



# Nanya Technology

## Macquarie Taiwan Corporate Day

Presentation to Investors and Analysts, October 18<sup>th</sup>-19<sup>th</sup>, 2017

**Dr. Pei Ing Lee, President & Spokesman**



# Safe Harbor

The information herein and the presentation made during the conference contain forward-looking statements and are provided for information purposes only. Neither Nanya Technology Corp. nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements or undertakes duty to update the statements. You are urged to review the information provided herein carefully, and please don't distribute, reproduce or disclose the information in whole or in part without prior written permission of NANYA Technology Corp.

# Agenda

01.	Nanya Technology Overview
02.	Q3'17 Revenue & Results
03.	Operation Guidance
04.	Q4'17 Market Outlook
05.	Q4'17 Business Outlook



# 01

## **NANYA TECHNOLOGY OVERVIEW**

# Nanya Technology Overview

## IDM Company

- Founded in 1995, IPO in 2000
- DRAM Process, Design, Production & Sales
- Headquarters: New Taipei, Taiwan
- Employees: >2,700
- Focus on value-added DRAM market
- Formosa Plastics Group (FPG) has 75.5% equity ownership as of Sep. 30th, 2017

## Technology & Capacity

- **Technology :**
  - Target to ramp 20nm to 38K WSPM by the end of 2017
  - 20nm Product offerings: DDR3/DDR4, LPDDR3/LPDDR4X
- **Capacity:**
  - Current: 60,000 WSPM(12" )
  - 2018: 68,000 WSPM(12" ) (38K 20nm + 30K 30nm)

\*WSPM: Wafer Starts Per Month

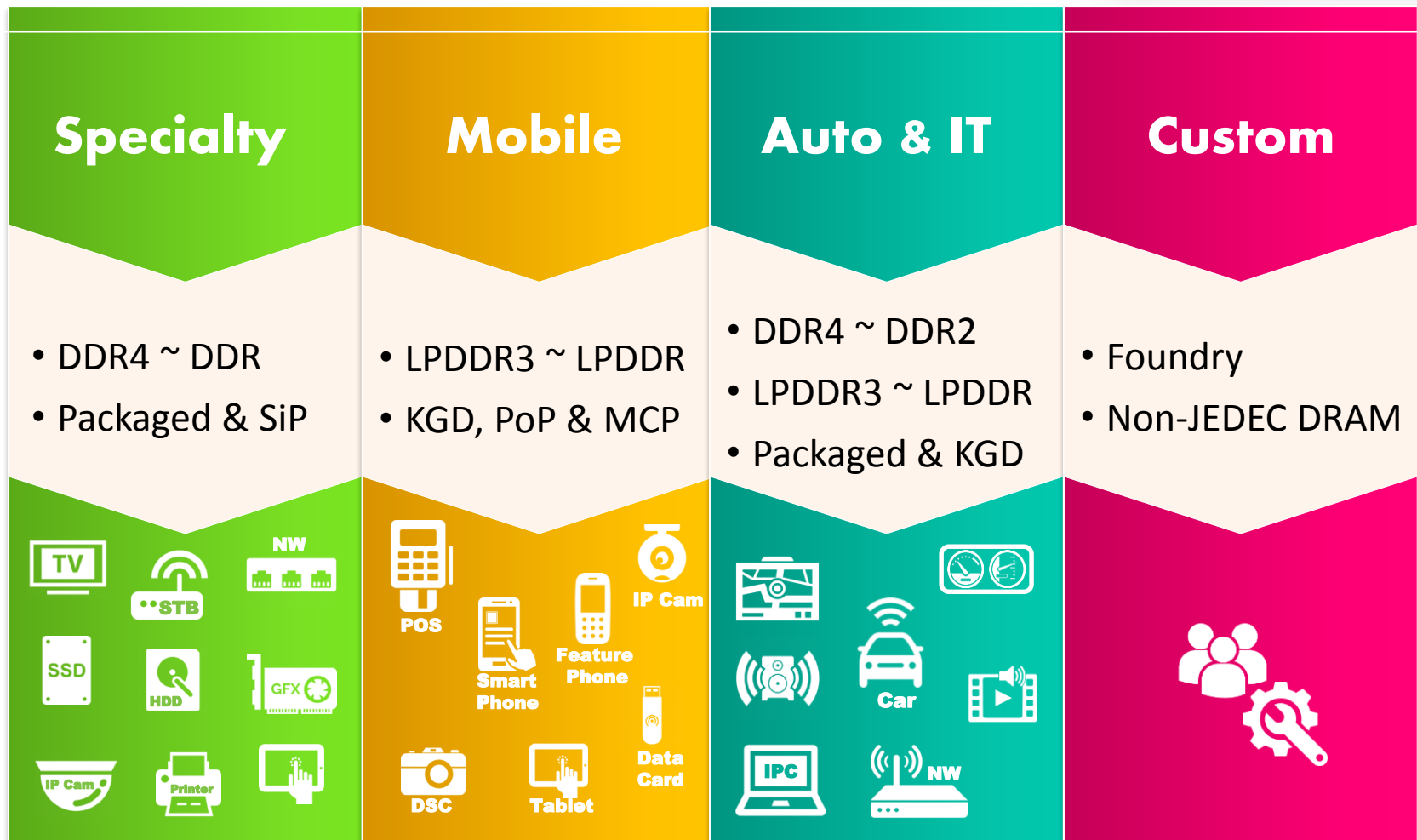
## Partnerships

- **Technology license form MU**  
Option rights to license Micron 1x and 1y nm technologies and products.
- **Shareholding in Micron**  
(as of Sep. 30th, 2017)
  - Sold 62% of Nanya original investment
  - Own 1.97% of Micron's share

# Worldwide Coverage & Location



# Nanya Specialty DRAM Product Portfolio





# 02

## Q3'17 REVENUE & RESULTS



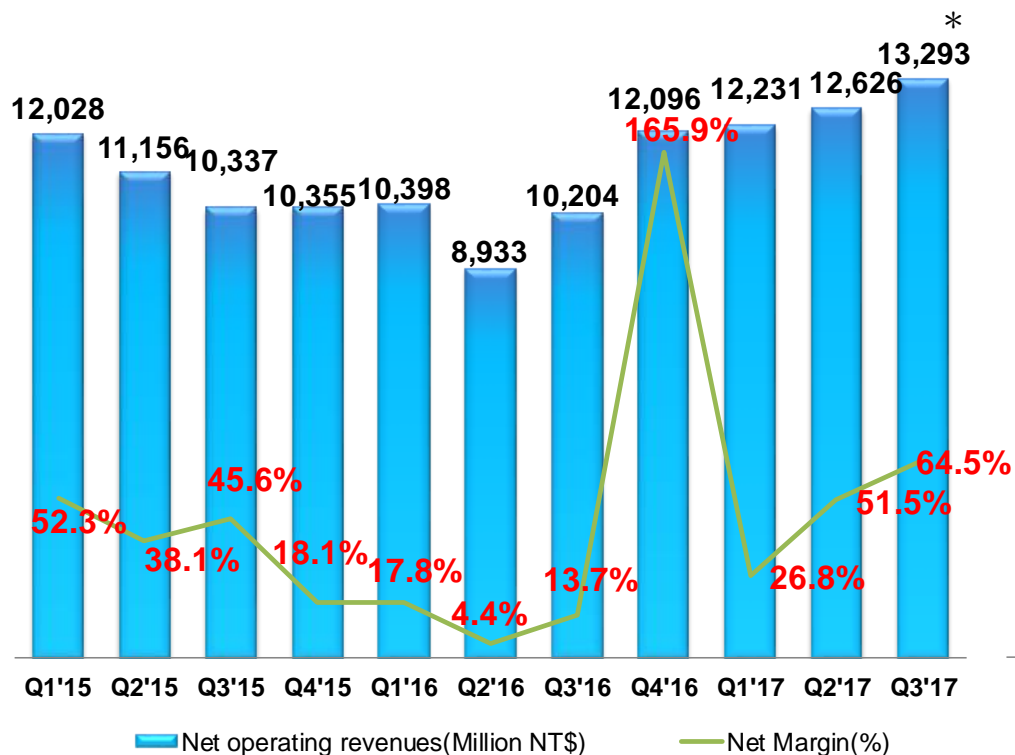
# Q3'17 Key Takeaways

- **Q3'17 Revenue of NT\$ 13,293 million(M), (+5.3% QoQ)**
- **ASP increased 2.3%, Bit shipment increased 2.9%**
- **Gross Margin 44.2%; Operating Margin 31.9%**
- **Recognized NT\$ 11,165M gain from Micron share disposal**
- **Recognized NT\$ 6,863M loss due to ECB valuation**
- **Q3'17 Net Income of NT\$ 8,574M, Net Margin 64.5%, EPS NT\$ 3.12**
- **Q1'17 ~ Q3'17 Net Income of NT\$ 18,339M, Net Margin 48.1%, EPS NT\$ 6.67**

# Financial Highlights

## 2015-2017 Quarterly Results

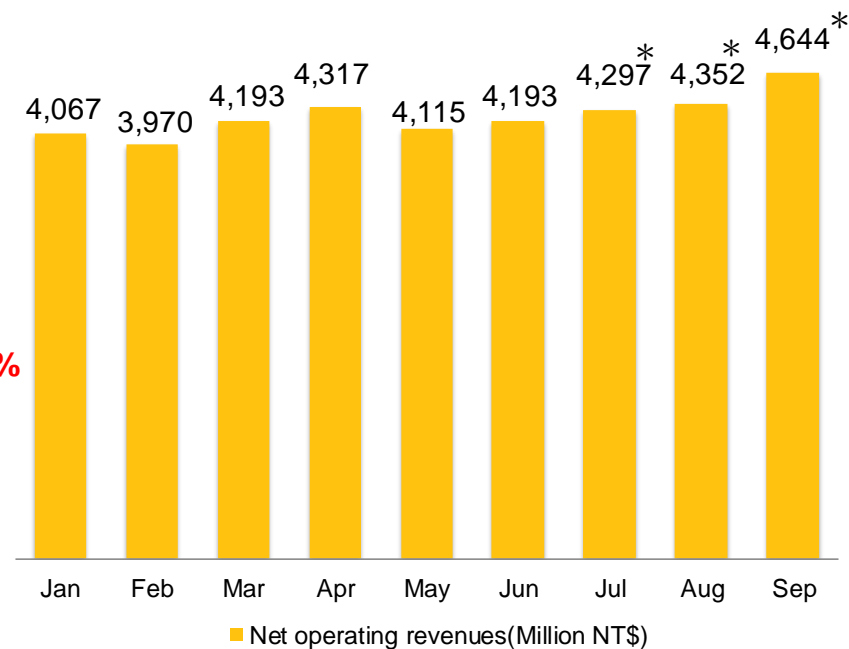
\* Unaudited number



## Monthly Revenues

\* Unaudited number

Net operating revenues (Million NT\$)



# Quarterly Revenue Results

	QoQ Q3'17 vs. Q2'17	YoY Q3'17 vs. Q3'16
Revenue	5.3%	30.3%
Shipment	2.9%	-5.1%
ASP	2.3%	44.2%
Exchange Rate	0.0%	-4.8%

- Q3'17 revenue increased by 5.3% QoQ
- Q3'17 bit shipment increased by 2.9% QoQ
- Q3'17 ASP increased by 2.3% QoQ

# Q3'17 Financial Results Summary

Amount in Million NT\$,  
except for EPS & BVPS

	Q3'17 Unaudited		Q2'17 Audited		QoQ	Q3'16 Audited		YoY
Net Sales	13,293	100%	12,626	100%	5.3%	10,204	100%	30.3%
Gross Margin (Loss) <i>Gross Margin(%)</i>	5,882	44.2%	5,544	43.9%	6.1%	3,171	31.1%	85.5%
Operating Income (Loss) <i>Operating Margin(%)</i>	4,245	31.9%	4,167	33.0%	1.9%	1,699	16.7%	149.9%
EBITDA* <i>EBITDA Margin (%)</i>	6,400	48.1%	6,098	48.3%	5.0%	3,215	31.5%	99.0%
Non-operating Income (Expense)	4,342	32.7%	3,835	30.4%		-296	-2.9%	
Income Tax Benefit (Expense)	-10	-0.1%	-1,505	-11.9%		-2	-0.0%	
Net Income (Loss) <i>Net Margin (%)</i>	8,574	64.5%	6,490	51.4%	32.1%	1,402	13.7%	511.7%
Earnings Per Share (NT\$)	3.12**		2.36			0.51		
Book Value Per Share (NT\$)	39.46***		35.45			22.57		
Shares Outstanding(million shares)	2,882****		2,748			2,748		

Note: \* EBITDA = Operating income + Depreciation & Amortization Expenses

\*\* EPS is based on weighted average outstanding shares of 2,748M

\*\*\* BVPS Includes accumulated unrealized gain on Micron shares, and is calculated based on 2,882M outstanding shares

\*\*\*\* 2,882M shares Includes 131.8M shares resulted from ECB conversion as of Sep. 30, 2017

# Q3'17 vs. Q2'17 Results Comparison

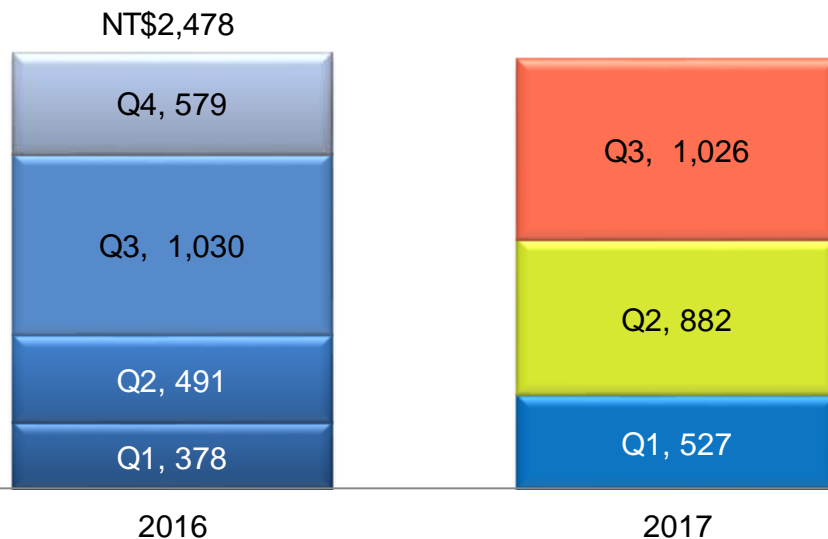
\*Percentage Points

	Q3'17	Q2'17	QoQ (PPT* Delta)	Difference
Amount in Million NT\$	Unaudited	Audited		
Net Sales	13,293	12,626	+5.3%	<ul style="list-style-type: none"> <li>ASP increased 2.3% QoQ</li> <li>Bit shipment increased 2.9% QoQ</li> </ul>
Gross Margin (Loss) Gross Margin(%)	5,882 44.2%	5,544 43.9%	+0.3%	<ul style="list-style-type: none"> <li>Q3'17 Gross Margin increased NT\$ 338M, mainly due to ASP increase</li> </ul>
Operating Income (Loss) Operating Margin(%)	4,245 31.9%	4,167 33.0%	-1.1%	<ul style="list-style-type: none"> <li>Approx. NT\$ 144M R&amp;D expense increased (1.1% negative impact to OPM) mainly for 20nm products development and deployment</li> </ul>
Net Income (Loss) Net Margin (%)	8,574 64.5%	6,490 51.4%	+13.1%	<ul style="list-style-type: none"> <li>Micron share disposal gain positive NT\$6,346M (Q3'17: NT\$+11,165M, Q2'17: NT\$ +4,819M)</li> <li>ECB option valuation negative NT\$ 5,850M (Q3'17: NT\$ -6,863M, Q2'17: NT\$ -1,013M.)</li> <li>Exchange positive NT\$ 194M (Q3'17: NT\$ 108.7M, Q2'17: NT\$ -85.6M,)</li> <li>Income tax positive NT\$ 1,495M (Q3'17: NT\$ -10M, Q2'17: NT\$ -1,505M,)</li> </ul>

# Operating Expenses

## R&D Expenses

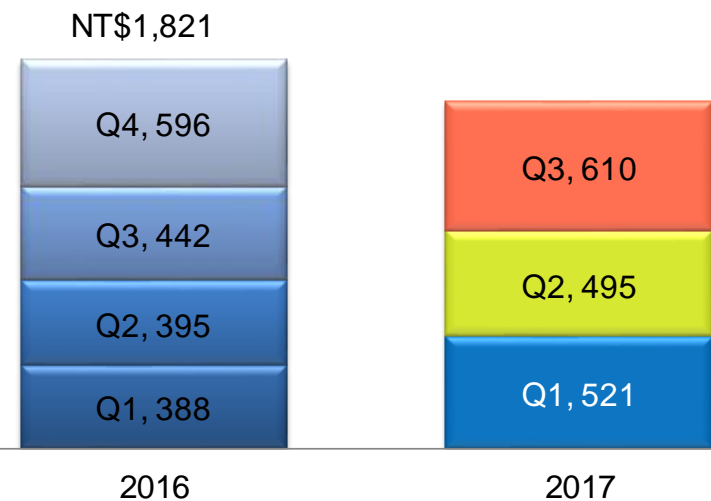
(Million NT\$)



*Note: R&D expenses increased by NT\$144M in Q3'17; mainly in 20nm products development and deployment*

## SG&A Expenses

(Million NT\$)



*Note: Increase of SG&A expenses in Q3'17 were mainly from Variable sales expense, Information security expense, employee compensation and other expense*

# Investment of Micron Private Placement

The Investment as of 2016/12/02		Realized Gain (2017/06/14~2017/09/30)		Unrealized Gain (2017/09/30)	
Volume	<b>57,780,138 shares</b>	Shares sold	<b>35,813,996 shares</b>	Shares held	<b>21,966,142 Shares</b> Approx. 1.97% of Micron's Interest
Purchase price (per share) & EX rate	<b>US\$ 17.29</b> (EX rate 31.488)	Average Sale Price	<b>US\$ 32.81</b> (Weighted average EX rate 30.223)	Market Price	<b>US\$ 39.33*</b> (EX rate 30.305)
Investment amount	<b>NT\$ 31,457,097,237</b>	Realized Gain (A)	<b>NT\$ 15,983,917,367</b>	Unrealized Gain (B)	<b>NT\$ 14,222,376,884</b>
Share-holding	Approximately <b>5.26%</b> of Micron's interest	Total Gain (A + B)	<b>NT\$ 30,206,294,251</b>		

\* 2017/9/29 Micron share price closed at US\$ 39.33

# Update on ECB Conversion

## as of Oct. 17, 2017

Item	Amount (US\$)	% of total Issuance	Conversion Price / Share (NT\$)	Estimated/Actual New Shares from Conversion	Dilution Effect
Issuance Amount(a)	500,000,000	100.00%	50.94	311,052,218(E)	10.17%
Converted Amount (b)	296,200,000	59.24%		184,267,235(A)	6.28%
ECB Balance (a-b)	203,800,000	40.76%		126,784,884(E)	

- Nanya issued its ECB of US\$500 million on Jan. 24, 2017, and pursuant to IFRS, has evaluated the ECB option value. The quarterly option value variation were recognized as non-operating expenses, and vice versa
- Mainly due to NTC's share price increases, the Company has recognized loss of NT\$ 1,169M in 1H'17, and additional loss of NT\$ 6,863M in Q3'17, resulting a total loss of NT\$ 8,032M ( including NT\$ 3,072M from the converted portion and NT\$ 4,960M from outstanding ECB options, share price closed at NT\$ 86.3 on Sep. 30, 2017)
- As of Oct. 17, 2017, 59.24% of ECB were converted



# Q3'17 Cash Flows

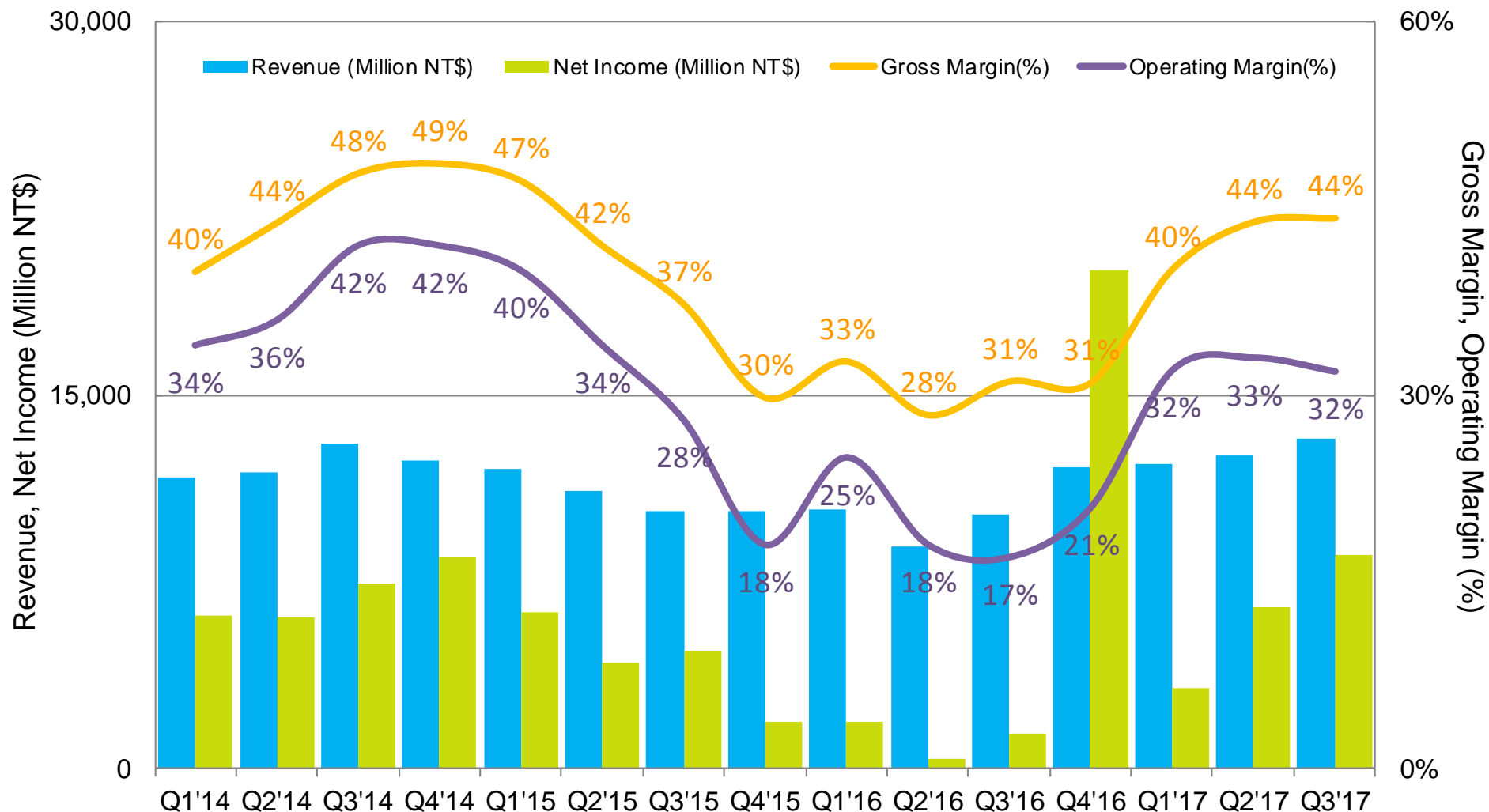
(Unit: Million NT\$)	Q3'17 Unaudited & Consolidated	Q2'17 Audited & Consolidated	Q3'16 Audited & Consolidated
<b>Beginning Balance</b>	<b>23,015</b>	<b>20,300</b>	<b>15,961</b>
Cash from Operating Activities	4,864	3,404	3,376
Capital expenditures	-8,219	-12,164	-4,791
Long-term & Short-term loans	-12,354*	7	1,979
Investments and others	17,265**	11,468	-3,277
<b>Ending Balance</b>	<b>24,571</b>	<b>23,015</b>	<b>13,248</b>
Free Cash Flow <sup>(1)</sup>	<b>-3,355</b>	<b>-8,760</b>	<b>-1,415</b>

(1) Free Cash Flow = Cash from operating activities – Capital expenditures

\* Repaid FPG borrowing NT\$ 10 billion, bank loan NT\$ 2.4 billion

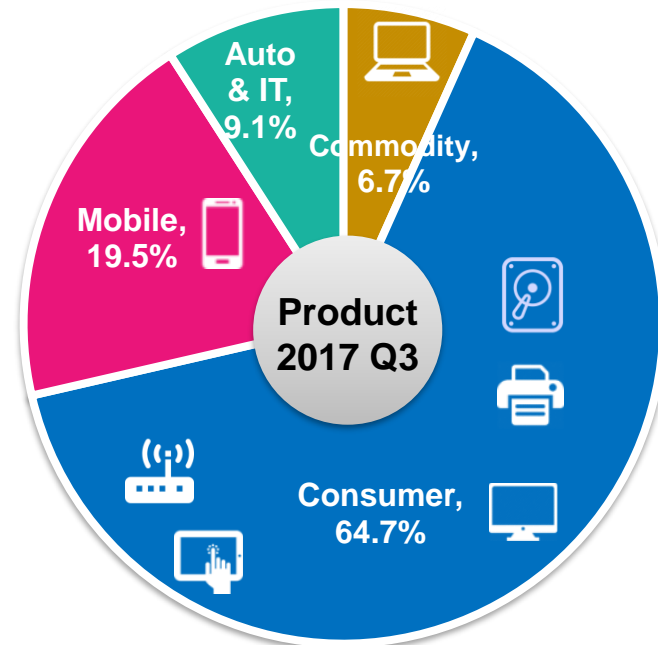
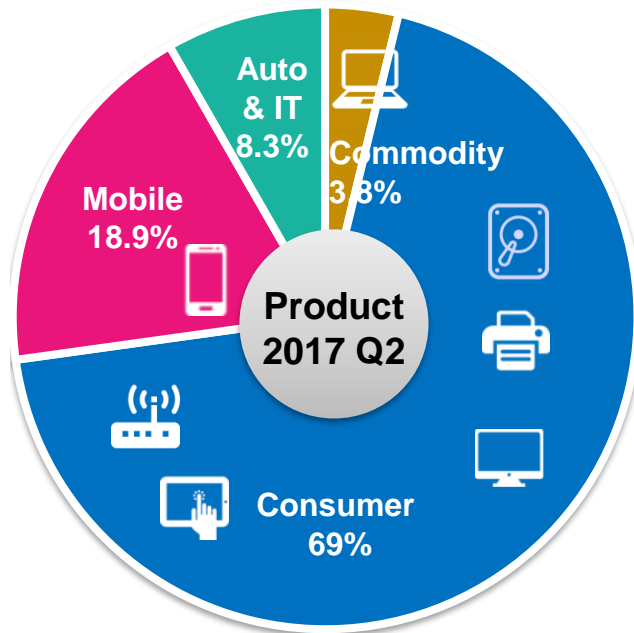
\*\* Mainly from the proceeds of Micron shares disposal of NT\$20.8 billion and cash dividend payout of NT\$4.1 billion

# Financial Highlights



# Sales Breakdown by Application

- Q3'17 commodity DRAM revenue increased due to 20nm products launched
- Q3'17 Auto & IT continue to grow to account for 9.1% of total revenue





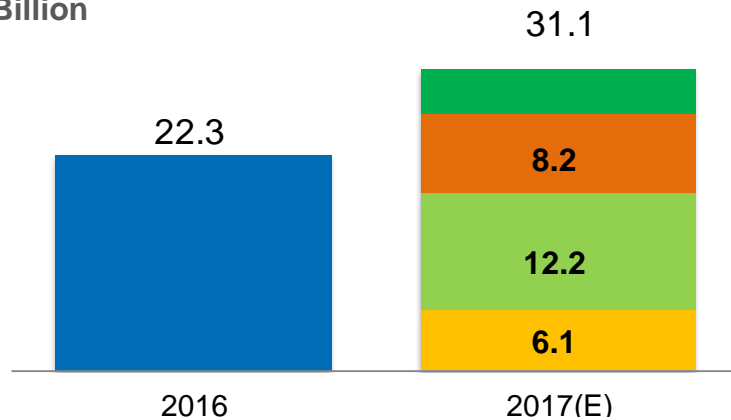
# 03

## OPERATION GUIDANCE

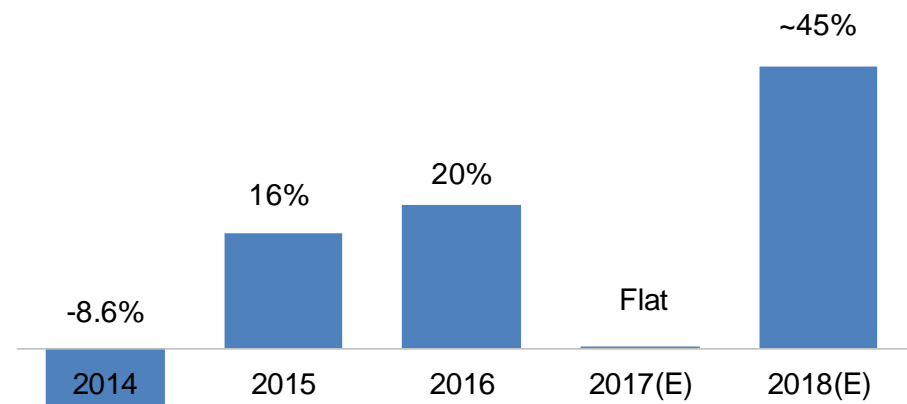
# CAPEX & Bit Shipment

## CAPEX

NT\$ Billion



## BIT SHIPMENT (YOY)



### ■ Capital Expenditure (CAPEX)

- Q3'17 CAPEX NT\$ 8.2Billion (B)
- Estimated 2017 CAPEX of NT\$ 31.06B
- Anticipated CAPEX of NT\$55.7B for 38K WSPM 20nm migration. (2016 CAPEX NT\$ 20.6B for 20nm)

### ■ Bit Shipment

- Q3'17 bit shipment up 2.9%, Q4'17 bit shipment forecast to increase mid-teens %
- Target 2017 bit shipment to be flat, 2018 to reach 45% bit shipment growth



# 04

## MARKET OUTLOOK

# Q4'17 DRAM Market

## Supply Side

- Q4'17: Limited bit growth from technology conversion
- 2018: Supply growth expected to be moderate at 21% ~ 23% with limited new capacity

## Demand Side

- Q4'17 Server / PC Market
  - Server / data center DRAM continues with increasing content growth; AI-enabled server will boost demand in long term. PC market sustained by enterprise PCs replacement
- Q4'17 Mobile Market
  - New launched smartphone will drive DRAM demand momentum. Flagship models requiring 3-6GB DRAM content
- Q4'17 Consumer Market
  - Consumer demand at seasonal high, TV/STB/NW continue to be strong, game consoles and smart speaker will also drive demand momentum
- 2018: DRAM demand growth expected to be stable at 22% ~ 24%



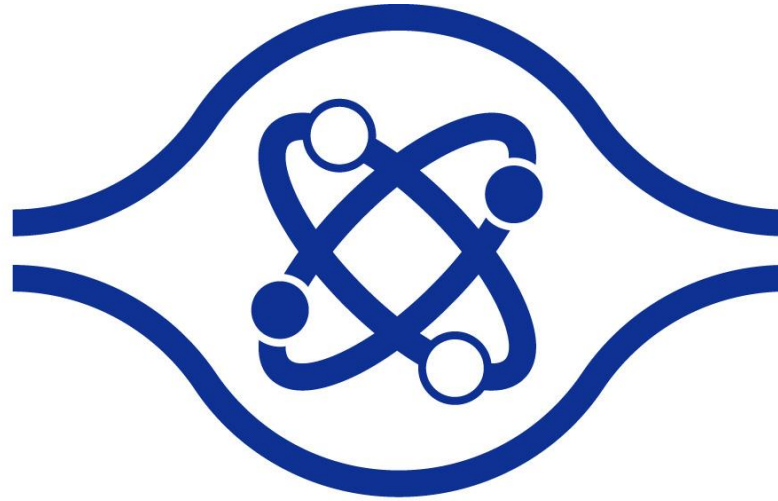
# 05

## BUSINESS OUTLOOK



# Nanya Business Outlook

- Limited DRAM supply growth through out 2017. Q4'17 ASP continue to grow, given product mix adjustment by DRAM vendors
- 2018 DRAM market in balance and overall healthy environment
- 20nm cost cross over in Q3'17, 20nm wafer input target to reach 38,000/month by end of 2017
- 20nm 4Gb DDR3 already in volume shipment, 8Gb DDR4 mass production in Q4'17
- Q4'17 bit shipment forecast to increase mid-teens % QoQ



NANYA  
Thanks & Questions

# Q3'17 Consolidated Income Statement

Amount: Million NT\$	Q3'17 Unaudited		Q2'17 Audited		QoQ	Q3'16 Audited		YoY
Net Sales	13,293	100.0%	12,626	100.0%	5.3%	10,204	100.0%	30.3%
Cost of Goods Sold	7,412	55.8%	7,082	56.1%		7,033	68.9%	
Gross Margin	5,882	44.2%	5,544	43.9%	6.1%	3,171	31.1%	85.5%
SG&A Expenses	610	4.6%	495	3.9%		442	4.3%	
R&D Expenses	1,026	7.7%	882	7.0%		1,030	10.1%	
Operating Income	4,245	31.9%	4,167	33.0%	1.9%	1,699	16.7%	149.9%
Non-operating Income (Exp.)	4,342	32.7%	3,835	30.4%		-296	-2.9%	
Income before Tax	8,587	64.6%	8,002	63.4%	7.3%	1,403	13.8%	512.0%
Income Tax Benefit (Expense)	-10	-0.1%	-1,505	-11.9%		-2	0.0%	
Net Income	8,577	64.5%	6,497	51.5%		1,401	13.7%	
Net income attributable to noncontrolling interests	3	0.0%	7	0.1%		0	0.0%	
Net Income attributable to NTC	8,574	64.5%	6,490	51.4%	32.1%	1,402	13.7%	511.7%
EPS(NT\$)	3.12		2.36			0.51		
Book Value Per Share	39.46		35.45			22.57		