

Technology

Computex 2024 Takeaways: GB200 NVL72, AI Server, AI PCs, Connectors, Liquid cooling

Computex 2024 in Taipei this week was mostly centered on AI servers and AI PCs, and most companies we visited are positive on AI opportunity for data centers and edge AI. We are impressed by the strong outlook/demand from the AI server supply chain (e.g. ODM, connectors, thermal, power supply), particularly GB200 NVL72 in 4Q24. For AI PCs, industry feedback supported our positive view in 2H24E given the long-awaited replacement cycle and strong product roadmap with new AI chip launches in 2024/25. Major beneficiaries include AI server names such as FII (601138 CH), Supermicro (SMCI US), Dell (DELL US), HPE (HPE US), FIT Hon Teng (6088 HK), BYDE (285 HK), Amphenol (APH US), and AI PC names such as Lenovo (992 HK), HPQ (HPQ US), Acer (2353 TT) and Asustek (2357 TT).

- **AI servers: upgrade roadmap, GB200 NVL72, Honhai/FII.** We discussed the latest GB200 NVL72 servers and liquid cooling solutions with major AI server ODMs (Honhai/Ingrasys, Supermicro, Wiwynn, Gigabyte, Inventec, Asus). Corporates are generally positive on the robust upgrade roadmap (Nvidia/AMD/Intel), but some expressed concerns on technical/delivery challenges for new architecture and technology (e.g. capacity, connectivity, thermal, power). For GB200 NVL72, ODMs only displayed the compute trays (no switch trays), and highlighted their liquid cooling solutions for GB200 servers. In particular, we conducted in-depth discussion with Ingrasys (Honhai's server subsidiary) on their comprehensive solutions across module, baseboard, motherboard, server, liquid cooling and rack solutions. We maintain our view that FII will be the largest GB200 NVL72 ODM, and NVL72 (2x36) will be shipped in 4Q24E ahead of NVL72 (1x72) in 1Q25E.
- **Connectors/cables: Copper cables, MCIO, overpass.** We are impressed by the GB200 product pipeline from Amphenol and Ingrasys/FIT (e.g. copper cable cartridge, MCIO, high-speed cables, overpass). Backplane with 5k units of copper cables is used for interconnecting compute/switch trays for cost/power saving. Our checks suggest upcoming AI servers will continue to expand the usage of copper cables for within-rack connections, as more GPUs/CPUs/switches will be packed into one rack as server scales up.
- **Thermal/Power supply.** As power requirement for GB200 servers increases to 120kw, two 3x1 RUs of upgraded power shelf (33kw each) are installed on top/bottom in GB200 rack. For thermal/cooling, liquid cooling (cold plates/rack CDU/side car) is adopted in GB200, vs air cooling (3D VC/AI Fan) in previous generation. Most ODM/thermal suppliers highlighted their liquid-to-air solutions which is more compatible with existing data centers.
- **AI PCs: Low cost/query, lower latency, personalization, privacy & security.** We saw strong AI PC product portfolios (Intel, Acer, Asus, MSI) for commercial/consumer/gaming segments. All brands highlighted the Copilot features built-in with Windows 11, including 1) Recall: locate and remember anything seen on their PC; 2) Cocreator: near real-time AI image generation and editing on the device; 3) Live Captions: translate audio from 40+ languages into English in real time. Overall, we think PC brands are well positioned to capture the trends given more innovation/development along with more AI chip supply, esp. new entrants from ARM-based Snapdragon X Elite.

Valuation Table

Name	Ticker	Rating	Mkt Cap (USD mn)	Price (LC)	TP (LC)	Up/Down -side	P/E (x) FY24E	P/E (x) FY25E	P/B (x) FY24E	ROE FY24E
FIT Hon Teng	6088 HK	Buy	2,296	2.46	*2.4	-2%	11.3	8.5	0.8	7.4
BYDE	285 HK	Buy	10,258	35.55	45.2	27%	13.3	9.8	3.8	28.4
FII	601138 CH	NA	67,274	24.53	NA	NA	18.8	15.3	3.1	16.8
Lenovo	992 HK	NA	16,902	10.64	NA	NA	18.2	13.0	2.7	2.7

Source: Company data, CMBIGM estimates, *TP under review

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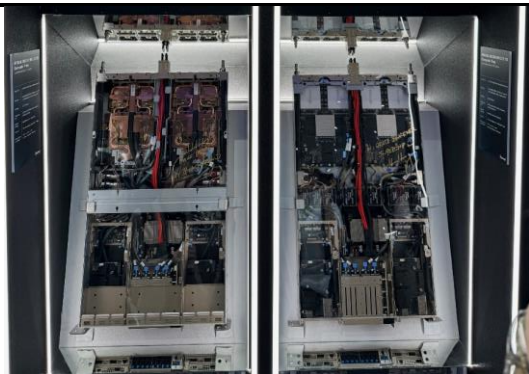
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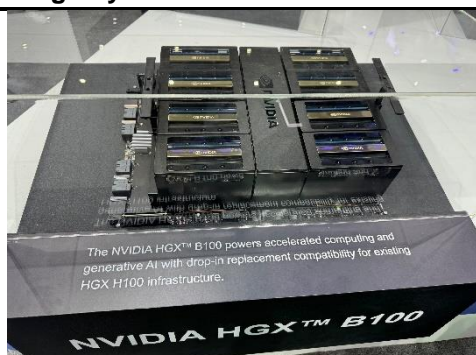
Focus Charts

Figure 1: Ingrasys – GB200 NVL72 Compute Tray



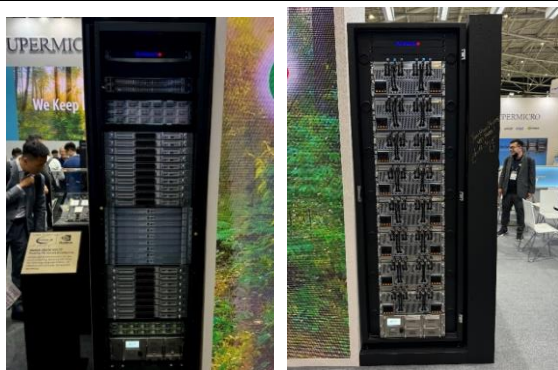
Source: Computex 2024, CMBIGM

Figure 3: Ingrasys – HGX B100



Source: Computex 2024, CMBIGM

Figure 5: Supermicro - GB200 NVL72



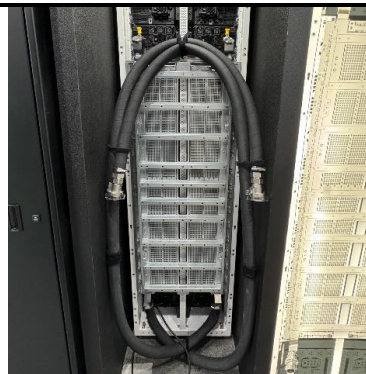
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Figure 7: Gigabyte - GB200 NVL72 & HGX B200



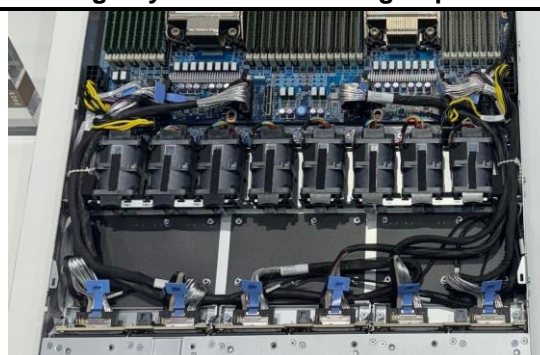
Source: Computex 2024, CMBIGM

Figure 2: Ingrasys – NVL72 copper cable backplane



Source: Computex 2024, CMBIGM

Figure 4: Ingrasys – FIT's MCIO/high-speed cables



Source: Computex 2024, CMBIGM

Figure 6: Supermicro – HGX B100 & B200



Source: Computex 2024, CMBIGM

Figure 8: Inventec - GB200 NVL72 & MGX GB200



Source: Computex 2024, CMBIGM

Figure 9: Amphenol – overpass/high-speed cables

Source: Computex 2024, CMBIGM

Figure 10: Amphenol – server/storage connectors

Source: Computex 2024, CMBIGM

Figure 11: Delta – Liquid Cooling

Source: Computex 2024, CMBIGM

Figure 12: Delta – GB200 Cold Planes & AI Fan

Source: Computex 2024, CMBIGM

Figure 13: MSI – AI PCs

Source: Computex 2024, CMBIGM

Figure 14: AI PCs - Acer

Source: Computex 2024, CMBIGM

Figure 15: Asus – AI PCs

Source: Computex 2024, CMBIGM

Figure 16: Asus – AI PCs

Source: Computex 2024, CMBIGM

Figure 17: Peers' valuation

Company	Ticker	Rating	Market Cap (US\$ mn)	Price (LC)	P/E (x)		P/B (x)		ROE (%)		Perf. YTD (%)
Brand											
Apple	AAPL US	NR	2,982,172	194.48	29.5	27.0	43.2	40.8	151.8	148.8	1.0
Xiaomi	1810 HK	BUY	56,459	17.62	19.8	18.2	2.1	1.9	10.9	10.6	12.9
Transsion	688036 CH	NR	13,393	85.91	15.0	12.9	4.2	3.4	28.2	27.8	(13.1)
Samsung	005930 KS	NR	337,609	77,300	14.6	10.6	1.4	1.2	9.4	12.0	(1.5)
LG	066570 KS	NR	12,056	100,700	9.0	7.0	0.8	0.7	9.2	10.9	(1.1)
Average					17.6	15.1	10.3	9.6	41.9	42.0	(0.3)
ODM/EMS											
BYDE	285 HK	BUY	10,258	35.55	13.3	9.8	3.8	3.0	28.4	30.3	(2.9)
Luxshare	002475 CH	BUY	31,911	32.20	16.6	13.4	2.7	2.3	16.4	16.9	(6.5)
Hon Hai Precision	2317 TT	NR	76,324	177.50	16.0	12.6	1.5	1.4	9.4	10.9	69.9
Average					15.3	11.9	2.7	2.2	18.1	19.4	20.2
Optics											
Sunny Optical	2382 HK	HOLD	6,666	47.55	34.4	25.4	2.0	1.9	5.7	7.4	(32.9)
Q Tech	1478 HK	BUY	546	3.60	9.8	7.3	0.7	0.7	7.6	9.4	(18.9)
Cowell	1415 HK	NR	2,263	20.65	22.0	12.7	4.4	3.3	21.9	28.4	(10.4)
Largan	3008 TT	NR	9,791	2,365	14.2	14.0	1.8	1.6	12.6	12.4	(17.6)
Genius	3406 TT	NR	1,934	553.00	15.2	15.8	2.6	2.4	18.0	15.8	31.5
O-Film	002456 CH	NR	3,459	7.69	36.1	24.8	5.4	4.6	12.3	14.6	(11.7)
Lg Innotek	011070 KS	NR	4,173	241,000	7.8	7.0	1.1	0.9	14.4	14.2	0.6
Average					19.9	15.3	2.6	2.2	13.2	14.6	(5.5)
Acoustics/Haptics											
AAC Tech	2018 HK	HOLD	4,129	26.90	22.4	-17%	21.0	16.9	1.2	1.2	5.8
Goertek	002241 CH	BUY	7,997	16.95	17.6	4%	24.2	22.3	1.7	1.6	7.0
Luxshare	002475 CH	BUY	31,911	32.20	46.6	45%	16.6	13.4	2.7	2.3	16.4
Merry	2439 TT	NR	831	121.50	NA	NA	15.4	-	2.0	-	-
Nidec	6594 JP	NR	26,855	6,996.00	28.0	21.8	2.7	2.4	10.1	11.3	22.8
Average					20.3	17.7	2.0	1.8	9.8	10.5	3.8
Connector											
FIT Hon Teng	6088 HK	BUY	2,296	2.46	11.3	8.5	0.8	0.8	7.4	9.1	108.5
Luxshare	002475 CH	BUY	31,911	32.20	16.6	13.4	2.7	2.3	16.4	16.9	(6.5)
TE	TEL US	NR	45,729	149.33	19.9	17.9	3.6	3.5	18.9	19.4	6.3
Amphenol	APH US	NR	78,595	130.86	38.1	33.7	8.2	7.0	23.6	23.4	32.0
Average					21.5	18.4	3.8	3.4	16.6	17.2	35.1
Casing											
BYDE	285 HK	BUY	10,258	35.55	13.3	9.8	3.8	3.0	28.4	30.3	(2.9)
Tongda	698 HK	BUY	101	0.08	3.5	2.8	0.1	0.1	3.1	3.8	(21.4)
TK Group	2283 HK	BUY	201	1.88	5.5	4.7	0.8	0.8	15.3	16.3	40.7
Everwin	300115 CH	NR	1,773	10.67	18.8	14.8	2.0	1.8	10.6	11.9	(19.5)
Lens Tech	300433 CH	NR	10,760	15.64	19.8	16.0	1.6	1.5	8.2	9.6	18.5
Catcher	2474 TT	NR	4,695	222.50	13.0	14.7	1.0	1.0	7.3	6.2	14.7
Jabil	JBL US	NR	13,787	114.32	13.6	10.9	6.9	4.8	43.6	54.7	(10.3)
Average					12.5	10.5	2.3	1.8	16.6	19.0	1.4
Hinge											
AAC Tech	2018 HK	HOLD	4,129	26.90	21.0	16.9	1.2	1.2	5.8	6.9	15.9
Jiangsu Gian	300709 CH	NR	631	24.58	17.6	14.4	2.0	1.8	11.3	12.2	(21.2)
KH Vatec	060720 KS	NR	250	14,430.00	9.1	6.6	1.2	1.1	13.9	17.1	(1.8)
Foseltek	6805 TT	NR	1,499	705.00	31.8	16.9	9.1	6.9	27.8	40.2	84.3
Jarlytec	3548 TT	NR	397	193.50	-	-	-	-	-	-	2.1
NBTM	600114 CH	NR	1,215	14.28	22.7	17.4	3.2	2.8	14.0	16.4	(7.8)
Average					20.4	14.4	3.3	2.7	14.6	18.6	4.8

Source: Bloomberg, CMBIGM

Figure 18: Peers' valuation

Figure 10-1 Core Valuation											
Company	Ticker	Rating	Market Cap (US\$ mn)	Price (LC)	P/E (x)		P/B (x)		ROE (%)		Perf
					FY24E	FY25E	FY24E	FY25E	FY24E	FY25E	YTD (%)
PC/Server											
Lenovo	992 HK	NR	16,902	10.64	18.2	13.0	2.7	2.7	16.0	21.1	(2.6)
Dell	DELL US	NR	95,173	133.96	20.1	17.4	-	-	(156.9)	(184.9)	75.1
HP Enterprise	HPE US	NR	25,461	19.59	10.3	9.4	1.1	1.1	11.5	11.4	15.4
HP Inc	HPQ US	NR	35,404	36.18	10.5	9.7	-	-	(323.8)	(433.6)	20.2
ASUSTeK	2357 TT	NR	11,151	484.00	14.9	13.1	1.5	1.4	9.9	10.5	(1.1)
Inspur	000977 CH	NR	7,171	35.28	24.0	19.5	2.6	2.3	10.7	11.9	6.3
Dawning	603019 CH	NR	7,850	38.85	24.7	20.3	2.7	2.4	11.3	12.4	(1.6)
Average					17.5	14.6	2.1	2.0	(60.2)	(78.8)	16.0
ODM/OEM											
Foxconn Industrial	601138 CH	NR	67,274	24.53	18.8	15.3	3.1	2.8	16.8	17.9	62.2
Super Micro	SMCI US	NR	45,552	777.92	32.8	22.7	8.2	6.1	38.9	36.0	173.7
Huaqin	603296 CH	NR	8,217	82.00	19.6	17.0	2.5	2.2	13.6	13.7	2.6
Quanta	2382 TT	NR	32,708	273.00	19.8	16.3	5.4	4.6	27.1	29.8	21.6
Wistron	3231 TT	NR	9,839	109.50	17.0	12.9	2.6	2.3	16.1	18.6	11.1
Wiwynn	6669 TT	NR	14,263	2,630.00	22.8	18.5	8.5	6.8	41.5	40.5	44.1
Inventec	2356 TT	NR	5,898	53.00	22.6	17.1	3.0	2.8	13.1	16.1	0.4
GigaByte	2376 TT	NR	6,103	309.50	20.0	15.8	4.7	4.0	24.7	25.8	16.4
Average					21.7	17.0	4.7	3.9	24.0	24.8	41.5
Switch/Storage											
Cisco	CSCO US	NR	187,194	46.23	12.5	13.0	4.0	3.9	33.1	29.2	(8.5)
Arista	ANET US	NR	92,934	296.57	37.5	33.2	10.1	8.0	29.8	25.7	25.9
Juniper	JNPR US	NR	11,524	35.46	18.6	15.7	2.5	2.4	14.4	15.5	20.3
Keysight	KEYS US	NR	23,737	136.00	22.9	19.4	4.7	4.2	17.8	20.2	(14.5)
Seagate	STX US	NR	20,159	96.00	98.5	17.1	-	-	(2.1)	(66.1)	12.5
Western Digital	WDC US	NR	24,571	75.25	-	9.4	2.2	1.9	(3.1)	19.5	43.7
Average					32.4	17.1	4.2	3.7	15.7	10.2	10.0
Connector											
FIT Hon Teng	6088 HK	BUY	2,296	2.46	11.3	8.5	0.8	0.8	7.4	9.1	108.5
Luxshare	002475 CH	BUY	31,911	32.20	16.6	13.4	2.7	2.3	16.4	16.9	(6.5)
TE	TEL US	NR	45,729	149.33	19.9	17.9	3.6	3.5	18.9	19.4	6.3
Amphenol	APH US	NR	78,595	130.86	38.1	33.7	8.2	7.0	23.6	23.4	32.0
Average					21.5	18.4	3.8	3.4	16.6	17.2	35.1
Substrate											
Unimicron	3037 TT	NR	8,704	184.00	22.4	12.7	2.8	2.4	12.8	20.0	4.5
Ibiden	4062 JP	NR	5,712	6,299.00	26.3	25.0	2.0	1.8	8.1	7.6	(19.4)
NYPcb	8046 TT	NR	3,898	194.50	48.2	20.6	2.8	2.5	5.2	12.0	(22.7)
Average					32.3	19.4	2.5	2.2	8.7	13.2	(12.5)
PCB											
WUS Printed	002463 CH	NR	8,652	32.75	27.8	22.4	5.4	4.5	19.8	20.4	48.1
Victory Giant	300476 CH	NR	3,633	30.50	22.8	17.8	3.1	2.6	13.5	14.9	65.3
Gold Circuit	2368 TT	NR	2,929	192.00	16.1	12.5	4.6	3.7	30.9	31.7	(11.9)
Average					28.4	23.6	3.3	3.0	11.8	12.8	32.2
Power Supply											
Delta	2308 TT	NR	27,796	345.00	26.4	21.6	4.1	3.7	15.2	16.7	10.0
Lite-on	2301 TT	NR	7,791	107.00	17.4	14.7	2.8	2.7	15.8	17.3	(8.5)
Average					21.9	18.2	3.5	3.2	15.5	17.0	0.8
Thermal											
Foxconn Industrial	601138 CH	NR	67,274	24.53	18.8	15.3	3.1	2.8	16.8	17.9	62.2
Sunowealth	2412 TT	NR	30,438	126.50	26.1	25.0	2.5	2.5	9.9	10.1	5.4
AVC	3017 TT	NR	7,371	620.00	31.6	21.9	8.7	6.8	29.6	33.6	84.2
Average					25.5	20.7	4.8	4.0	18.8	20.5	50.6

Source: Bloomberg, CMBIGM

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