

A futuristic cityscape at night with tall, dark buildings and glowing windows. In the foreground, there are curved, glowing light trails in blue, green, and yellow, suggesting high-speed movement or data flow.

Chroma

2023.4Q Earnings Release

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

CORPORATE PROFILE

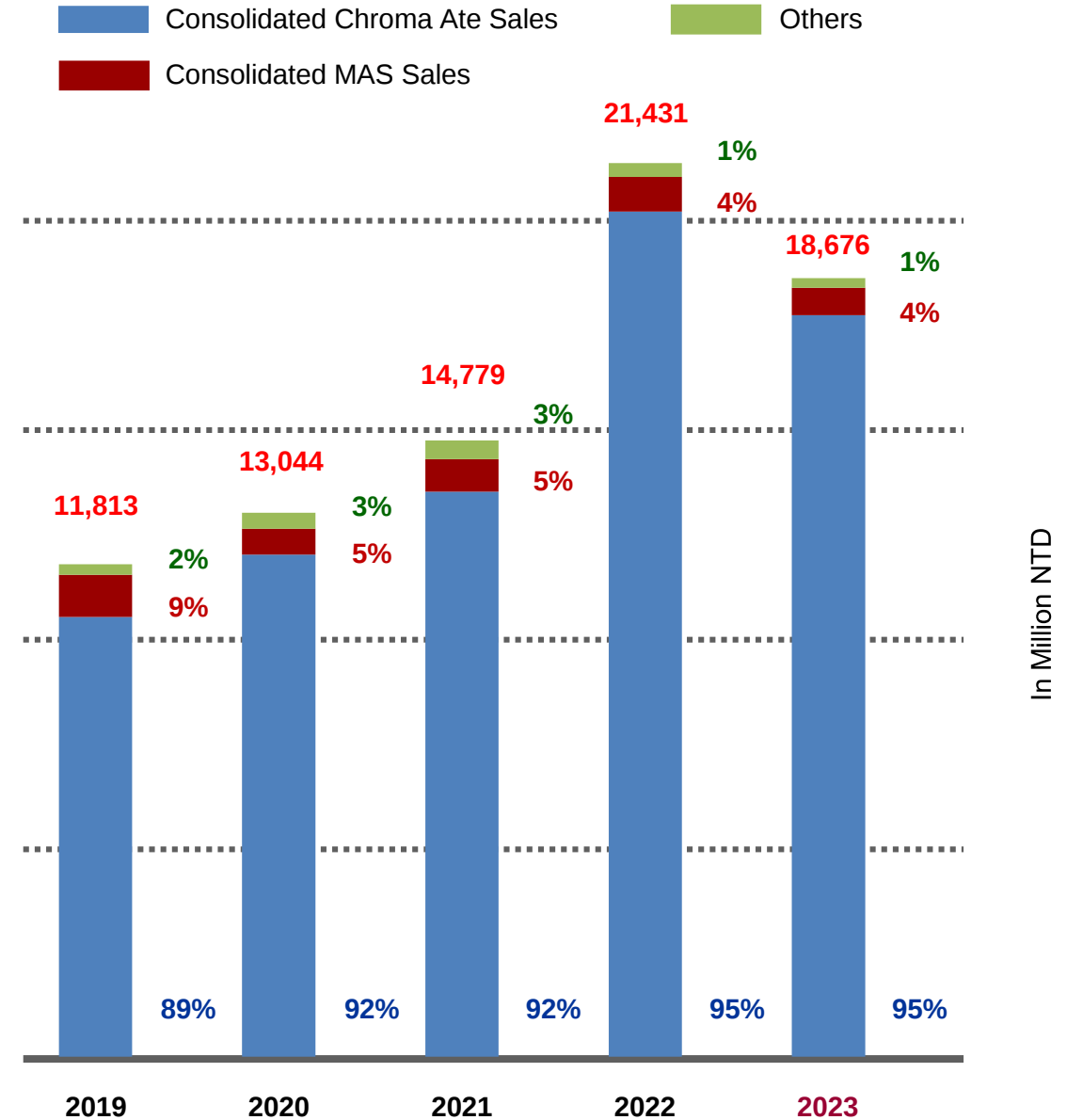


Corporate Profile

- Chroma Group founded in 1984, a world leading own brand and design of high precision test & measurement instruments, automated test systems, intelligent manufacturing systems and test & automation turnkey solutions provider. Businesses cover test and measurement instruments and ATS for electronics, ICT and cleantech various industries.
- Key success: Precision, Reliability, Innovation
- Chroma group consolidated business units of Chroma Ate Inc., Modular Assembly System (MAS).
- 2023 Consolidated Sales : NT\$ 18.7 billion
- 2023 Net Income: NT\$ 4.1 billion
- Chroma Group total of 3,464 employees (as of December, 2023)

Consolidated Sales Breakdown

Chroma

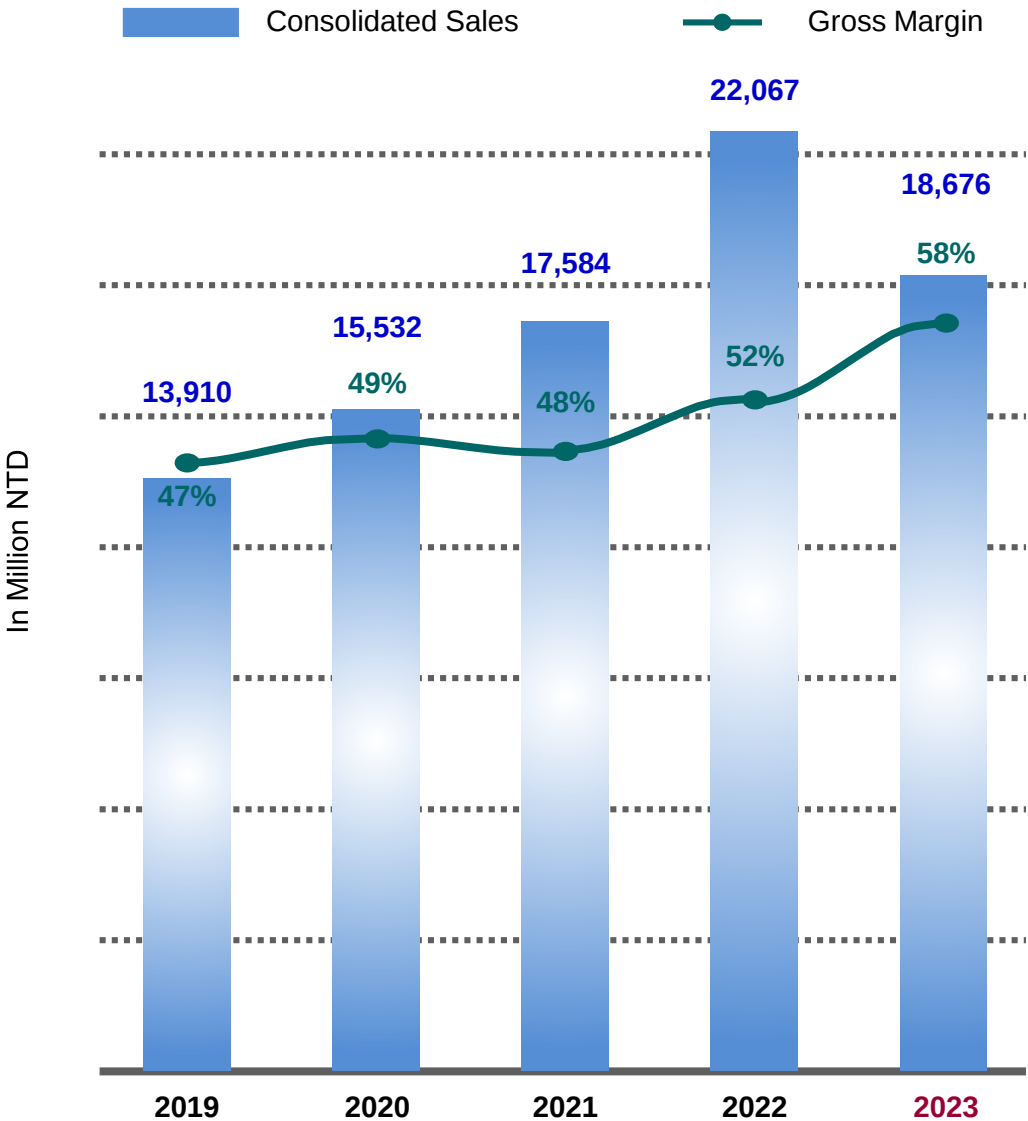


* Excluded Chroma New Material Corp. as a terminated business entity.

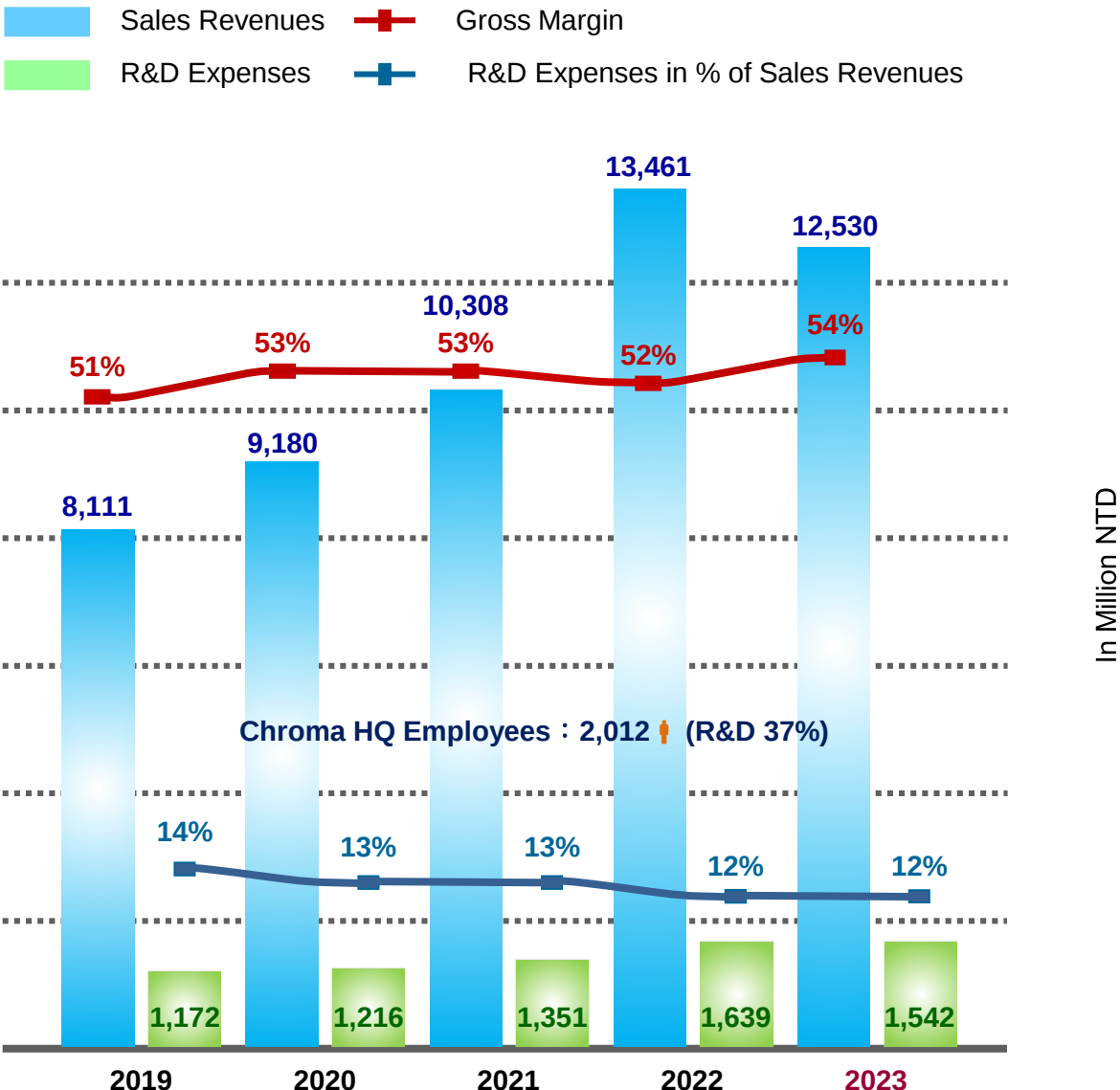
Financial Performance



Consolidated Sales & Gross Margin

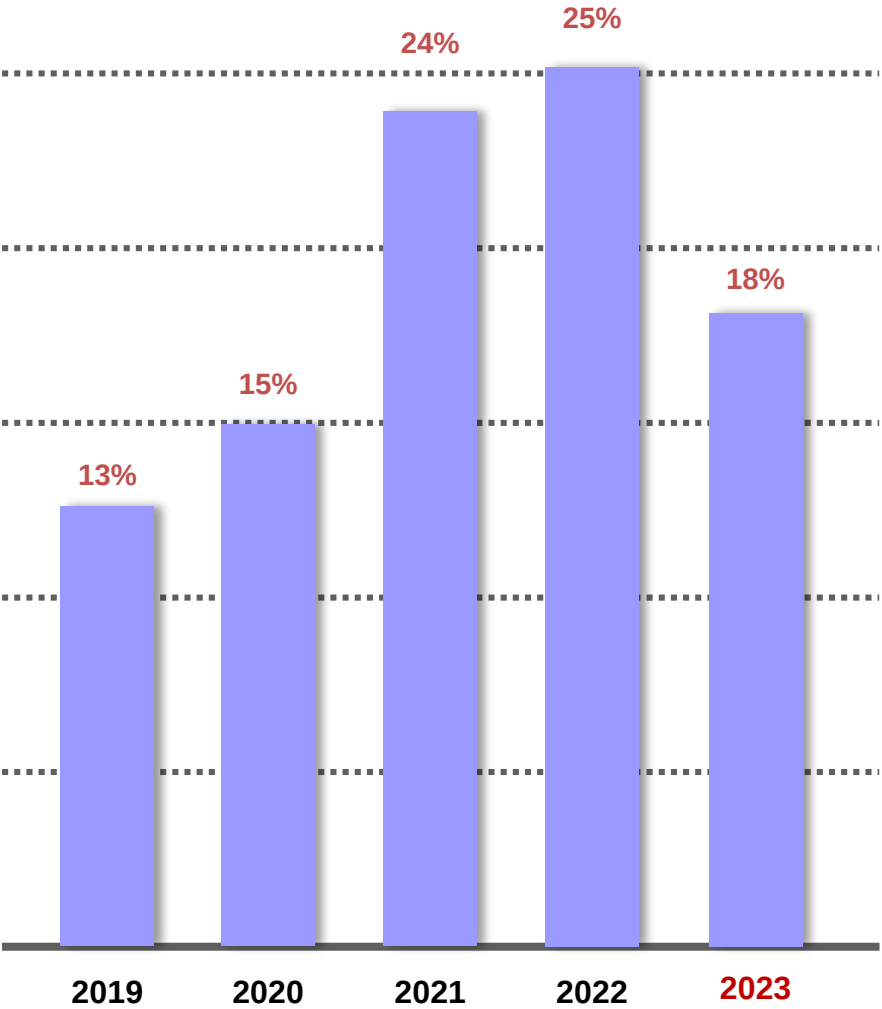


Parent Company Sales / Gross Margin / RD Expenses

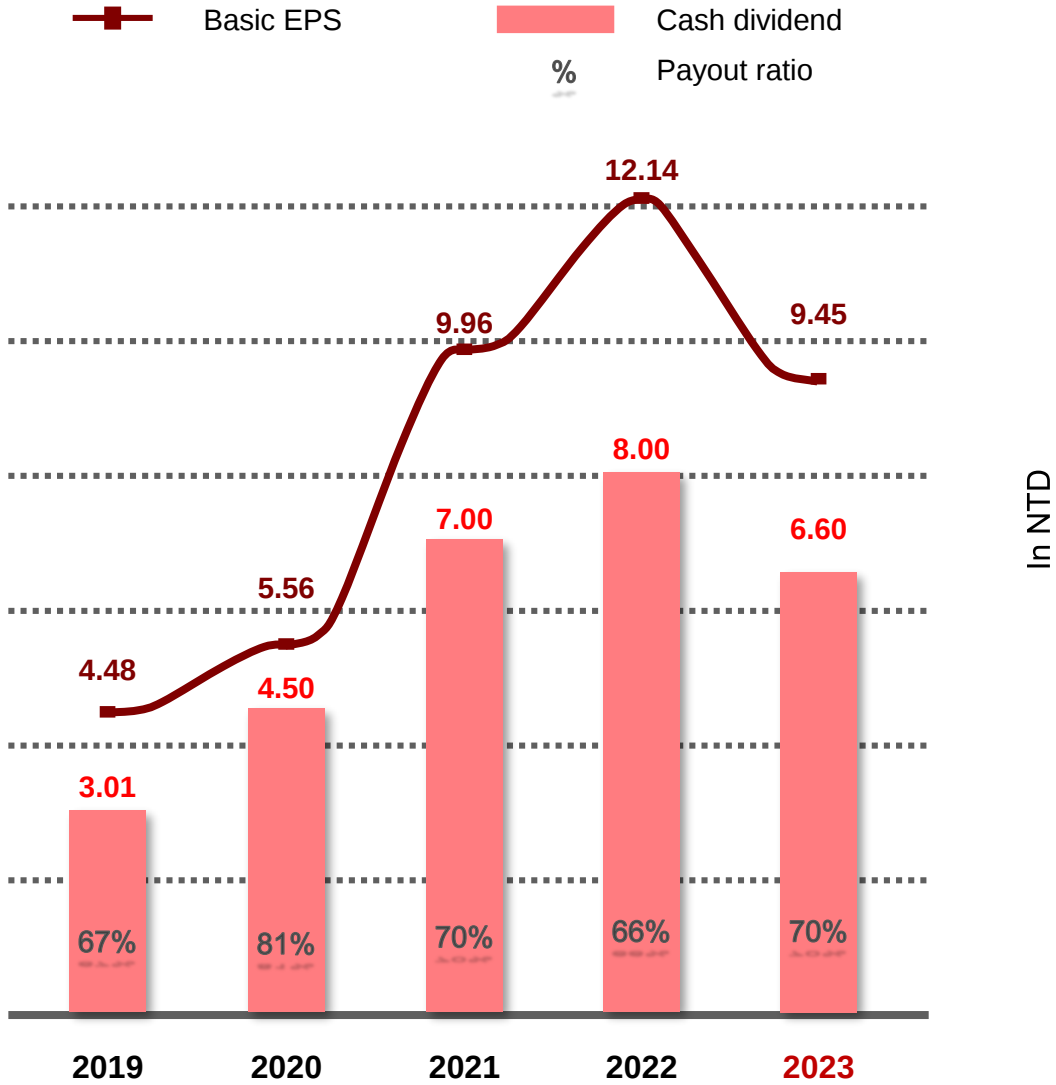


Financial Performance

ROE



Dividend



* Dividend for 2023 will be paid out after resolution of AGM

Global Operation Sites



52

Operation
Sites

109

Distributors

1999



Netherlands:
Ede

2017



Germany:
Augsburg

2008



Japan:
Shin-Yokohama/
Osaka

2018



Korea:
Pangyo

1993



United States:
Irvine, CA
Milpitas, CA
Redmond, WA
Portland, OR
Chandler, AZ
Austin, TX
Sherman, TX
Allentown, PA
Albany, NY

2001



United States:
Foothill Ranch, CA
Georgetown, TX
Marlborough, MA
Wixom, MI
Stroudsburg, PA
Apex, NC
Odessa, FL
Canada: Mississauga
Mexico: Juarez
Brazil: Porto Alegre

1998



China/ Shenzhen

1999



China/ Beijing

2000



China/ Shanghai



Taiwan: Taoyuan (Headquarters)

2003



Taiwan: Hsinchu

2009



Taiwan: Kaohsiung

2001



China/ Dongguan

2006



China/ Suzhou

2011



China/ Xiamen

2016



Quantel : Singapore

Others:

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

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

FINANCIAL REVIEW



Year 2023 Condensed Consolidated Income Statement



Condensed Consolidated P&L

(In Million NTD, except for EPS in NTD)

	2023	%	2022	%	YoY %
Net Sales	18,676	100%	22,067	100%	(15%)
Consolidated Sales of Testing Equipment Business	17,787	95%	20,269	92%	(12%)
Consolidated Sales of MAS	658	4%	830	4%	(21%)
Consolidated Sales of New Material	0	0%	635	3%	n/a
Others	231	1%	333	1%	(31%)
Cost of Goods Sold	(7,919)	(42%)	(10,710)	(48%)	(26%)
Gross Profit	10,757	58%	11,357	52%	(5%)
Operating Expenses:					
General & Administration	(4,327)	(23%)	(4,401)	(20%)	(2%)
Research & Development	(1,757)	(10%)	(1,917)	(9%)	(8%)
Operating Income	4,673	25%	5,039	23%	(7%)
Non-Operating Income (Expenses), net	493	3%	1,402	6%	(65%)
Income (Loss) Before Tax	5,166	28%	6,441	29%	(20%)
Income Tax	(1,070)	(6%)	(1,219)	(5%)	(12%)
Net Income	4,096	22%	5,222	24%	(22%)
Net Income (Losses) Attributable To:					
Shareholders of the Parent	3,979	21%	5,106	23%	(22%)
Noncontrolling Interests	117	1%	116	1%	-
	\$ 4,096	22%	\$ 5,222	24%	(22%)
EPS (Basic)	\$ 9.45		\$ 12.14		(22%)
EPS (Diluted)	\$ 9.37		\$ 12.00		(22%)

2022 included the gain from disposal of investment (ADLINK) of NTD 414 million plus revert the gain from disposal of property to ADLINK of NTD 90m.

Year 2023.4Q Condensed Consolidated Income Statement



Condensed Consolidated P&L

(In Million NTD, except for EPS in NTD)

	2023.4Q	%	2023.3Q	%	QoQ %	2022.4Q	%	YoY %
Net Sales	5,025	100%	4,847	100%	4%	6,074	100%	(17%)
Consolidated Sales of Testing Equipment Business	4,913	98%	4,627	96%	6%	5,810	96%	(15%)
Consolidated Sales of MAS	44	1%	165	3%	(73%)	188	3%	(77%)
Others	68	1%	55	1%	24%	76	1%	(11%)
Cost of Goods Sold	(2,446)	(49%)	(2,084)	(43%)	17%	(3,300)	(54%)	(26%)
Gross Profit	2,579	51%	2,763	57%	(7%)	2,774	46%	(7%)
Operating Expenses:								
General & Administration	(1,094)	(22%)	(1,088)	(22%)	1%	(1,170)	(19%)	(6%)
Research & Development	(451)	(9%)	(437)	(9%)	3%	(549)	(10%)	(18%)
Operating Income	1,034	20%	1,238	26%	(16%)	1,055	17%	(2%)
Non-Operating Income (Expenses), net	(16)	-	307	6%	n/a	65	1%	n/a
Income (Loss) Before Tax	1,018	20%	1,545	32%	(34%)	1,120	18%	(9%)
Income Tax	(193)	(4%)	(291)	(6%)	(34%)	(206)	(3%)	(6%)
Net Income	825	16%	1,254	26%	(34%)	914	15%	(10%)
Net Income (Losses) Attributable To:								
Shareholders of the Parent	799	16%	1,225	25%	(35%)	863	14%	(7%)
Noncontrolling Interests	26	-	29	1%	(10%)	51	1%	(49%)
	\$ 825	16%	\$ 1,254	26%	(34%)	\$ 914	15%	(10%)
EPS (Basic)	\$ 1.89		\$ 2.91		(35%)	\$ 2.05		(8%)
EPS (Diluted)	\$ 1.87		\$ 2.89		(35%)	\$ 2.00		(7%)

2023.4Q currency exchange losses of 135m.

Balance Sheet Highlights & Financial Ratio

Consolidated (In Million NTD)

Balance Sheet Highlights

	<u>2023. Dec</u>	<u>2022. Dec</u>	+ / - %
Cash & Short Term Investments	4,794	6,685	- 28%
Inventory	4,675	4,753	- 2%
Short Term Debt	2,136	2,024	6%
Long Term Debt	990	1,165	- 15%
Shareholders Equity	22,517	21,873	3%
Total Assets	33,482	33,828	- 1%
Inventory Turnover (Day)	217	148	
AR Turnover (Day)	87	72	
AP Turnover (Day)	128	101	
Net Debt to Equity (%)	Net Cash	Net Cash	
ROE (%) ●	18%	25%	
ROA (%) ●	12%	16%	

Cash Position

	<u>2023</u>	<u>2022</u>	<u>YoY</u>
EBITDA	5,973	7,180	(17%)
Cash Flow from Operation	3,408	5,297	(36%)
Free Cash Flow ●●	2,014	6,198	(68%)

● All ROE + ROA has been annualized.

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

OPERATION HIGHLIGHT



2023.4Q & Annual Product Mix and Consolidated Sales Breakdown

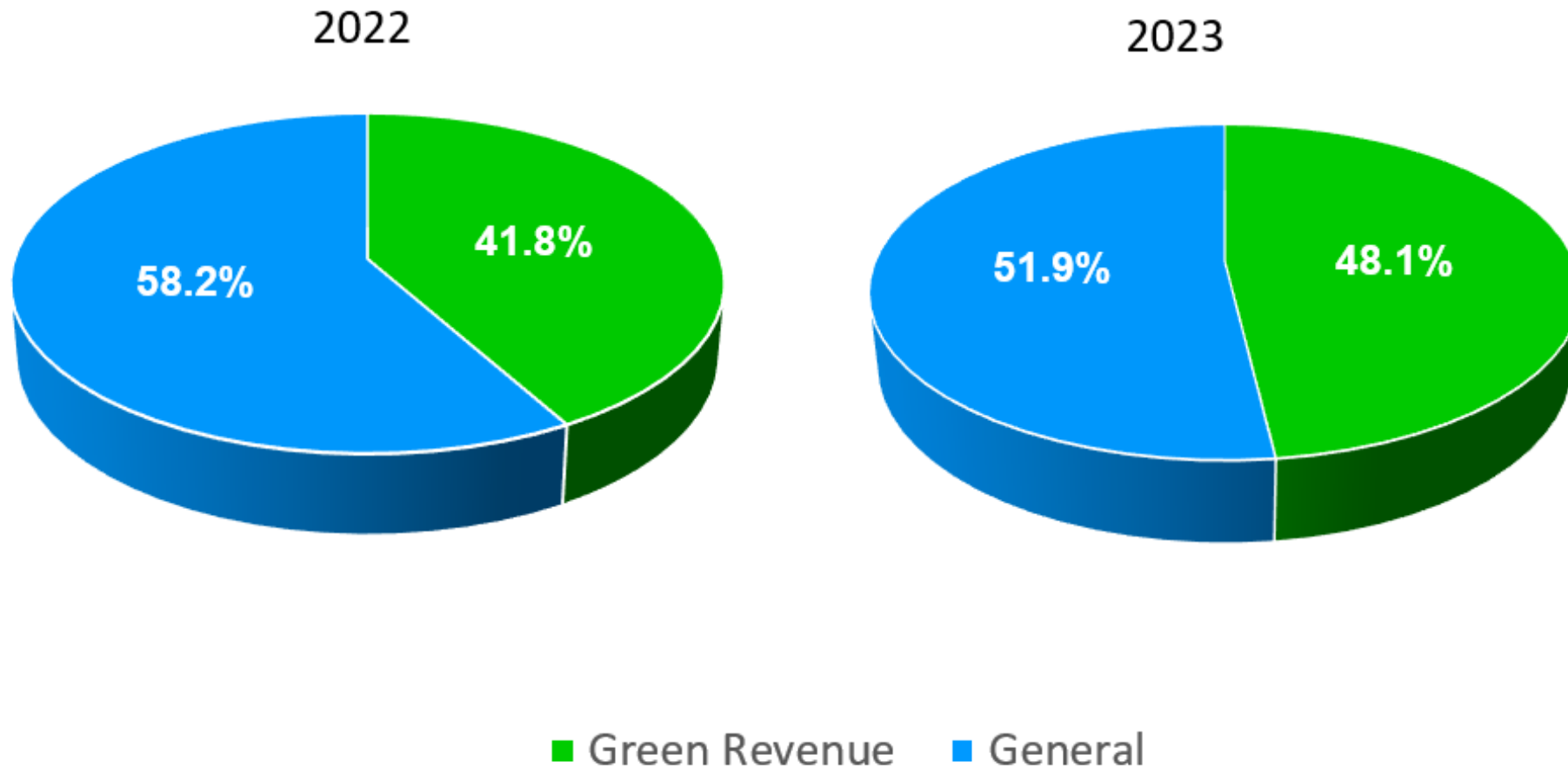
(Unit: Million NTD)

	2023.4Q	%	QoQ	YoY	2023	%	YoY	2022	%
Test Instruments & Automatic Testing System (ATS)	1,501	52%	(23%)	(19%)	8,078	64%	15%	7,052	52%
Semiconductor / Photonics Test Solutions	865	30%	(19%)	60%	2,963	24%	(34%)	4,523	34%
Turnkey Solutions	171	6%	159%	163%	454	4%	(21%)	578	4%
Service & Others	365	12%	88%	45%	1,035	8%	(21%)	1,308	10%
Total of Parent Company Sales	2,902	100%	(11%)	7%	12,530	100%	(7%)	13,461	100%
+ Sales from Overseas Operations & Related Subsidiaries	2,011		48%	(35%)	5,257		(23%)	6,808	
Chroma Consolidated Testing Equipment Business	4,913	98%	6%	(15%)	17,787	95%	(12%)	20,269	92%
MAS	44	1%	(73%)	(77%)	658	4%	(21%)	830	4%
Other Subsidiaries	68	1%	24%	(11%)	231	1%	(31%)	333	1%
Consolidated Sales (Continued Business Units)	5,025	100%	4%	(17%)	18,676	100%	(13%)	21,432	97%



The consolidated sales in 2022 have excluded terminated business entity of Chroma New Material Corp.

- In year 2023, Chroma total consolidated sales revenues reached 18.7 billion NTD, which declined of 15% YoY. The Parent Company sales reached 12.5 billion, presented a decline of 7%. EV and ESS industries are major sales contribution in 2023.
- Year 2024 Business Outlook:
 - ✓ 2024 growth momentum largely contributes from semiconductor / Photonics sector.
 - ✓ The accelerating development and optimizing chip performance of HPC/AI will continue drive the demand for SLT testers.
 - ✓ A big turnaround of mature nodes (28nm) market increase the sales contribution to ATE systems.
 - ✓ The Test Instruments & ATS for power testing solutions sustained a steady growth.



Note: Revenues are classified according to FTSE Russell's Green Revenues Classification System (GRCS).

Technology & Solution Milestones

High Precision Test Solutions

3650-S2



768pin
12 slots
15kVA
Floating
LB electronics
IC: SiC/Power/logic

2022

2023

2024

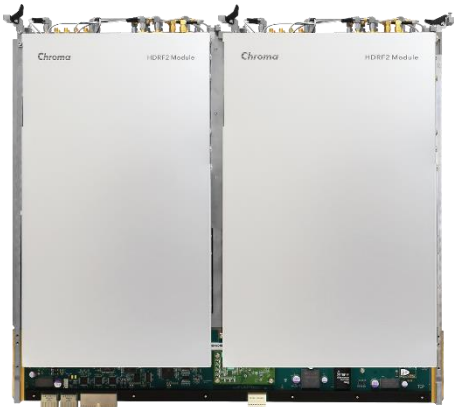
3680 HDRF



Internally Integrated
One-touch engagement
3rd party RF instruments

3680 HDRF2

NEW



Internally Integrated
One-touch engagement
4 Vector Signal Transceivers
32 RF ports
6Ghz Software Defined Radio
200Mhz bandwidth
Supports various protocols:
Bluetooth 5.2, Wi-Fi 6, LoRa, GPS

Temperature-forcing Systems



- ✓ **-40°C ~ +150°C @T_c**
- ✓ Up to **1,200W** power dissipation



- ✓ **-70°C ~ +150°C @T_c**
- ✓ Up to **1,000W** power dissipation



- ✓ **-40°C ~ +150°C @T_c**
- ✓ Up to **2,000W** power dissipation



Hybrid Tri-temp Test Handler



- ✓ 3x3~120x120mm
- ✓ **-70 ~ +150°C @T_c**, up to **1.2kw** dissipation
- ✓ 500 kgf contact
- ✓ TSD (T_j) available

Model 3110 Gen2

Single Site Test Handler



- ✓ 3x3~120x120mm
- ✓ **-40 ~ +150°C @T_c**, up to **1.8kw** dissipation
- ✓ 500 kgf contact
- ✓ TSD (T_j) available

Model 3210

FT & SLT Hybrid Test System

UPGRADE



- ✓ 5x5~120x120mm
- ✓ 4~24 sites
- ✓ **-40 ~ +150°C @T_c**, up to **1.5kw/site** dissipation
- ✓ 500 kgf/site contact
- ✓ TSD (T_j) available
- ✓ Warpage detection
- ✓ OHT integration

Model 3200

Advanced packaging of AI/HPC, automotive, IoT, cloud, network and data center chips

2D+3D Measurement

- XY / Z Resolution: 30nm / 0.05nm
- Sensor: BLiS
- Light Source: Multiple Light Sources
- Applications:
 - Probe Mark Indentation Depth
 - 2D/3D CD & Surface Topography

BLiS technology



Model 7980

2023

2D+3D Measurement

- XY / Z Resolution: 30nm / 0.05nm
- Sensor: BLiS
- Light Source: Multiple Light Sources
- Applications:
 - RDL: $\geq 2 \mu\text{m}$, AR3
 - TSV/VIA: $\geq 2 \mu\text{m}$, AR15
 - OVL $\leq 0.2 \mu\text{m}$

BLiS technology



Model 7981



2024

BLiS: Broadband Light integrated System (Multi-sensors with different functions are integrated.)

Advanced Packaging: InFO, CoWoS, 3D IC

PD/APD Burn-in System



Model 58606
Temp. : 40° ~ 180°C
DUT pad size > 70um
±2mA; ±80V

HP LD Burn-in System



Model 58605
Temp. : 20° ~ 85°C
Up to 6Amps of Pulse Driving



VCSEL Wafer Test System II

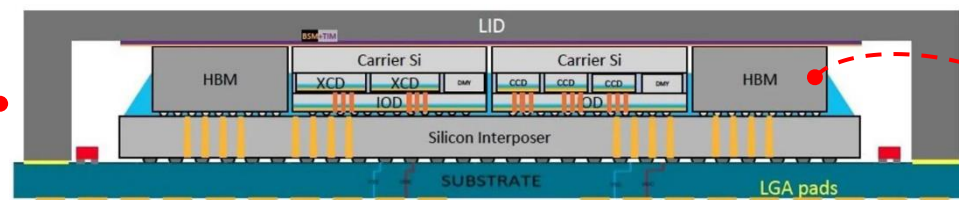


Model 58635 Series
Temp.: -20° ~ 100°C
LIV+NF two-in-one
Pulse width: <10 us

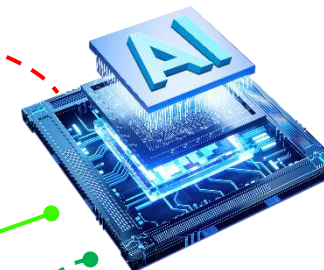


Advanced Packaging

- 3D Measurement System 7980/7981
 - RDL, TSV/VIA, OVL, surface 3D profile



CoWoS



AI/HPC Chips

AI / HPC Chips

- Tri-temp SLT Handler 3110
- FT & SLT Hybrid Test System 3200
- Temperature Forcing System 31000R Series



Vcore Power Supply

- Ultra Low Voltage DC Load 63202A



Optical Fiber Communication

- Laser Diode Burn-in and Reliability Test System 58604
- Laser Diode Characterization System 58620
- VCSEL Wafer Test System 58635

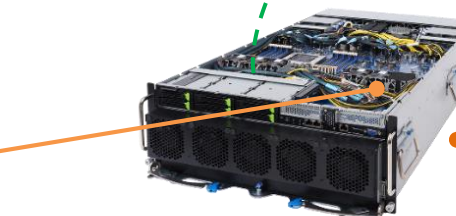
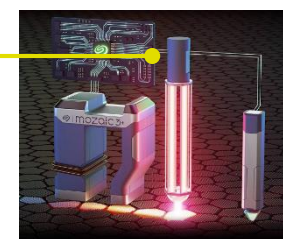


Data Storage - Hard Disk Drive

- Photonics Device Mapping Probe Tester 58212-C
 - Photodiode for HAMR (Heat-Assisted Magnetic Recording)



HAMR



AI Server



Data Center

Technology & Solution Milestones

High Power Test Solutions

Bidirectional DC Source



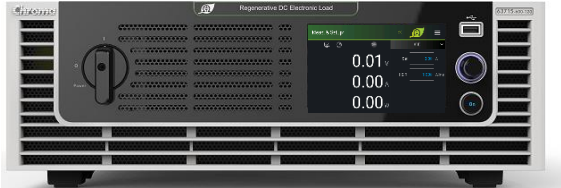
Bidirectional: Source & Load with energy regen
High Power Density: 6-18kW/3UH, Eff:92%
Model 62000D Series 100V-1800V, 540A

Regenerative AC Load



Programmable AC Load with energy regen
High Power Density: 15kW/3UH, Eff:90%
Model 63800R Series 9kW-15kW, 350VLN

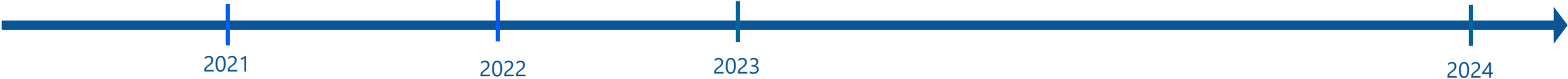
Regenerative DC Load



NEW



Programmable DC Load with energy regen
High Power Density: 18kW/3UH, Eff:93%
Model 63700 Series 18kW, 600/1200/1800V



Regenerative Grid Simulator

High power AC source with energy regen
Optional regen AC Load
Parallel up to 1MVA
Model 61800-100HV 105kVA, 500VLN-800VLN

Prismatic Solution



Battery Cell Formation
Model 17000-K029
5V, 240A

All-In-One Formation System



Battery Cell Formation
Model 17000 All-In-One Series
5V, 200A



Pouch Solution



Battery Cell Formation
Model 17000-K015
5V, 60A

Cylindrical Solution



Battery Cell Formation
Model 17080 / Model 17080-K001
5V, 30A



Thank You