October 2, 2026 12:00 AM GMT

Investor Presentation: Greater China Technology Hardware | Asia Pacific

AI Profit Taking Occurred in 3Q26; What's Next?

See our recent reports:

Asia Pacific Technology: AI's Hidden Backbone (13 Sep 2026)

Greater China Technology Hardware: How to Position in Supply Chain Stocks amid iPhone 18 Launching (10 Sep 2026)

Greater China Technology Hardware: iPhone 18: Real Upgrade Cycle, but Select Optical Valuations Look Stretched (10 Sep 2026)

Zhongji InnoLight Co Ltd: Leading AI Enabler in Optics; Significant Growth Potential (6 Sep 2026)

Greater China Technology Hardware: GB200 and GB300 NVL72 Racks in August 2026 (9 Sep 2026)

E Ink Holdings Inc.: Guidance at Risk; Move to EW (9 Aug 2026)

Bizlink: 2H26 GM Back to 30%+; 2H26 Momentum Seen Sustained (23 Aug 2026)

MORGAN STANLEY ASIA LIMITED+

Andy Meng, CFA

Equity Analyst

Andy.Meng@morganstanley.com +852 2234 7989

MORGAN STANLEY TAIWAN LIMITED+

Derrick Yang

Equity Analyst

Derrick.Yang@morganstanley.com +886 2 2730 2889

Howard Kao

Equity Analyst

Howard.Kao@morganstanley.com +886 2 2730 2889

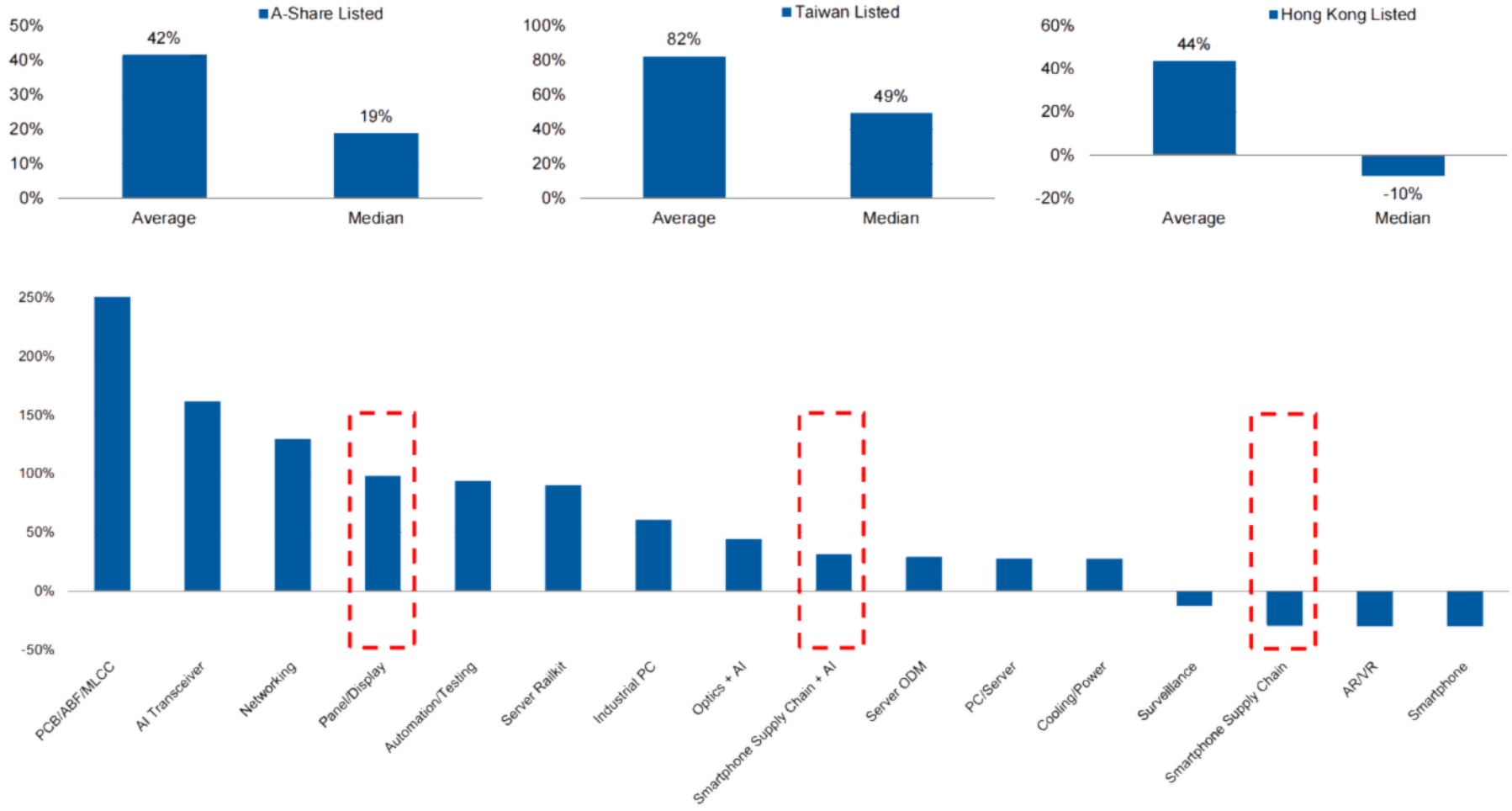
GREATER CHINA TECHNOLOGY HARDWARE
Asia Pacific
Industry View **In-Line**

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

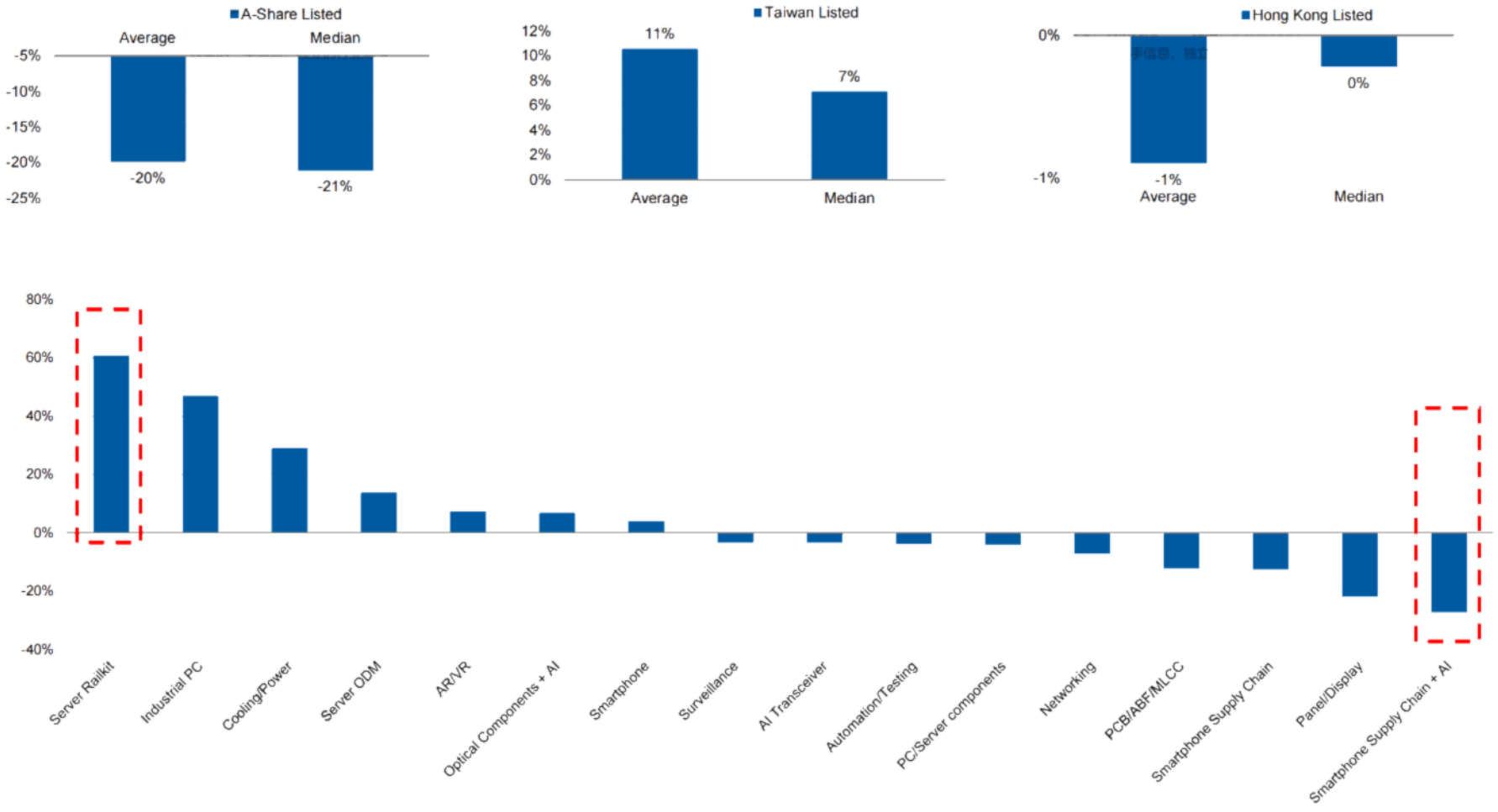
+= Analysts employed by non-U.S. affiliates are not registered with FINRA, may not be associated persons of the member and may not be subject to FINRA restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

Highly Divergent 1H26 Performance, with AI Content as the Key Re-rating Catalyst



Source: FactSet, Bloomberg, Morgan Stanley Research.

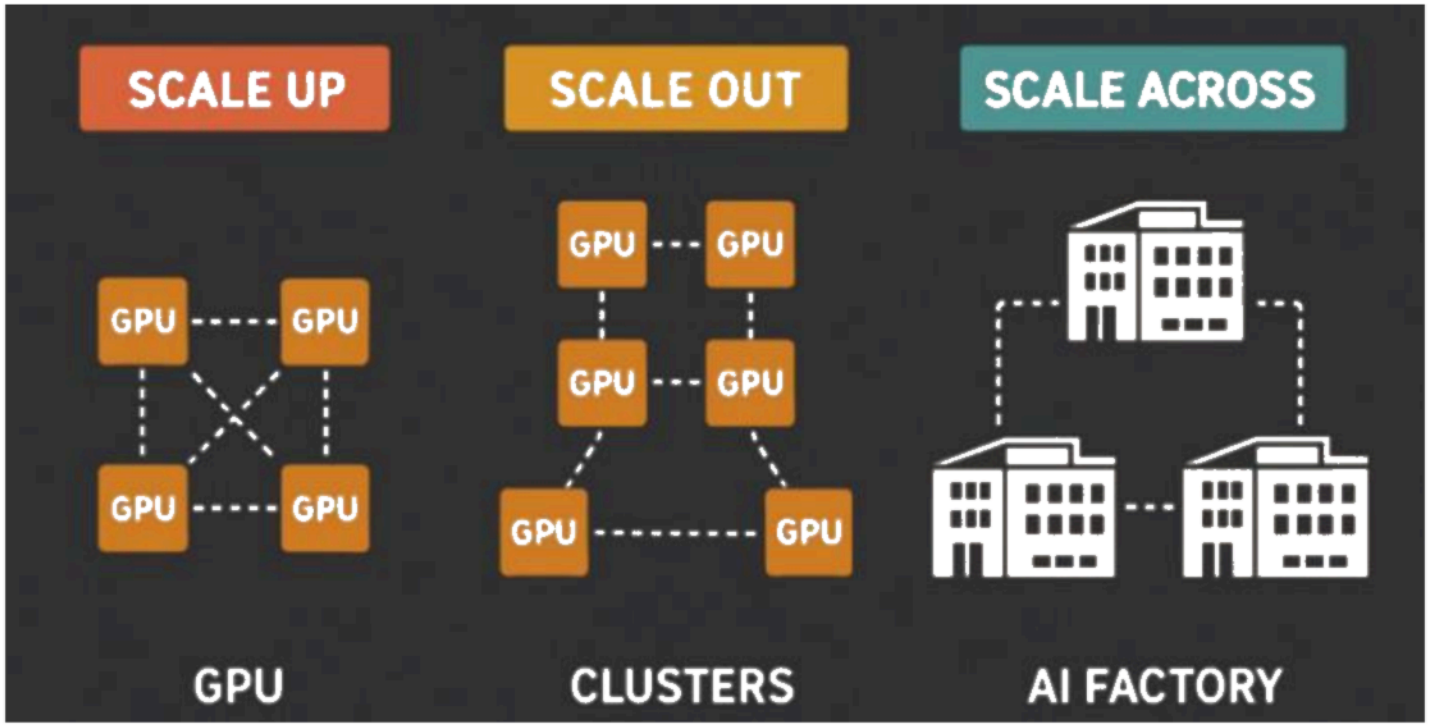
AI Profit Taking Occurred in 3Q26, King Slide, VPEC, Lenovo and Largan Outperformed



Data from Jun 1 to Sep 30, Source: FactSet, Bloomberg, Morgan Stanley Research.

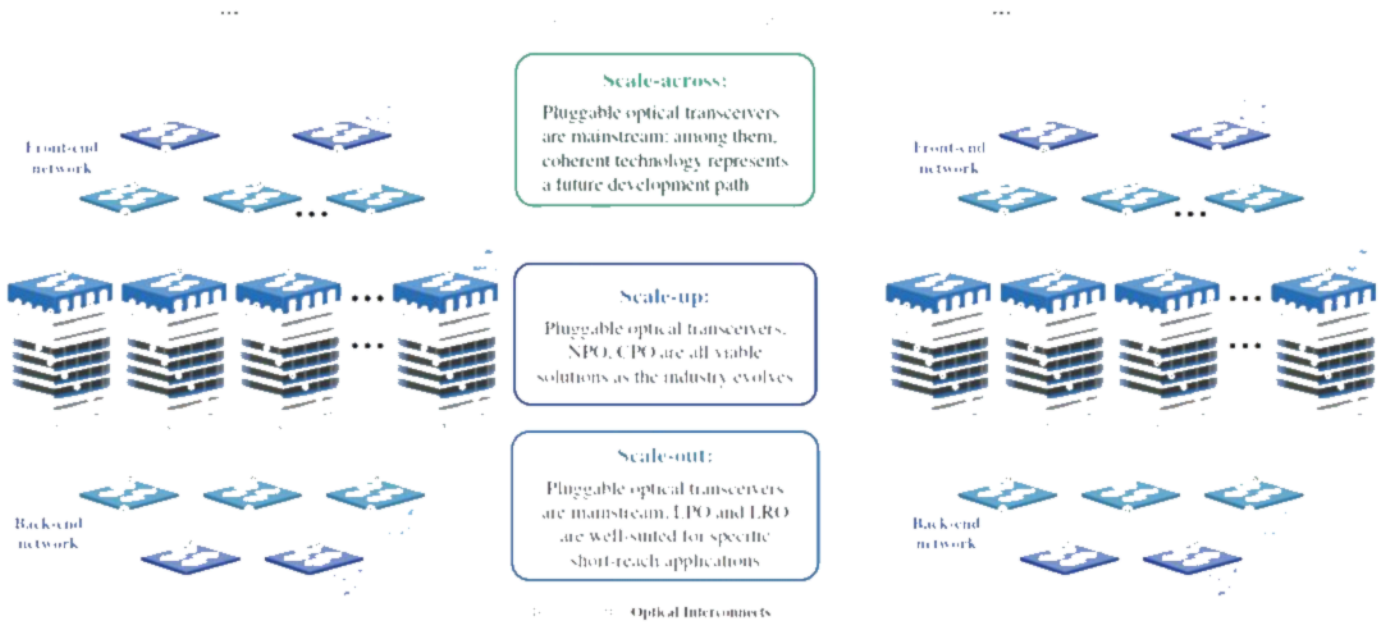
Andy Meng

Scale-up, Scale-out, and Scale-Across



Source: Morgan Stanley Research.

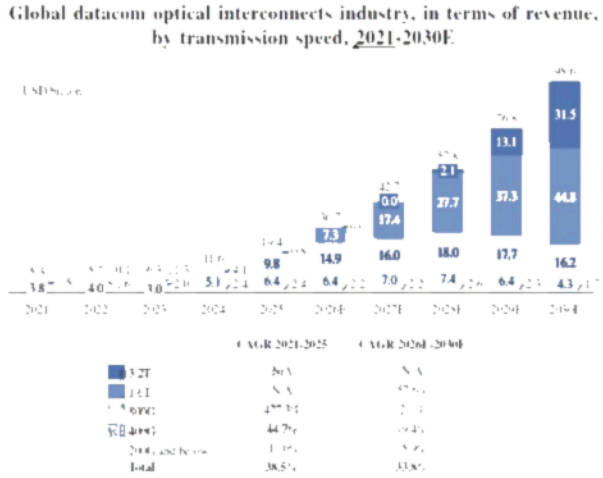
Significant Growth Opportunity from AI factory Build-outs

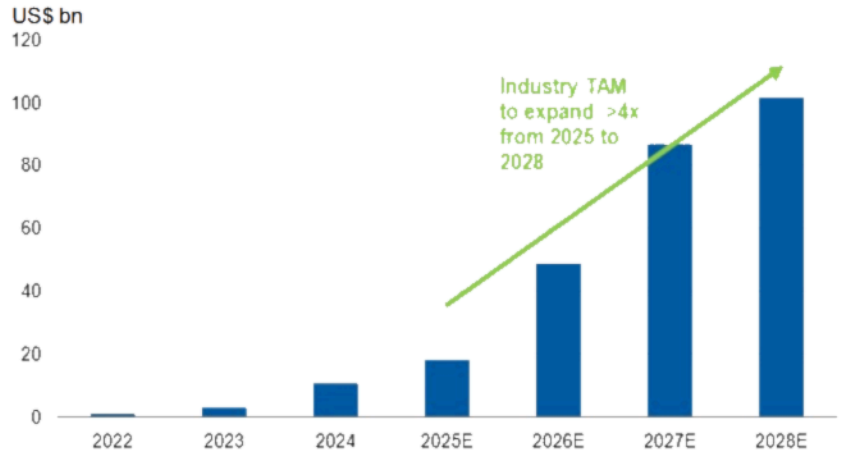


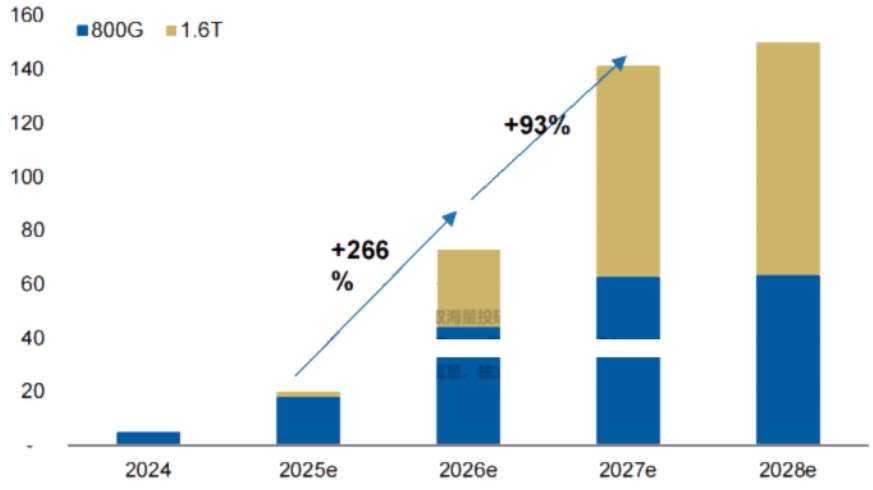
Source: China Insights Consultancy Limited.

Global AI transceiver TAM to expand >4x, 2025-2028

Metric	NVL72 Optical Scale-Out	NVL576 Hybrid	NVL576 Full CPO	Feynman Hybrid 200G	Feynman Full CPO 400G	Feynman Full CPO 200G
Configuration	NVL72	NVL576	NVL576	NVL1152	NVL1152	NVL1152
Total GPUs	72	576	576	1,152	1,152	1,152
Racks	1	8	8	8	8	8
GPUs per rack	72	72	72	144	144	144
Low-latency domain	72	576	576	1,152	1,152	1,152
Scale-up BW/GPU (Tb/s)	N/A	14.4	14.4	28.8	28.8	28.8
Scale-out BW/GPU (Tb/s)	1.6T	1.6T	1.6T	3.2T	3.2T	3.2T
Scale-out oversubscription	2:1	1.5:1	1.5:1	1:1	1:1	1:1
SerDes (Gb/s)	100	200	200	200	400	200
Scale-up medium	Copper	Hybrid	CPO	Hybrid	CPO	CPO
Scale-out medium	Plug/CPO	Plug/CPO	Plug/CPO	CPO	CPO	CPO
Intra-rack OEs (A)	-	-	10,368	-	20,736	41,472
Inter-pod OEs (B)	-	9,072	9,072	36,288	18,144	36,288
Scale-out OEs (C)	144	768	768	2,304	1,152	2,304
Total OEs (pod)	144	9,840	20,208	38,592	40,032	80,064
OEs per rack	144	1,230	2,526	4,824	5,004	10,008
OEs per GPU	2	17	35	34	35	70



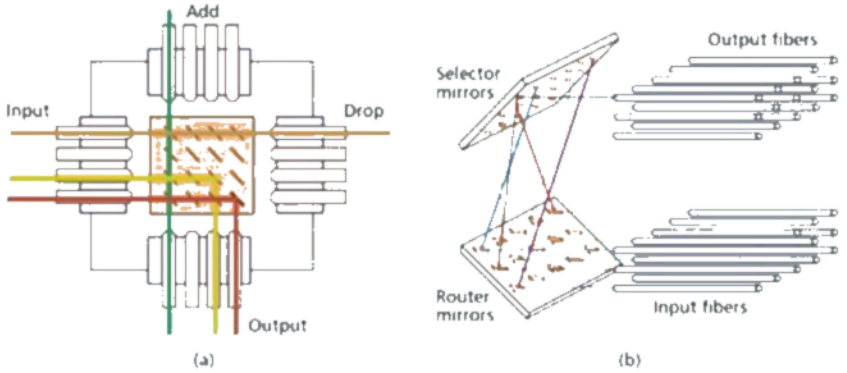




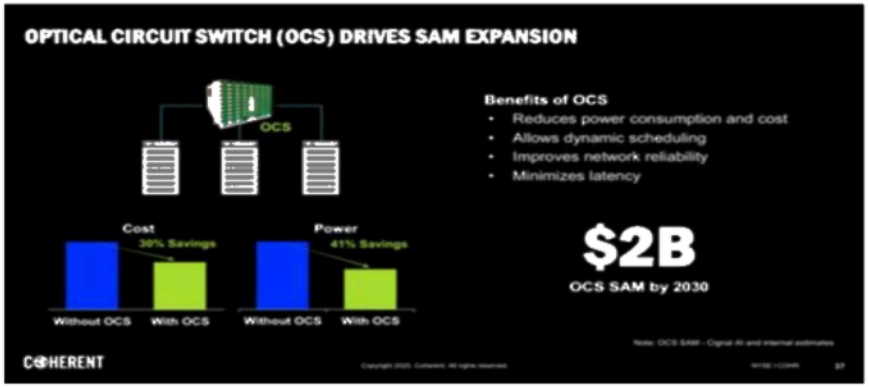
Source: Company data, LightCounting (E) estimates, China Insights Consultancy Limited · Omdia, Morgan Stanley Research (e) estimates.

OCS and NPO could Become Additional Drivers from 2027

OCS Example MEMS Mirrors Forming Circuit Switches



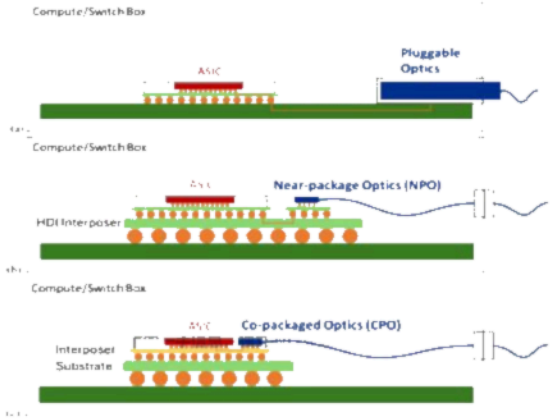
Optical vendors positioning for OCS expansion



Major OCS Solutions in the R&D Pipeline

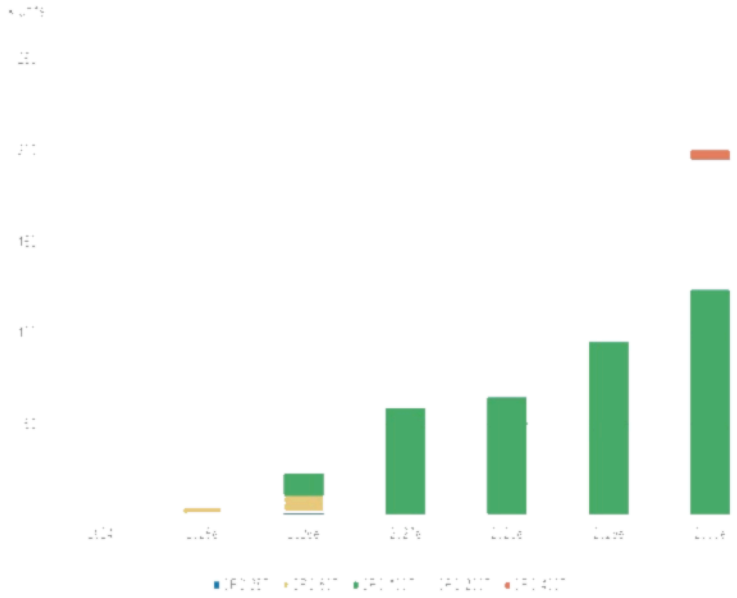
Vendor	Product	Port Configuration	Technology	Status
Lumentum (LITE)	R300 OCS	300x300	MEMS	Strong market reception
Lumentum (LITE)	R64 OCS	64x64 (Scalable to 72x72)	MEMS	Sampling Q4 2025, GAH2 2026
Coherent (COHR)	OCS Platform	64x64 and 320x320	Liquid Crystal	Shipped to 7 customers as of Nov 2025
FS	DCS - WSeries	8x8, 16x16, 32x32	MEMS	Launched Aug 2025
Huber+Suhner (HUBN)	Polatis OCS	No evidence	No evidence	Major orders received July 2025

NPO vs. CPO and pluggables



GA = General Availability, Source: researchgate.net, Coherent, Optics Express, company data, Morgan Stanley Research

We Expect Total CPO Switch Shipments to Rise at a 144% CAGR Over 2024-2030



WinWay 順嘉科技

CPO Market Trends & Challenges

2025	2026	2027	2028	2029	2030
nVIDIA: First 1.6T CPO switch	Spectrum-X(3.2T) mass production	Optical – Copper coexist	Scale-up expansion	Ecosystem maturity	CPO mainstream

2026 – 2028 is the golden window for ASIC platform flexibility

One ASIC supporting both CPO and CPC —Scale-up via CPO for performance, Scale-out via pluggable for flexibility.

NVIDIA SIGNALS	FUTURE TRENDS	CORE CHALLENGES
• 1st CPO switch: 1MW at rack-level GPU scale	• Scale-up is the main battlefield	• Thermal & yield are deeply tied to package
• Spectrum-X: 5× efficiency, 2Tb/s, 10× reliability	• Adoption: coexist → expand → mainstream	• Serviceability: operations SOP rebuilt
• CPO and copper coexist, layered deployment	• ELS architecture, DSP-free design	• Standards & cost: ecosystem immature

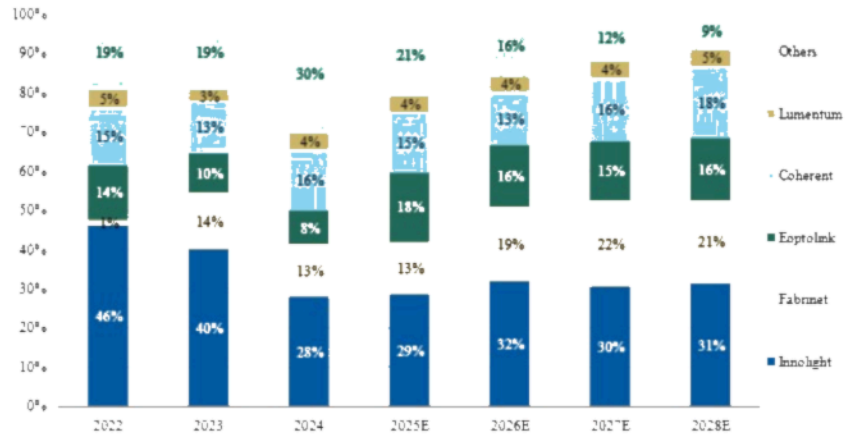
Source: Yole data, WinWay, Morgan Stanley Research (e) estimates.

人在草木间

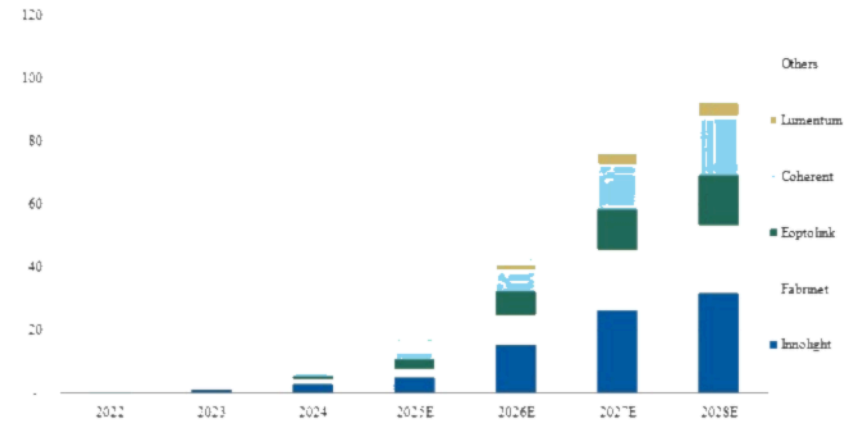
更多资料请加V

Market Share Change Unlikely to Cap Absolute Growth in TAM

Global AI transceiver market share changes: Eoptolink and Coherent likely to gain share

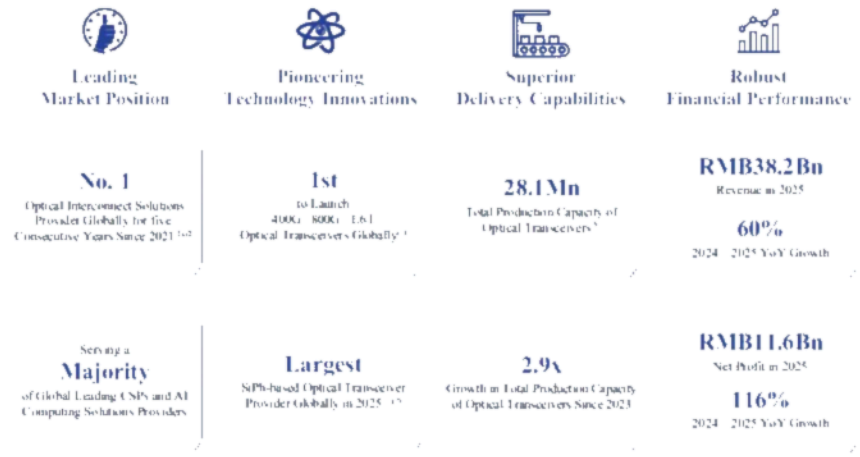


…but each company can enjoy growing TAM (absolute amount)



Source: Unit in US$ bn, Source: Company Data, Omdia, Morgan Stanley Research (E) estimates.

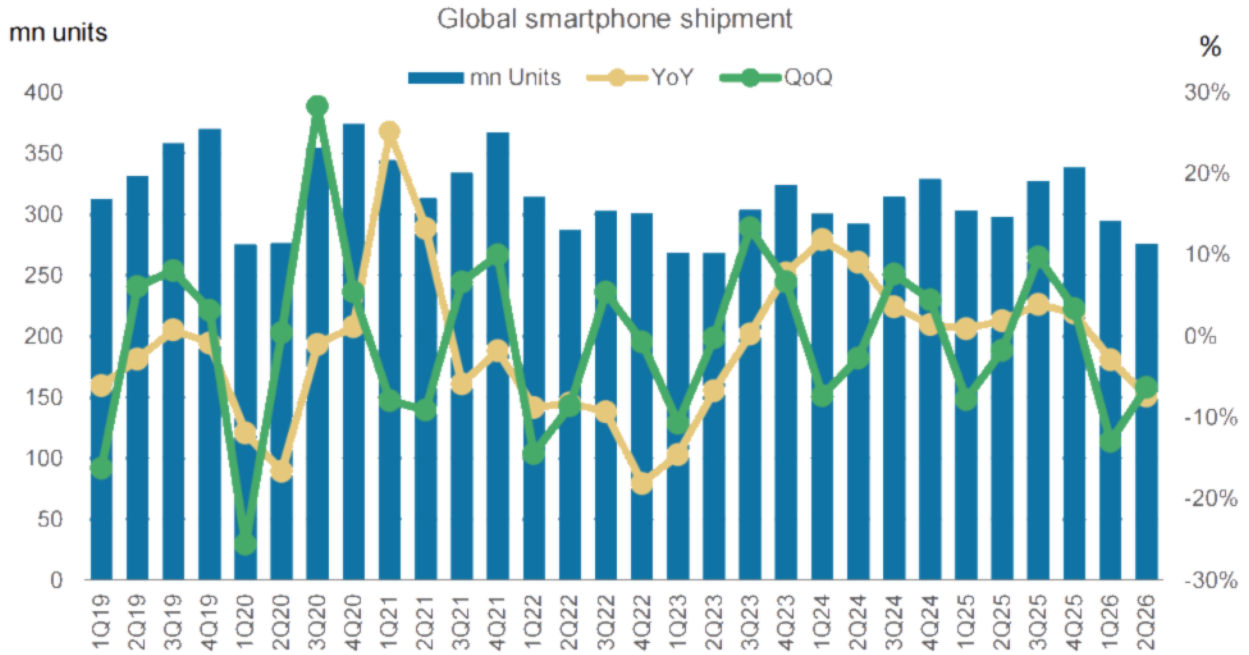
InnoLight: Global leader in the AI transceiver industry



Ranking of Top 10 Transceiver Suppliers				
Rank	2010	2018	2023	2024
1	Finisar	Finisar	**Innolight**	**Innolight**
2	Opnext	**Innolight**	Coherent	Coherent
3	Sumitomo	Hisense	Huawei	Eoptolink
4	Avago	Accelink	Cisco	Huawei
5	Source Photonics	FOIT (Avago)	Accelink	Cisco
6	Fujitsu	Lumentum/Oclaro	Hisense	Accelink
7	JDSU	Acacia	Eoptolink	Hisense
8	Emcore	Intel	HGGenuine	Marvell
9	WTD	AOI	Source Photonics	HGGenuine
10	NeoPhotonics	Sumitomo	Marvell	Source Photonics

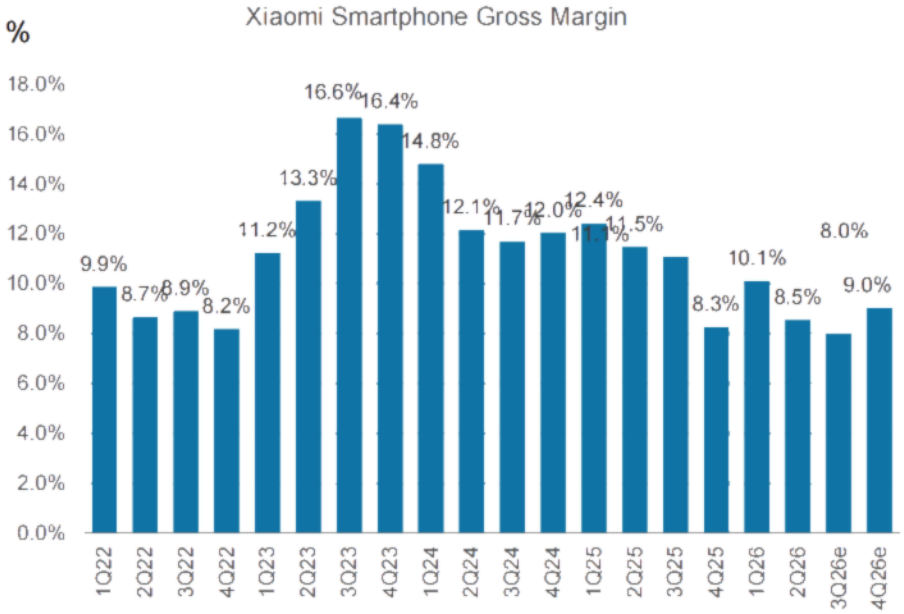
Source: Company data, LightCounting, Morgan Stanley Research. Note: (1) According to CIC; (2) By revenue; (3) As of March 31, 2026

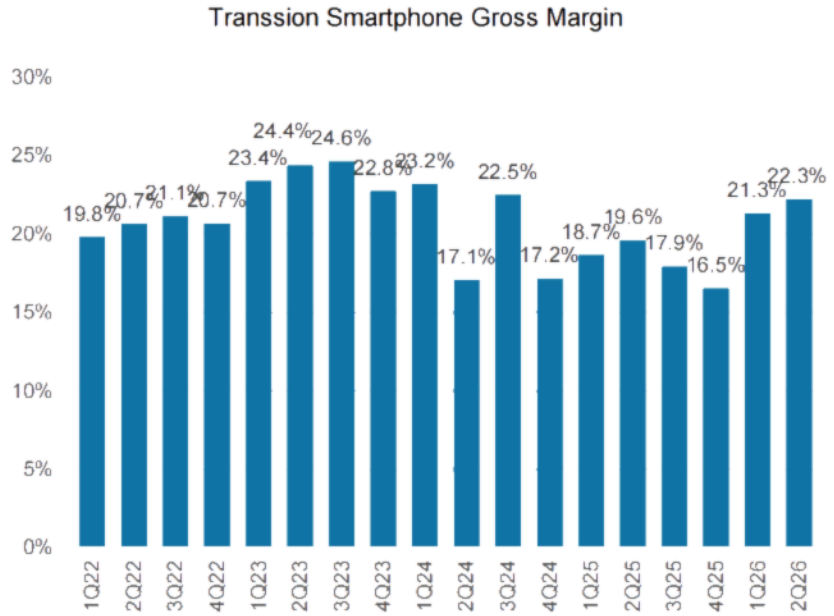
Global Smartphone Shipments Dipped 7% YoY and 6% QoQ in 2Q26



Source: IDC, Morgan Stanley Research.

Xiaomi and Transsion's Smartphone GPM Trends





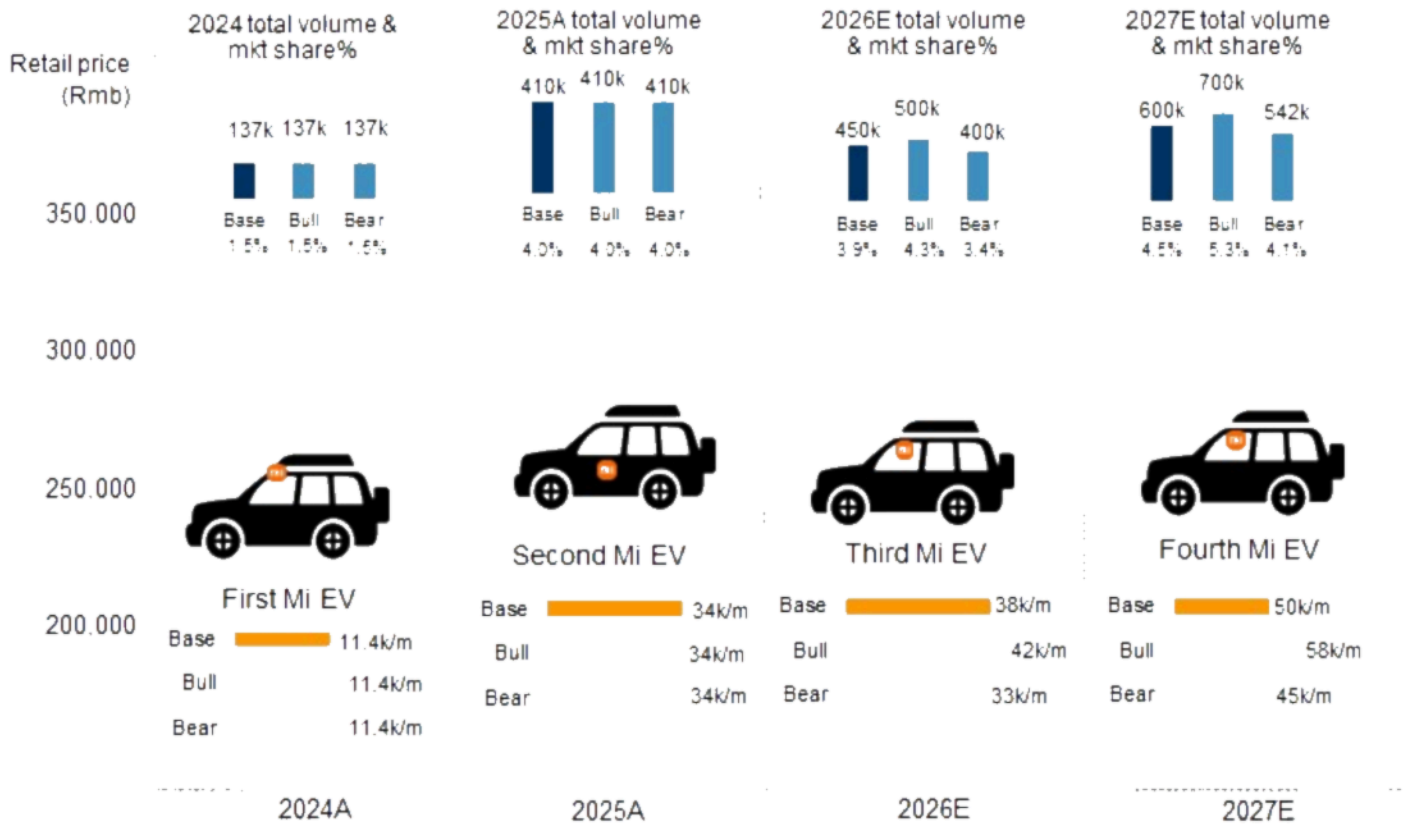
Source: Company data, Morgan Stanley Research (e) estimates.

Xiaomi SkyNomad Officially Launched on Sep 7



Source: Company data

Our Base/Bull/Bear cases for Xiaomi's EV Product Roadmap and Sales Volume Forecasts



Source: Company data, Morgan Stanley Research estimates.

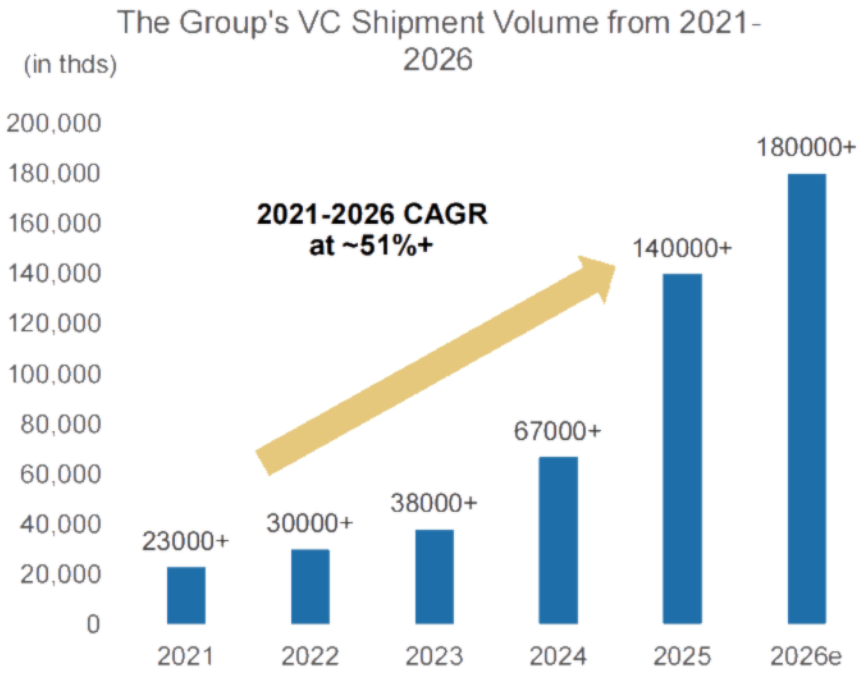
FAU/CPO New Business Became Important Drivers for Largan and Genius

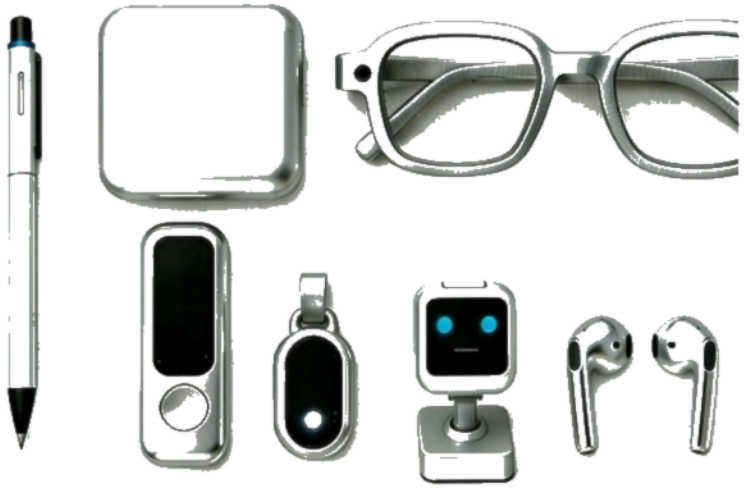
	2026E	2027E	2028E
Optical Engine Volume (mn)	0.39	7.78	48.60
FAU Volume (mn units)	0.39	7.78	48.60
ASP (USD)	100	100	100
Total TAM (US$ mn)	39	778	4,860
Largan's Market Share	0%	5%	40%
FAU Revenue for Largan (US$ mn)	0	39	1,931
Net Margin	n.a.	10%	30%
FAU Earnings for Largan (US$ mn)	n..a	4	579
Assumed Forward P/E			35
Market Cap in USD (mn)			20,278
Market Cap in TWD (mn)			648,889
Per share impact	4,100	4,510	4,961

	2026E	2027E	2028E
Optical Engine Volume (mn)	0.39	7.78	48.60
FAU Volume (mn units)	0.39	7.78	48.60
ASP (USD)	100	100	100
Total TAM (US$ mn)	39	778	4,860
15% Share of Components TAM	6	117	729
Genius's Market Share	0%	5%	30%
FAU Component Revenue for Genius (US$ mn)	0	6	218
Net Margin	n.a.	10%	25%
FAU Component Earnings for Genius (US$ mn)	n..a	1	54
Assumed Forward P/E			25
Market Cap in USD (mn)			1,322
Market Cap in TWD (mn)			42,294
Per share impact	310	341	375

Source: Morgan Stanley Research estimates

AAC: Rapid Vapor Chamber (VC) Growth and Beneficiary of AI Hardware Opportunities



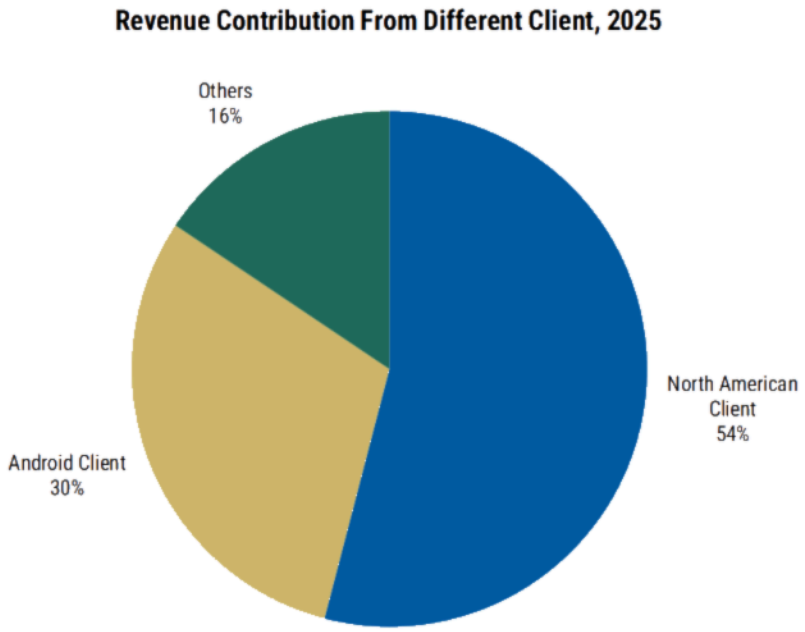


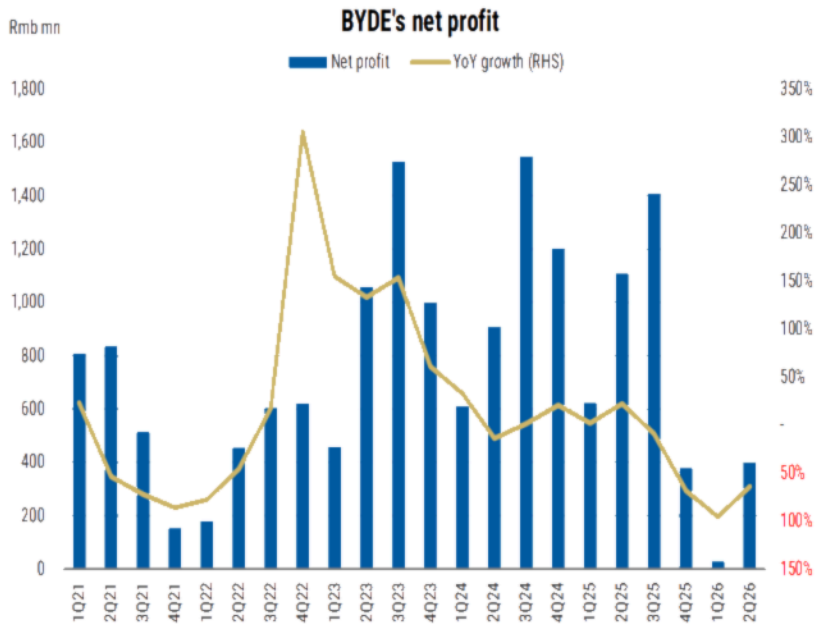
Illustrations of various new forms of AI hardware concepts

(AR glasses, earphone-like devices, pendants, pens, desktop robots, ...)

Source: Company data, Morgan Stanley Research estimates

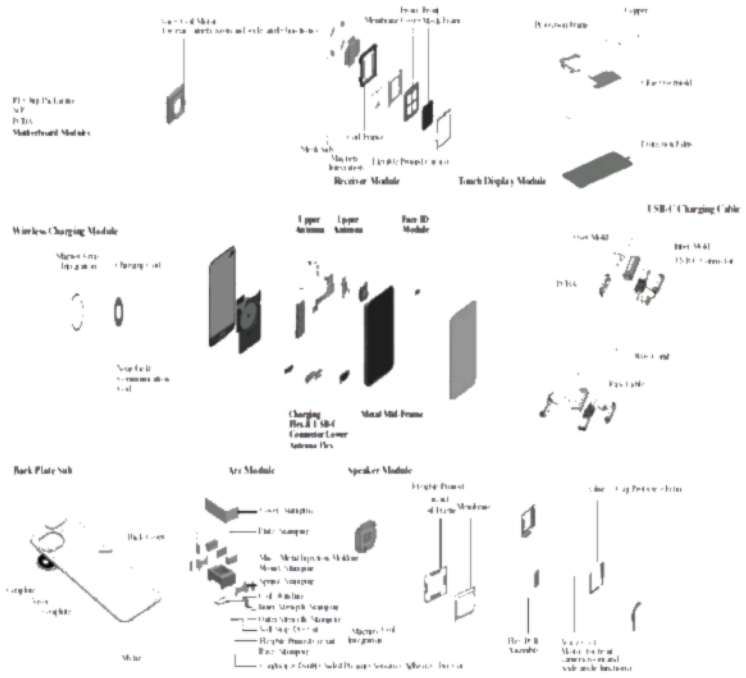
BYDE: Earnings to See Sequential Improvement in 3Q26-4Q26

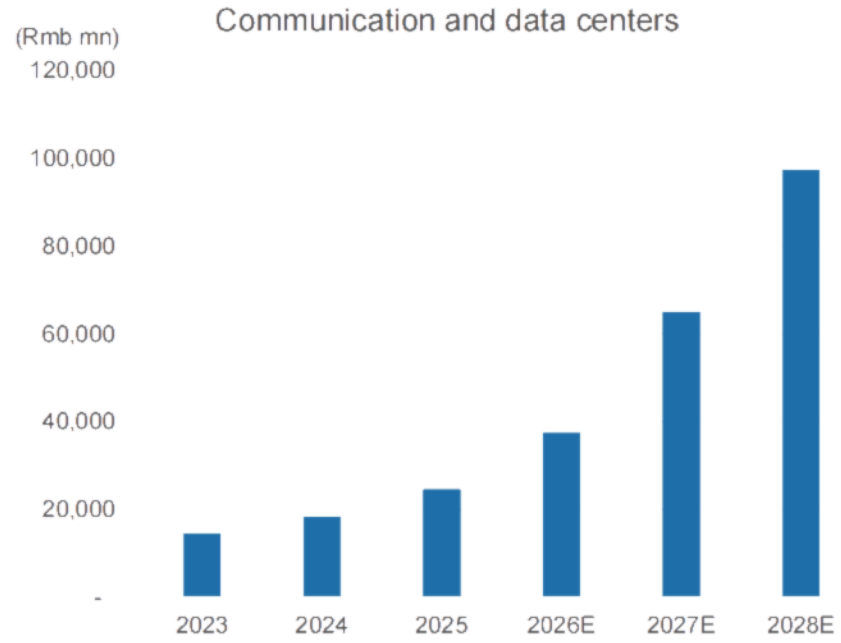




Source: Company data, Morgan Stanley Research.

Luxshare: Dual Drivers from Apple and AI Infrastructure





Source: Company data, Morgan Stanley Research estimates.

Lingyi: Higher Content Value from New iPhone



Source: Company data, Morgan Stanley Research.

Crystal-Optech: Three New Capex Projects for CPO/NPO Opportunities

Crystal-Optech is leveraging its core competencies in optics, thin-film coating, and precision manufacturing to build exposure across multiple critical layers of the CPO ecosystem, including:

1. **Silicon Lens**
2. **TGV Glass Substrate**
3. **WDM Filters**

AI Optical Infrastructure Development Pipeline

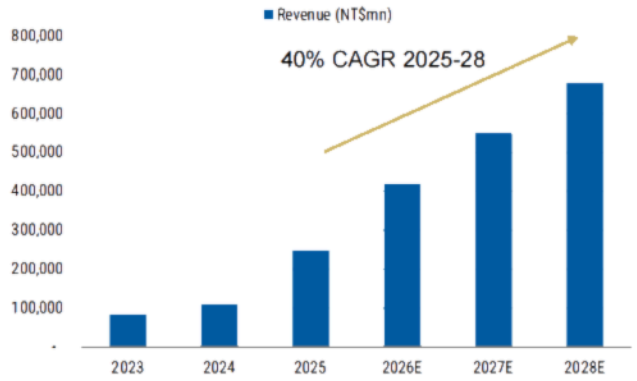
Technology Platform	Role in CPO / Optical Interconnect Architecture	Strategic Significance	Current Status
Silicon Lens (CPO)	Core optical coupling component within CPO optical engines	Enables high-density optical signal transmission for 800G/1.6T modules and future AI cluster interconnects	Under Development
TGV Glass Substrate	Advanced photoelectric packaging substrate platform	Supports optical-electrical integration and positions the company to participate in the CPO packaging supply chain	Under Development
WDM Filter	High-precision wavelength management component for optical communications	Expands exposure to high-end optical networking applications through narrow-band filter technology	Under Development

Source: Company data, Morgan Stanley Research.

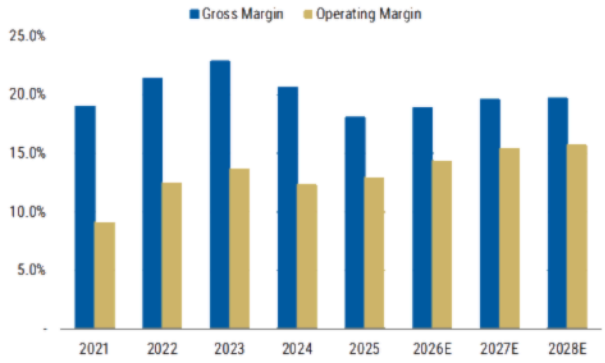
Derrick Yang

Accton: Dual Drivers from Network Switches and AI Accelerator Modules

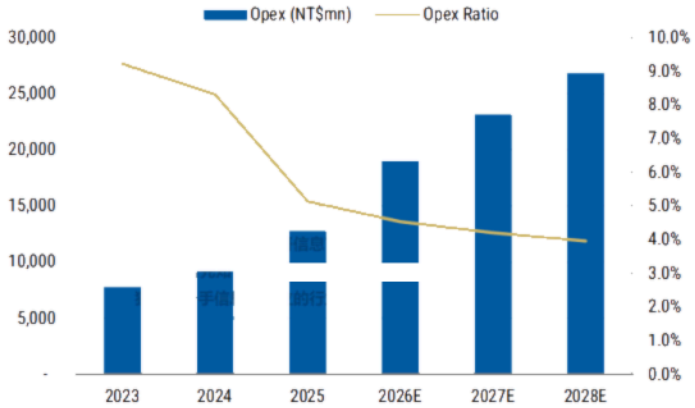
Overall Revenue Forecasts



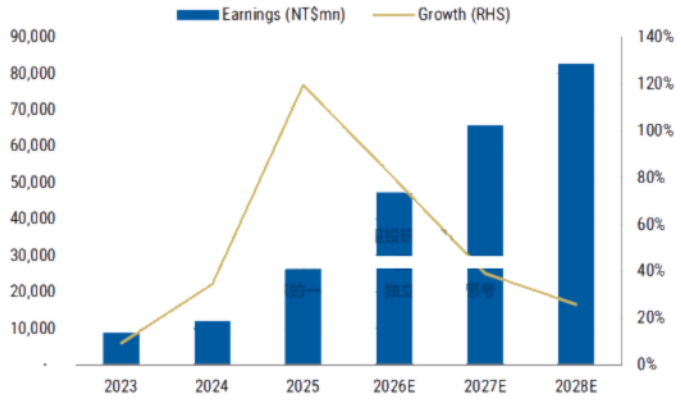
Margin Trend



Operating Expense Trend



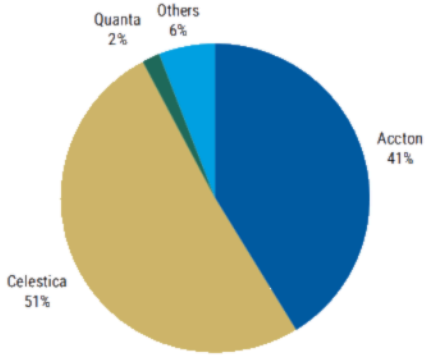
Earnings Forecasts



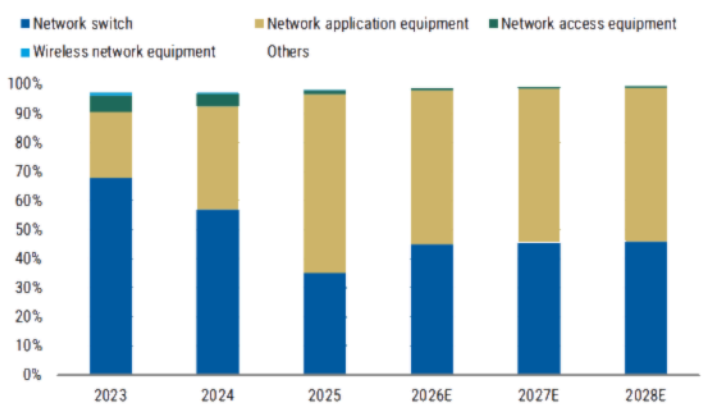
Source: Company data, Morgan Stanley Research (e) estimates.

Accton: Dual Drivers from Network Switches and AI Accelerator Modules

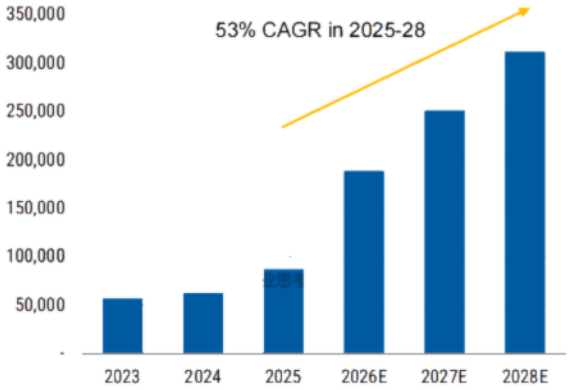
ODM Direct Market Share for Switches (2025)



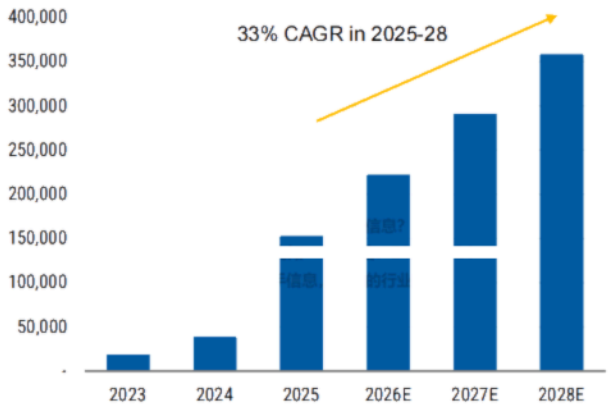
Revenue Breakdown



Network Switch Revenue Forecasts



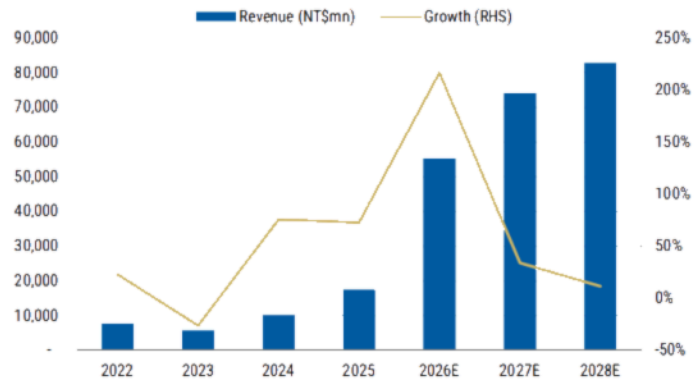
Networking Application Revenue Forecasts



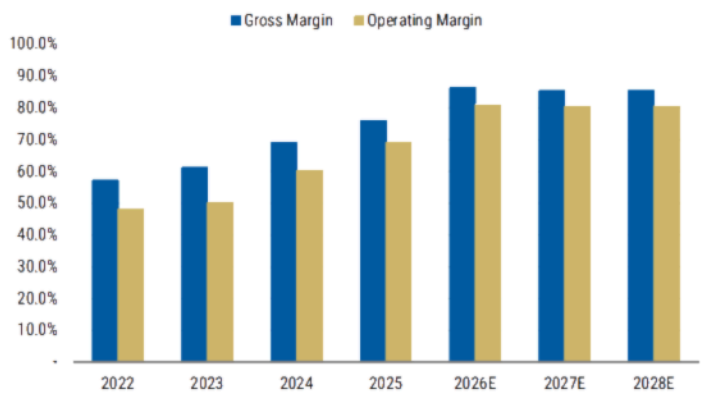
Source: Company data, IDC, Morgan Stanley Research (e) estimates.

King Slide: Favorable Dynamics for Server Rail Kit

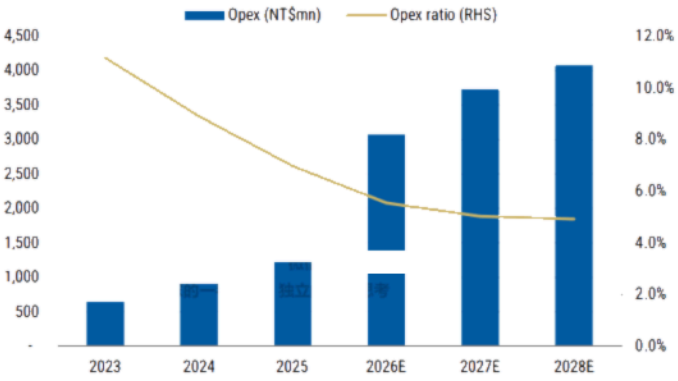
68% Revenue CAGR over 2025-28E



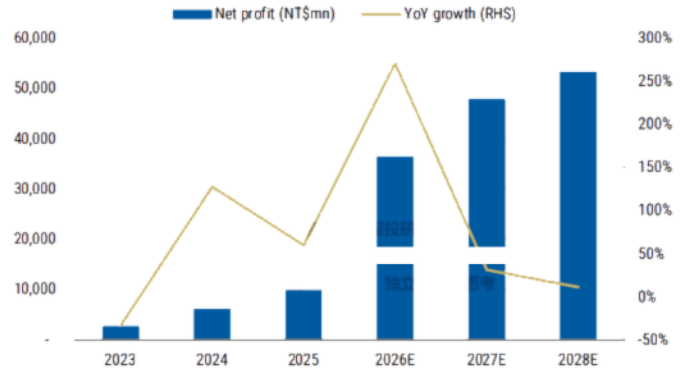
Margin Trend



Operating Expense Trend



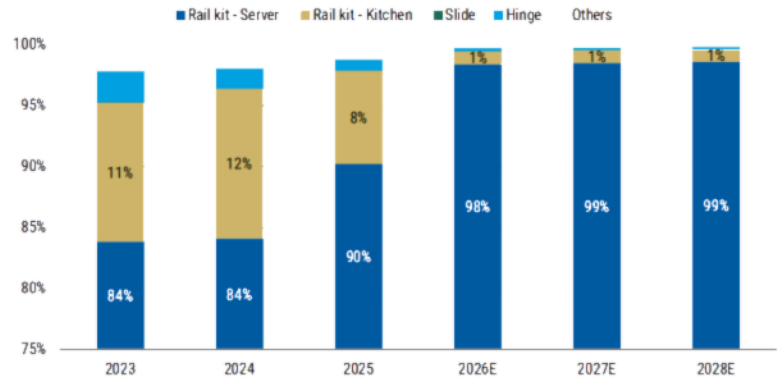
76% Earnings CAGR over 2025-28E



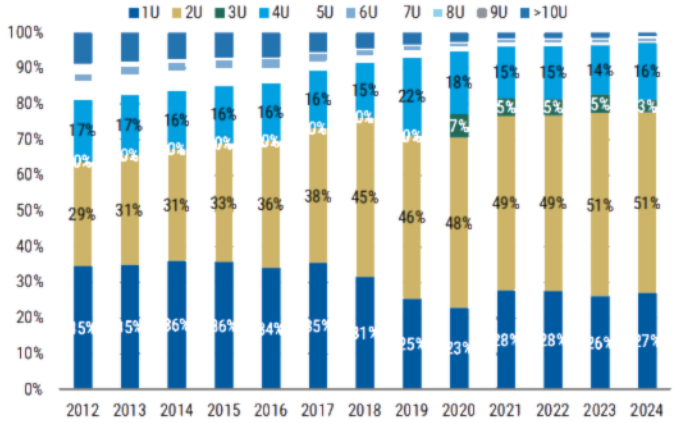
Source: Company data, Morgan Stanley Research (e) estimates.

King Slide: Favorable Dynamics for Server Rail Kit

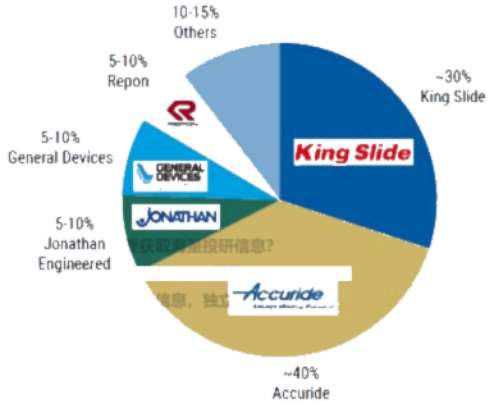
Revenue Breakdown by Product



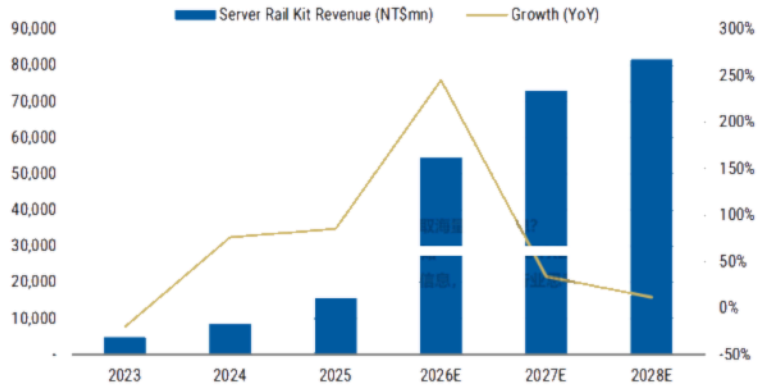
Global Rack Server Shipments, by Size



Server Rail Kit Market Share Breakdown



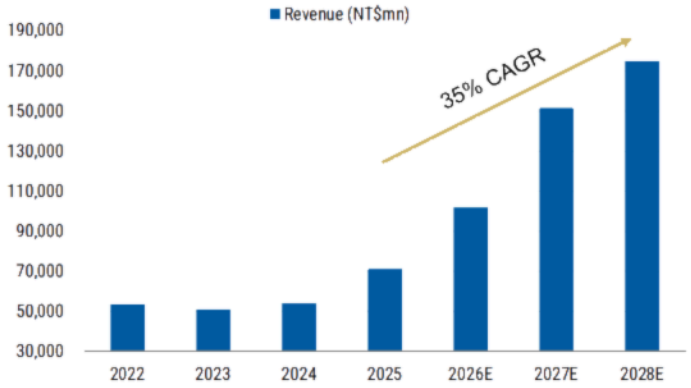
Server Rail Kit Revenue Trend



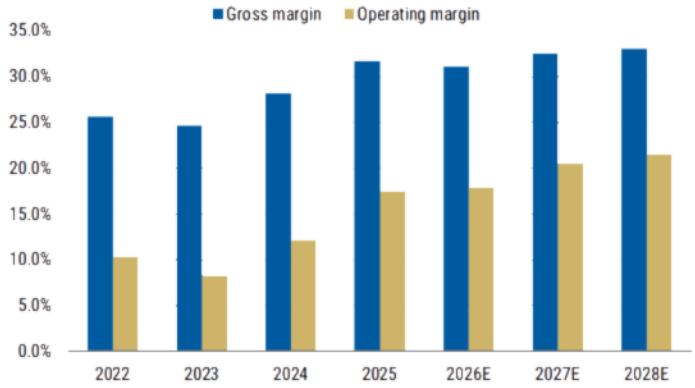
Source: Company data, IDC, Morgan Stanley Research (e) estimates.

Bizlink: Share Gains in AI Deployment Powering Growth

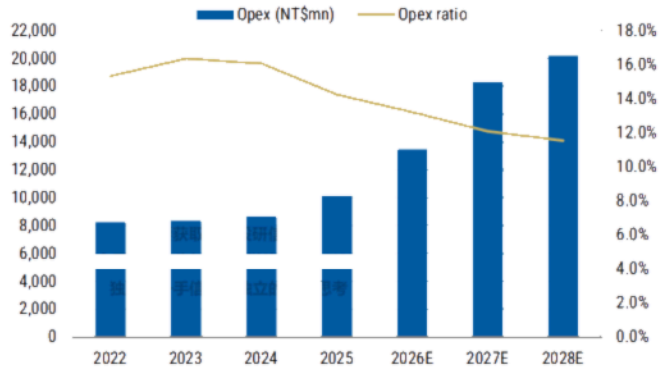
Overall Revenue Trend



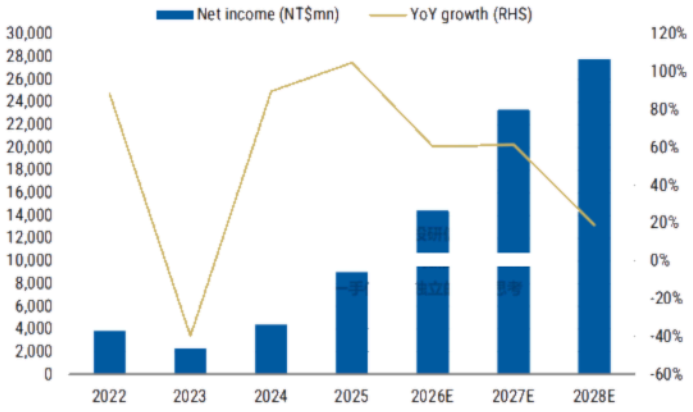
Margin Trend



Operating Expense Trend



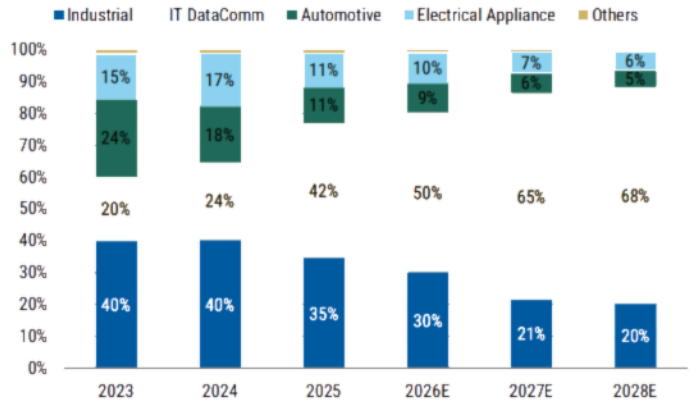
46% Earnings CAGR over 2025-28E



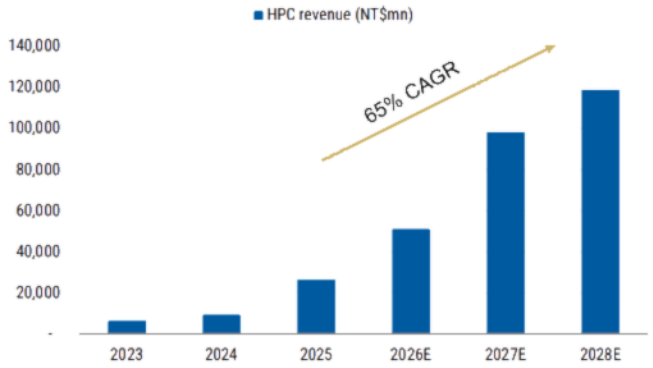
Source: Company data, Morgan Stanley Research (e) estimates.

Bizlink: Share Gains in AI Deployment Powering Growth

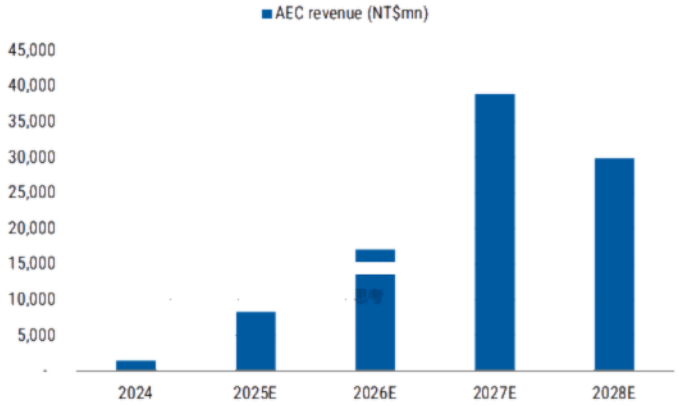
Revenue Breakdown, by Segment



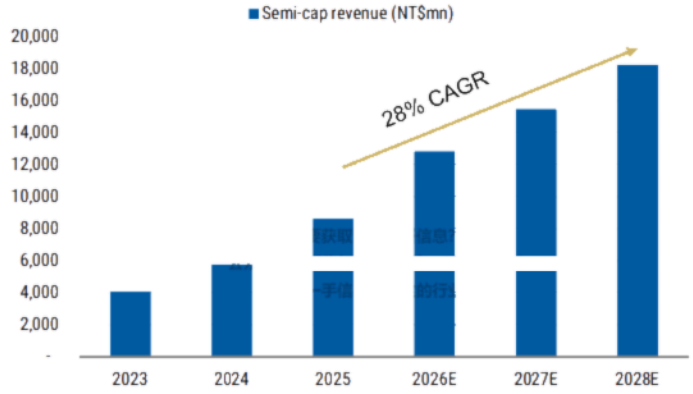
Datacenter/HPC Revenue Trend



Annual AEC Revenue Trend



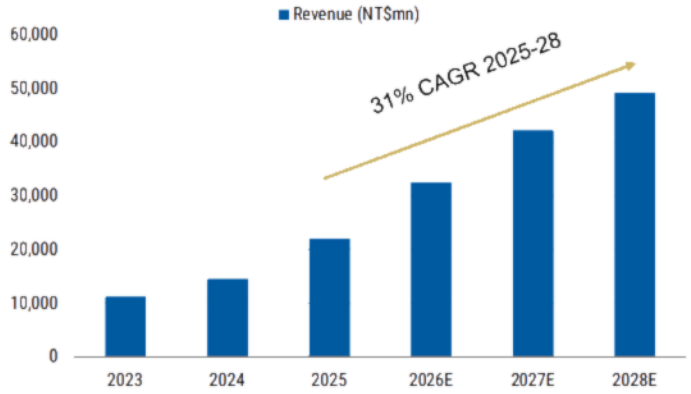
Semi-capital Equipment Annual Revenue Trend



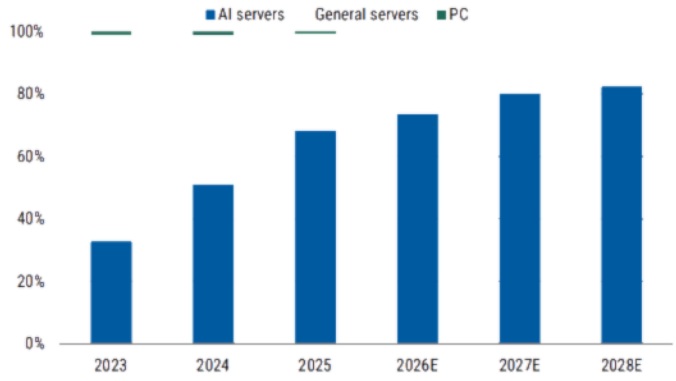
Source: Company data, Morgan Stanley Research (e) estimates.

Chenbro: Market Growth and Share Gains to Support Optimistic 2026 Outlook

Annual Revenue Trend



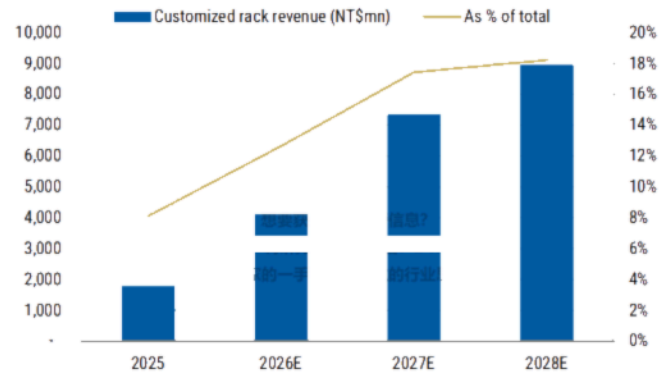
Revenue Breakdown



Margin Trend



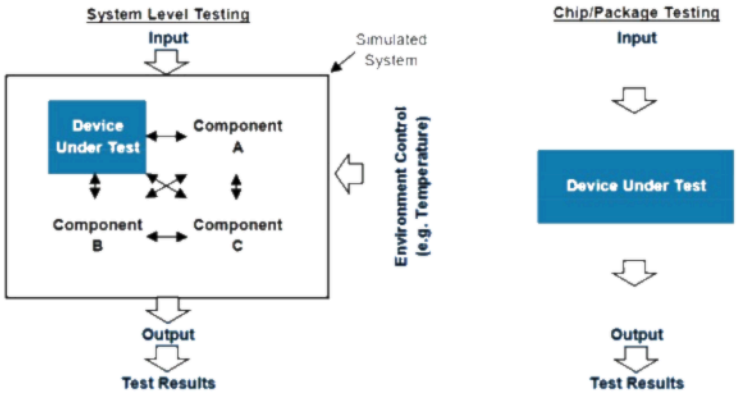
Customized Rack Revenue Contribution



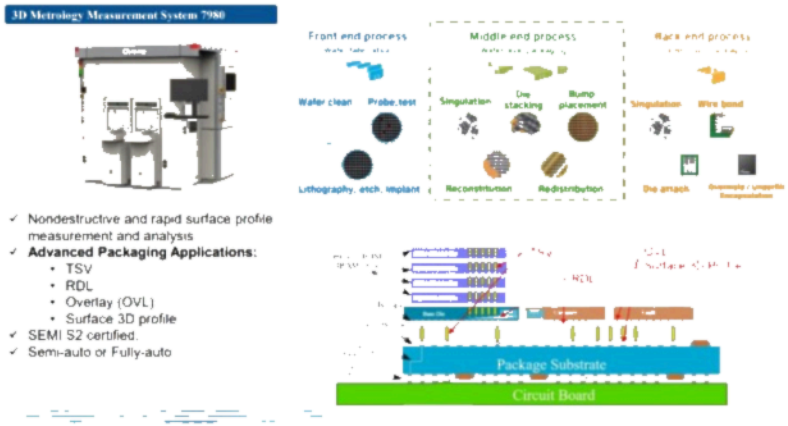
Source: Company data, Morgan Stanley Research (e) estimates

Chroma: Fueled by Multiple AI Drivers

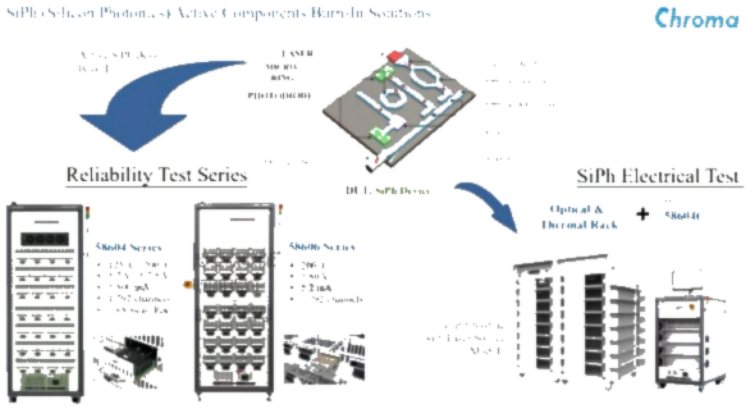
System-level Testing vs. Chip/Package Testing



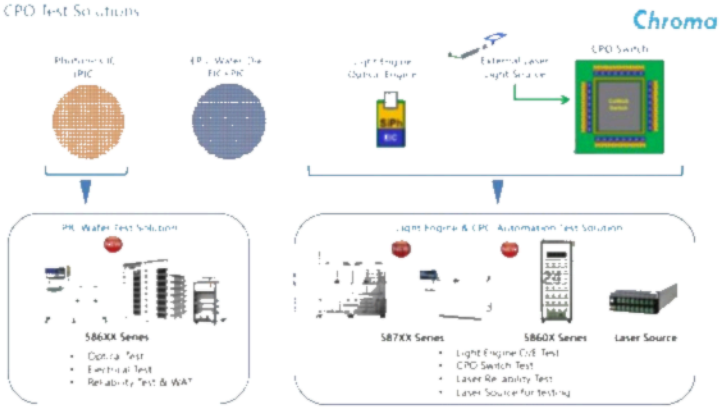
Offerings for Metrology in Advanced Packaging



Offerings in Silicon Photonics



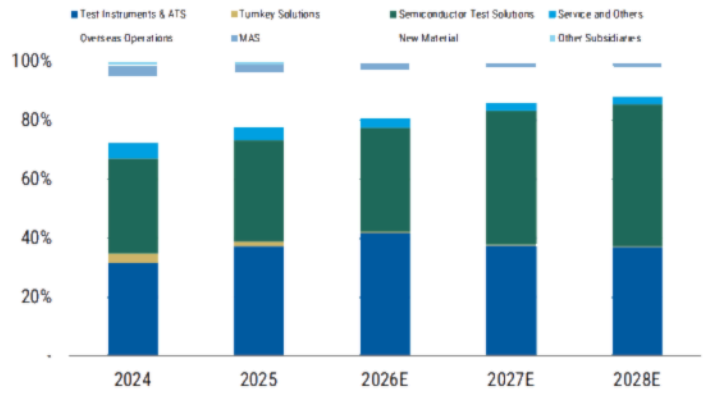
Offerings in CPO Testing Solutions



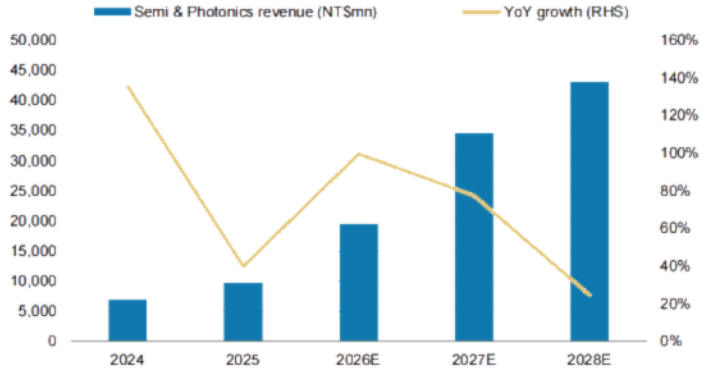
Source: Chroma, Morgan Stanley Research.

Chroma: Fueled by Multiple AI Drivers

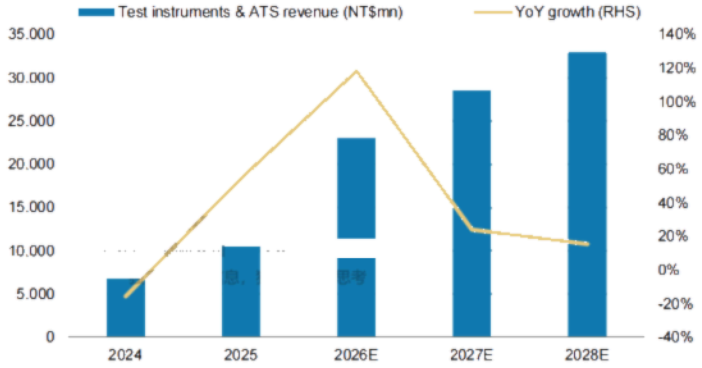
Revenue Breakdown by Segment



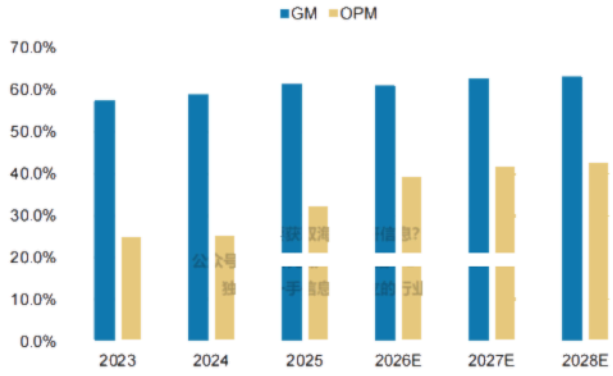
Semi & Photonics Revenue Trend



Testing Instruments & ATS Revenue Trend



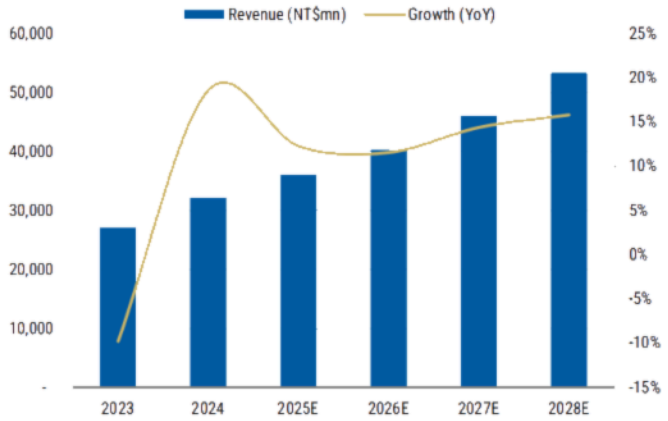
Margin Trend



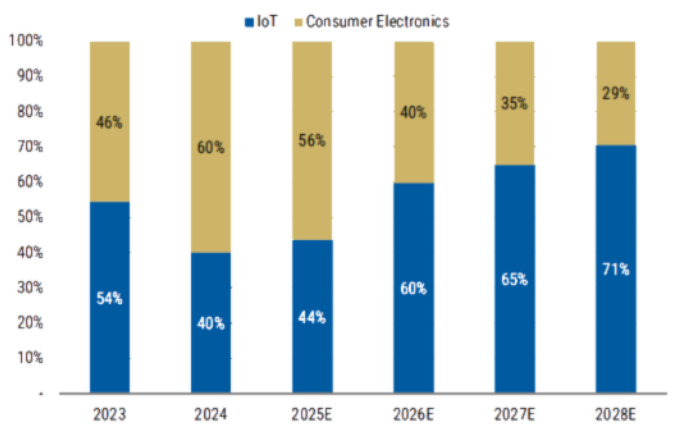
Source: Company data, Morgan Stanley Research estimates

E Ink: Lack of Catalyst in Near Term

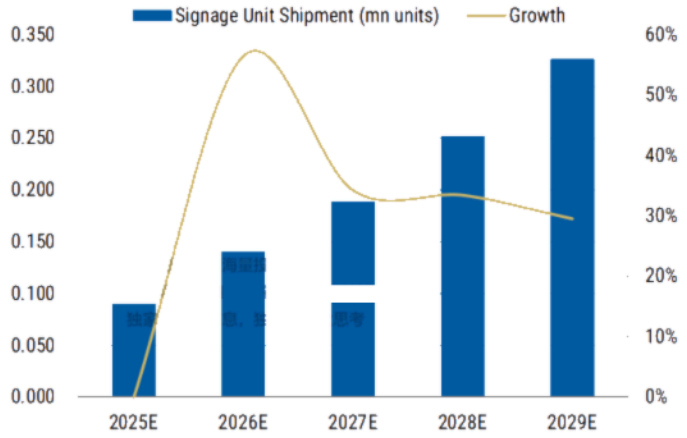
14% Revenue CAGR over 2025-28E



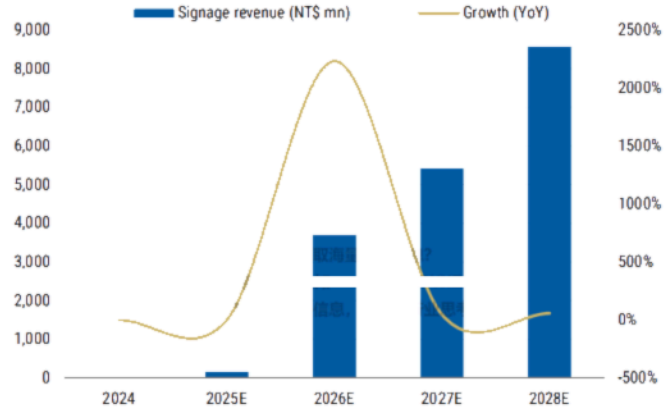
Revenue Breakdown by Segment



E-paper Signage Shipment Forecasts



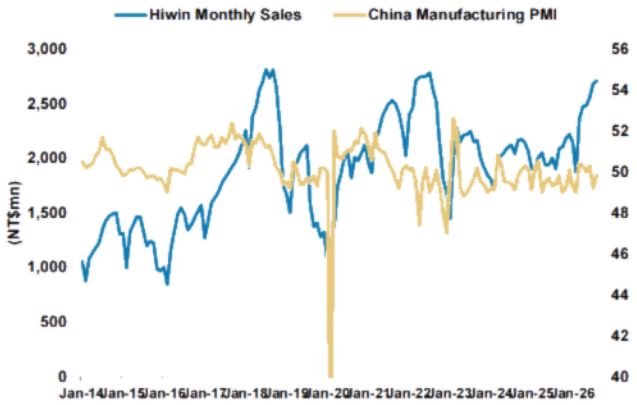
Signage Revenue Trend



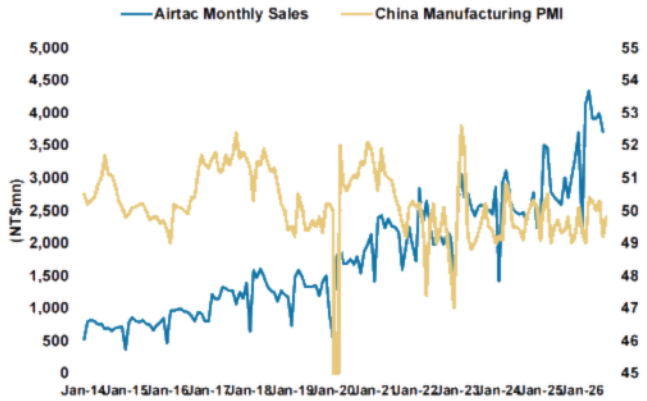
Source: Company data, FactSet consensus, TEJ, Morgan Stanley Research (e) estimates.

Automation

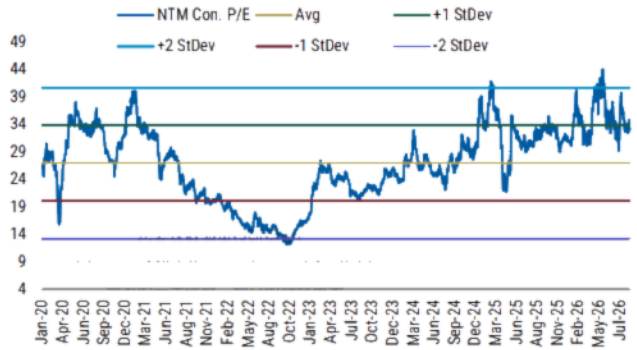
Hiwin Monthly Sales vs. China Manufacturing PMI



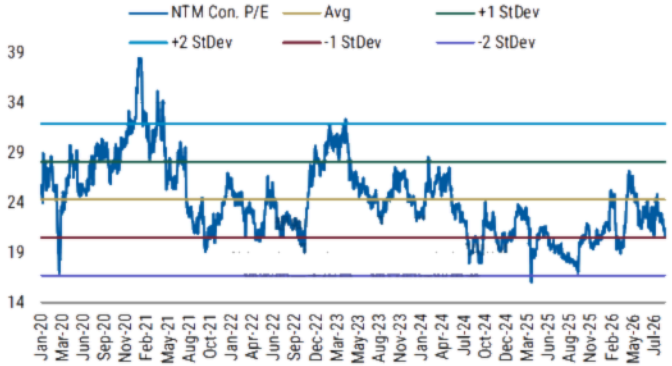
AirTAC Monthly Sales vs. China Manufacturing PMI



Hiwin NTM P/E



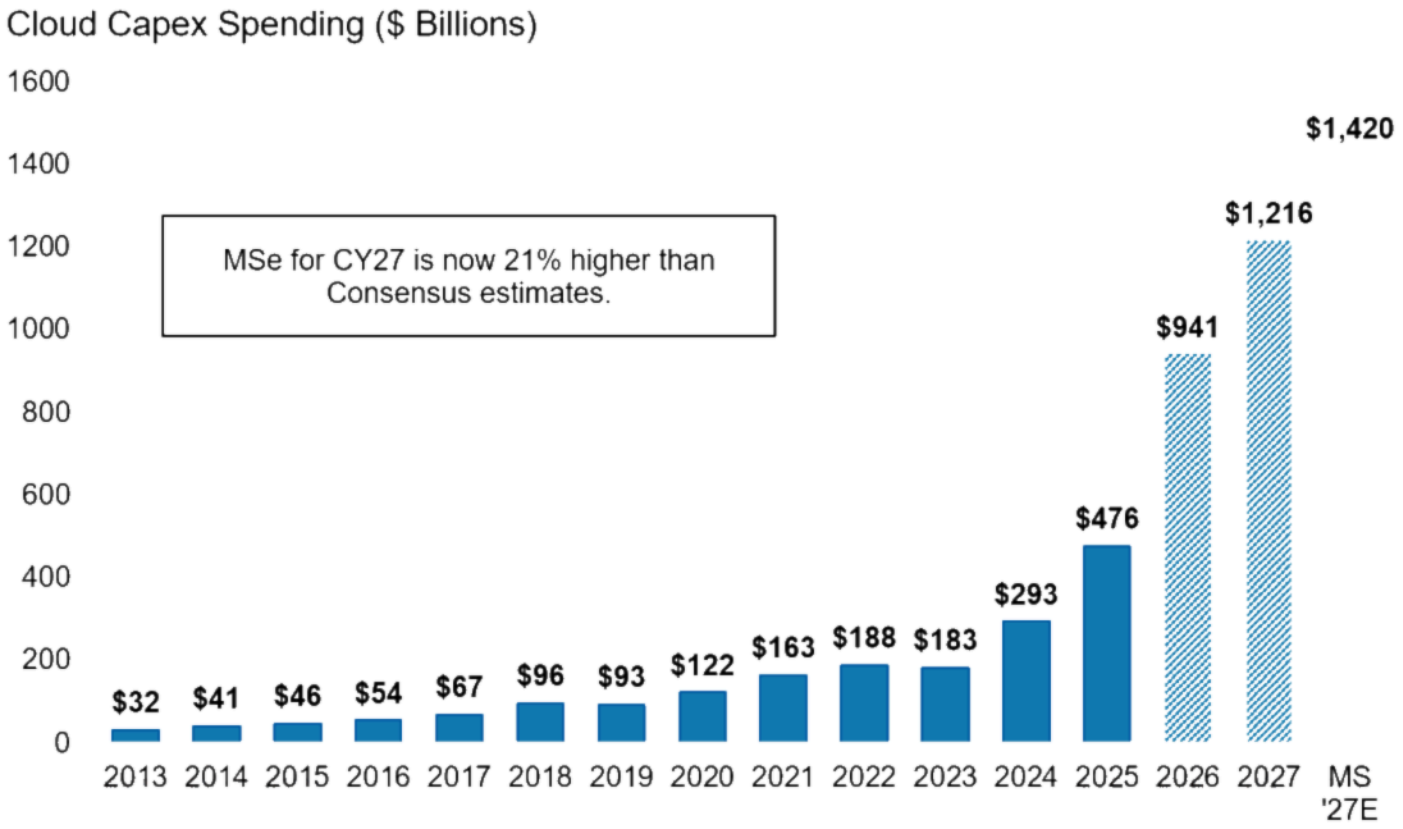
AirTAC NTM P/E



Source: NBS, company data, FactSet consensus, Morgan Stanley Research.

Howard Kao

AI Server Momentum Remains Strong



Agentic AI – Hardware Beneficiaries (ABF Substrates, CPU Sockets, MLCCs)

Every 1M Units of total CPU upside	
Server CPU ABF Substrate ASP (US$)	77.8
Revenue upside to Unimicron per 1M CPUs (US$ M)	12.6
Revenue upside to Unimicron per 1M CPUs (NT$ M)	397
Unimicron 2026 total revenue estimate (NT$ M)	169,246
Unimicron ABF revenue upside per 1M CPUs	**0.2%**

If CPU TAM grows 10-15M units...	
Server CPU ABF Substrate ASP (US$)	77.8
Revenue upside to Unimicron if CPU TAM grows 10-15M units (US$ M)	157.6
Revenue upside to Unimicron if CPU TAM grows 10-15M units (NT$ M)	4,964
Unimicron 2026 ABF revenue estimate (NT$ M)	169,246
Unimicron ABF revenue upside if CPU TAM grows 10-15M units	**2.9%**

Every 1M Units of total CPU upside	
Server CPU Socket ASP (US$)	21.9
Revenue upside to Lotes per 1M CPUs (US$ M)	7.7
Revenue upside to Lotes per 1M CPUs (NT$ M)	241
Lotes 2026 total revenue estimate (NT$ M)	41,065
Lotes CPU Socket upside per 1M CPUs	**0.6%**

If CPU TAM grows 10-15M units...	
Server CPU Socket ASP (US$)	21.9
Revenue upside to Lotes if CPU TAM grows 10-15M units (US$ M)	95.7
Revenue upside to Lotes if CPU TAM grows 10-15M units (NT$ M)	3,015
Lotes 2026 total revenue estimate (NT$ M)	41,065
Lotes CPU Socket upside if CPU TAM grows 10-15M units	**7.3%**

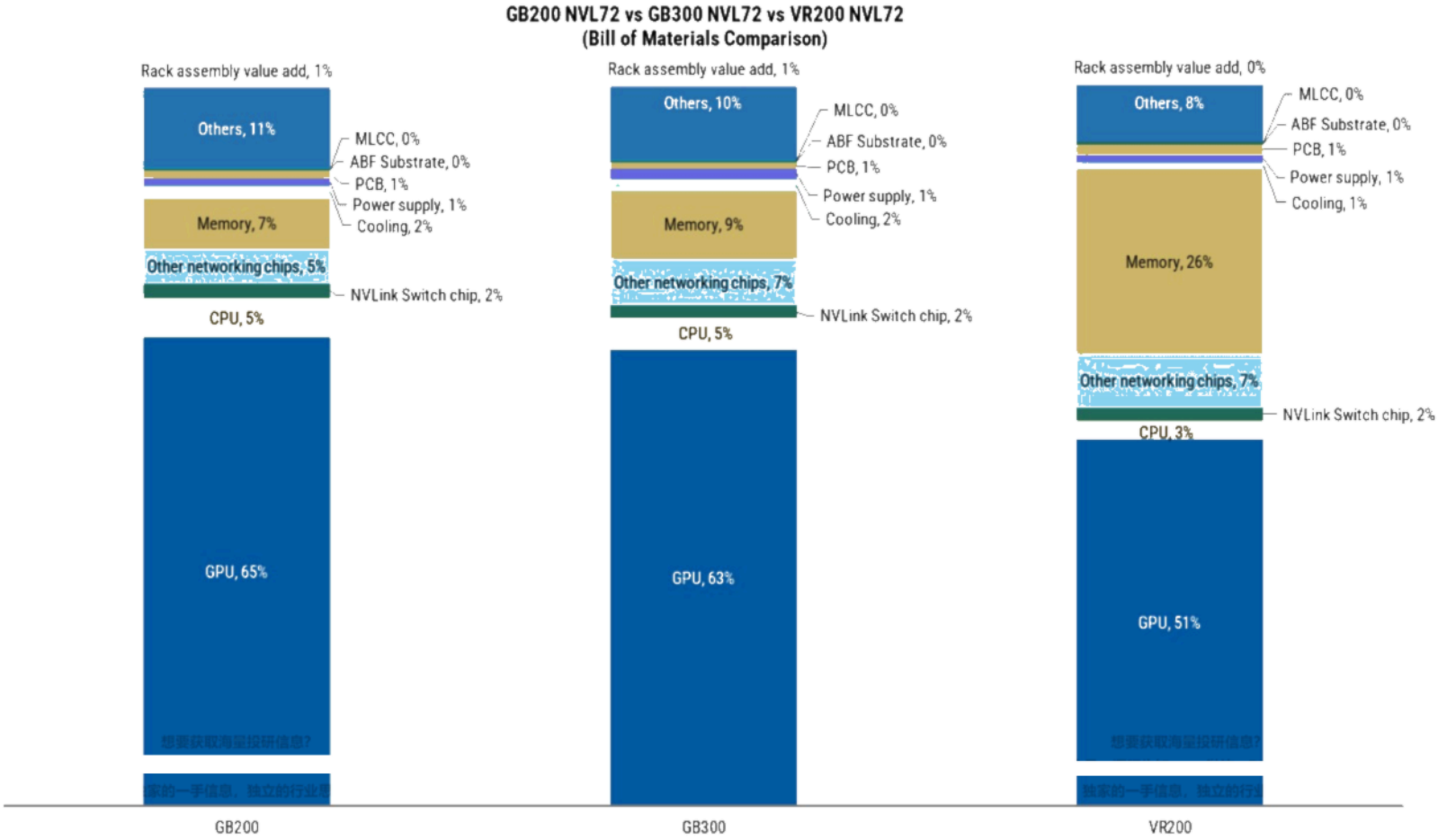
Every 1M Units of total CPU upside	
Server CPU Socket ASP (US$)	21.9
Revenue upside to FIT per 1M CPUs (US$ M)	8.8
FIT 2026 total revenue estimate (US$ M)	5,483
FIT CPU Socket upside per 1M CPUs	**0.2%**

If CPU TAM grows 10-15M units...	
Server CPU Socket ASP (US$)	21.9
Revenue upside to FIT if CPU TAM grows 10-15M units (US$ M)	109.4
FIT 2026 ABF revenue estimate (NT$ M)	5,483
FIT CPU Socket upside if CPU TAM grows 10-15M units	**2.0%**

Every 1M Units of total CPU upside	
Server MLCC Content (US$)	30.0
Revenue upside to Yageo per 1M CPUs (US$ M)	4.5
Revenue upside to Yageo per 1M CPUs (NT$ M)	142
Yageo 2026 total revenue estimate (NT$ M)	158,893
Yageo MLCC revenue upside per 1M CPUs	**0.1%**

If CPU TAM grows 10-15M units...	
Server MLCC Content (US$)	30.0
Revenue upside to Yageo if CPU TAM grows 10-15M units (US$ M)	56.3
Revenue upside to Yageo if CPU TAM grows 10-15M units (NT$ M)	1,772
Yageo 2026 total revenue estimate (NT$ M)	158,893
Yageo MLCC revenue upside if CPU TAM grows 10-15M units	**1.1%**

Owing to Recent Increase in Memory Prices, Memory Will Become 25%+ of Rubin BOM



We Estimate a Single VR200 NVL72 Rack Will Cost Hyperscalers ~US$7.8mn

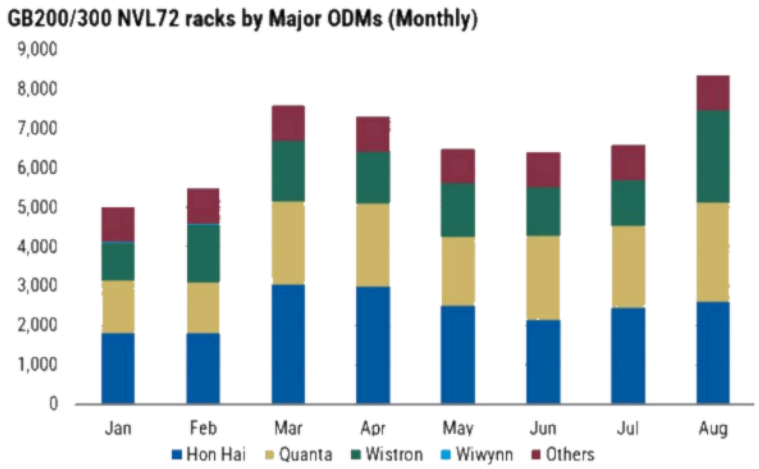
Nvidia NVL72 Bill of Materials	GB300	VR200	Diff.
GPU	$2,520,000	$3,960,000	*57%*
CPU	$180,000	$180,000	*0%*
NVLink Switch chip	$64,800	$144,000	*122%*
Other networking chips	$261,000	$576,000	*121%*
Memory	$373,939	$2,001,600	*435%*
Cooling	$64,610	$72,080	*12%*
Power supply	$57,600	$76,000	*32%*
PCB	$35,100	$116,730	*233%*
ABF Substrate	$11,160	$20,340	*82%*
MLCC	$1,530	$4,320	*182%*
Others	$402,412	$623,278	*55%*
Rack assembly value add	$22,400	$28,800	*29%*
Total	**$3,994,551**	**$7,803,148**	***95%***

Our Bottom-up Analysis Shows ODM Value-added per Rack Will Increase ~38% for VR200

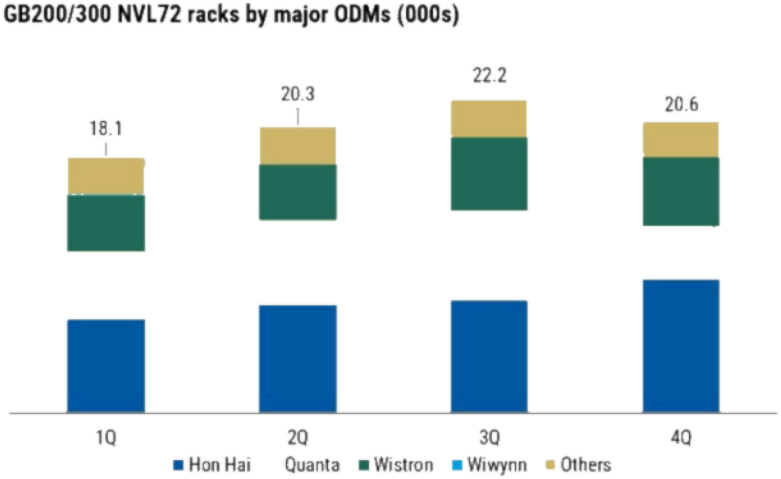
ODM Value-Add per rack	GB300	VR200
Compute Board Assembly/Test	$12,096	$16,200
Compute Tray Assembly/Test	$28,800	$32,400
Switch Board Assembly/Test	$2,475	$3,150
Switch Tray Assembly/Test	$2,700	$3,150
Rack Assembly/Test	$22,400	$28,800
BF DPU Assembly/Test	$1,170	$1,170
CX/Orchid Module Assembly/Test	$0	$3,600
Other peripheral boards	$3,150	$1,260
Cooling components	$12,922	$14,416
Others	$22,500	$45,500
Total ODM Value-Add	**$108,213**	**$149,646**

We Forecast 2026 GB200/300 Racks To Be 80-90K

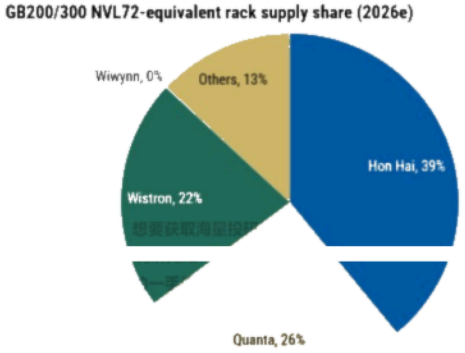
GB200/300 NVL72-equivalent Monthly Rack Output (2026e)



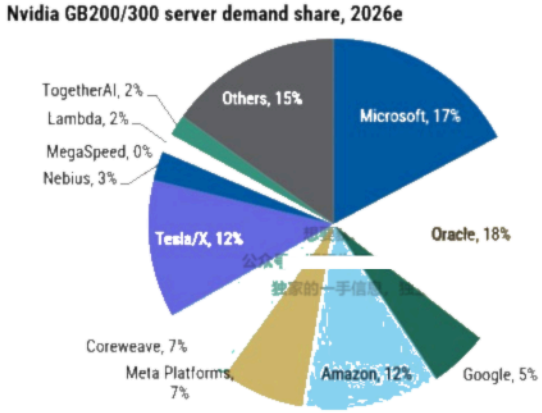
GB200/300 NVL72-equivalent Quarterly Rack Output (2026e)



GB200/300 Rack Supply Share by Major ODMs (2026e)

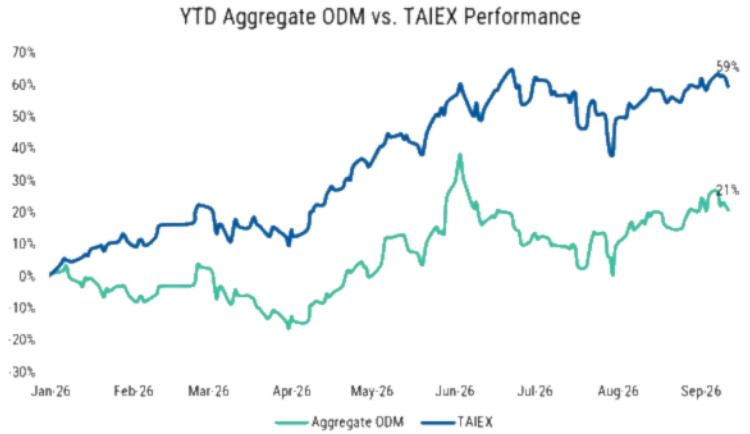


GB200/300 Rack Demand Share (2026e)



ODMs Have Underperformed YTD

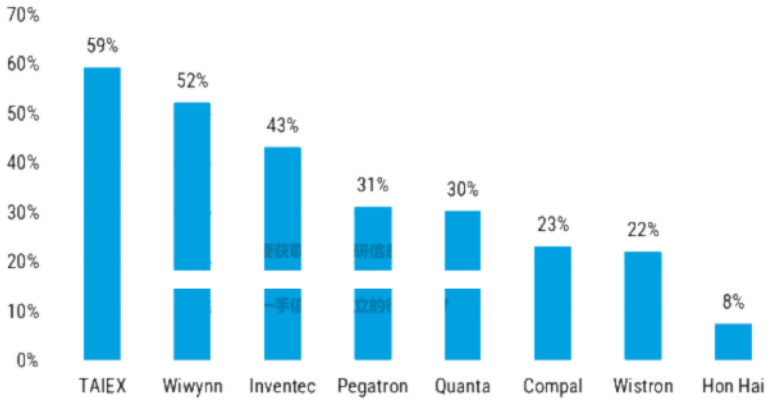
ODM Cohort Has Underperformed TAIEX by more than 30ppts YTD



ODM Cohort Is Trading At Avg Historical P/E

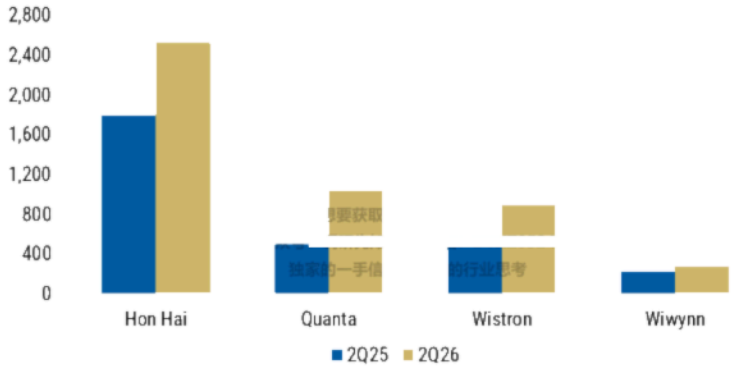


YTD Price Performance – Individual ODMs vs TAIEX

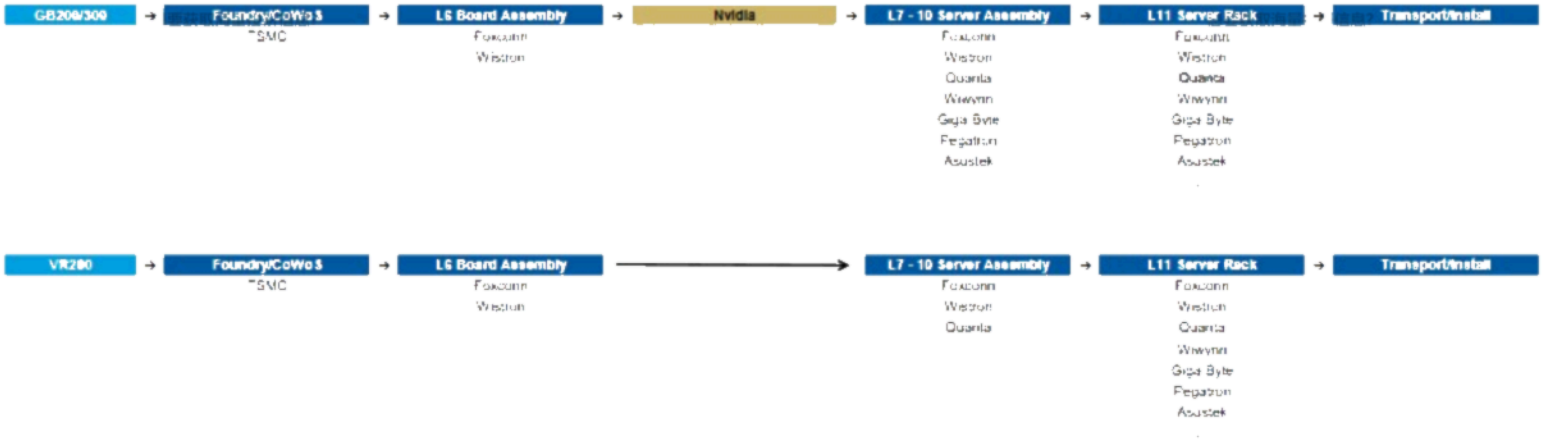


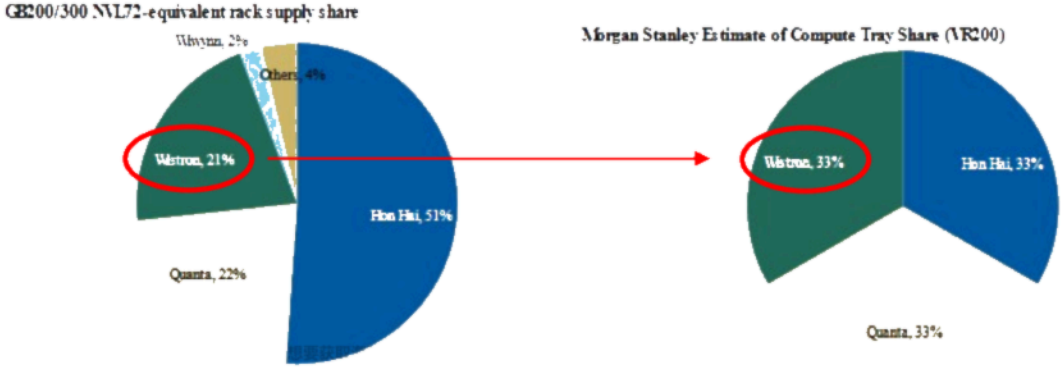
...While Revenue Continues to Grow y/y

Key ODM quarterly revenue 2Q25 vs. 2Q26 (NT$ B)



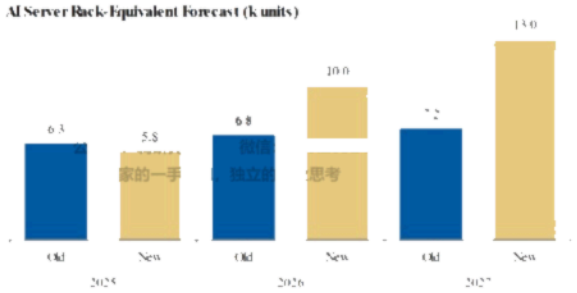
Wistron is a Share Winner From VR200 Onward as Well as MI400-series





Wistron Sensitivity Analysis for GB300

EPS contribution		Rack shipment (000s)					
Rack ASP (US$ M)	1	2	3	4	5	6
2.6	0.36	0.73	1.09	1.46	1.82	2.18
2.8	0.39	0.78	1.18	1.57	1.96	2.35
3.0	0.42	0.84	1.26	1.68	2.10	2.52
3.2	0.45	0.90	1.34	1.79	2.24	2.69
3.4	0.48	0.95	1.43	1.90	2.38	2.85
3.6	0.50	1.01	1.51	2.01	2.52	3.02



Source: NVIDIA, Morgan Stanley Research

We Forecast 4Q26 NB Builds at 23.9M Units (-6% q/q, -26% y/y)

Shipment (unit: k)	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Aug-26E	Diff.	Sep-26E
Quanta	2,700	2,000	5,300	3,500	3,500	4,500	2,800	2,600	3,100	-16%	3,600
Wistron	1,700	1,600	2,800	1,800	1,700	2,000	1,600	1,400	1,600	-13%	1,700
Others	1,700	1,500	2,200	1,500	1,500	2,400	1,600	1,500	1,600	-6%	1,700
Compal	1,600	1,500	2,800	1,800	2,000	2,400	1,800	1,400	2,100	-33%	2,300
Pegatron	700	425	675	525	575	650	400	425	600	-29%	575
Total	8,400	7,025	13,775	9,125	9,275	11,950	8,200	7,325	9,000	-19%	9,875
MoM %											
Quanta	-31%	-26%	165%	-34%	0%	29%	-38%	-7%	11%		38%
Wistron	-35%	-6%	75%	-36%	-6%	18%	-20%	-13%	0%		21%
Others	-15%	-12%	47%	-32%	0%	60%	-33%	-6%	0%		13%
Compal	-33%	-6%	87%	-36%	11%	20%	-25%	-22%	17%		64%
Pegatron	-24%	-39%	59%	-22%	10%	13%	-38%	6%	50%		35%
Total	-29%	-16%	96%	-34%	2%	29%	-31%	-11%	10%		35%
YoY%											
Quanta	-4%	-35%	8%	6%	-8%	-10%	-30%	-37%	-24%		-22%
Wistron	13%	7%	47%	6%	-6%	-17%	-20%	-36%	-27%		-23%
Others	13%	-6%	16%	-12%	-17%	14%	-6%	-17%	-11%		-11%
Compal	-20%	-29%	-3%	-18%	-17%	-4%	-22%	-39%	-9%		-8%
Pegatron	15%	-26%	-4%	-14%	-26%	-34%	-47%	-48%	-27%		-30%
Total	0%	-21%	12%	-4%	-12%	-8%	-24%	-35%	-20%		-18%

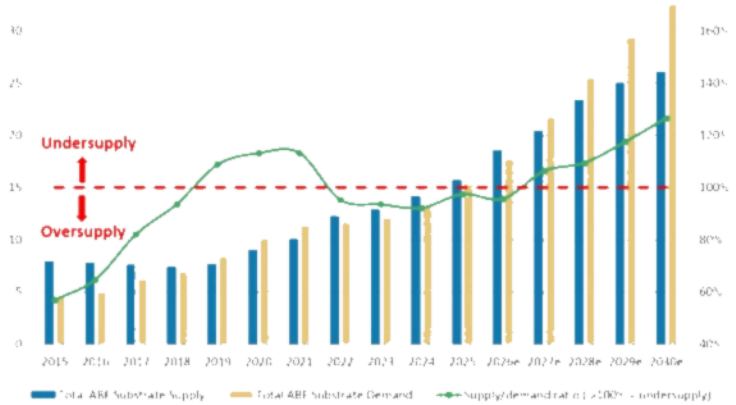
Shipment (unit: k)	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	1Q26	2Q26	3Q26E	3Q26E	Diff.	4Q26E
Quanta	10,500	11,700	12,600	11,100	10,800	12,100	12,700	10,900	10,000	11,500	9,000	9,500	-5%	8,500
Wistron	4,600	5,100	5,200	5,300	4,900	5,900	6,400	6,900	6,100	5,500	4,700	4,800	-2%	4,200
Others	4,500	4,900	5,200	5,400	5,000	5,600	5,400	5,300	5,400	5,400	4,800	4,900	-2%	4,500
Compal	7,500	8,700	8,300	7,800	7,000	7,100	7,100	6,800	5,900	6,200	5,500	6,400	-14%	5,300
Pegatron	1,550	2,030	2,475	1,950	1,885	2,375	2,400	2,410	1,800	1,750	1,400	1,700	-18%	1,350
Total	28,650	32,430	33,775	31,550	29,585	33,075	34,000	32,310	29,200	30,350	25,400	27,300	-7%	23,850
QoQ %														
Quanta	1%	11%	8%	-12%	-3%	12%	5%	-14%	-8%	15%	-22%	-17%		-6%
Wistron	-13%	11%	2%	2%	-8%	20%	8%	8%	-12%	-10%	-15%	-13%		-11%
Others	0%	9%	6%	4%	-7%	12%	-4%	-2%	2%	0%	-11%	-9%		-6%
Compal	-10%	16%	-5%	-6%	-10%	1%	0%	-4%	-13%	5%	-11%	3%		-4%
Pegatron	-6%	31%	22%	-21%	-3%	26%	1%	0%	-25%	-3%	-20%	-3%		-4%
Total	-5%	13%	4%	-7%	-6%	12%	3%	-5%	-10%	4%	-16%	-10%		-6%
YoY%														
Quanta	-3%	-7%	-4%	7%	3%	3%	1%	-2%	-7%	-5%	-29%	-25%		-22%
Wistron	18%	11%	0%	0%	7%	16%	23%	30%	24%	-7%	-27%	-25%		-39%
Others	2%	0%	6%	20%	11%	14%	4%	-2%	8%	-4%	-11%	-9%		-15%
Compal	-1%	0%	-11%	-6%	-7%	-18%	-14%	-13%	-16%	-13%	-23%	-10%		-22%
Pegatron	-9%	-2%	-1%	18%	22%	17%	-3%	24%	-5%	-26%	-42%	-29%		-44%
Total	1%	-1%	-4%	5%	3%	2%	1%	2%	-1%	-8%	-25%	-20%		-26%

Source: IDC, Morgan Stanley Research. e = Morgan Stanley Research estimates

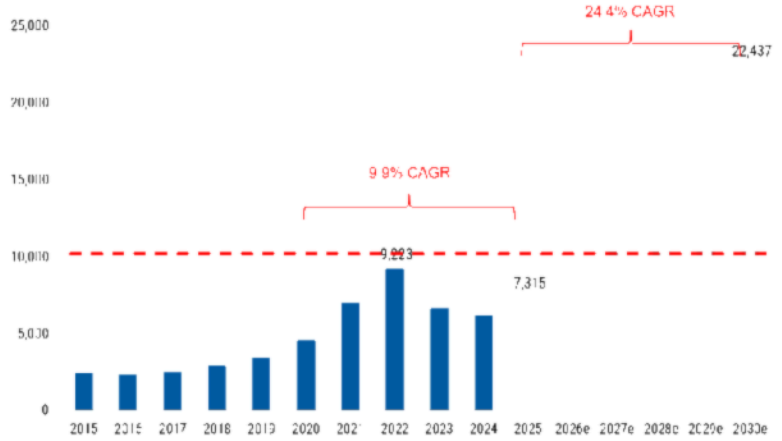
想要获取专业的投研信息？
公众号：一手信息独立的行业思考
来自专家的一手信息
要获取专业的投研信息？
一手信息独立的行业思

ABF Substrates: Undersupply From 2027

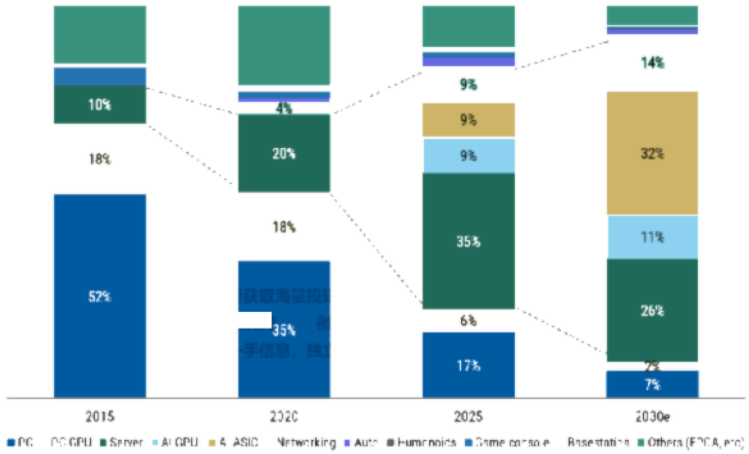
Expect ABF Substrate Undersupply From 2027 Onwards



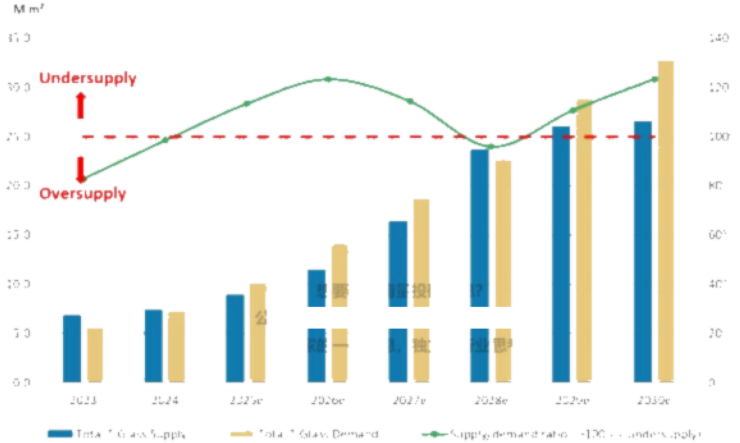
We are in the Early Innings of an AI-driven Upcycle



AI-related Applicated Expected to Rise to 75%+ by 2030



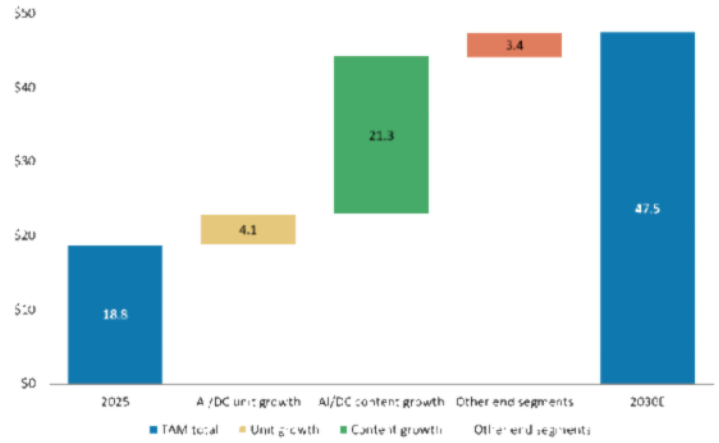
Expect T glass to Remain Undersupplied Until 2028



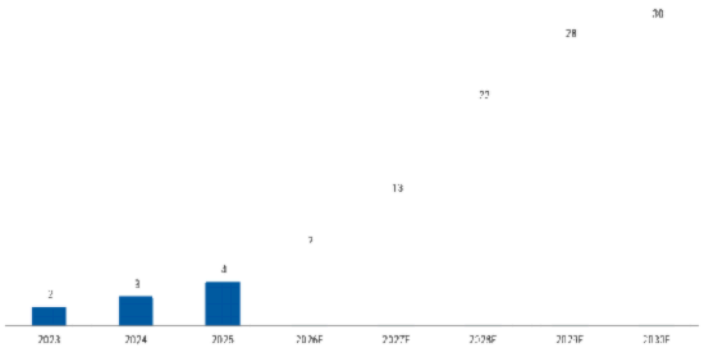
Source: Morgan Stanley Research

CCL: The Backbone of Electronic Inter-connectivity

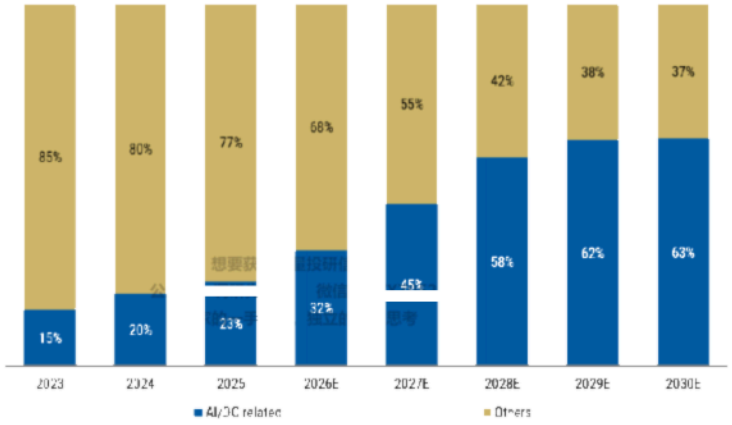
CCL TAM is primarily driven by content, rather than units (US$ B)



AI/data center-related CCL TAM to rise at a 47% CAGR (2025-30)

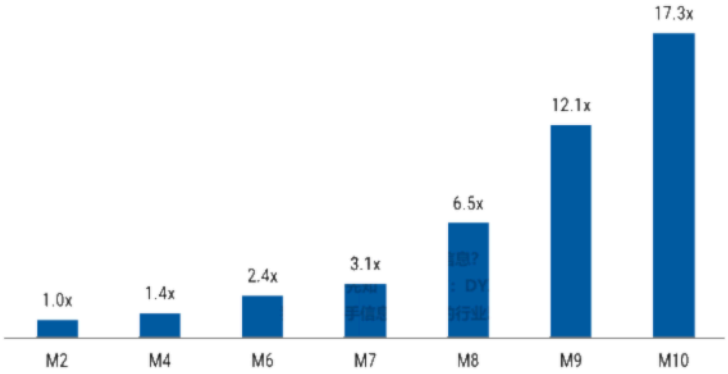


AI/data center-related CCL mix will rise to 63% by 2030



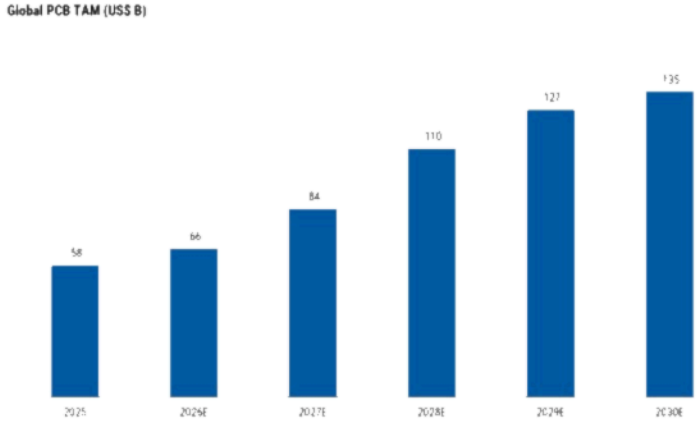
CCL ASP Comparison by Grade

CCL ASP by grade

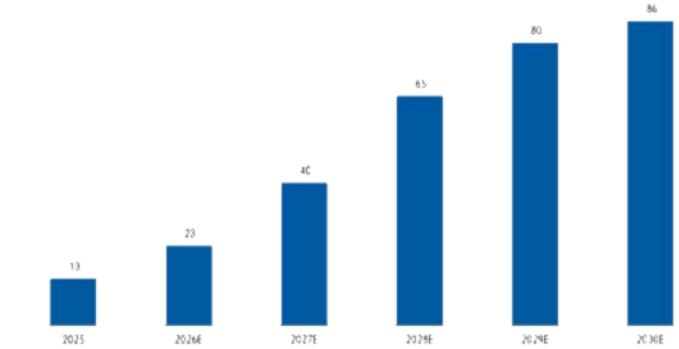


PCB: AI-Related Demand Will Add More than US$70B to the PCB Market

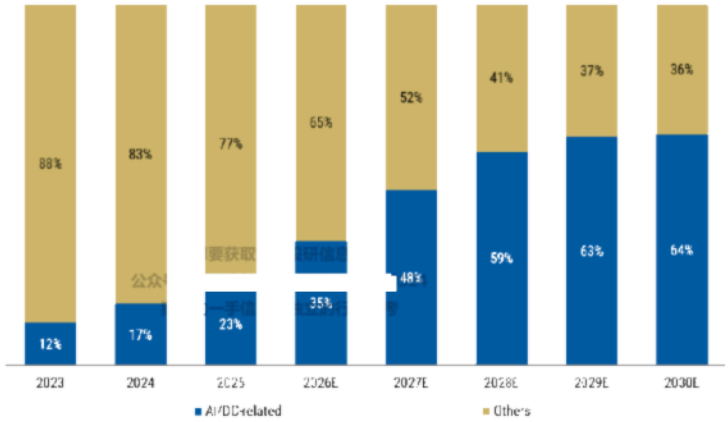
Global PCB TAM to rise at a 18% CAGR (2025-30e)



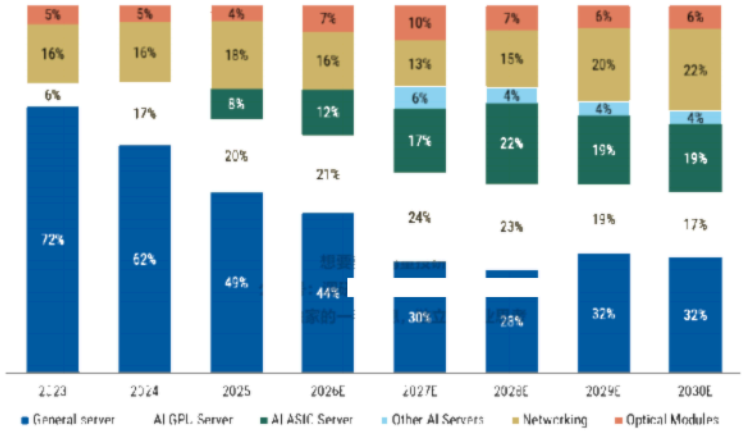
AI/data center-related PCB TAM to rise at a 45% CAGR (2025-30e)



AI/data center-related PCB mix will rise to 64% by 2030e



Breakdown of the AI/data center-related PCB TAM by segment



Copper Foil/CCL/PCB Content per Rack

NVIDIA

Nvidia (US$)	GB300	VR200	VR300
Total Copper Foil Content per rack	$1,697	$5,164	$5,705
Total CCL Content per rack	$6,695	$18,750	$35,601
Total PCB Content per rack	$37,491	$91,227	$154,377
Gen/Gen	**GB300**	**VR200**	**VR300**
Total Copper Foil Content per rack	15%	204%	10%
Total CCL Content per rack	1%	180%	90%
Total PCB Content per rack	0%	143%	69%

AMD

AMD (US$)	MI4XX	MI5XX
Total Copper Foil Content per rack	$9,610	$9,734
Total CCL Content per rack	$20,099	$37,268
Total PCB Content per rack	$66,143	$114,188
Gen/Gen	**MI4XX**	**MI5XX**
Total Copper Foil Content per rack	--	1%
Total CCL Content per rack	--	85%
Total PCB Content per rack	--	73%

TPU (US$)	TPUv7	TPUv8	TPUv9
Total Copper Foil Content per rack	$1,783	$4,457	$4,657
Total CCL Content per rack	$6,550	$13,009	$32,288
Total PCB Content per rack	$19,474	$37,861	$87,906
Gen/Gen	**TPUv7**	**TPUv8**	**TPUv9**
Total Copper Foil Content per rack	--	150%	4%
Total CCL Content per rack	--	99%	148%
Total PCB Content per rack	--	94%	132%

aws

Trainium (US$)	T2	T3	T4
Total Copper Foil Content per rack	$1,423	$3,266	$6,855
Total CCL Content per rack	$9,599	$10,218	$32,789
Total PCB Content per rack	$24,500	$26,287	$84,770
Gen/Gen	**T2**	**T3**	**T4**
Total Copper Foil Content per rack	--	129%	110%
Total CCL Content per rack	--	6%	221%
Total PCB Content per rack	--	7%	222%

Advanced AI PCB Takes 2.2x More Time to Produce Than a Normal PCB



Source: Morgan Stanley Research

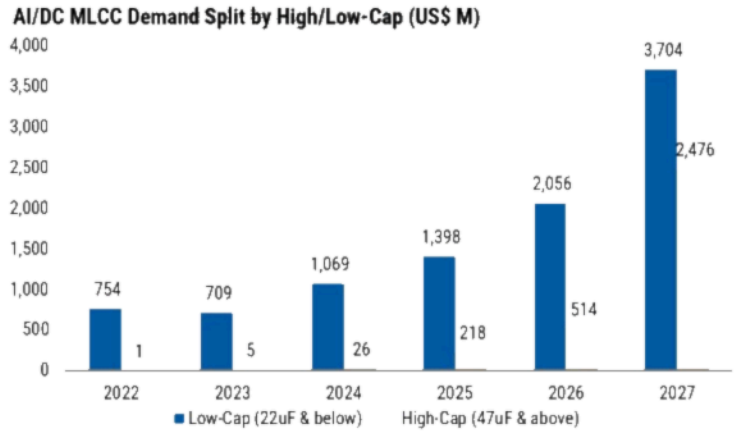
NVIDIA GPU ABF/CCL/PCB Roadmap

NVIDIA	H100	H200	B200	GB200 NVL72	GB300 NVL72	VR200 NVL144	VR300
ABF Substrate							
Substrate size	55mm x 58mm	55mm x 58mm	73mm x 81mm	73mm x 81mm	73mm x 81mm	83mm x 97mm	83mm x 97mm
Layer count	12L	12L	14L	14L	14L	18L	18L
Supplier	Ibiden	Ibiden	Ibiden/Unimicron	Ibiden/Unimicron	Ibiden/Unimicron	Ibiden/Unimicron	Ibiden/Unimicron
CCL Spec.	Very low-loss (M6)	Very low-loss (M6)	Ultra low-loss (M7)	Extreme low-loss (M8) + Low-loss (M4)	Extreme low-loss (M8) + Low-loss (M4)	Extreme low-loss (M8) + Low-loss (M4)	Extreme low-loss (M8) + Low-loss (M4) ?
CCL supplier	EMC	EMC	Doosan	Doosan	Doosan	Doosan	Doosan, ?
PCB Size	152mm x 80.5mm	152mm x 80.5mm	170mm x 86.5mm	305.5mm x 222mm	305.5mm x 222mm	320.8mm x 233.1mm	?
PCB Spec.	18L HDI (5+8+5)	18L HDI (5+8+5)	20L HDI (5+10+5)	22L HDI (5+12+5)	22L HDI (5+12+5)	26L HDI (6+14+6)	?
PCB Supplier	UMTC, TTM, WUS	UMTC, TTM, WUS	UMTC, TTM, WUS, VGT	VGT, UMTC	VGT, UMTC	VGT, UMTC, ZDT, etc	VGT, UMTC, ZDT, ?
CCL Spec.	Ultra low-loss (M7)	Ultra low-loss (M7)	Extreme low-loss (M8) + Low-loss (M4)	NA	NA	NA	NA
CCL supplier	EMC, Doosan	EMC, Doosan	Doosan, EMC	NA	NA	NA	NA
PCB Spec	24L PTH	24L PTH	18L PTH	NA	NA	NA	NA
PCB Supplier	WUS, TTM, ISU	WUS, TTM, ISU	WUS, TTM, ISU, UMTC	NA	NA	NA	NA
CCL Spec.	Ultra low-loss (M7)	Ultra low-loss (M7)	Ultra low-loss (M7), Extreme low-loss (M8)	Extreme low-loss (M8) + Standard loss (M2)	Extreme low-loss (M8) + Standard loss (M2)	Extreme low-loss (M8)	M9O or hybrid PTFE ?
CCL supplier	EMC, TUC	EMC, TUC	EMC, TUC, Doosan	EMC, Shengyi	EMC, Shengyi	EMC, Shengyi	EMC+Taiflex, Shengyi, ?
PCB Spec.	26-28L	26-28L	28-30L	24L PTH	24L PTH	32L PTH	?
PCB Supplier	WUS, TTM, ISU, GCE	WUS, TTM, ISU, GCE	WUS, TTM, ISU, GCE	WUS, TTM, UMTC, VGT	WUS, TTM, UMTC, VGT	WUS, TTM, UMTC, VGT	WUS, VGT, SCC, ?
CCL Spec.	Very low-loss (M6)	Very low-loss (M6)	Very low-loss (M6)	NA	NA	NA	NA
CCL supplier	EMC, TUC, ITEQ, Panasonic	EMC, TUC, ITEQ, Panasonic	EMC, TUC, ITEQ, Panasonic	NA	NA	NA	NA
PCB Spec	16-18L	16-18L	16-20L	NA	NA	NA	NA
PCB Supplier	GCE, WUS, TTM, ISU, Tripod	GCE, WUS, TTM, ISU, Tripod	GCE, WUS, TTM, ISU, Tripod	NA	NA	NA	NA
CCL Spec.						M8	M8? M9?
CCL supplier						EMC	EMC, ?
PCB Spec.						44L PTH	36L PTH?
PCB Supplier						WUS, TTM, Kinwong, VGT, etc.	WUS, TTM, Kinwong, VGT, ?

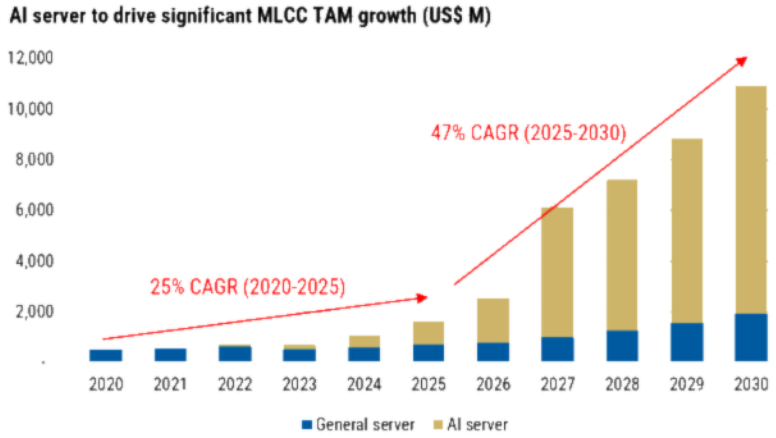
Source: Morgan Stanley Research

Cloud and Edge AI to Add ~US$5B TAM to the Overall MLCC Market by 2027

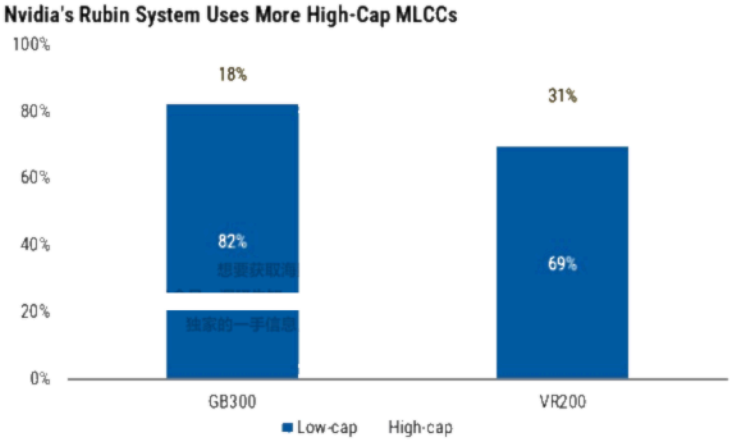
Cloud AI to Drive >US$6B TAM by 2027 (US$ bn)



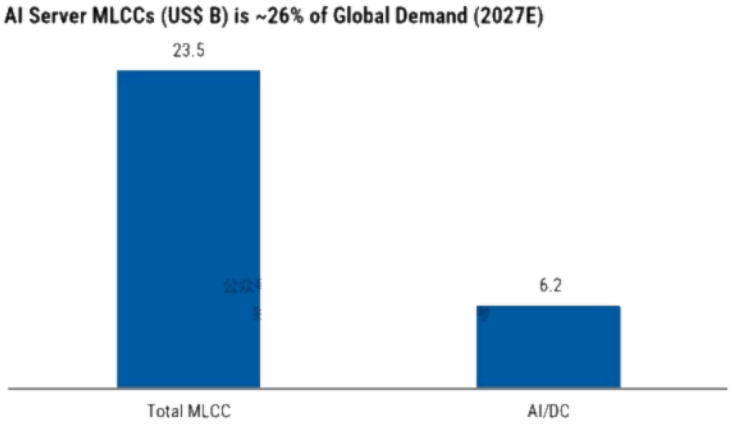
AI Servers to Drive Significant MLCC TAM Growth (US$ M)



AI Servers to Use Significantly More High-cap (47uF+) MLCCs



AI Server MLCC is ~6% of Global Units but ~26% of Global Value



We Introduce our 4Q26 iPhone Builds at 73M Units (+35% q/q, -4% y/y)

mn units	1Q24	2Q24	3Q24	4Q24	2024	1Q25	2Q25	3Q25	4Q25	2025	1Q26	2Q26	3Q26e	4Q26e	2026e
iPhone Sell-in															
iPhone SE3 / SE 5G / 16e / 17e	1.0	2.0	5.0	3.0	11.0	4.0	9.0	4.0	1.0	18.0	2.0	10.0	8.0	5.0	25.0
iPhone XR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 12 mini (5.4")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 12 (6.1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 12 Pro (6.1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 12 Pro Max (6.7")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 13 mini (5.4")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 13 (6.1")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iPhone 13 Pro (6.1")	0.5	0.5	-	-	1.0	-	-	-	-	-	-	-	-	-	-
iPhone 13 Pro Max (6.7")	0.5	0.5	-	-	1.0	-	-	-	-	-	-	-	-	-	-
iPhone 14 (6.1")	1.0	0.5	-	-	1.5	-	-	-	-	-	-	-	-	-	-
iPhone 14 Plus (6.7")	1.0	0.5	-	-	1.5	-	-	-	-	-	-	-	-	-	-
iPhone 14 Pro (6.1")	2.0	2.0	1.0	1.0	6.0	1.0	1.0	1.0	-	3.0	-	-	-	-	-
iPhone 14 Pro Max (6.7")	2.0	2.0	1.0	1.0	6.0	1.0	1.0	1.0	-	3.0	-	-	-	-	-
iPhone 15 (6.1")	6.0	5.0	4.0	1.0	16.0	1.0	0.5	0.5	0.5	2.5	-	-	-	-	-
iPhone 15 Plus (6.7")	4.0	3.0	1.0	1.0	9.0	1.0	0.5	0.5	0.5	2.5	-	-	-	-	-
iPhone 15 Pro (6.1")	12.0	10.0	8.5	2.0	32.5	2.0	2.0	2.0	1.0	7.0	1.0	1.0	-	-	2.0
iPhone 15 Pro Max (6.7")	18.0	13.0	10.5	3.0	44.5	3.0	3.0	2.0	1.0	9.0	1.0	1.0	-	-	2.0
iPhone 16 (6.1")	-	-	6.0	12.0	18.0	5.0	4.0	4.0	1.0	14.0	2.0	2.0	1.0	1.0	6.0
iPhone 16 Plus (6.7")	-	-	5.0	6.0	11.0	4.0	3.0	1.0	-	8.0	-	-	-	-	-
iPhone 16 Pro (6.3")	-	-	8.0	17.0	25.0	11.5	9.5	4.0	2.0	27.0	2.0	2.0	2.0	1.0	7.0
iPhone 16 Pro Max (6.9")	-	-	4.0	26.0	30.0	16.5	13.0	10.0	4.0	43.5	5.0	3.0	2.0	1.0	11.0
iPhone 17 (6.1")	-	-	-	-	-	-	-	6.0	16.0	22.0	10.0	8.0	6.0	2.0	26.0
iPhone Air (6.7")	-	-	-	-	-	-	-	4.0	4.0	8.0	-	-	-	-	-
iPhone 17 Pro (6.3")	-	-	-	-	-	-	-	8.0	22.0	30.0	18.0	13.0	9.0	4.0	44.0
iPhone 17 Pro Max (6.9")	-	-	-	-	-	-	-	7.0	23.0	30.0	15.0	12.0	9.0	5.0	41.0
iPhone 18 Pro (6.3")													8.0	24.0	32.0
iPhone 18 Pro Max (6.9")													8.0	24.0	32.0
iPhone Duo													1.0	6.0	7.0
Total	**48.0**	**39.0**	**54.0**	**73.0**	**214.0**	**50.0**	**46.5**	**55.0**	**76.0**	**227.5**	**56.0**	**52.0**	**54.0**	**73.0**	**235.0**
YoY	*-11%*	*-5%*	*8%*	*-3%*	*-3%*	*4%*	*19%*	*2%*	*4%*	*6%*	*12%*	*12%*	*-2%*	*-4%*	*3%*
QoQ	*-36%*	*-19%*	*38%*	*35%*		*-32%*	*-7%*	*18%*	*38%*		*-26%*	*-7%*	*4%*	*35%*	

- For full-year 2026, our supply-chain checks suggest total iPhone build volume could be up in the low to mid single digits YoY.
- For foldable iPhone model in 2H26, we expect 7M units of iPhone Duo builds in 2H26.

This report references U.S. Executive Order 14032 and/or entities or securities that are designated thereunder. U.S. persons may be prohibited from buying certain securities of entities named in this report. Readers are solely responsible for ensuring that their investment activities are carried out in compliance with applicable laws.

This report references export controls and/or entities that may be subject to export control restrictions. Readers are solely responsible for ensuring that their investment or trade activities are carried out in compliance with applicable laws.