CHROMA ATE INC.

2018.4Q Earnings Conference Call

Paul Ying, CFO

Leo Huang, Chairman & CEO

21st February, 2019

Disclaimer

This presentation contains some forward-looking statements that are subject to substantial risks and uncertainties. Typically, these statements contain words such as “anticipate”, “believe”, “could”, “estimate”, “expect”, “intend”, “plan”, “forecast”, “project”, “predict”, “potential”, “continue”, “may”, “should”, “will”, and “would” or similar words. You should consider these forward-looking statements carefully because such statements are only our expectations or projections about future events, and actual results may differ materially from those expressed or implied by such statements. The forward-looking statements in this presentation include, but are not limited to, growth rates for various markets estimated by third party sources, future products and technology development, widespread market acceptance of the hosted delivery model, future revenue growth and profitability. You should be cautioned that the forward-looking statements are no guarantee of our future performance. The forward-looking statements contained in this presentation are made only as of the date of this presentation and we undertake no obligation to update the forward-looking statements to reflect subsequent events or circumstances, except as required by law.

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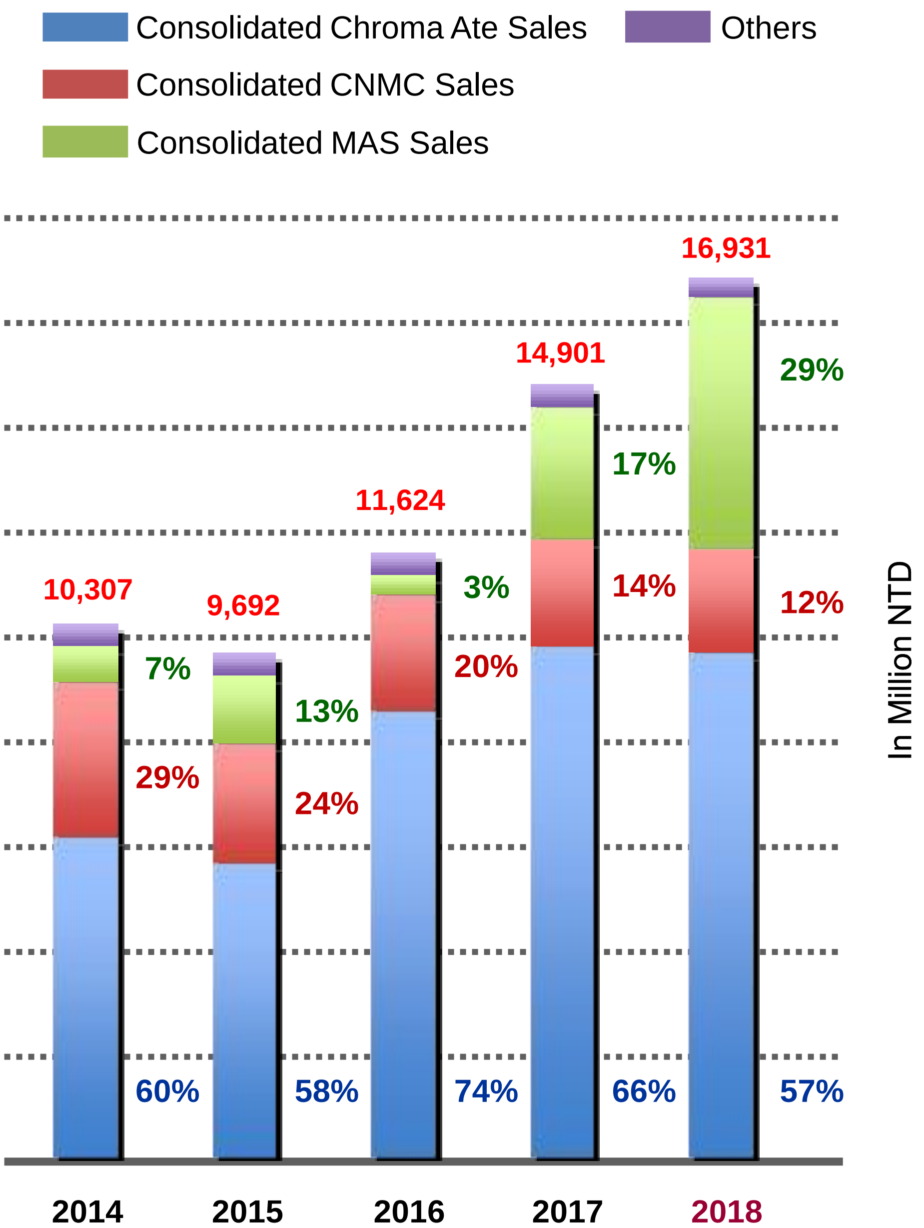
Agenda

- Corporate Profile
- Financial Review
- Operation Highlights
- Q&A

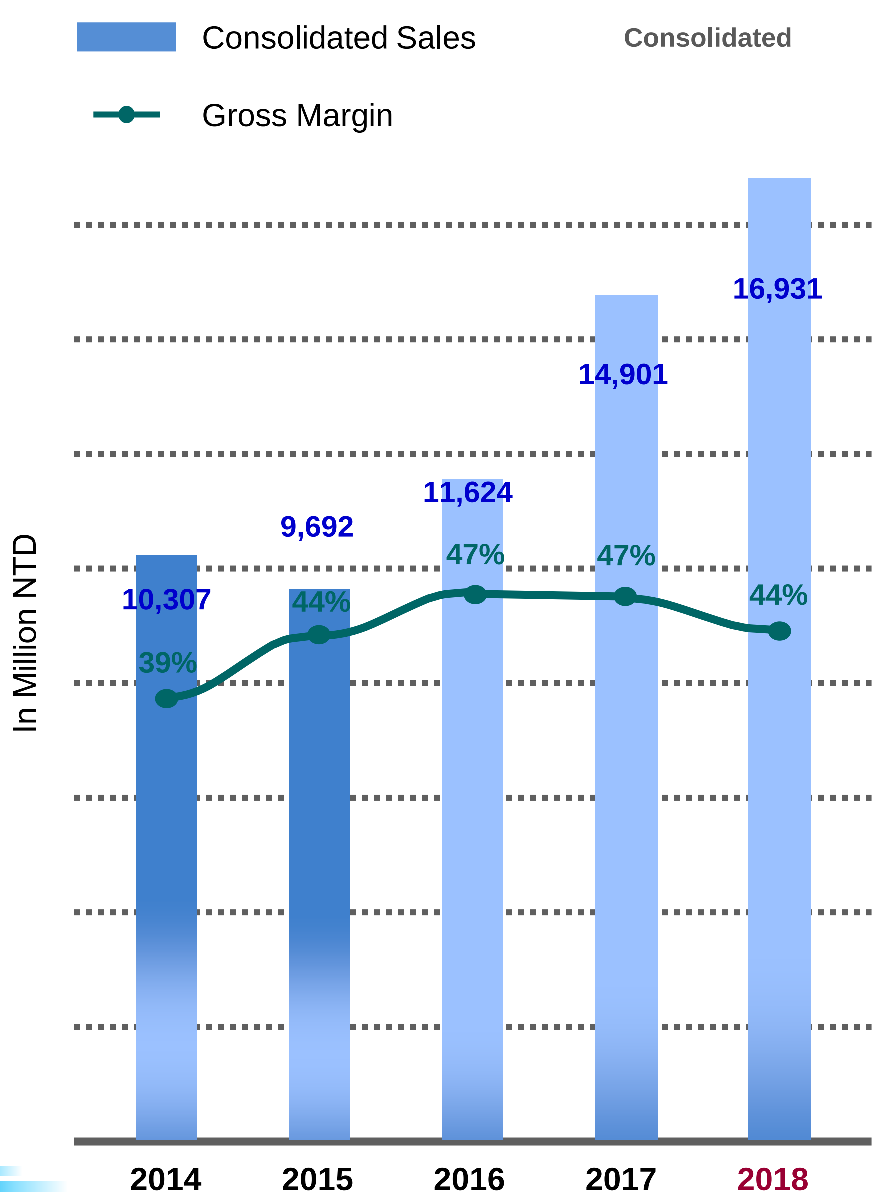
CORPORATE PROFILE

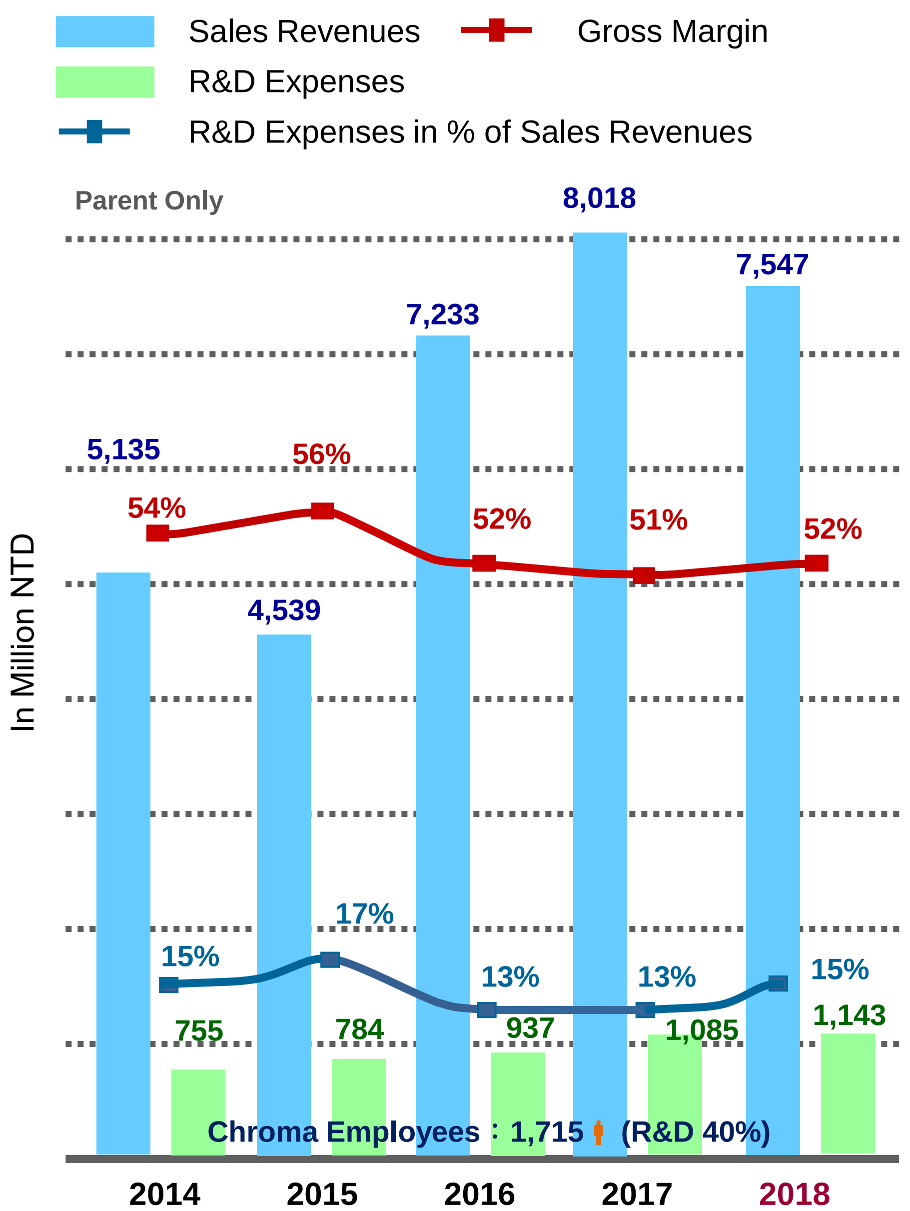
Corporate Profile

- Chroma Group founded in 1984, a world leading own brand turnkey test & automation solution provider, specialized in electronics test and measurement instruments and ATS (auto test system). Businesses cover test and measurement instruments and ATS for various industries, and a turnkey solution as an integration of Test and Measurement , Automation and MES (manufacturing execution system).
- Key success: Precision, Reliability, Innovation
- Chroma group encompass business unit of Chroma Ate Inc., Modular Assembly System (MAS) and Chroma New Material Corp (CNMC).
- 2018 Consolidated Sales : NT$ 16.9 billion
- 2018 Net Income: NT$2.5 billion
- Chroma Group total of 2,988 employees (as December, 2018)

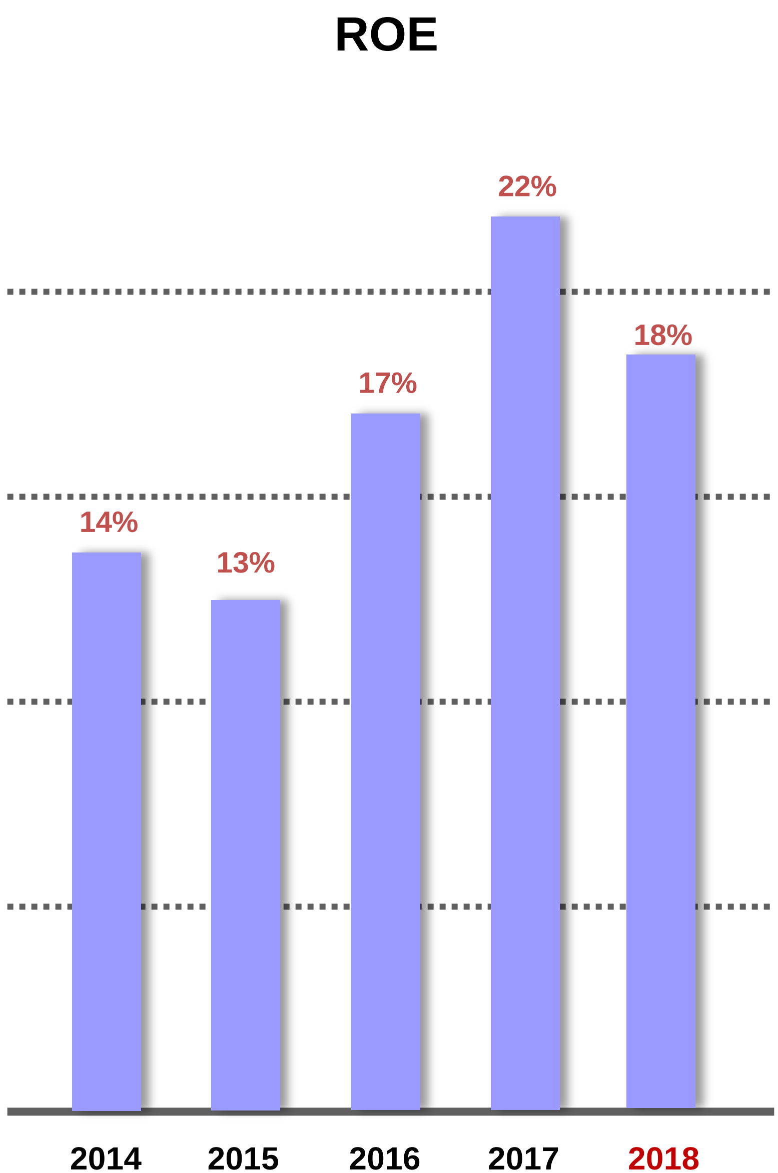


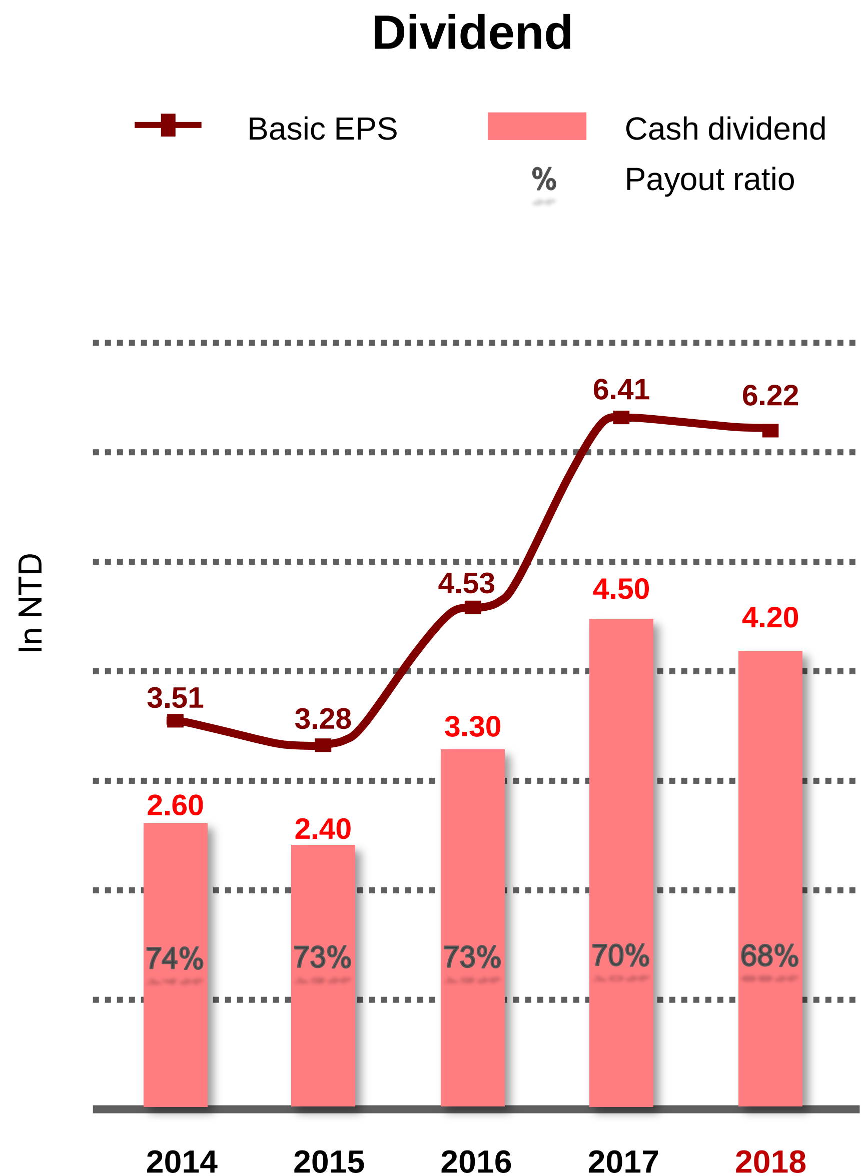
Financial Performance





Financial Performance





* The dividend will be paid out after the resolutions of Annual General Shareholders meeting.

Global Operation Sites

Chroma

43
Operation Sites

93
Distributors

EST. 1999

Netherlands: Ede

EST. 2017

Germany: Augsburg

EST. 2008

Japan: Shin-Yokohama/ Nagoya/ Osaka

EST. 2018

Korea: Pangyo

EST. 1993

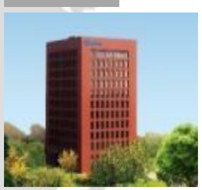
United States: Irvine, CA
Santa Clara, CA
Chandler, AZ

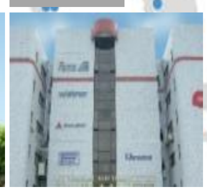
EST. 2001

United States: Foothill Ranch, CA
Marlborough, MA
Mexico：
Ciudad Juarez

EST. 1998

China/ Shenzhen

EST. 1999

China/ Beijing

EST. 2000

China/ Shanghai

EST. 2001

China/ Dongguan


Taiwan: Taoyuan (Headquarters)

EST. 2003

Taiwan: Hsinchu

EST. 2009

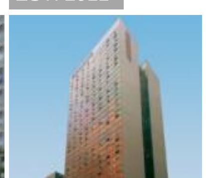
Taiwan: Kaohsiung

EST. 2006

China/ Suzhou

EST. 2011

China/ Xiamen

EST. 2011

China/ Chongqing

EST. 2016

Quantel：Singapore

Others:
India: New Delhi/ Mumbai/ Bangalore
Thailand: Bangkok
Vietnam: Hanoi/ Ho Chi Minh
Malaysia: Kuala Lumpur/ Penang
Philippines: Manila/ Cebu
Indonesia: Jakartar

Others: Qingdao/ Zhengzhou/ Xian/Hefei/ Chengdu/ Wuhan/ Hangzhou/ Guangzhou/ Hong Kong

Chroma

FINANCIAL REVIEW

Year 2018 Condensed Consolidated Income Statement

Chroma

Condensed Consolidated P&L (In Million NTD, except for EPS in NTD)	2018	%	2017	%	YoY %
Net Sales	**16,931**	**100%**	**14,901**	**100%**	**14%**
Consolidated Sales of Testing Equipment Business	9,725	57%	9,873	66%	**(1%)**
Consolidated Sales of MAS	4,862	29%	2,538	17%	**92%**
Consolidated Sales of New Material	2,005	12%	2,054	14%	**(2%)**
Others	339	2%	436	3%	**(22%)**
Cost of Goods Sold	(9,473)	(56%)	(7,832)	(53%)	**21%**
Gross Profit	**7,458**	**44%**	**7,069**	**47%**	**6%**
Operating Expenses:					
General & Administration	(3,164)	(19%)	(2,814)	(19%)	**12%**
Research & Development	(1,255)	(7%)	(1,212)	(8%)	**4%**
Operating Income	**3,039**	**18%**	**3,043**	**20%**	**-**
Non-Operating Income (Expenses), net	269	2%	79	1%	**240%**
Income (Loss) Before Tax	3,308	20%	3,122	21%	**6%**
Income Tax	(761)	(5%)	(573)	(4%)	**32%**
Net Income	**2,547**	**15%**	**2,549**	**17%**	**-**
Other Comprehensive Income (Losses)	4	-	(138)	(1%)	**n/a**
Comprehensive Income	**$ 2,551**	**15%**	**$ 2,411**	**16%**	**6%**
Net Income (Losses) Attributable To:					
Shareholders of the Parent	2,546	15%	2,558	17%	**-**
Noncontrolling Interests	1	-	(9)	-	**n/a**
	$ 2,547	**15%**	**$ 2,549**	**17%**	**-**
EPS (Basic)	**$ 6.22**		**$ 6.41**		**(3%)**
EPS (Diluted)	**$ 6.08**		**$ 6.18**		**(2%)**

Balance Sheet Highlights & Financial Ratio

Consolidated (In Million NTD)	2018. Dec	2017. Dec	+ / - %
Balance Sheet Highlights			
Cash & Short Term Investments	4,689	7,028	- 33%
Inventory	2,417	2,431	-
Short Term Debt	821	1,688	- 51%
Long Term Debt	1,954	1,161	68%
Shareholders Equity	14,690	13,463	9%
Total Assets	**23,202**	**22,018**	**5%**
Inventory Turnover (Day)	93	101	
AR Turnover (Day)	104	87	
AP Turnover (Day)	123	116	
Net Debt to Equity (%)	Net cash	Net cash	
ROE (%) ●	**18%**	**21%**	
ROA (%) ●	**11%**	**13%**	

Cash Position	2018	2017	YoY
EBITDA	3,655	3,459	6%
Cash Flow from Operation	1,266	2,749	(54%)
Free Cash Flow ●●	**(569)**	**2,911**	**n/a**

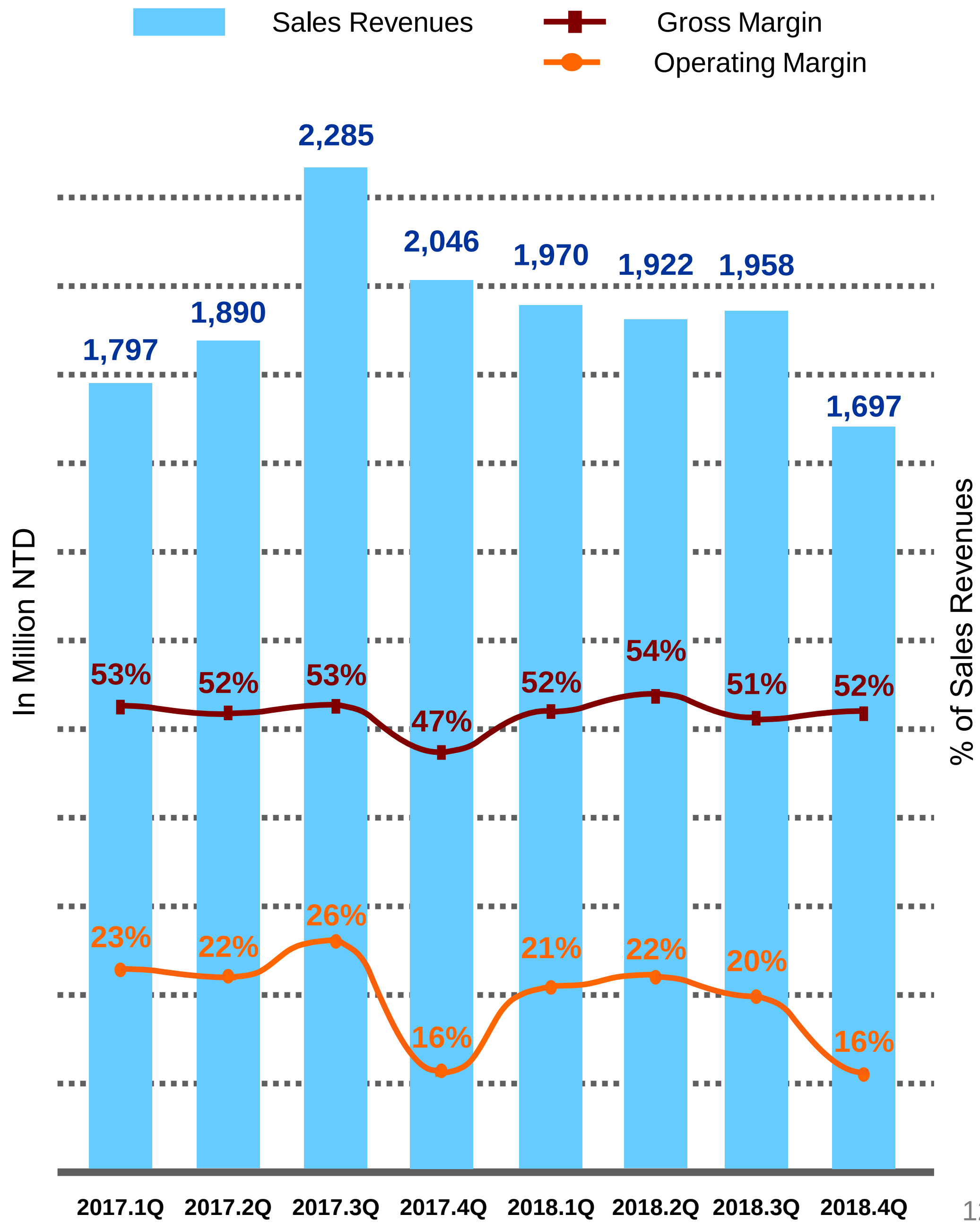
● All ROE + ROA has been annualized.

●● Free Cash Flow = Net Cash Provided by Operating Activities + (Net Cash used by Investing Activities)

Quarterly Highlights

2018.4Q Key Points

- Sales Revenue: $ 1,697 million, down 13% QoQ, down 17% YoY
- Gross Margin: 52%
- Operating Margin: 17%
- Net Income: NT$ 479 million, down 22% QoQ, down 46% YoY
- 2018.4Q Highlights:
  - The major sales contribution in fourth quarter is mainly coming from turnkey solutions, presented a growth of 60% QoQ.



Year 2018.4Q Condensed Income Statement

Condensed P&L – Parent Only (In Million NTD, except for EPS in NTD)	2018.4Q	%	2018.3Q	%	QoQ %	2017.4Q	%	YoY %
Net Sales	**1,697**	**100%**	**1,958**	**100%**	**(13%)**	**2,046**	**100%**	**(17%)**
Cost of Goods Sold	(821)	(48%)	(962)	(49%)	**(15%)**	(1,079)	(53%)	**(24%)**
Gross Profit	**876**	**52%**	**996**	**51%**	**(12%)**	**967**	**47%**	**(9%)**
Operating Expenses:								
General & Administration	(305)	(18%)	(313)	(16%)	**(3%)**	(368)	(18%)	**(17%)**
Research & Development	(293)	(17%)	(291)	(15%)	**-**	(281)	(13%)	**4%**
Operating Income	**278**	**17%**	**392**	**20%**	**(29%)**	**318**	**16%**	**(13%)**
Non-Operating Income (Expenses), net ●	242	14%	295	15%	**(18%)**	617	30%	**(61%)**
Income (Loss) Before Tax	520	31%	687	35%	**(24%)**	935	46%	**(44%)**
Income Tax	(41)	(2%)	(75)	(4%)	**(45%)**	(47)	(3%)	**(13%)**
Net Income	**$ 479**	**29%**	**$ 612**	**31%**	**(22%)**	**$ 888**	**43%**	**(46%)**
Other Comprehensive Income	(93)	(6%)	(111)	(6%)	**(16%)**	30	2%	**n/a**
Comprehensive Income	**$ 386**	**23%**	**$ 501**	**25%**	**(23%)**	**$ 918**	**45%**	**(58%)**
EPS (Basic)	**$ 1.16**		**$ 1.49**		**(22%)**	**$ 2.18**		**(47%)**
EPS (Diluted)	**$ 1.13**		**$ 1.46**		**(23%)**	**$ 2.11**		**(46%)**

● 100% owned subsidiaries' income - New Material: 12m (QoQ ↑ 20%, YoY ↑ 140%), MAS: 148m (QoQ ↓ 38%, YoY ↓ 73%).

Year 2018 Condensed Income Statement

Chroma

Condensed P&L – Parent Only (In Million NTD, except for EPS in NTD)	2018	%	2017	%	YoY %
Net Sales	**7,547**	**100%**	**8,018**	**100%**	**(6%)**
Cost of Goods Sold	(3,630)	(48%)	(3,901)	(49%)	**(7%)**
Gross Profit	**3,917**	**52%**	**4,117**	**51%**	**(5%)**
Operating Expenses:					
Selling and General & Administration	(1,259)	(17%)	(1,272)	(16%)	**(1%)**
Research & Development	(1,143)	(15%)	(1,085)	(13%)	**5%**
Operating Income	**1,515**	**20%**	**1,760**	**22%**	**(14%)**
Non-Operating Income (Expenses), net ●	1,414	19%	1,106	14%	**28%**
Income (Loss) Before Tax	2,929	39%	2,866	36%	**2%**
Income Tax	(382)	(5%)	(308)	(4%)	**24%**
Net Income	**$ 2,547**	**34%**	**$ 2,558**	**32%**	**-**
Other Comprehensive Income	-	-	(133)	(2%)	**n/a**
Comprehensive Income	**$ 2,547**	**34%**	**$ 2,425**	**30%**	**5%**
EPS (Basic)	**$ 6.22**		**$ 6.41**		**(3%)**
EPS (Diluted)	**$ 6.08**		**$ 6.18**		**(2%)**

● Non-operating Income included 100% owned subsidiaries' income - New Material: 45m (YoY ↑ 96%), MAS: 1008m (YoY ↑ 39%).

Balance Sheet Highlights & Financial Ratio

Chroma

Parent Only (In Million NTD)	2018. Dec	2017. Dec	+ / - %
Balance Sheet Highlights			
Cash & Short Term Investment	1,867	2,878	- 35%
Inventory	1,897	1,862	2%
Short Term Debt	630	1,500	- 58%
Long Term Debt	1,800	1,000	80%
Shareholders Equity	14,410	13,230	9%
Total Assets	**19,327**	**18,560**	**4%**
Inventory Turnover (Day)	189	155	
AR Turnover (Day)	138	123	
AP Turnover (Day)	122	120	
Net Debt to Equity (%)	4%	Net cash	
ROE (%) ●	**18%**	**22%**	
ROA (%) ●	**13%**	**15%**	

Cash Position	2018	2017	YoY
EBITDA	3,128	3,047	3%
Cash Flow from Operation	1,815	662	174%
Free Cash Flow ●●	**510**	**1,327**	**(62%)**

● All ROE + ROA has been annualized.

●● Free Cash Flow = Net Cash Provided by Operating Activities + (Net Cash used by Investing Activities)

OPERATION

HIGHLIGHT

2018.4Q Product Mix and Consolidated Sales Breakdown

Chroma

(Unit: Million NTD)	2018. 4Q	%	QoQ	YoY
Test Instruments & Automatic Testing System (ATS)	1,038	61%	(9%)	(9%)
Semiconductor / Photonics Test Solutions	364	21%	(35%)	9%
Turnkey Solutions	202	12%	59%	(57%)
Service & Others	93	6%	(26%)	(10%)
Total of Parent Company Sales	1,697	100%	(13%)	(17%)
+ Sales from Overseas Affiliates	686		55%	17%
Chroma Consolidated Testing Equipment Business	2,383	61%	-	(9%)
MAS	951	24%	10%	(51%)
New Material	512	13%	(7%)	(3%)
Other Subsidiaries	78	2%	(20%)	(34%)
Consolidated Sales	3,924	100%	-	(25%)

2018 Product Mix and Consolidated Sales Breakdown

(Unit: Million NTD)	2018	%	YoY	2017	%
Test Instruments & Automatic Testing System (ATS)	4,411	58%	4%	4,253	53%
Semiconductor / Photonics Test Solutions	1,890	25%	(23%)	2,460	31%
Turnkey Solutions	778	11%	(16%)	928	12%
Service & Others	468	6%	24%	377	4%
Total of Parent Company Sales	**7,547**	**100%**	**(6%)**	**8,018**	**100%**
+ Sales from Overseas Affiliates	**2,178**		**17%**	**1,855**	
Chroma Consolidated Testing Equipment Business	**9,725**	**57%**	**(1%)**	**9,873**	**66%**
MAS	**4,862**	**29%**	**92%**	**2,538**	**17%**
New Material	**2,005**	**12%**	**(2%)**	**2,054**	**14%**
Other Subsidiaries	**339**	**2%**	**(22%)**	**436**	**3%**
Consolidated Sales	**16,931**	**100%**	**14%**	**14,901**	**100%**

Year 2019 Guidance

- Chroma consolidated sales revenues have grown consecutively for four years, presented a CAGR of 15%. The year 2018 consolidated sales presented another year of growth of 14% compared to 2017. The impressive results in 2018 was mainly contributed from MAS (the Automation business), presented a strong growth of 92% YoY, while the Chroma testing equipment business were flat compared to last year. The net income in 2018 was 2.5 billion NTD, also flat compared to 2017.

- 2019 Business Outlook:

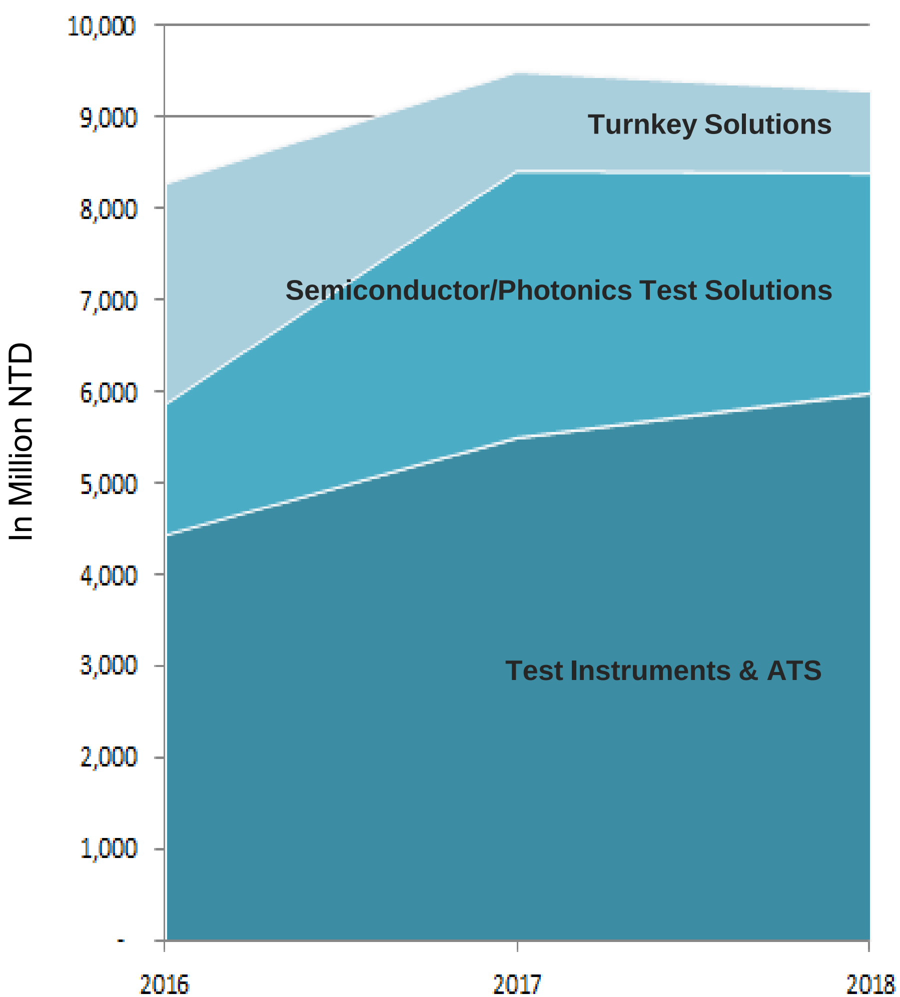
  ✓ First quarter low due to supply chain relocation and Chinese new year.

  ✓ Expects shipments to pick up from second quarter and earnings in 2019 will not lower than last two years.

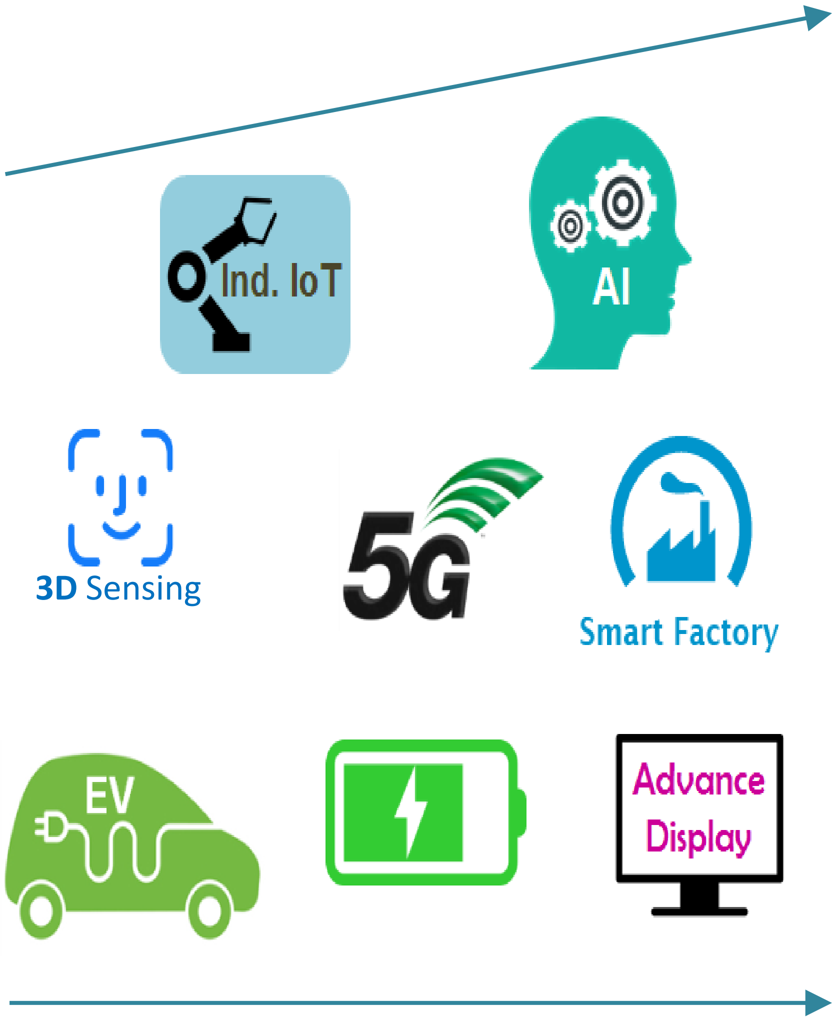
  ✓ Testing equipment business expects to grow in 2019. EV markets and OEM/ EMS relocation will continue to drive the growth of power electronics testing equipment and solutions sales. While semiconductor / photonics testing solution will be mainly contribute from VCSEL capacity build and pilot run of ToF.

Growth Opportunities

Testing Solution Sales



Market Applications



Test Instruments & ATS

TECHNOLOGY

Power Testing

Full Four Quadrant/Regenerative
0-500VAC,100kVA

High Voltage : 1800V
High Power Density: 18kW@3U

e-Scooter operation simulation mode
Complying with TES regulation
Up to 12kW

’H2.18

’19

MARKET

EV Market, Green Energy

Regenerative Grid Simulator
618XX

Programmable DC Source
& Solar Array Simulator
62XXXH-S

E-Scooter Charging Station ATS
8000

SOLUTION

Test Instruments & ATS

TECHNOLOGY

Battery Testing

High Precision & Multi-current Range
6V, 30A

High Precision & Multi-current Range
6V, 12A

Max Output Voltage: 6kV
Pulse Interval: 30ms~3000ms
8 Types of Judgments

Battery AOI

Cylindrical Battery Application:
18650、20700、21700
2D defect detection

Roll-to-roll Production Process App.
3D Thickness measuring
Measuring range：1~300μm

’H2.18 ’19

MARKET

Power/Green Battery

NEW

Battery Charge
& Discharge Tester
17208M-6-30

NEW

Cylindrical Battery Cell AOI System
7505-K006

NEW

Battery Charge
& Discharge Tester
17216M-6-12

NEW

Thin Film Automated Optical Metrology System
7505-K007

NEW

Battery Cell Surge Tester
19311/19311-10

SOLUTION

Semiconductor/Photonics Test Solutions

Chroma

TECHNOLOGY

IC Testing Handler

Flexible Configuration :
ATE/SLT/ATE+SLT
Max.144 Test Sites

Optical Metrology System

Wafer Surface Profile
Measurement & Analysis: 12”
1um – 0.1nm Inspection Range

’18.H2

’19

MARKET

CPU/MCU/GPU, ICs, MEMS, PMIC, FPGA, Sensors

IC Wafer

FT & SLT Hybrid Test System
3200

Advanced Packaging Optical Metrology System
7505-K005

SOLUTION

Semiconductor/Photonics Test Solutions

Chroma

TECHNOLOGY

VCSEL/EEL Testing

6" Photonics Wafer
LIV & NF & FF Testing

Discrete Module Testing
Parallel Test; Tiny Module Handling

Mini LED/OLED Testing

High Speed Double Side Inspection
15ms per chip

Mini LED Probing
Multi-die Parallel Test

OLED Burn-in
Full Automation System,
>500 Channel Scalable Design

'H2.18

'19

MARKET

3D Image Sensing, Autonomous Driving, OLED, Mini LED

Wafer

Package

Wafer/Cell

Photonics Wafer Probing Test System 58635

Wafer Chip Inspection System 7940

VCSEL/EEL Module Characterization System 58621

Mini LED Probing Test System

OLED Burn-in System

SOLUTION

Turnkey Solution

Chroma

TECHNOLOGY

OLED Module Burn-in Automation

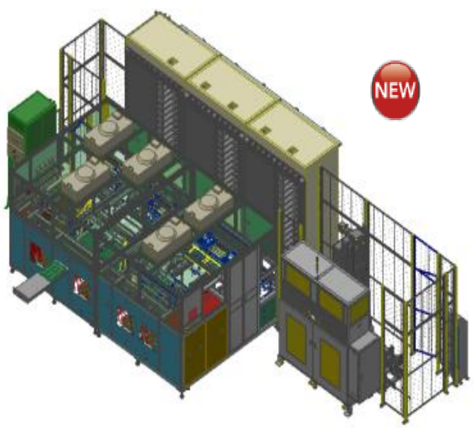
OLED Module Automatic Burn-in System :
Temp. up to 85 ℃, Class 1000
Fine Pitch Contact to 100 um
Multi - MIPI / eDP Signaling & Power Monitoring

TV Automatic Test Turnkey Test :
Throughput 15sec / Each TV
Optical Pattern Inspection
Fully Function Testing with MES Management

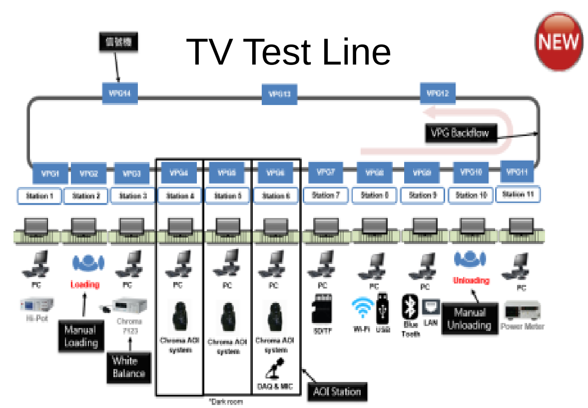
’H2.18 ’19

MARKET

Flat Panel Display



OLED Module Automatic Burn-In System
5710



TV Automatic Test System

SOLUTION

In-line Nanoparticle Monitoring System

Sub 20nm

SuperSizer II
Semi S2 in Certified
Fore CMP Slurry

NEW

SuperSizer V
Semi S2 in Process
Fore high purity wet chemicals (solvent)

Strategic Investment & Alliance with Camtek Ltd.

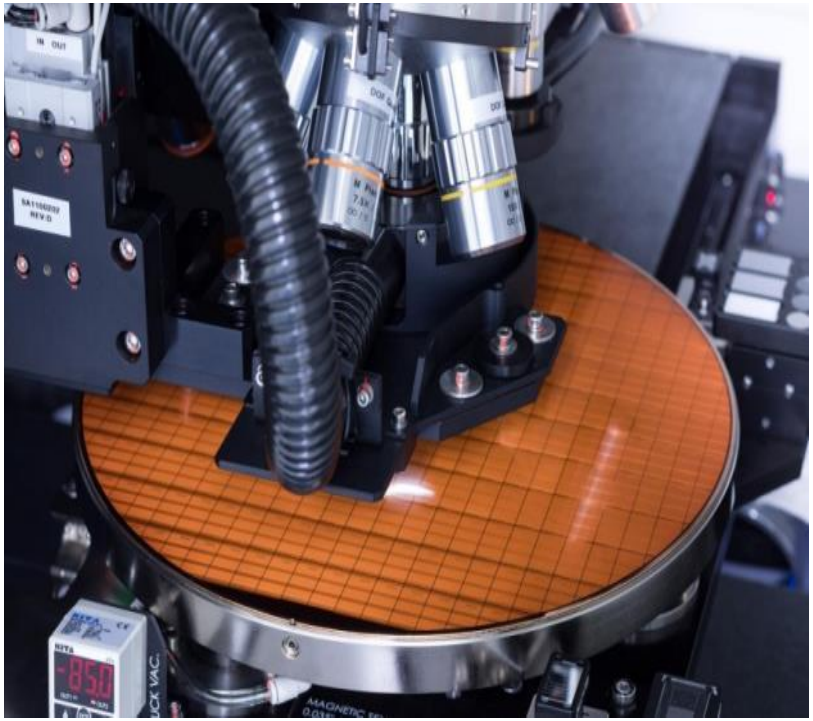
- 20.5% Stake of Camtek Ltd.
- Total Shares Transaction: 7,817,440 ordinary shares.
- Total Capital: 74 million USD (approx. 2.3 billion NTD)
- Technology: White Light Triangulation Technology (Patented)
- Application: Mainly in Semiconductor Advanced Package
- Synergies:
  - Strengthen Chroma's AOI and 3D metrology capabilities for serving of broad set of fast growing industries
  - Development of low cost solution for 2D Optical Inspection.
- Two seats on Camtek's Board of Directors

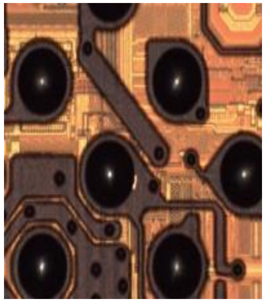
About Camtek

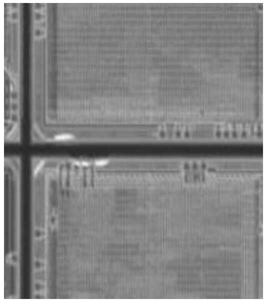
- Camtek is a leading manufacturer of metrology and inspection equipment and a provider of software solutions serving the mid end of the semiconductor industry.
- Camtek is organized in 8 subsidiaries around the world in US, Europe, Japan, China, Hong Kong, Taiwan, Korea and Singapore, with R&D and production mainly in Israel, and co-headquartered in Hong Kong.
- 2018 revenue of US$123.2 million, increase of 32% YoY. Gross profit of US$60.8m (49.4%), growth rate of 33% YoY and net income of US$18.7m (15.2%), 10 times compared to 2017. (* based on continued operations only)
- Employees: 295
- Market Cap of US$297 million as of 2018/2/13, cash US$54.9 million

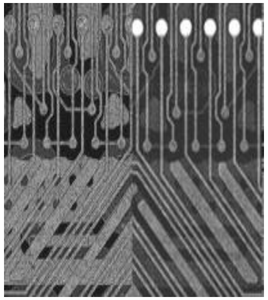
Camtek: Product

Wafer Inspection

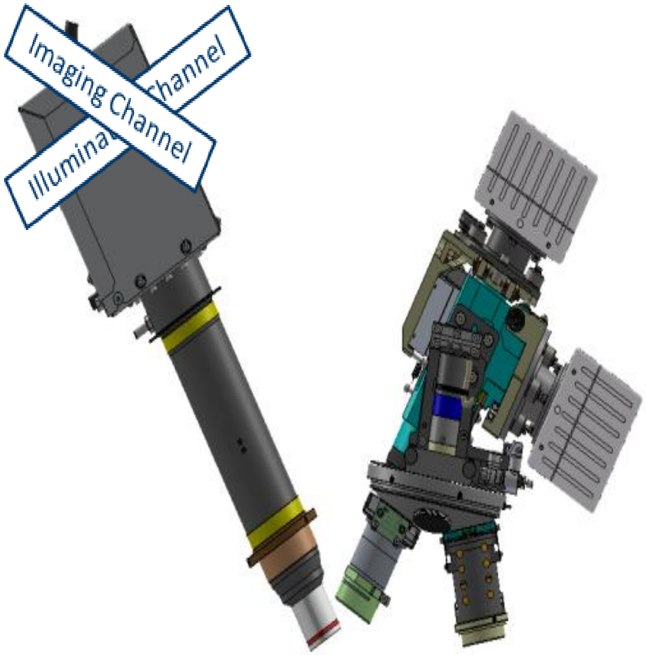


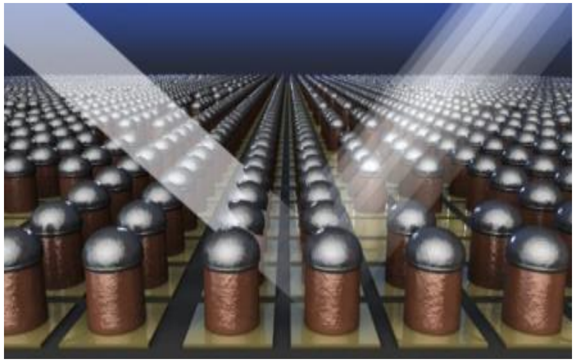






Wafer 3D Metrology





Camtek: Software Solution

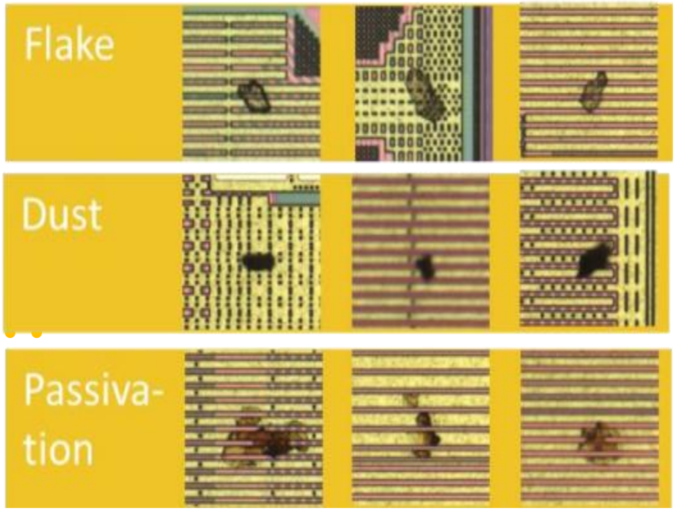
Automatic Defect Classification

Fully automated inspection process
Deep Learning based algorithms

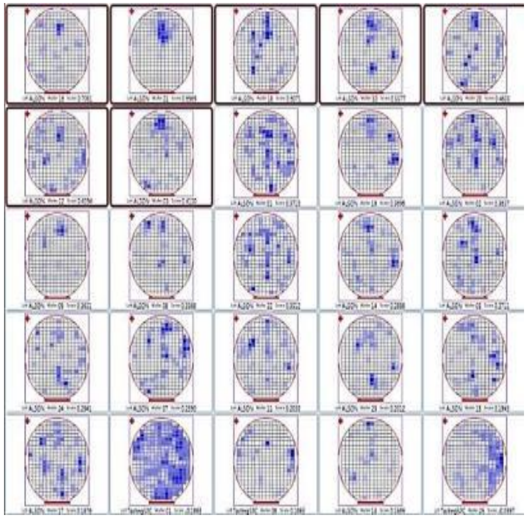
Yield Analysis

Yield enhancement
Process control
Enhanced data visualization

Defect classification



Map Analysis Pattern



Camtek: Customer Reference

Chroma

Fab & Assembly House

ASE GROUP
tsmc
TEXAS INSTRUMENTS
SanDisk

SK hynix
infineon
SAMSUNG
UMC

Amkor Technology
SPIL
ST
Micron

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Thank You !