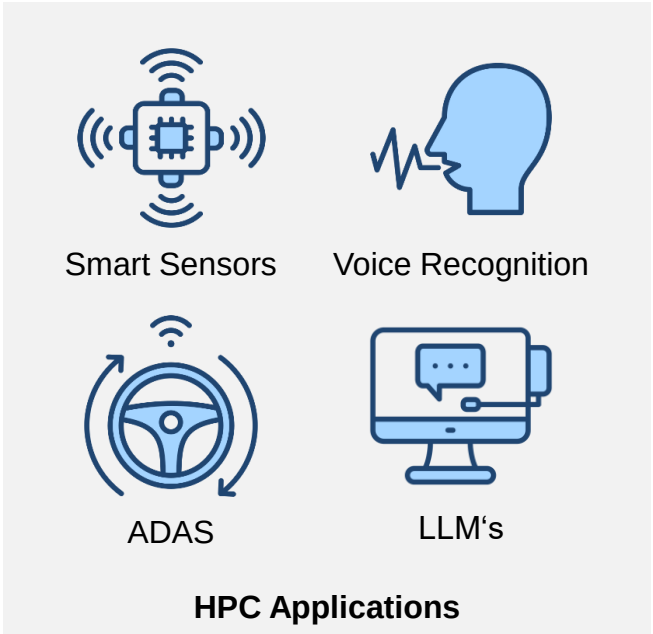
- Our development of special processes such as HV, HK, BCD, embedded flash, and emerging memory (RRAM/MRAM) continues to move into more advanced nodes, driving more applications and sustained growth in royalty revenues per wafer.
- Security-related applications are the focus of our development in advanced processes. In addition to licensing to major foundries, we expect to complete licensing to US foundries this quarter.

OTP for SRAM Repair in HPC

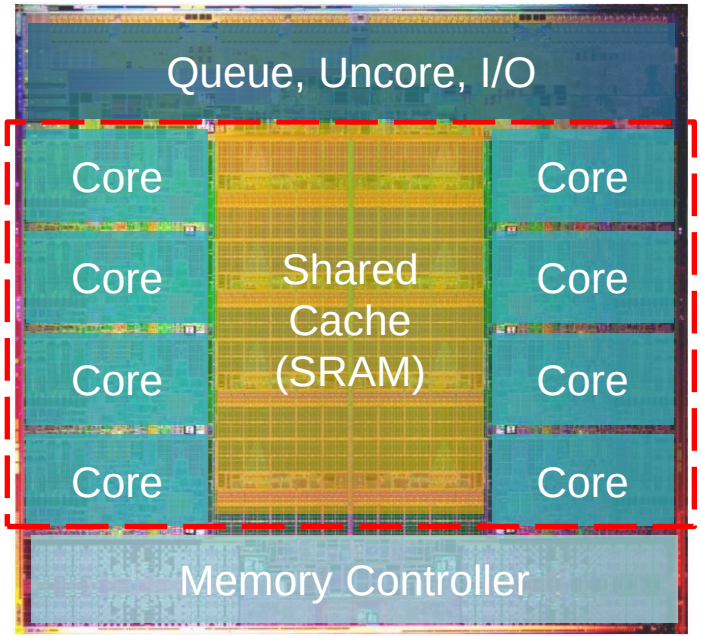


Embedded **SRAM** for **Advanced Nodes**

- The rise of High-Speed Computing (HPC), such as DPU, GPU, and AI are driving the need for High-Density Embedded SRAM.
- Therefore, SRAM Repair in Advanced Process is a must.



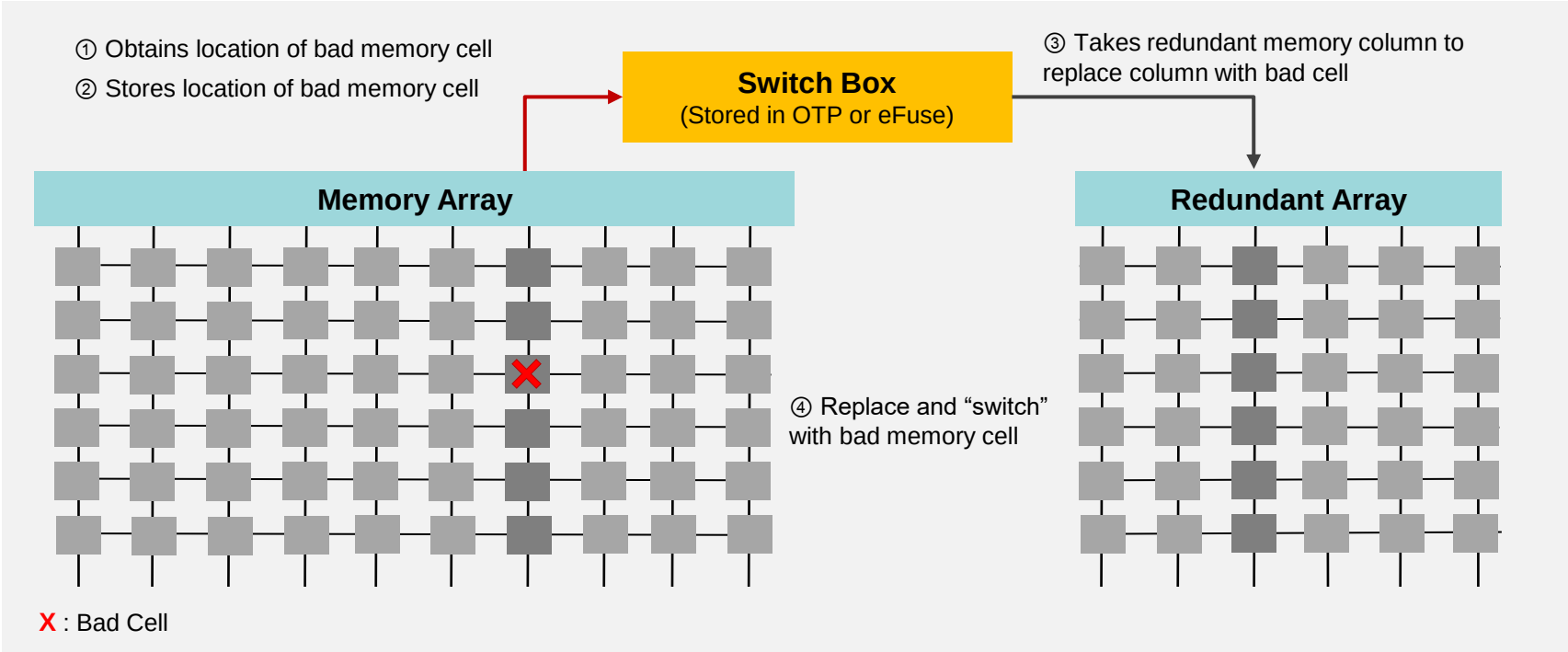
Due to Multi-core CPU’s, SRAM needs larger densities to store information



Ex: Intel Core i7-3960X Die Shot

Scheme of **SRAM Repair**

- Memory is usually repaired through a Switch Box that replaces the bad memory cells with Redundant Memory cells.



Why **OTP** is a Must for **SRAM Repair**

- To repair memory, you need to store the location of bad memory cells. For a Switch Box, OTP is a better solution than eFuse considering the **area cost effect, yield, reliability and flexibility**.

Features	eFuse	OTP
Cell Size	Large	Small
Repairing Density	Small	Large
Yield	Worse	Better
Reliability	Worse	Better
Flexibility	Worse	Better

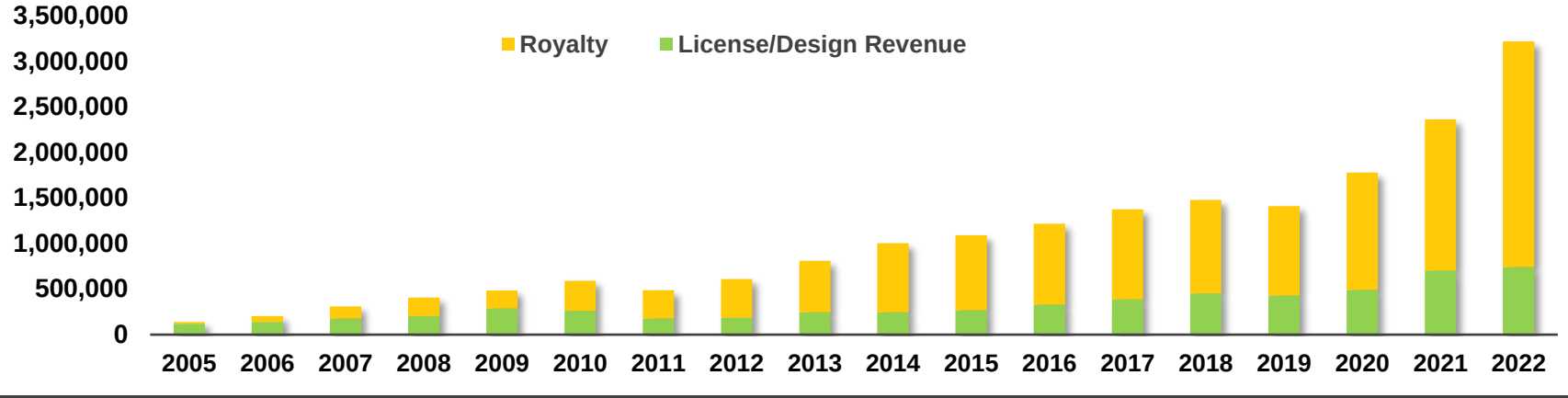
Q&A

Appendix

Company Overview

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

Revenue Trend
(Unit: NT$ 1,000)



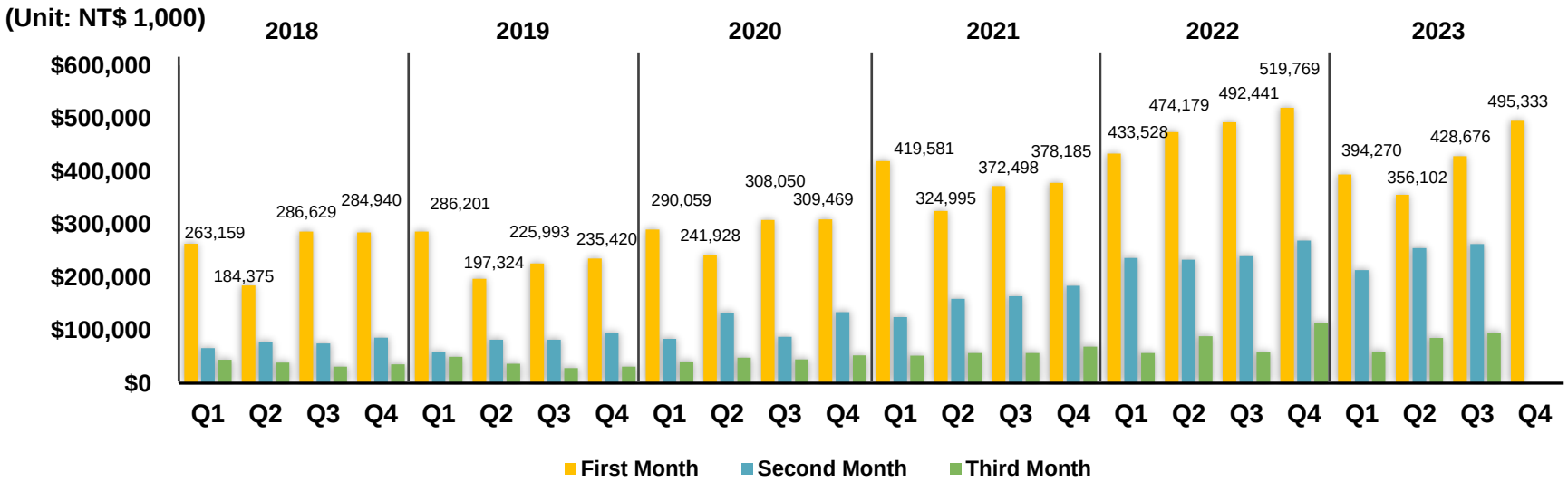
Founded
In 2000
Based in Hsinchu, Taiwan. IPO in 2011. Over 53M wafers shipped.

1150+
Patents Issued
199 pending patents. 345 employees with 67% R&D personnel.

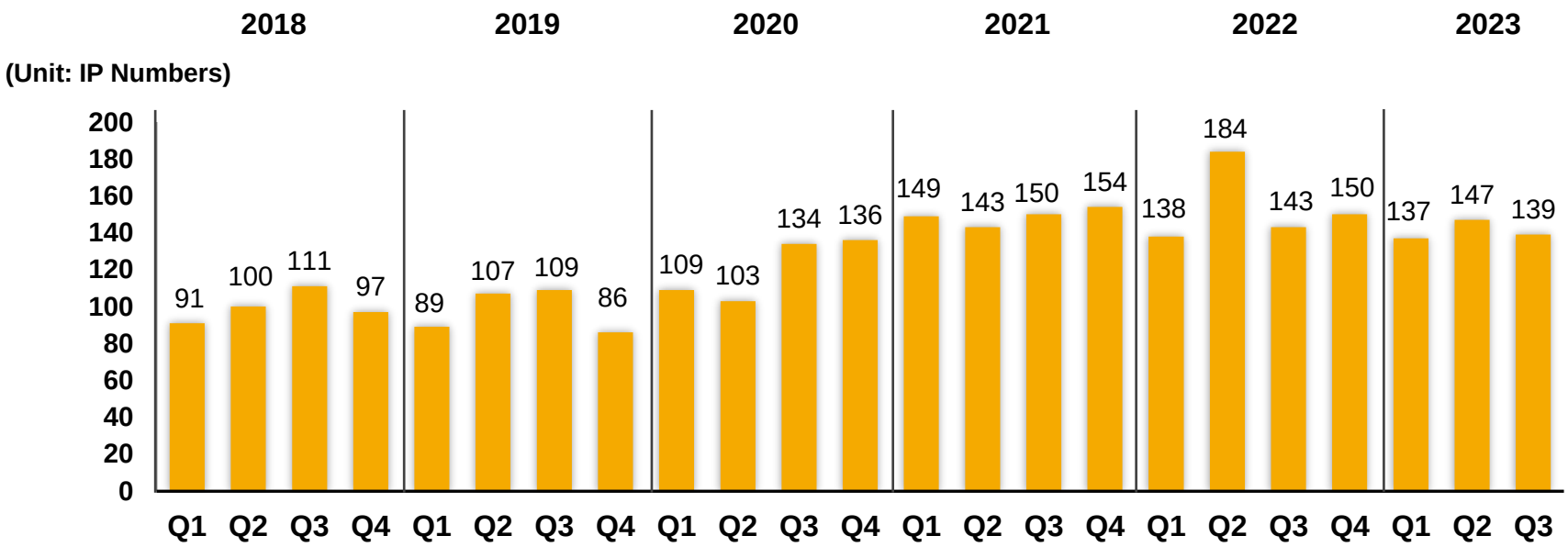
Best IP Partner
With TSMC
TSMC Best IP Partner Award since 2010.

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.



Quarterly Number of **New Tape-outs**



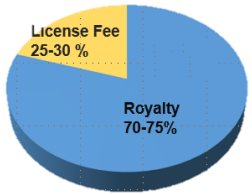
Worldwide Customers

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

Country	Foundry	IDM	Fabless
Taiwan	4	1	323
China	9	0	1105
Korea	4	0	96
Japan	4	7	80
North America	1	1	365
Europe	2	1	211
Others	1	0	103

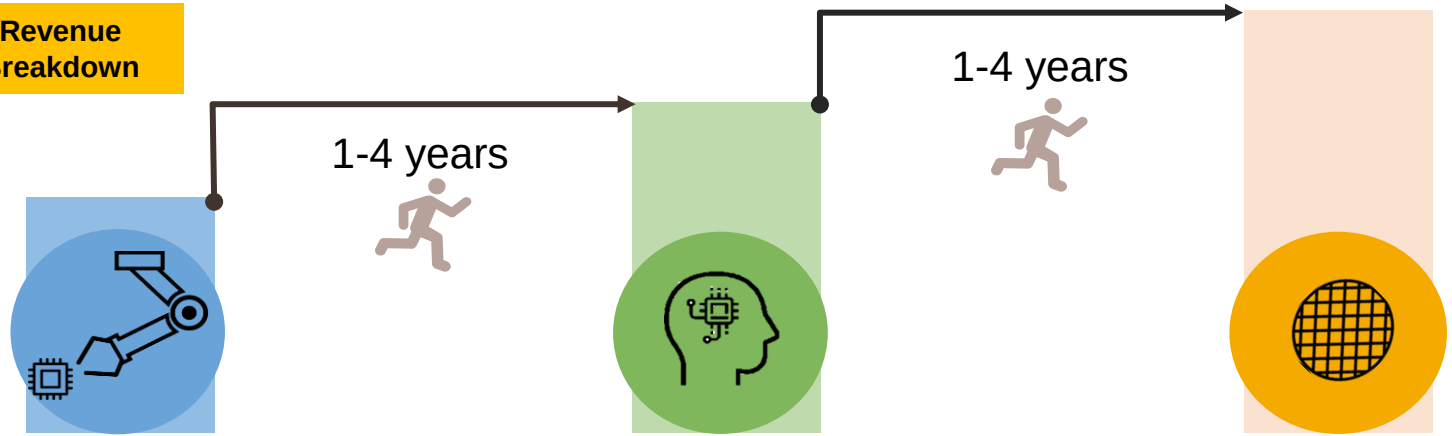
Business Model

- 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

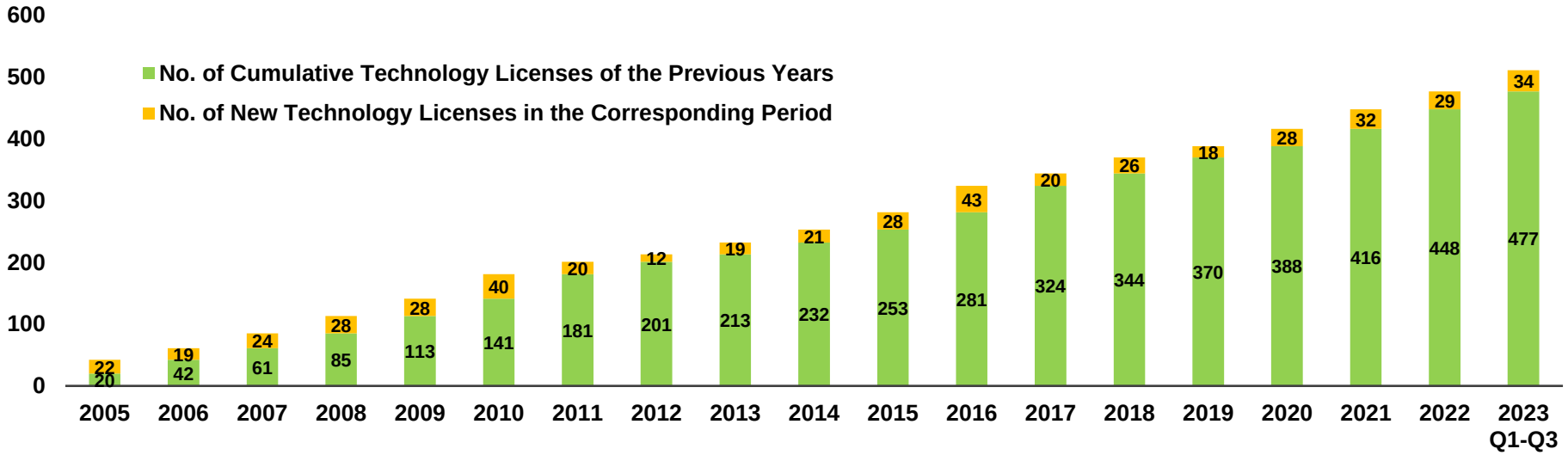
Royalty
Wafer Mass Production

Technology **Licenses**

Number of Licenses

Year	2016	2017	2018	2019	2020	2021	2022	2023 Q1-Q3
License	43	20	26	18	28	32	29	34

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

- New technologies are being developed for 156 platforms by Q3 2023.
- 15 licensing contracts were signed.

Technology	3nm	4/5nm	6/7nm	12/16nm	22/28nm	40nm	55/65nm	80/90nm	0.11~ 0.13um	0.15~ 0.18um	>0.25um
NeoBit	-	-	-	-	-	-	2	1	14	12	1
NeoFuse	3	2	1	6	17	6	19	7	3	4	-
PUF-Based	-	4	-	1	1	-	1	-	-	-	-
MTP	-	-	-	-	2	1	8	7	12	21	-

Note: As of September 30th, 2023

Technology Development

- Developments by process nodes

12" Fabs	Production	Development	IP Type	Process Type
3nm	0	3	OTP, PUF	FF, FFP
4/5nm	2	6	OTP, PUF	FF, FF-Auto
6/7nm	4	1	OTP, PUF	FF, FF+
12/16nm	9	7	OTP, PUF	FF, FF+, FFC. FFC+, LPP, DRAM, HV
22/28nm	46	20	OTP, PUF, MTP	LP/ULP/ULL, HPC/HPC+, HV-OLED, DRAM, SOI, ReRAM, MRAM, E-Flash, BCD
40nm	23	7	OTP, PUF, MTP	LP/ULP, E-Flash, HV-DDI/OLED, ReRAM, BCD+
55/65nm	40	30	OTP, PUF, MTP	LP/ULP, E-Flash, HV-DDI/OLED, DRAM, CIS, BCD, PM
80/90nm	27	12	OTP, MTP	HV-DDI/OLED, LP, Generic, BCD, CIS
0.11/0.13um	21	3	OTP, MTP	HV-DDI, BCD, Generic
0.15/0.18um	7	11	OTP, MTP	BCD, Generic
Total	179	100		

8" Fabs	Production	Development	IP Type	Process Type
80/90nm	9	3	OTP	HV-DDI, LL, BCD
0.11/0.13um	77	26	OTP, MTP, PUF	HV/HV-MR, BCD, LP/LL, CIS, Green, Flash, SOI, Generic
0.152/0.16/0.18um	233	26	OTP, MTP	HV/HV-MR, BCD, LP/LL, CIS, Green, Generic
0.25um	42	1	OTP	BCD
0.3/0.35um	53	-	OTP, MTP	UHV, BCD
0.4/0.5um	11	-	OTP	UHV, BCD
Total	425	56		

Note: As of September 30th, 2023

THANKS

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For more information, please visit:
eMemory Website: https://www.ememory.com.tw/
PUFsecurity Website: https://www.pufsecurity.com/