

Technology - Asia Pacific

Recent FAQs on GB200 AI server supply chain; Buy Quanta, HH, Delta, AVC, Auras

Industry Overview

Buy key AI server stocks: Quanta, HH, Delta, AVC, Auras

Recently, we noted another round of market noise on NVDA GB200 AI server rack shipments, leading to Taiwan hardware tech companies' share price volatility. Investors' key questions were focused on (1) our latest GB200 shipment forecast for 2025; (2) timing of the GB200 shipment ramp-up; and (3) potential demand push-out to GB300 from GB200 generation. Overall, we remain positive about key AI server companies riding the AI upcycle. We maintain our Buy ratings on **Quanta** (leading AI server ODM, strong R&D resources, diversified client base), **Hon Hai (HH)**, global footprint and strong working capital to support AI business), **Delta** (top AI server power-supply maker; solid position in thermal/cooling), **Asia Vital Component (AVC)**, leading position in thermal/cooling components; rising liquid cooling mix), and **Auras** (rising server and liquid cooling mix, margin expansion).

Expect ODMs to ship 50K NVDA GB200 AI server racks in 2025

We note market consensus' lower NVDA GB200 AI server rack shipment forecast due to hardware supply-chain's technical/production issues (e.g., lower yield rate, over-heating, component supply hiccup), versus the noise about semi/CoWoS supply in September 2024. Nevertheless, we expect ODMs to ship 50K units of GB200 AI server racks in 2025 and have not changed this forecast since 2Q24. Based on our supply chain check, demand for the GB200 AI server rack remains much stronger than supply.

Expect sequential GB200 shipment ramp-up in 1Q-4Q25

Despite short-term shipment delay/push-out, we believe that the supply chain's pace to ramp up server shipment will be quick after technical/production issues are solved, similar to that for H100 generation seen in 2Q-3Q24. Judging from AI server ODMs' monthly sales (Exhibit 1), we believe that ODMs shipped a small volume of GB200 AI server racks in December 2024 (likely higher mix in NVL36 than NVL72). We expect a larger volume of GB200 AI server rack shipments by end-1Q25 and even more in 2Q-4Q25.

Demand/order push-out to GB300 from GB200 less likely

Some investors debated whether CSPs may postpone AI server demand/order to GB300 generation due to the recent shipment delay of GB200 generation. We view this as less likely considering CSPs' ongoing AI server project pipeline and capex growth (Exhibit 2) and the readiness of the GB300 platform. Based on our check, the supply chain expects mass production of GB300 AI server racks by 4Q25.

US restriction list to likely benefit US top CSP suppliers

We expect the US restriction list to lead to clearer disclosure of AI server shipping destinations. Companies with higher exposure to/focus on big US CSPs should benefit more, in our view.

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Refer to important disclosures on page 7 to 11. Analyst Certification on page 4. Price Objective Basis/Risk on page 3.

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For abbreviations, see Exhibit 4

Exhibit 1: AI server ODMs' monthly sales in 4Q24

Quanta/Hon Hai sales grew 49%/42% YoY in December 2024

NT\$m	Oct'24	Nov'24	Dec'24	4Q24
Quanta (2382 TT)	135,893	141,354	138,416	415,662
Hon Hai (2317 TT)	804,848	672,585	654,825	2,132,258
Wiwynn (6669 TT)	35,381	37,465	42,767	115,614
Wistron (3231 TT)	96,285	95,243	105,654	297,182
Inventec (2356 TT)	64,685	60,858	72,264	197,806
Pegatron (4938 TT)	118,801	105,758	102,446	327,005
Compal (2324 TT)	85,452	79,666	64,057	229,175
MoM%/QoQ%				
Quanta (2382 TT)	-12%	4%	-2%	-2%
Hon Hai (2317 TT)	10%	-16%	-3%	15%
Wiwynn (6669 TT)	3%	6%	14%	18%
Wistron (3231 TT)	-1%	-1%	11%	9%
Inventec (2356 TT)	15%	-6%	19%	21%
Pegatron (4938 TT)	9%	-11%	-3%	11%
Compal (2324 TT)	2%	-7%	-20%	-6%
YoY%				
Quanta (2382 TT)	49%	36%	49%	44%
Hon Hai (2317 TT)	9%	3%	42%	15%
Wiwynn (6669 TT)	87%	93%	111%	97%
Wistron (3231 TT)	23%	25%	41%	29%
Inventec (2356 TT)	60%	38%	66%	54%
Pegatron (4938 TT)	-16%	-9%	23%	-4%
Compal (2324 TT)	-2%	-6%	-8%	-5%

Source: BofA Global Research, TEJ

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Exhibit 2: Global cloud service providers' capex trend, 2016-26E

BofA Global Research expects the capex of top 4 US CSPs to grow 49%/18% YoY in 2024/2025

US\$m	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E
Meta	4,491	6,732	13,980	15,102	15,115	18,628	31,431	27,266	38,266	49,938	55,466
Amazon	7,804	11,955	13,426	16,861	40,141	61,053	63,645	52,729	75,106	85,000	93,000
Microsoft	9,114	8,696	14,223	13,546	17,592	23,216	24,768	35,202	55,008	63,821	67,966
Google	10,212	13,184	25,139	23,548	22,281	24,640	31,485	32,251	51,355	60,138	67,758
FAMG	31,621	40,567	66,768	69,057	95,129	127,537	151,329	147,448	219,736	258,896	284,190
Oracle	1,604	2,037	1,468	1,591	1,833	3,118	6,678	6,935	10,745	15,307	16,796
YoY %											
Meta	78%	50%	108%	8%	0%	23%	69%	-13%	40%	30%	11%
Amazon	70%	53%	12%	26%	138%	52%	4%	-17%	42%	13%	9%
Microsoft	39%	-5%	64%	-5%	30%	32%	7%	42%	56%	16%	6%
Google	3%	29%	91%	-6%	-5%	11%	28%	2%	59%	17%	13%
FAMG	34%	28%	65%	3%	38%	34%	19%	-3%	49%	18%	10%
Oracle	0%	27%	-28%	8%	15%	70%	114%	4%	55%	42%	10%

Source: BofA Global Research estimates, Bloomberg. All data based on calendar year.

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Exhibit 3: Stocks mentioned

Market data and BofA Global Research ratings for stocks mentioned in the report

BofA Ticker	Bloomberg Ticker	Company Name	Price (NT\$)	Rating
QUCPF	2382 TT	Quanta Computer	260.00	B-1-7
HNHAF	2317 TT	Hon Hai Precision Industry	171.00	B-1-7
DLTEF	2308 TT	Delta Elect	400.50	B-1-7
AVMPF	3017 TT	Asia Vital Component	502.00	B-1-7
AUTCF	3324 TT	Auras Technology	611.00	C-1-7

Source: BofA Global Research, Bloomberg. NTS: New Taiwan Dollar. Market data as of 2025/1/15

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Exhibit 4: Abbreviations

Abbreviations used in the report defined

Acronym		Acronym		Acronym	
AI	Artificial Intelligence	Dec	December	Oct	October
AVC	Asia Vital Component	FAMG	Facebook, Amazon, Microsoft, Google	ODM	Original Design Manufacturer
Capex	Capital Expenditure	FAQ	Frequently Asked Questions	R&D	Research & Development
CoWoS	Chip on Wafer on Substrate	HH	Hon Hai	Reit.	Reiterate
CSP	Cloud Service Provider	Nov	November	Sep	September
Corps	Corporates	NVDA	Nvidia	US/US\$	United States/US Dollar

Source: BofA Global Research

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Price objective basis & risk

Asia Vital Components (AVMPF)

Our PO of NT\$815 is based on 22.5x 2H25-1H26E EPS. We use 22.5x P/E multiple (median since 2H23 when global AI theme take-off and 2SD above P/E average since 2020) in view of AVC's double-digit sales/EPS CAGR in 2024-26E. We see AVC's leading position in thermal/cooling component market and strong AI market demand will drive rising liquid cooling sales mix and ASP/margin increase. 22.5x P/E is also at the above-20x P/E level we use for Taiwan AI server supply chain leaders.

Upside risks to our PO are: (1) stronger demand in AI server, server, PC, smartphone, (2) better operating leverage with larger revenue scale, (3) less intensive competition, (4) faster product certification, (5) faster capacity expansion, (6) favorable FX movement (USD/RMB and/or USD/NTD) to help on GM and/or non-operating items.

Downside risks to our PO are: (1) softer AI server demand due to GPU/component shortage, (2) weaker server/PC/smartphone market demand amid inflation/macro uncertainties, (3) GM pressure due to higher material/labor/utility cost, (4) more intensive competition, (5) delayed product certification, (6) slower capacity expansion, (7) unfavorable FX movement (USD/RMB and/or USD/NTD) to weigh on GM and/or non-operating items.

Auras Technology (AUTCF)

Our PO of NT\$890 is based on 19x 2H25-1H26E EPS. We use 19x P/E multiple (1SD above P/E average since 2020) in view of Auras' double-digit sales/EPS CAGR in 2024-26E. We see Auras' leading position in thermal/cooling component market and strong AI market demand will drive rising liquid cooling sales mix and ASP/margin increase.

Upside risks to our PO are: (1) stronger demand in AI server, server, PC, (2) better operating leverage with larger revenue scale, (3) less intensive competition, (4) faster product certification, (5) faster capacity expansion, (6) favorable FX movement (USD/RMB and/or USD/NTD) to help on GM and/or non-operating items.

Downside risks to our PO are: (1) softer AI server demand due to GPU/component shortage, (2) weaker server/PC market demand amid inflation/macro uncertainties, (3) GM pressure due to higher material/labor/utility cost, (4) more intensive competition, (5) delayed product certification, (6) slower capacity expansion, (7) unfavorable FX movement (USD/RMB and/or USD/NTD) to weigh on GM and/or non-operating items.

Delta Electronics Inc. (DLTEF)

Our PO of NT\$500 is based on 28x 2025E EPS, which is 2.5SD above Delta's average trading P/E since 2012. We believe the P/E multiple is justified, given (1) continuous strength and leading position in server power-supply and power choke business, (2) content/value growth with broader product offering in AI (artificial intelligence) business, (3) continuous delivery in EV business, despite still lukewarm IA (industrial automation)



business, and (4) ongoing margin expansion.

The upside risks to our PO are (1) stronger-than-expected server/datacenter demand, (2) faster-than-expected IA recovery, and (3) faster-than-expected EV model launches by global brands.

The downside risks to our PO are (1) unexpected changes in policy that could impact IA growth in China, (2) slower-than-expected server/datacenter demand recovery, and (3) earnings impact from unprofitable long-term investments.

Hon Hai Precision Industry (HNHAF)

We set our PO at NT\$262 (16x 2H25-1H26E EPS), at around 4SD above historical P/E average since 2007. We think the valuation is justified as HH's leading position in EMS/ODM business, improving iPhone momentum with replacement cycle, rising sales from AI business, more diversified global footprint than peers to mitigate tariff/geopolitical risk, and improving balance sheet with higher cash dividend payout.

Downside risks to our PO are: (1) weaker momentum from Apple business (iPhone, iPad and Apple Watch), (2) increasing competition in EMS business from peers, (3) slower sales/earnings delivery in auto/EV business, and (4) weaker market demand or lower shipment from Nvidia AI server rack/system business.

Upside risks to our PO are: (1) better-than-expected yield rate and demand for iPhone, iPad and Apple Watch business, (2) further automation adoption to reduce labor costs and improve efficiency, (3) faster sales/earnings delivery from auto/EV business, and (4) stronger market demand or higher shipment from Nvidia AI server rack/system business.

Quanta Computer (QUCPF)

Our PO of NT\$366 is based on 22x 2025E EPS. We use a 22x PE valuation multiple (around 4SD above historical average since 2012 while at the upper-end of server ODM peers trading range) in view of valuation-rating under Quanta's leading server ODM position, key beneficiary from rising AI applications, better product mix with continuous delivery in server and auto/EV business, broader client/project base vs. peers, and high/stable 5-6% cash yield.

Upside risks to our PO are: (1) stronger NB demand given the change in lifestyle post COVID pandemic, (2) stronger-than-expected momentum in cloud computing business, and (3) faster production resumption from China lockdown with better execution and cost management.

Downside risks to our PO are: (1) weaker-than-expected PC market, (2) more intensified competition in NB and server business, and (3) lighter-than-expected datacenter capex cycle due to macro uncertainties.

Analyst Certification

We, Robert Cheng and Doris Kao, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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APR - Technology Hardware Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Asia Vital Components	AVMPF	3017 TT	Doris Kao
	Asustek	AKCPF	2357 TT	Robert Cheng
	Auras Technology	AUTCF	3324 TT	Doris Kao
	BOE Technology Group Co., Ltd	XCJQF	000725 CH	Brad Lin
	BYD Electronic	BYDIF	285 HK	Katherine Zhu
	Cowell	CWLLF	1415 HK	Katherine Zhu
	Crystal-Optech	XMKAF	002273 CH	Katherine Zhu
	Delta Electronics Inc.	DLTEF	2308 TT	Robert Cheng
	Duksan Neolux	XDSXF	213420 KS	Simon Woo, CFA
	E Ink Holdings	PWVIF	8069 TT	Doris Kao
	Elite Material	ETMCF	2383 TT	Mike Yang
	Foxconn Industrial Internet	XDAZF	601138 CH	Robert Cheng
	Gold Circuit	GOCCF	2368 TT	Doris Kao
	Hon Hai Precision Industry	HNHAF	2317 TT	Robert Cheng
	Inovance Technology	XMYRF	300124 CH	Ming Hsun Lee, CFA
	LG Electronics	LGEAF	066570 KS	Simon Woo, CFA
	Lotes	ZYZTF	3533 TT	Doris Kao
	Luxshare	XNJQF	002475 CH	Robert Cheng
	Quanta Computer	QUCPF	2382 TT	Robert Cheng
	Samsung Electro-Mechanics	SMSGF	009150 KS	Simon Woo, CFA
	Samsung SDI	SSDIF	006400 KS	Simon Woo, CFA
	Samsung SDS	XWPBF	018260 KS	Simon Woo, CFA
	Shennan Circuits	XAMKF	002916 CH	Doris Kao
	Sunny Optical	SNPTF	2382 HK	Katherine Zhu
	Unimicron	UMCRF	3037 TT	Mike Yang
	Universal Display	OLED	OLED US	Simon Woo, CFA
	Wistron	WICOF	3231 TT	Doris Kao
	Wiwynn	XWQF	6669 TT	Robert Cheng
	Xiaomi Corporation	XIACF	1810 HK	Robert Cheng
	Yageo	YGEQF	2327 TT	Robert Cheng
	Zhen Ding Tech	XFAGF	4958 TT	Doris Kao
	Zhongji Innolight	XZICF	300308 CH	Katherine Zhu
NEUTRAL				
	AAC Technologies	AACAF	2018 HK	Katherine Zhu
	AU Optronics	AUOTF	2409 TT	Brad Lin
	AU Optronics	AUOTY	AUOTY US	Brad Lin
	Compal Electron	XLCPF	2324 TT	Doris Kao
	DS Precision	XBASF	002384 CH	Mike Yang
	Ennostar	XENOF	3714 TT	Katherine Zhu
	Innolux Corporation	CMLXY	3481 TT	Brad Lin
	Largan Precision	LGANF	3008 TT	Robert Cheng
	Lenovo Group	LNVGf	992 HK	Robert Cheng
	Lenovo Group	LNVGy	LNVGy US	Robert Cheng
	LG Innotek	XLGQF	011070 KS	Simon Woo, CFA
	Lite-On Tech	LOTZF	2301 TT	Doris Kao
	Pegatron	PGTRF	4938 TT	Robert Cheng
	TCL Technology Group Corp	XTOOF	000100 CH	Brad Lin
	Transsion	XCINF	688036 CH	Robert Cheng
	ZTE Corporation	SHZZF	000063 CH	Katherine Zhu
	ZTE Corporation	ZTCOF	763 HK	Katherine Zhu
UNDERPERFORM				
	Acer	ASIYF	2353 TT	Robert Cheng
	Advantech	ADTEF	2395 TT	Robert Cheng
	BizLink	BIZLF	3665 TT	Doris Kao
	Catcher Tech	CHERF	2474 TT	Robert Cheng
	Everwin Precision	XSHZF	300115 CH	Katherine Zhu
	Genius Electronic Optical	GNSEF	3406 TT	Robert Cheng
	Goertek	XGKCF	002241 CH	Robert Cheng
	Kinsus	KNSUF	3189 TT	Mike Yang
	Lianchuang Electronic	XWOFF	002036 CH	Katherine Zhu
	NYPGB	NANYF	8046 TT	Mike Yang
	Sanan Opto	XEQYF	600703 CH	Katherine Zhu
	Seoul Semiconductor	SLSOF	046890 KS	Simon Woo, CFA



APR - Technology Hardware Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
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	Sunway Communications	XWSVF	300136 CH	Robert Cheng
	Tianma	XVZLF	000050 CH	Brad Lin

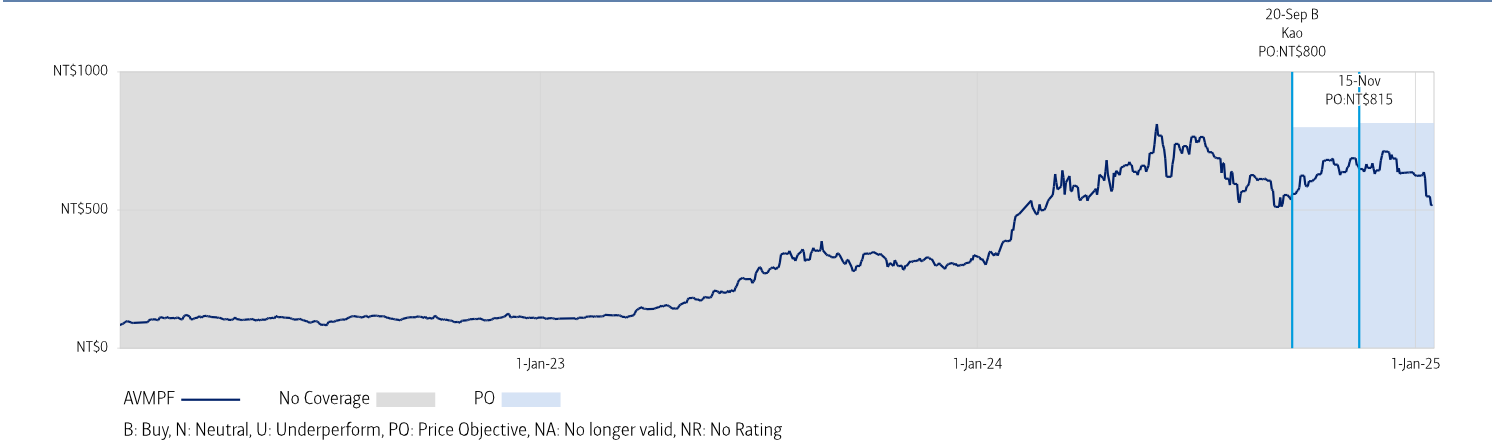
RSTR

	LG Display	LPHLF	034220 KS	Simon Woo, CFA
	LG Display-ADR	LPL	LPL US	Simon Woo, CFA

Disclosures

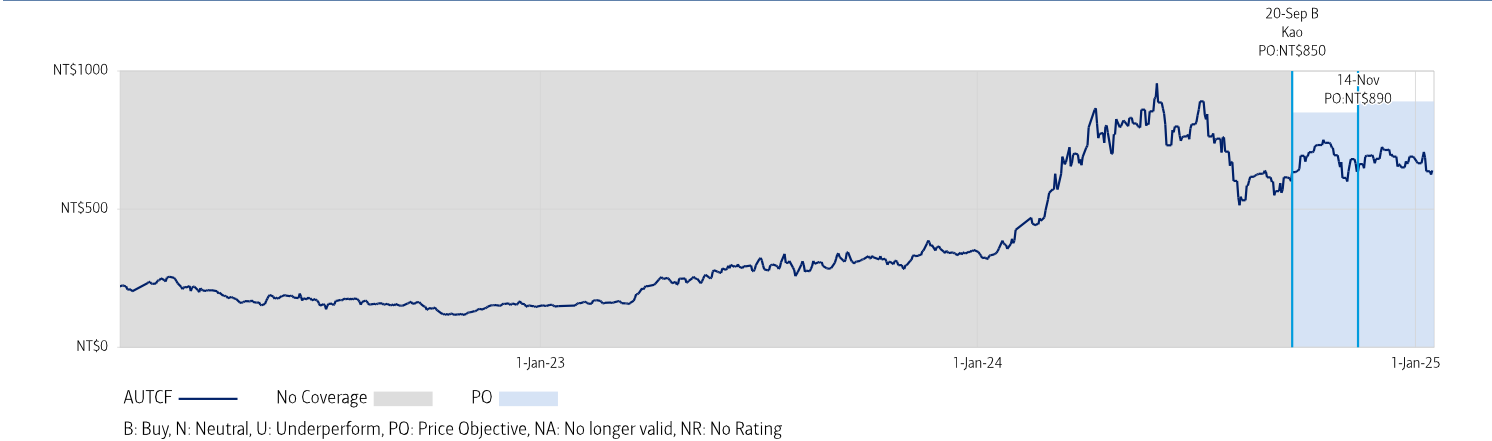
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Asia Vital Component (AVMPF) Price Chart



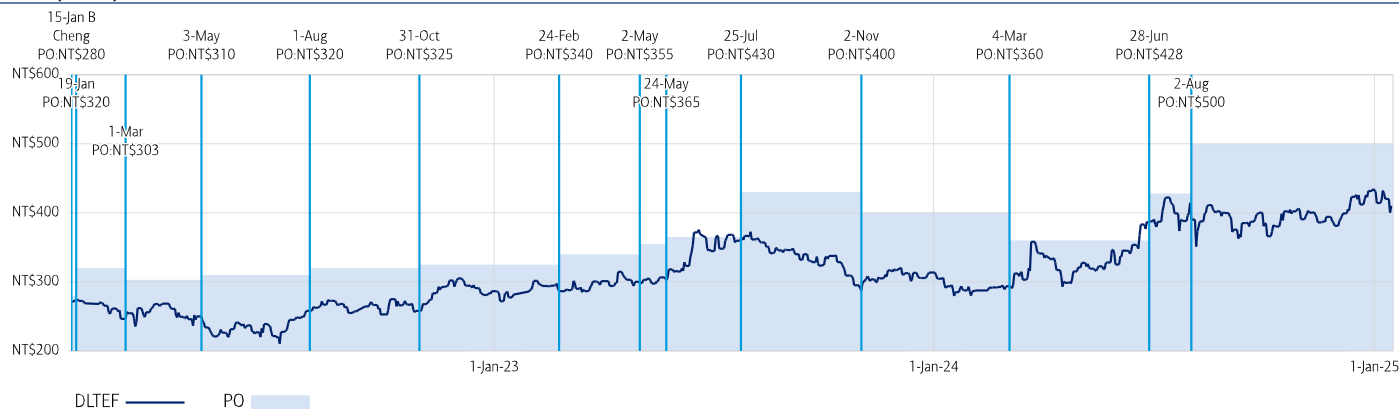
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Auras Technology (AUTCF) Price Chart



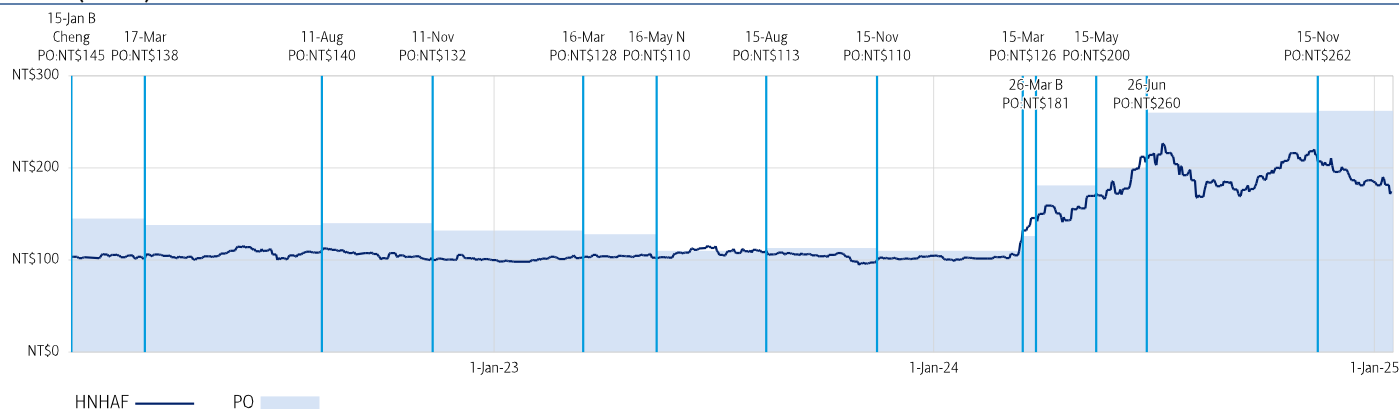
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Delta Elect (DLTEF) Price Chart

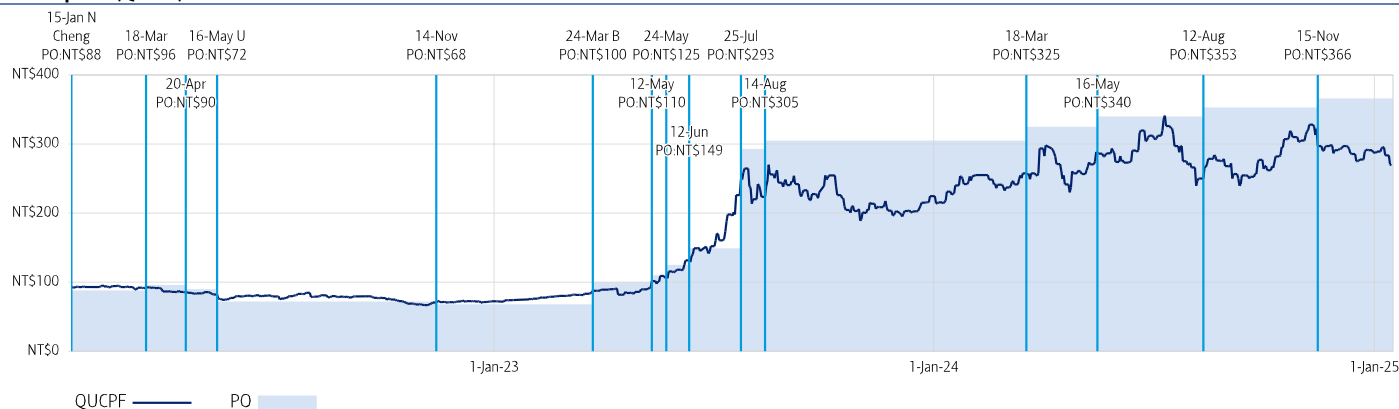
B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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Hon Hai Prec. (HNHAF) Price Chart

B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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Quanta Computer (QUCPF) Price Chart

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Equity Investment Rating Distribution: Electronics Group (as of 31 Dec 2024)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	30	53.57%	Buy	10	33.33%
Hold	12	21.43%	Hold	6	50.00%
Sell	14	25.00%	Sell	3	21.43%

Equity Investment Rating Distribution: Technology Group (as of 31 Dec 2024)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	209	53.45%	Buy	107	51.20%
Hold	93	23.79%	Hold	47	50.54%
Sell	89	22.76%	Sell	28	31.46%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2024)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1869	54.39%	Buy	1108	59.28%
Hold	766	22.29%	Hold	463	60.44%
Sell	801	23.31%	Sell	370	46.19%

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Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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