

**Chroma**

*Your Testing Quality is Our Commitment.*

**CHROMA ATE INC.**

**2014**

**Test**  
turnkey **Auto** nation  
Solution provider

**14<sup>th</sup> February, 2014**

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. This presentation and the information contained herein are the property of Chroma Ate Inc.

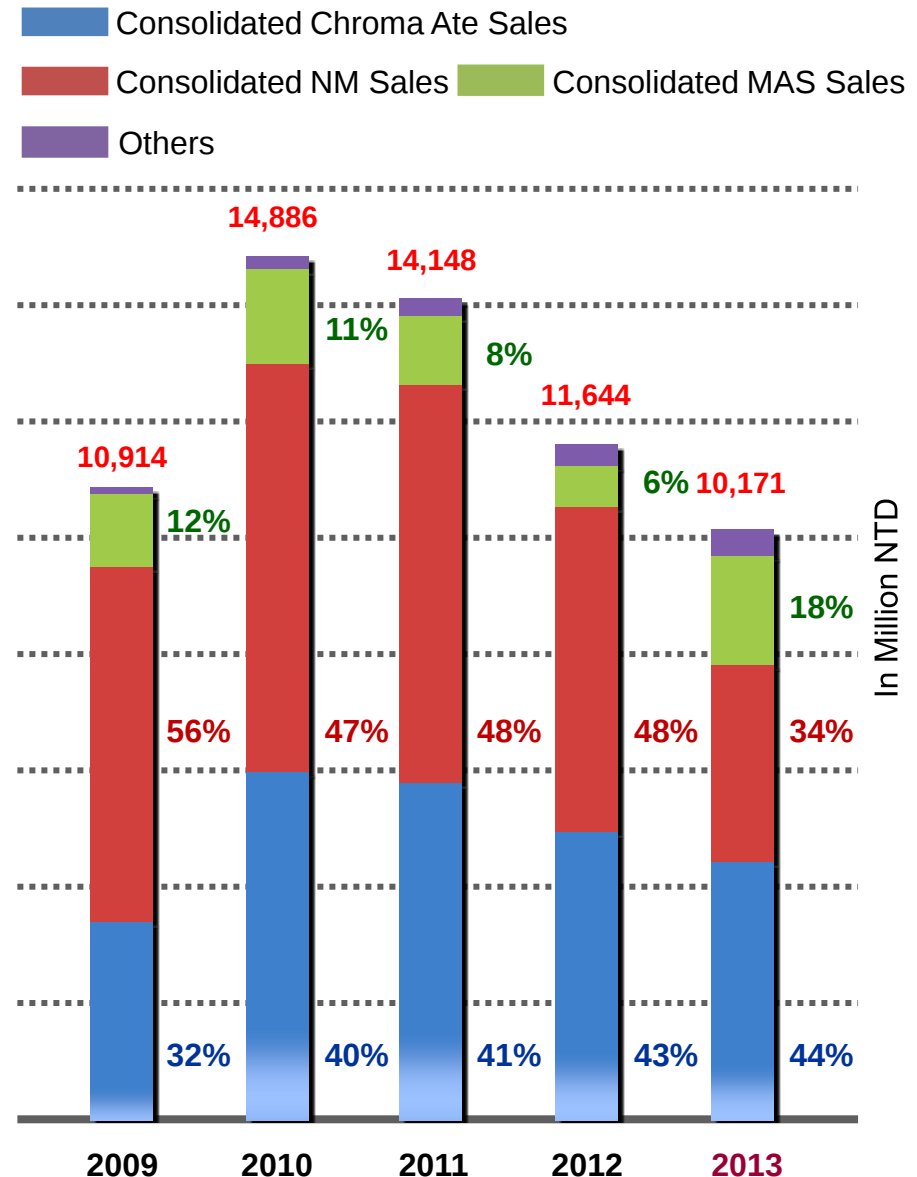
- **Corporate Profile**
- **Financial Review**
- **Operation Highlights**
- **Q&A**

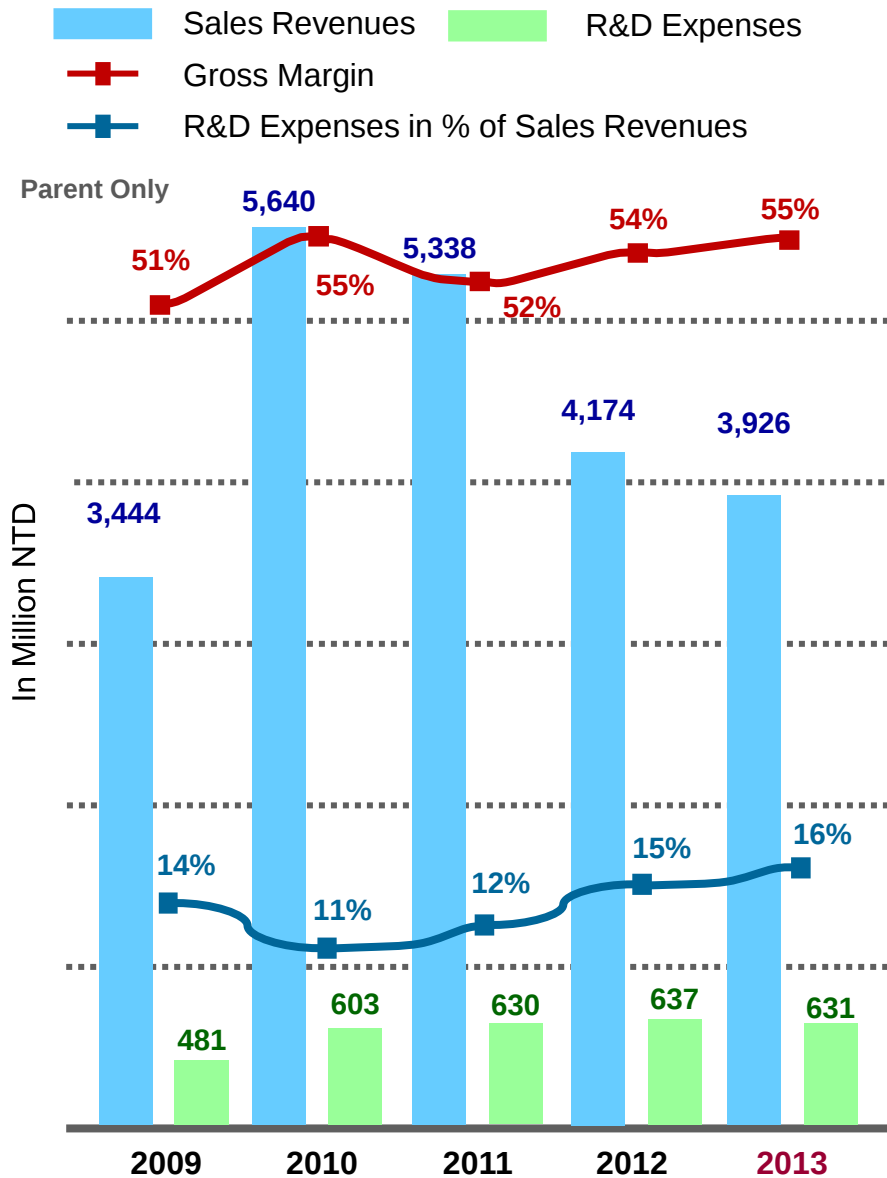
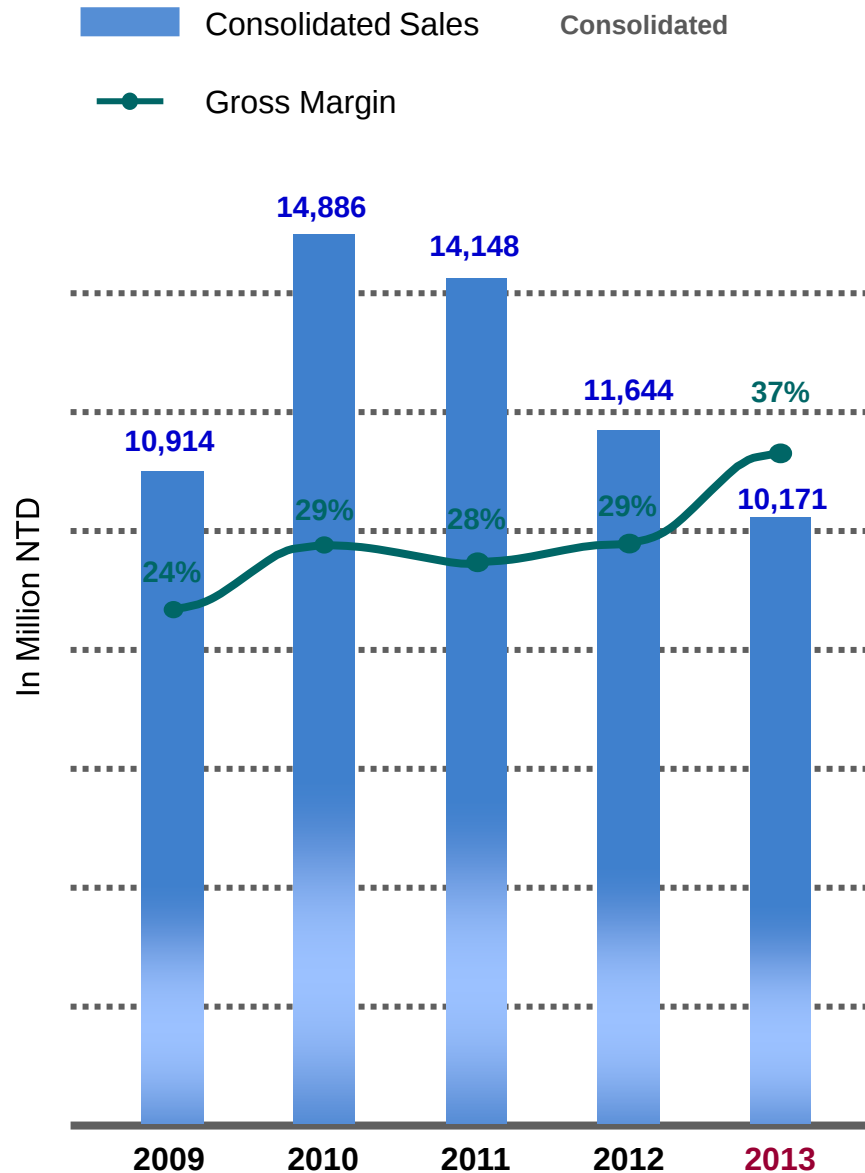
**Chroma**

# **CORPORATE PROFILE**

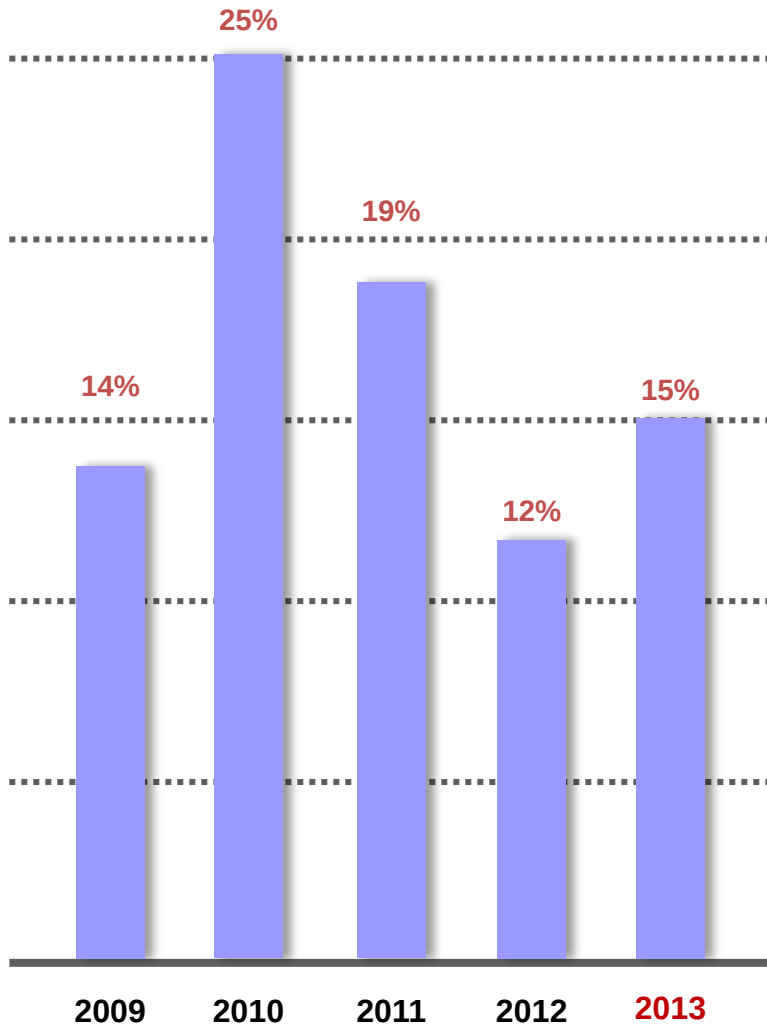
**Test**  
turnkey **Auto** **mation**  
Solution  
provider

- 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 of 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 (NM).
- 2013 Consolidated Sales : NT\$10.17 billion
- 2013 Net Income: NT\$1.21 billion
- Chroma Group total of 2,143 employees (as December, 2013)

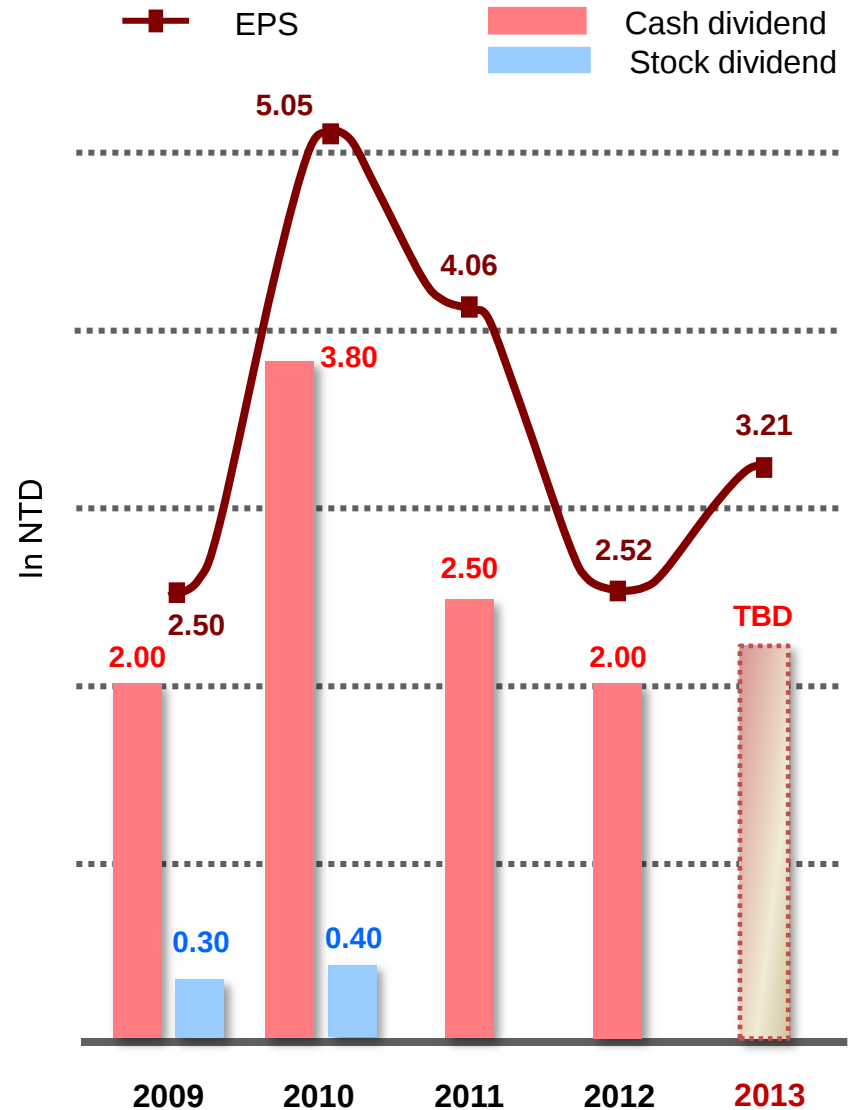




## ROE



## Dividend



Global Employees : 2,143 🧑 , Branch Offices x16, Distributors x58, Subsidiaries x6



# FINANCIAL REVIEW

# Year 2013 Condensed Consolidated Income Statement

| <u>Condensed Consolidated P&amp;L</u><br>(In Million NTD, except for EPS in NTD) | <u>2013</u>     | %             | <u>2012</u>    | %             | YoY<br>%     |
|----------------------------------------------------------------------------------|-----------------|---------------|----------------|---------------|--------------|
| <b>Net Sales</b>                                                                 | <b>10,171</b>   | <b>100.0%</b> | <b>11,644</b>  | <b>100.0%</b> | <b>(13%)</b> |
| Consolidated Sales of Testing Business                                           | 4,458           | 43.8%         | 4,971          | 42.7%         | (10%)        |
| Consolidated Sales of MAS                                                        | 1,858           | 18.3%         | 704            | 6.0%          | 164%         |
| Consolidated Sales of New Material                                               | 3,409           | 33.5%         | 5,613          | 48.2%         | (39%)        |
| Others                                                                           | 446             | 4.4%          | 356            | 3.1%          | 25%          |
| Cost of Goods Sold                                                               | (6,420)         | (63.1%)       | (8,254)        | (70.9%)       | (22%)        |
| <b>Gross Profit</b>                                                              | <b>3,751</b>    | <b>36.9%</b>  | <b>3,390</b>   | <b>29.1%</b>  | <b>11%</b>   |
| Operating Expenses:                                                              |                 |               |                |               |              |
| General & Administration                                                         | (1,869)         | (18.4%)       | (1,635)        | (14.0%)       | 14%          |
| Research & Development                                                           | (714)           | (7.0%)        | (681)          | (5.8%)        | 5%           |
| <b>Operating Income</b>                                                          | <b>1,168</b>    | <b>11.5%</b>  | <b>1,074</b>   | <b>9.3%</b>   | <b>9%</b>    |
| Non-Operating Income (Expenses), net                                             | 249             | 2.4%          | 64             | 0.5%          | 289%         |
| Income (Loss) Before Tax                                                         | 1,417           | 13.9%         | 1,138          | 9.8%          | 25%          |
| Income Tax                                                                       | (238)           | (2.3%)        | (222)          | (1.9%)        | 7%           |
| <b>Net Income</b>                                                                | <b>1,179</b>    | <b>11.6%</b>  | <b>916</b>     | <b>7.9%</b>   | <b>29%</b>   |
| Other Comprehensive Income                                                       | 287             | 2.8%          | 26             | 0.2%          | n/a          |
| <b>Comprehensive Income</b>                                                      | <b>\$ 1,466</b> | <b>14.4%</b>  | <b>\$ 942</b>  | <b>8.1%</b>   | <b>56%</b>   |
| <b>Net Income (Losses) Attributable To:</b>                                      |                 |               |                |               |              |
| Shareholders of the Parent                                                       | 1,205           | 11.9%         | 920            | 7.9%          | 31%          |
| Noncontrolling Interests                                                         | (26)            | (0.3%)        | (4)            | -             | n/a          |
|                                                                                  | <b>\$ 1,179</b> | <b>11.6%</b>  | <b>\$ 916</b>  | <b>7.9%</b>   | <b>29%</b>   |
| <b>EPS (Basic)</b>                                                               | <b>\$ 3.21</b>  |               | <b>\$ 2.46</b> |               | <b>30%</b>   |

# Balance Sheet Highlights & Financial Ratio

## Consolidated (In Million NTD)

Dec. 2013

Dec. 2012

+ / - %

### Balance Sheet Highlights

|                              |               |               |            |
|------------------------------|---------------|---------------|------------|
| Cash & Short Term Investment | 1,620         | 1,693         | - 4%       |
| Inventory                    | 1,531         | 1,579         | - 3%       |
| Short Term Debt              | 794           | 599           | 33%        |
| Long Term Debt               | 819           | 119           | n/a        |
| Shareholders Equity          | 8,717         | 7,903         | 10%        |
| <b>Total Assets</b>          | <b>12,768</b> | <b>11,307</b> | <b>13%</b> |

|                          |     |    |  |
|--------------------------|-----|----|--|
| Inventory Turnover (Day) | 88  | 81 |  |
| AR Turnover (Day)        | 102 | 95 |  |
| AP Turnover (Day)        | 86  | 86 |  |
| Net Debt to Equity (%)   | -   | -  |  |

|                  |            |            |  |
|------------------|------------|------------|--|
| <b>ROE (%)</b> ● | <b>15%</b> | <b>12%</b> |  |
| <b>ROA (%)</b> ● | <b>10%</b> | <b>8%</b>  |  |

### Cash Position

A' 2013

A' 2012

YoY

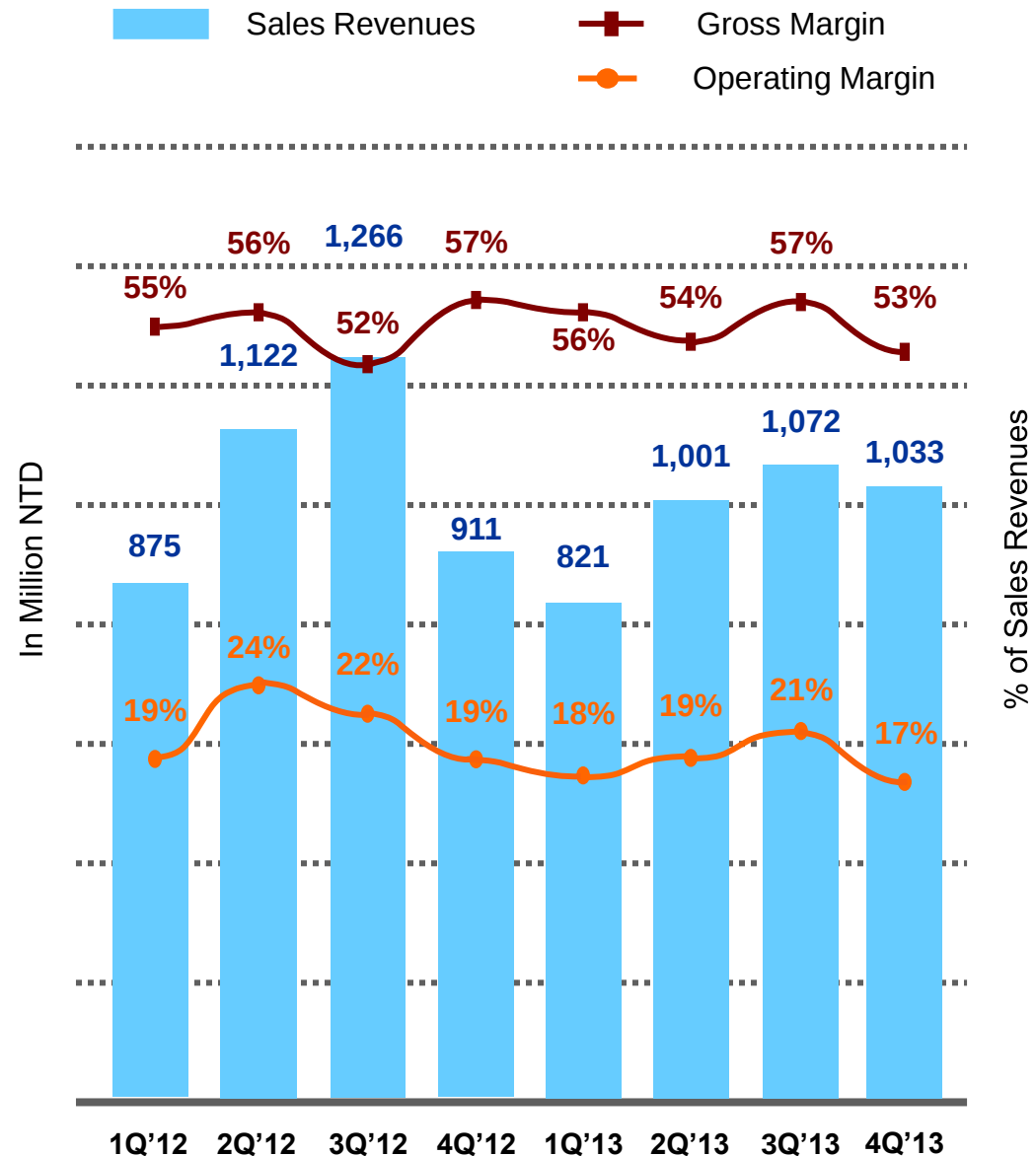
|                          |              |            |            |
|--------------------------|--------------|------------|------------|
| EBITDA                   | 1,745        | 1,498      | 16%        |
| Cash Flow from Operation | 940          | 1,470      | (36%)      |
| <b>Free Cash Flow</b> ●● | <b>(262)</b> | <b>433</b> | <b>n/a</b> |

● All ROE + ROA has been annualized.

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

## 4Q' 2013 Key Points

- Sales Revenue: \$ 1,033 million, down 4% QoQ, up 13% YoY
- Gross Margin: 53%
- Operating Margin: 17%
- Net Income: NT\$ 282 million, up 2% QoQ, up 42% YoY
- 4Q 2013 Highlights:
  - The major sales drivers in this quarter are contributed from Turnkey Solutions due to solar application, a growth of 118% QoQ respectively.



# Year 2013. 4Q Condensed Income Statement

| <b>Condensed P&amp;L – Parent Only</b><br>(In Million NTD, except for EPS in NTD) | <b>4Q' 2013</b> | <b>%</b>      | <b>3Q' 2013</b> | <b>%</b>      | <b>QoQ</b><br>% | <b>4Q' 2012</b> | <b>%</b>      | <b>YoY</b><br>% |
|-----------------------------------------------------------------------------------|-----------------|---------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|
| <b>Net Sales</b>                                                                  | <b>1,033</b>    | <b>100.0%</b> | <b>1,072</b>    | <b>100.0%</b> | <b>(4%)</b>     | <b>911</b>      | <b>100.0%</b> | <b>13%</b>      |
| Cost of Goods Sold                                                                | (490)           | (47.4%)       | (463)           | (43.2%)       | 6%              | (396)           | (43.5%)       | 24%             |
| <b>Gross Profit</b>                                                               | <b>543</b>      | <b>52.6%</b>  | <b>609</b>      | <b>56.8%</b>  | <b>(11%)</b>    | <b>515</b>      | <b>56.5%</b>  | <b>5%</b>       |
| Operating Expenses:                                                               |                 |               |                 |               |                 |                 |               |                 |
| General & Administration                                                          | (198)           | (19.2%)       | (216)           | (20.1%)       | (8%)            | (190)           | (20.8%)       | 4%              |
| Research & Development                                                            | (167)           | (16.1%)       | (165)           | (15.4%)       | 1%              | (152)           | (16.7%)       | 10%             |
| <b>Operating Income</b>                                                           | <b>178</b>      | <b>17.3%</b>  | <b>228</b>      | <b>21.3%</b>  | <b>(22%)</b>    | <b>173</b>      | <b>19.0%</b>  | <b>3%</b>       |
| Non-Operating Income ●<br>(Expenses), net                                         | 134             | 13.0%         | 71              | 6.6%          | 89%             | 42              | 4.6%          | 219%            |
| Income (Loss) Before Tax                                                          | 312             | 30.3%         | 299             | 27.9%         | 4%              | 215             | 23.6%         | 45%             |
| Income Tax                                                                        | (30)            | (2.9%)        | (23)            | (2.1%)        | 30%             | (17)            | (1.9%)        | 76%             |
| <b>Net Income</b>                                                                 | <b>\$ 282</b>   | <b>27.4%</b>  | <b>\$ 276</b>   | <b>25.8%</b>  | <b>2%</b>       | <b>\$ 198</b>   | <b>21.7%</b>  | <b>42%</b>      |
| Other Comprehensive Income                                                        | 111             | 10.7%         | 36              | 3.3%          | n/a             | (34)            | (3.7%)        | n/a             |
| <b>Comprehensive Income</b>                                                       | <b>\$ 393</b>   | <b>38.1%</b>  | <b>\$ 312</b>   | <b>29.1%</b>  | <b>26%</b>      | <b>\$ 164</b>   | <b>18.0%</b>  | <b>140%</b>     |
| <b>EPS (Basic)</b>                                                                | <b>\$ 0.75</b>  |               | <b>\$ 0.73</b>  |               | <b>3%</b>       | <b>\$ 0.53</b>  |               | <b>42%</b>      |

● Non-operating Income included 100% owned subsidiaries' income - New Material: 15m (QoQ ↑ 50%), MAS: 68m (QoQ ↑ 66%).

# Year 2013 Condensed Income Statement

| <b>Condensed P&amp;L – Parent Only</b><br>(In Million NTD, except for EPS in NTD) | <b>2013</b>     | <b>%</b>      | <b>2012</b>    | <b>%</b>      | <b>YoY</b><br>% |
|-----------------------------------------------------------------------------------|-----------------|---------------|----------------|---------------|-----------------|
| <b>Net Sales</b>                                                                  | <b>3,926</b>    | <b>100.0%</b> | <b>4,174</b>   | <b>100.0%</b> | <b>(6%)</b>     |
| Cost of Goods Sold                                                                | (1,772)         | (45.1%)       | (1,905)        | (45.6%)       | (7%)            |
| <b>Gross Profit</b>                                                               | <b>2,154</b>    | <b>54.9%</b>  | <b>2,269</b>   | <b>54.4%</b>  | <b>(5%)</b>     |
| Operating Expenses:                                                               |                 |               |                |               |                 |
| General & Administration                                                          | (781)           | (19.9%)       | (754)          | (18.1%)       | 4%              |
| Research & Development                                                            | (631)           | (16.1%)       | (637)          | (15.3%)       | -               |
| <b>Operating Income</b>                                                           | <b>742</b>      | <b>18.9%</b>  | <b>878</b>     | <b>21.0%</b>  | <b>(15%)</b>    |
| Non-Operating Income (Expenses), net                                              | 563             | 14.3%         | 192            | 4.6%          | 193%            |
| Income (Loss) Before Tax                                                          | 1,305           | 33.2%         | 1,070          | 25.6%         | 22%             |
| Income Tax                                                                        | (100)           | (2.5%)        | (150)          | (3.6%)        | (33%)           |
| <b>Net Income</b>                                                                 | <b>\$ 1,205</b> | <b>30.7%</b>  | <b>\$ 920</b>  | <b>22.0%</b>  | <b>31%</b>      |
| Other Comprehensive Income                                                        | 286             | 7.3%          | 28             | 0.7%          | n/a             |
| <b>Comprehensive Income</b>                                                       | <b>\$ 1,491</b> | <b>38.0%</b>  | <b>\$ 948</b>  | <b>22.7%</b>  | <b>57%</b>      |
| <b>EPS (Basic)</b>                                                                | <b>\$ 3.21</b>  |               | <b>\$ 2.46</b> |               | <b>30%</b>      |

● Non-operating Income included 100% owned subsidiaries' income - New Material: 47m (YoY ↑ 9%), MAS: 355m (YoY n/a).

# Balance Sheet Highlights & Financial Ratio

## Parent Only (In Million NTD)

Dec. 2013

Dec. 2012

+ / - %

### Balance Sheet Highlights

|                              |               |              |            |
|------------------------------|---------------|--------------|------------|
| Cash & Short Term Investment | 406           | 547          | - 26%      |
| Inventory                    | 1,174         | 1,073        | 9%         |
| Short Term Debt              | 630           | 380          | 66%        |
| Long Term Debt               | 700           | -            | n/a        |
| Shareholders Equity          | 8,578         | 7,797        | 10%        |
| <b>Total Assets</b>          | <b>10,989</b> | <b>9,257</b> | <b>19%</b> |

|                          |     |     |
|--------------------------|-----|-----|
| Inventory Turnover (Day) | 231 | 234 |
| AR Turnover (Day)        | 149 | 141 |
| AP Turnover (Day)        | 84  | 89  |
| Net Debt to Equity (%)   | 11% | -   |

|                  |            |            |
|------------------|------------|------------|
| <b>ROE (%)</b> ● | <b>15%</b> | <b>12%</b> |
| <b>ROA (%)</b> ● | <b>12%</b> | <b>10%</b> |

### Cash Position

4Q' 2013

3Q' 2013

QoQ

A' 2013

YoY

|                          |            |              |            |             |            |
|--------------------------|------------|--------------|------------|-------------|------------|
| EBITDA                   | 350        | 337          | 4%         | 1,457       | 16%        |
| Cash Flow from Operation | 297        | (217)        | n/a        | 619         | (42%)      |
| <b>Free Cash Flow</b> ●● | <b>348</b> | <b>(857)</b> | <b>n/a</b> | <b>(68)</b> | <b>n/a</b> |

● All ROE + ROA has been annualized.

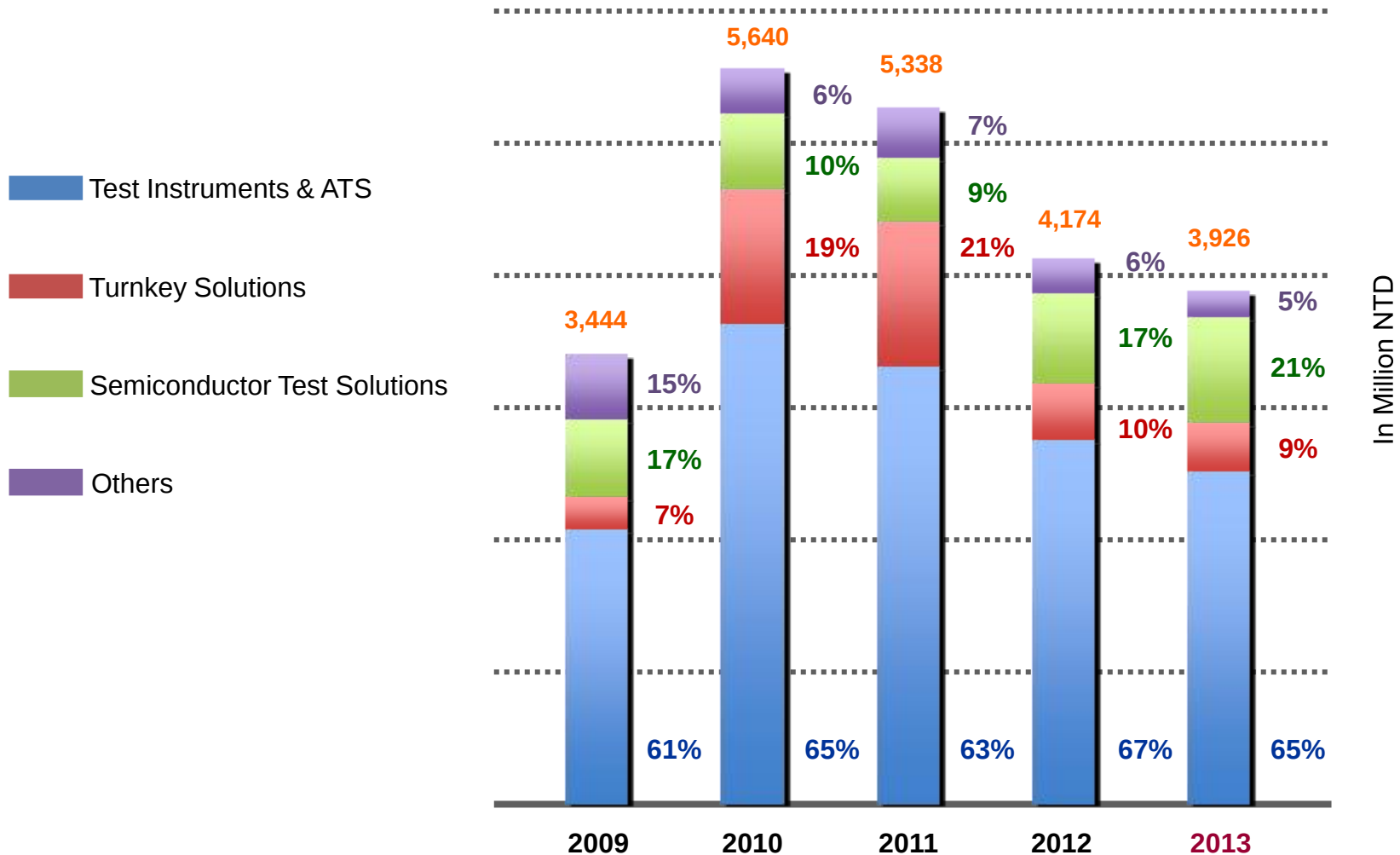
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**Chroma**

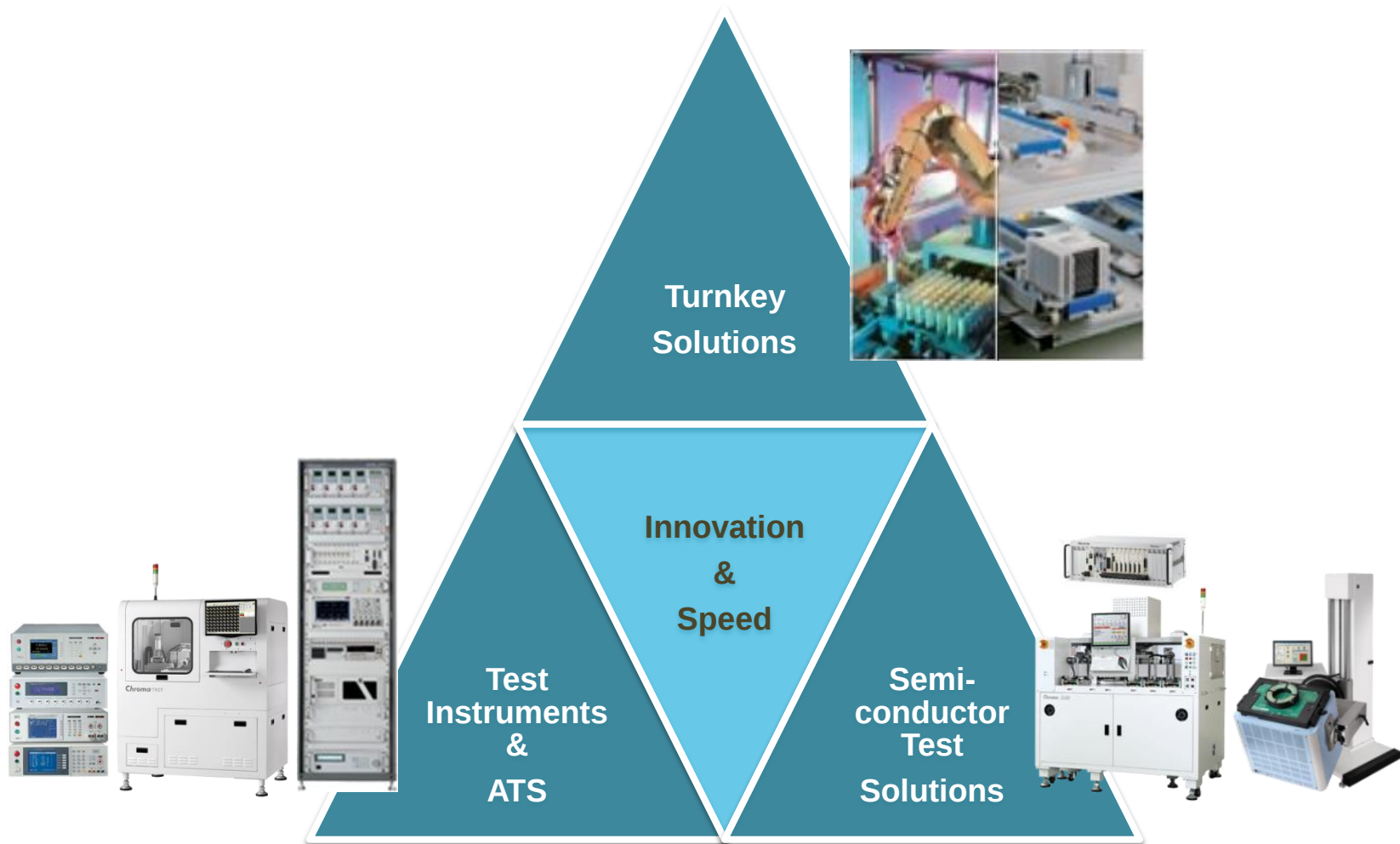
# OPERATION HIGHLIGHT

**Test**  
turnkey **Auto** **mation**  
Solution  
provider

## *A Turnkey Solution and Intelligent Automation Line Provider*



- In year 2013, the Chroma Ate sales revenues were mainly contributed from Test Instruments & ATS, covered 65% of the annual sales, while Semiconductor Test Solutions were the major growth sector, represented an increase of 19% YoY. MAS's sales revenues growth were mainly from solar module business.
- A trinity of strengths - Test and Measurement, Automation and MES, the key elements of Turnkey Solution, which in line with global market demand in automation. The Company expected this will be the major growth engine in next 3 ~ 5 years.
- Well established with strong global support network further enhance customer satisfaction and market penetration in US, Europe and Japan markets.
- The growth driver of year 2014 come from Chroma Ate business entity, particularly in Turnkey Solutions and Semiconductor Test Solutions, while the Test Instruments & ATS will maintain a solid position from enhanced power electronic applications, such as 4G LTE, servo power and clean tech related.



# Test Instruments & ATS

## Front Projector ATS



New

(Model: 7600A)

- ✓ 0.001 Lux ultra-low illuminance display range
- ✓ Hardware & software compliance with ANSI ,JBMA and IEC standard
- ✓ Support 4:3 、 16:9 、 16:10 fixed ratio and 3 ration in 1 system

## TV / Monitor PCBA ATS



New

(Model: 22294-A & A222917)

- ✓ Fully automation testing functions for PCBA production line
- ✓ Increase productivity 3 times more
- ✓ Real time 1 pixel high resolution inspection

## Regenerative Grid Simulator



New

(Model: 61800)

- ✓ Inverter/battery inverter/EV charger for smart grid application
- ✓ Bi-directional AC source (4-quadrant)
- ✓ High power 60kVA (1 & 3-phase output)
- ✓ Parallelable up to 300KVA

## Adapter/Charger ATS



New

(Model: 8030)

- ✓ Be able to test 8 UUTs concurrently improving productivity significantly.
- ✓ Specially designed all-in-one tester (15U) suitable for production line usage.
- ✓ Provide optimized standard test items for the low power charger.

## HF LCR Meter

New



(Model: 11050)

- ✓ Test Parameter: L/C/R/Z/Y/DCR/Q/D/  $\theta$
- ✓ Test Frequency: 1kHz ~ 10MHz
- ✓ Test Level: 10mV ~ 1V
- ✓ Basic Accuracy: 0.1%
- ✓ 15ms fast speed measurement

## Wound Component EST Analyzer

New

Patent



(Model: 19036)

- ✓ First combining impulse tester and Hipot analyzer
- ✓ Multichannel scanning: Up to 40 channels with patented 4-wire port.
- ✓ Test Range: 5kVac/6kVdc; 6kV impulse voltage

## EV AC Charging Compatibility ATS



(Model: 8000)

- ✓ Meet SAE J1772 standard
- ✓ To simulates various states of AC EVSE before EV delivery.
- ✓ Testing response action of EV for EVSE transmission signal limit value.

## Battery Management System PCBA ATS



(Model: 8700)

- ✓ Battery cells voltage simulation
- ✓ Over charge/discharge current protection test
- ✓ BMS voltage/current/temperature calibration
- ✓ BMS IC data reading/writing

## Solar Cell Front-Side Printing Inspector



New

- ✓ Super high 20um/pixel resolution
- ✓ Line-scan on-the-fly inspection
- ✓ Enhanced stain inspection
- ✓ No grain-boundaries interference in defect inspection

(Model: 7212-HS)

## High Speed Wafer Chip Inspection System



New

- ✓ Applicable for 8" wafer on tape
- ✓ Higher throughput 1 minute/ wafer
- ✓ Maximum chip size can be achieved 200mil

(Model: 7935-HS, Q2 )

# Semiconductor Test Solutions

## 3650-EX SoC/Analog Test System



New

- ✓ 100Mhz/200Mhz SoC Test System
- ✓ Support up to 1088 pins
- ✓ Support up to 96 CH DPS
- ✓ Range of application from MCU, Analog/Power, RF, and all sorts of consumer SoC devices

(Model: 3650-EX)

## 3240Q Chroma RF Test Handler



New

- ✓ Flexible octal / quad sites test configure
- ✓ Wider DUT pitch with shielding chamber to avoid interference during test
- ✓ High throughput with best cost effective handler on RF test
- ✓ Suitable for RF IC application ranging from Wi-Fi, Bluetooth, GPS chip, and etc.

(Model: 3240Q)

# Turnkey Solutions

- Passive Component Turnkey Solution
- Flat Panel Display Turnkey Solution
- Photovoltaic Turnkey Solution
- LED/Lighting Turnkey Solution
- Battery Turnkey Solution



## Inductor Layer Short ATS



(Model: 1871)

- ✓ High speed layer short test for Molding Power Choke
- ✓ Apply unique Impulse Winding Tester (Chroma19301) for low inductance test
- ✓ Semi 4 wires measurement technology
- ✓ Throughput : Up to 1200 pcs/min maximum
- ✓ Disc design to avoid the UUT losses

## Inductor Test and Packing System

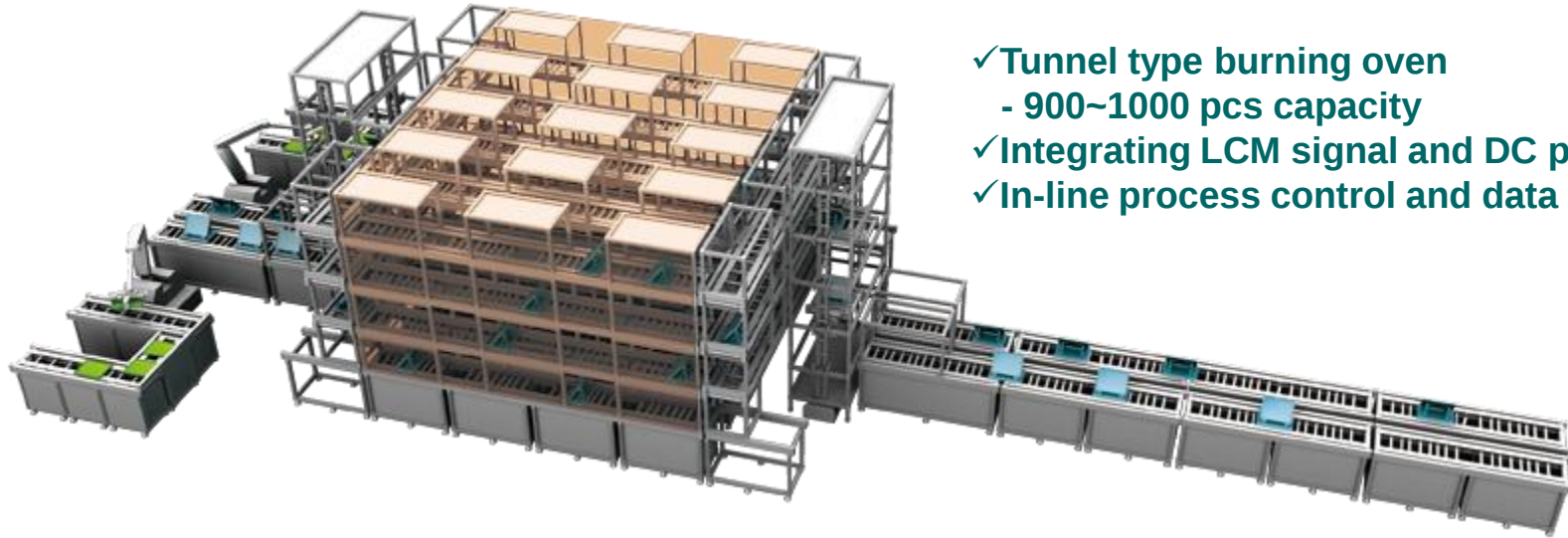


(Model: 1870D)

- ✓ High speed electrical test and packing for Molding Power Choke
- ✓ Support high frequency (~10M ) for Inductance test
- ✓ Throughput : Up to 1200 pcs/min maximum
- ✓ Disc design to avoid the UUT losses
- ✓ Software for data collection , storage and monitoring for quality of process



## FPD Burn-in & Testing Line



- ✓ Tunnel type burning oven  
- 900~1000 pcs capacity
- ✓ Integrating LCM signal and DC power source
- ✓ In-line process control and data collection

Assembly

Aging

Testing

Packing



## Solar Cell Inspection Test/Sorting Solution



(Model: 3730)

Sorting

IV Testing

AOI

Loading

- ✓ Low breakage rate
- ✓ High throughput
- ✓ Integrated with inspector and IV tester
- ✓ Modularized sorting bins

## High Speed LED Bulb In-line Test System



(Model: 5102)

- ✓ Over 10K pcs throughput per day
- ✓ Test LED bulb in steady state
- ✓ Support Flicker Measurement



LEDinside "Aurora Award 2013"

## High Speed LED Tube In-line Test System



(Model: 5104)

- ✓ Over 10K pcs throughput per day
- ✓ Support a variety of LED tube measurement
  - Support JEL801 Light Intensity Distribution Measurement
  - Support Flicker Measurement

## LED Bulb Automatic Assembly & Test Line



(Model: 5500)

PCB Assembly → Socket Assembly → Cover Assembly → Optical Test

- ✓ Fully automated assembly and testing
- ✓ High throughput
- ✓ Low labor requirement
- ✓ Modularized design
- ✓ Flexible bulb type application

## Regenerative Li-ion Cell Formation System

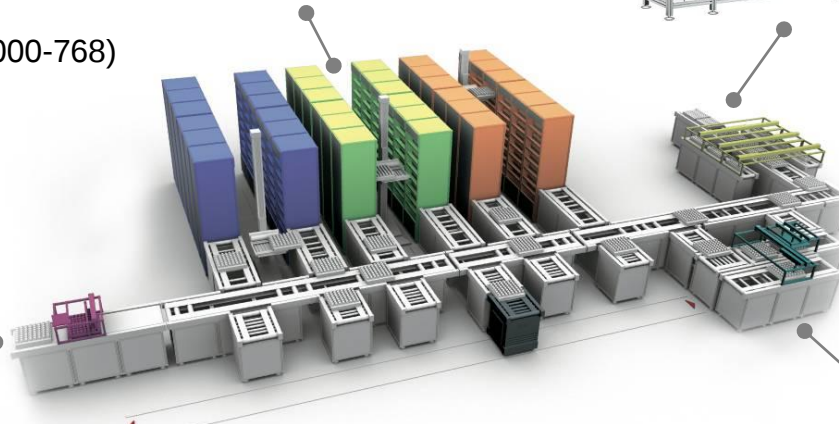


(Model: 17000-768)

## Grouping Equipment



(Model: 17930)



## Barcode Binding Equipment



(Model: 17910)

## OCV and ACR Test Equipment



(Model: 17800)

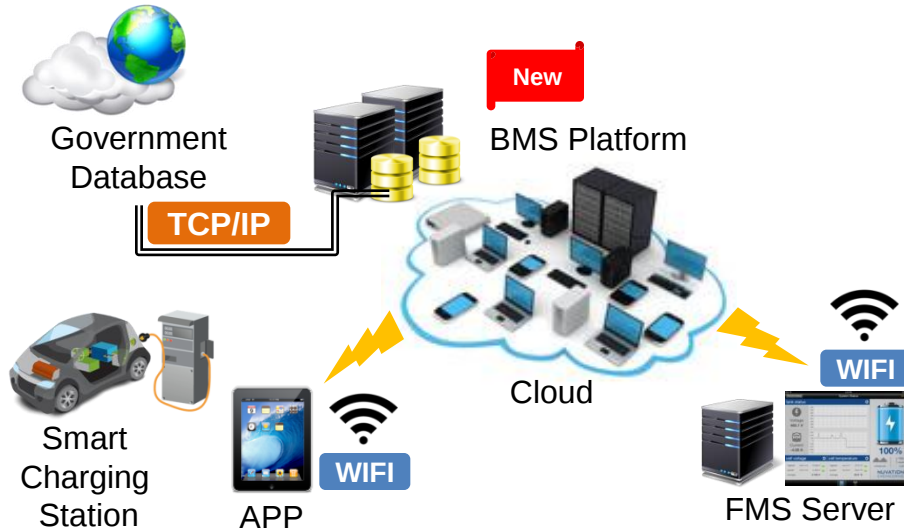
## Mobile Device Battery Cell/Pack Assembly Line



(Model: 5600)

- ✓ Fully automated assembly and testing
- ✓ High throughput 1,000 pcs./Hr.
- ✓ Low labor requirement
- ✓ Modularized design

## BMS Platform



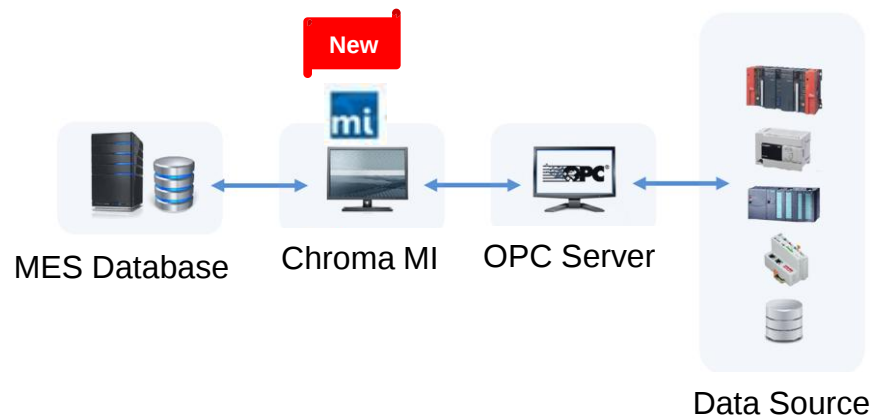
### ✓ Analyzed Platform on Cloud

- Battery Production History
- Records of Terminal Voltage
- Records of Charge/ Discharge Temperature and Voltage
- APP Monitoring
- Battery Status Monitoring

### ✓ Mobile Devices Monitoring

### ✓ Smart Charging Station

## MI Platform



### ✓ MI Management Platform

- EQ Menu and OPC Control Bar
- Unit and Work Panel
- OIF Panel and Editor
- Item Browser
- Message Panel
- System Status Bar



let's make a better world  
Thank You!