# ememory

## 2015 Q4 Investor Conference

Feb. 18<sup>th</sup>, 2016

### **IPR Notice**

All rights, titles and interests contained in this information, texts, images, figures, tables or other files herein, including, but not limited to, its ownership and the intellectual property rights, are reserved to eMemory. This information may contain privileged and confidential information. Some contents in this information can be found in Logic Non-Volatile Memory (The NVM solutions from eMemory), published in 2014. Any and all information provided herein shall not be disclosed, copied, distributed, reproduced or used in whole or in part without prior written permission of eMemory Technology Inc.

eMemory, NeoBit, NeoFlash, NeoEE, NeoMTP and NeoFuse are all trademarks and/or service marks of eMemory in Taiwan and/or in other countries.

### **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.

#### **Outline**

- Business Model
- Review of Operations for 2015 Q4
- Future Outlook
- Stock Option Cost Estimation
- Q & A



### **Business Model**

- Founded in 2000. First customer engaged in 2002. Achieved profitability in 2005 and IPO in 2011. The largest logic non-volatile memory IP company, 227 employees (157 R&D)\*.
- Since its IPO, the company initiated no new fund raising or bank debt, and has distributed in excess of 100% of earnings in cash dividends.
- Growth Indices: 1) No. of on-going technology platforms
  - 2) No. of design licenses
  - 3) Royalty

Upfront Licensing Fee =Technology and Design License



Note\*: As of Dec. 31st, 2015

mass production of customer wafers

### **Worldwide Customers**



	Taiwan	China	Korea	Japan	North America	Europe	Others
Foundry	5	7	3	2	1	1	1
IDM	0	0	0	8	2	1	0
Fabless	237	351	51	36	181	94	40



























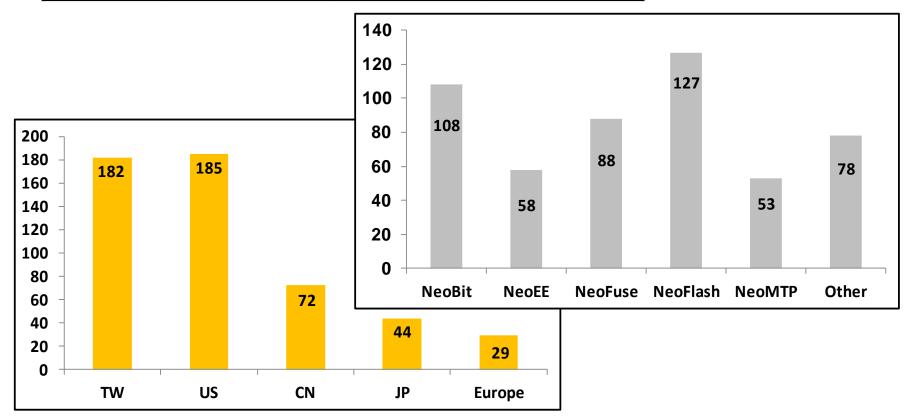






#### **Patent Portfolio**

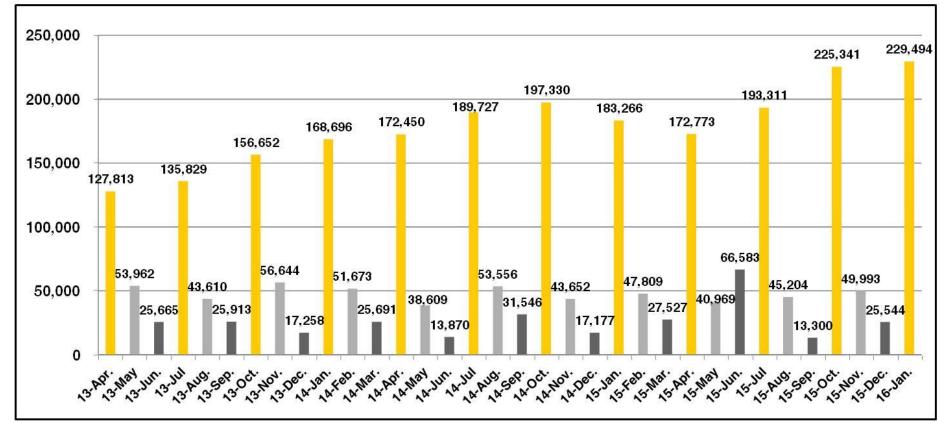
	Q3 15	Q4 15	Diff.
Pending	187	187	-
Issued	304	325	+21
Total	491	512	+21



### **Quarterly Revenue Pattern\***

• The quarterly royalty from most of foundries are collected at first month of each quarter and from some other foundries are collected at second month, and none at third month.

**Unit: NTD Thousands** 



#### **Outline**

- Business Model
- Review of Operations for 2015 Q4
- Future Outlook
- Stock Option Cost Estimation
- Q & A



### **Q4 Revenue Breakdown**

#### **Unit: NTD thousands**

	2015 Q4	2015 Q3	QoQ	2014 Q4	YoY	2015	2014	YoY
Licensing	69,307	38,167	81.59%	51,849	33.67%	267,512	246,073	8.71%
Royalty	231,571	213,648	8.39%	206,310	12.24%	824,108	757,904	8.74%
Total	300,878	251,815	19.48%	258,159	16.55%	1,091,620	1,003,977	8.73%

#### **Unit: Number of contracts**

		2015 Q4	2015 Q3	2015	2014
Technology Licenses		11	4	28	21
Licenses	NRE	9	10	57	82
	Usage	104	76	349	363

### **Financial Income Statement**

(Unit: NTD thousands)	Q4 15	Q4 14	% change	2015	2014	% change
Revenue	300,878 *	258,159	16.5%	1,091,620 *	1,003,977	8.7%
Gross Margin	100%*	100%	-	100%*	100%	-
Operating Expenses	156,216 *	148,466	5.2%	570,403 *	540,286	5.6%
Operating Margin	48.1%*	42.5%	+5.6ppts	47.7%*	46.2%	+1.5ppts
Net Income	128,090 *	100,931	26.9%	479,111 *	418,604	14.5%
Net Margin	42.6%*	39.1%	+3.5ppts	43.9% *	41.7%	+2.2ppts
EPS (Unit: NTD)	1.69 *	1.33	27.1%	6.32 *	5.52	14.5%
ROE	28.4%*	23.4%	+5.0ppts	26.6% *	24.3%	+2.3ppts

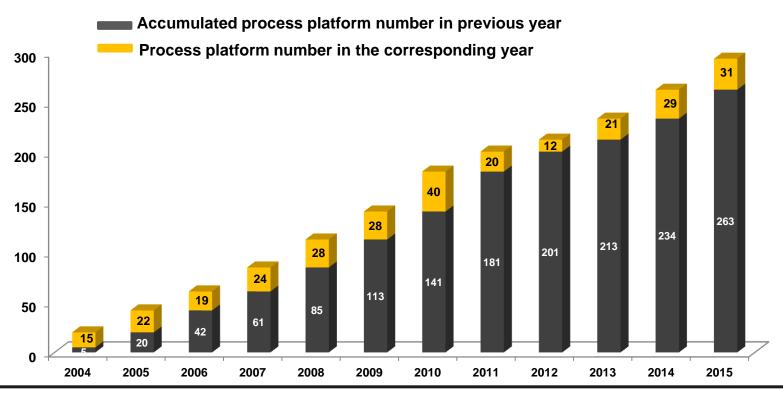
<sup>\*</sup> Unaudited

### **Technology License**

**Unit: Number of contract** 

Year	2013	2014	2015
License number	19	21	28

Note: The 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.



### **Current Technology Development Platforms**

- Total (As of Dec.) : 100
- 16 for NeoBit, 38 for NeoFuse, 26 for NeoEE, and
  20 for NeoMTP.

	10nm	14/16nm	28nm	40nm	55/65nm	80/90nm	0.11~ 0.13um	0.15~ 0.18um	>0.25 um	Total
NeoBit	-	-	-	-	-	-	5	11		16
NeoFuse	1	3	9	4	9	3	6	3	-	38
NeoFlash	-	-	-	-	-	-	-	-	-	0
NeoEE	-	-	-	2	-	1	6	17	-	26
NeoMTP	•	-	-	1	2	2	4	11	-	20

### **Current Technology Development Platforms**

12" Fabs	Production	Development	NVM Type	Process Type
10nm	0	1	ОТР	FF
14/16nm	0	3	ОТР	FF+
28nm	5	9	ОТР	LP/HPM, HLP/HPM, LPS
40nm	2	7	OTP, MTP	HV-DDI, LP
55/65nm	10	11	OTP, MTP, Flash	LP, HV-DDI, HV-OLED, DRAM, CIS
80/90nm	5	6	OTP, MTP	HV-DDI, HV-OLED, LP
0.13/0.11um	6	4	OTP, Flash	HV-DDI, BCD, Generic
0.18um	1	0	ОТР	BCD

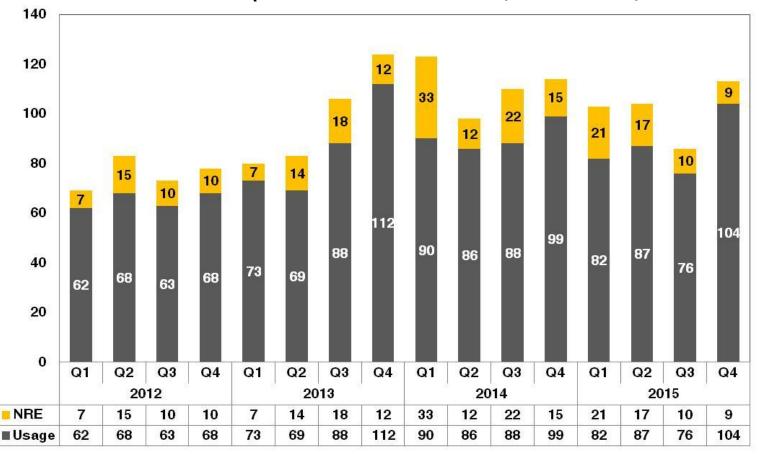
8" Fabs	Development	NVM Type	Process Type
0.13/0.11um	17	OTP, MTP, Flash	HV-DDI, BCD, LP, RF, CIS, LL
0.18/0.16/0.152um	42	OTP, MTP	Generic, LP, LL, MR, HV, Green, BCD
0.25um	0	OTP, MTP	BCD
0.35um	0	ОТР	UHV

\*As of Dec. 31, 2015



## Quarterly Design Licensing (New Tape Out)

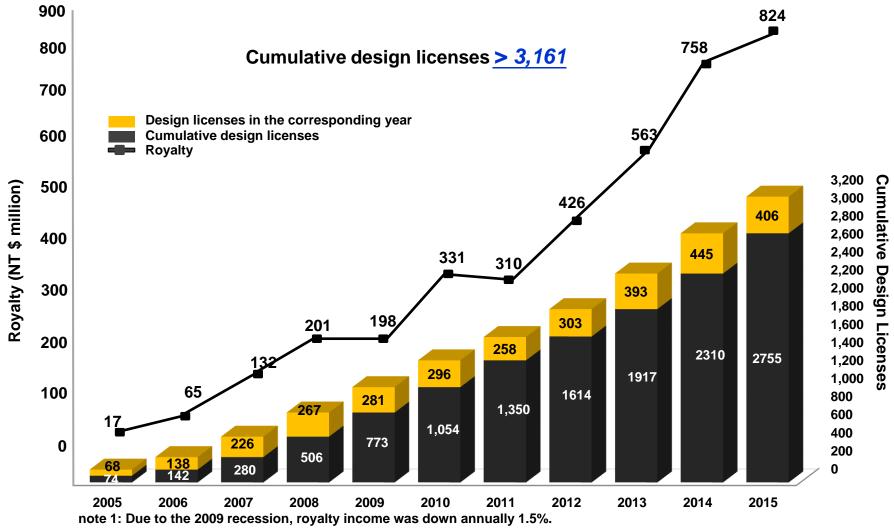
- Total 406 NTO in 2015 ( 445@2014 393@2013, 303@2012, 258@2011)



Usage: Usage of pre-qualified and verified IP (charged by per product tape out or annual package), the cycle time from design implementation to royalty payments for mass production is faster, typically less than one year.

NRE: NRE covers the customization of IP that must undergo new verification or qualification. It typically requires 1 to 1.5 years before resulting in royalty revenue.

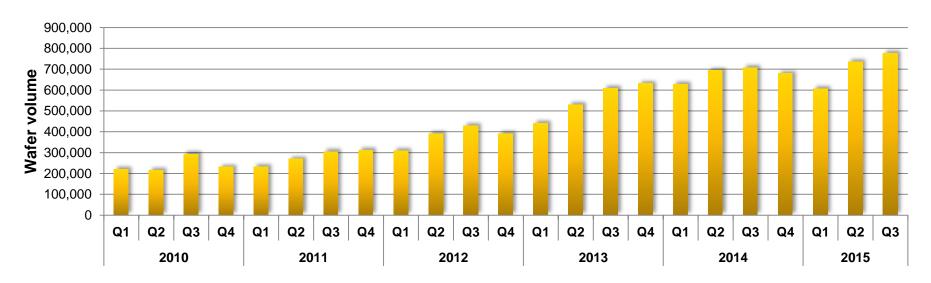
### **Cumulative Licenses Drive Future Royalties**



note 2: Pre-payment of royalty fees by a single customer contributed to 2010 annual growth of 67%, causing a drop of 6.3% in the following year, 2011.

note 3: CAGR for 2009-2013 was 30%.

#### Wafer Production Volume



embedded eMemory IP in T Company (\$revenue); \* % of Process node in T company total revenue in Q4 15

	Process node	*% of T	Q4 15	Q3 15	2015	2014
8"	0.25/0.35	4%	47.61%	38.2%	33.49%	30.5%
	0.15/0.18	11%	10.11%	7.9%	8.73%	11.9%
	0.11/0.13	3%	29.24%	30.9%	29%	20.8%
12"	90nm	7%	20.20%	21.8%	19.85%	16.3%
	65nm	11%	0.61%	0.9%	0.55%	0%
	40/45nm	14%	0%	0%	0%	0%
	28nm	25%	0.18%	0.02%	0.05%	0%
	16/20nm	24%	0%	0%	0%	0%
8"		19%	21.64%	16.3%	16.64%	15.6%
12"		81%	1.88%	2.3%	1.87%	1.4%
Total		100%	5.42%	5.0%	4.76%	4.5%

### **Outline**

- Business Model
- Review of Operations for 2015 Q4
- Future Outlook
- Stock Option Cost Estimation
- Q & A

### **Outlook for Q4 and Beyond**

- License fee expected to grow due to the successful development in advanced nodes.
- PMIC continually extends to the application of wireless charger and fast charger related products.
- 55nm DDI continues volume production. More than 50 tape out were done in past two years.
- 28nm Set-top Box processor starts to volume production. There are more customers will tape out new products in Q1 2016.

### Outlook for Q4 and Beyond

- Fingerprint and CIS customers start to small volume production.
- The qualification of 16nm FF+ started and expected to be completed at end of March 2016.
- 16nm FFC verification is successful. Qualification will be started in Q1 2016.
- 10nm FF IP will tape out in March and already has customer engagement.
- More projects on automotive, the applications extend from PMIC to LCD Driver.

### **Key Growth Drivers**

# Growth in application per mobile devices

More chip applications per smartphone/tablet product.

### Growth into more markets

- From consumer electronics and mobile devices to wearable devices.
- Adding new NVM product lines further enable more product applications.

## Growth in advanced technology

 Higher royalty per wafer is contributed from more advanced technology nodes.

#### **Great IoT era**

• Embedded Logic NVM will be a must.

#### **Outline**

- Business Model
- Review of Operations for 2015 Q4
- Growth Opportunity and Future Outlook
- Stock Option Cost Estimation
- Q & A



### Q & A

# ememory

**Embedded Wisely, Embedded Widely**