

IT Hardware

AI expanding from training to inference & edge

Key message

1. We believe a strong outlook for cloud and edge AI will drive earnings for IT hardware suppliers this year, based on: (1) robust 2025F earnings guidance from US CPU makers Intel and AMD, CSPs Meta, Microsoft, Google and Amazon, and smartphone AP supplier Qualcomm; and (2) our recent Taiwan supply chain checks.
2. In 2024, global PC shipments grew by 1.3%, smartphone by 3.9% and server by low single digits. We forecast 2025F PC shipments to grow by 6%, smartphone by 5% and server by 10%.
3. Gaming and AI PC will drive PC sales growth and AI will drive smartphone and server demand this year in training, inference and edge. Key beneficiaries are Asustek (2357 TT), MSI (2377 TT) and Dell (US). Our top smartphone picks are Apple (US) and Largan (3008 TT) and our top server picks are Hon Hai (2317 TT), Quanta (2382 TT), Asia Vital Components (3017 TT), Delta (2308 TT) and King Slide (2059 TT).

Event

We believe a strong outlook for cloud and edge AI will drive earnings for IT hardware suppliers this year, based on: (1) a positive 2025F PC, smartphone and server demand outlook from US CPU makers Intel and AMD, CSPs Meta, Microsoft, Google and Amazon, and smartphone AP supplier Qualcomm; and (2) our recent Taiwan supply chain checks.

Impact

2024 PC shipments grew 1.3%; we forecast 6% growth in 2025F. Commercial PC demand growth in the US and Japan, and early pull-in amid tariff uncertainty in 4Q24 caused 2024 shipments growth of 1.3% YoY to 245.4mn units, higher than our estimate. Lenovo (CN), Apple (US) and Acer (2353 TT) gained share last year on 4-6% shipments growth. With x86-based AI CPU (AMD Ryzen, Intel Lunar Lake) and Microsoft Copilot+ features, Windows AI PCs accounted for nearly 10% of 4Q24 PC demand, according to Gartner. The market expects AI PC penetration up to 30-40% in 2025F, boosting PC shipments growth of mid-single-digits, despite 1Q25F shipments fall of 5-10% QoQ. The termination of Windows 10 technical support will also spur PC replacement demand. 2025F gaming PC sales will grow on RTX-50 GPU debut in 1Q25F, boosting PC shipments and ASP and benefiting Asustek (2357 TT), MSI (2377 TT) and Dell (US).

2024 global smartphone shipments grew 3.9%; to grow 4.6% in 2025F. On higher AI smartphone demand and holiday season promotions in 4Q24, 2024 smartphone shipments grew 3.9% YoY to 1.23bn units, beating our forecast by 2.6%. Chinese brands Huawei (up 57% YoY), Xiaomi (up 16% YoY) and Vivo (up 12% YoY) outperformed peers in 2024, while Apple (US) saw shipments fall 2% but still ranked No.1 worldwide. We expect smartphone shipments to grow 4.6% in 2025F on more Gen AI-featured model launches. With subsidies in China and new model rollouts, Android smartphone demand in 1H25F looks solid, and Qualcomm (US) and Mediatek (2454 TT) guide for stable to moderate QoQ sales growth in 1Q25F. Both estimate global smartphone SoC shipments to grow around 4% this year, aligning with our forecast. Apple will launch Apple Intelligence-enabled SE4 in February, and Apple Intelligence will penetrate more non-English speaking regions in April, including China, Japan, Korea, France and Spain. Coupled with a newly designed slim form factor for iPhone 17 in 2H25F, we expect Apple's iPhone shipments to grow this year following three years of decline, and it will maintain the global No.1 smartphone brand in terms of shipments and revenue, benefiting lens maker Largan (3008 TT). We estimate foldable smartphone shipments growth of 10% this year, vs. 23% in 2024, with Samsung (KR) and Huawei (CN) the major players, and Fositek (6805 TT) the key benefactor.

2024 server demand up by low single digits; we forecast 10% growth in 2025F. We estimate global server shipments rose around 4% last year. Shipments were stable in 4Q24 on growing general server demand, despite GB200 AI server shipments deferrals. Demand from US CSPs outgrew that of China CSPs (down QoQ) on earlier pull-in in 3Q24. With the ramp-up of GB200 AI server from February, we expect AI server shipments will grow QoQ in 1Q25F, though overall server shipments will decline QoQ. GB200 will see significant mass production after 2Q25F and GB300 after 3Q25F. The market expects ASIC AI server demand to grow this year, together supporting overall US CSPs' 2025F capex growth to stay high at around 35% vs. 60% in 2024. Based on shipments of 25-30k racks for GB200 NVL72 and moderate growth in general server demand, we forecast total server shipments growth of 10% in 2025F. We estimate AI server (including GPU and ASIC AI) will comprise around 12% of total server shipments this year and contribute over 70% of server revenue due to skyrocketing ASP. Taiwanese ODMs Hon Hai (2317 TT) and Quanta (2382 TT) are key GB200 AI server assemblers, while Wiyynn (6669 TT) is a major ASIC server assembler. We also expect thermal, power, switch and rail kit makers to benefit from the AI server demand surge in 2025F.

Stocks for Action

Our top PC picks are Asustek, MSI and Dell. In smartphone, we like Apple and Largan, and in server, Hon Hai, Quanta, Asia Vital Components (3017 TT), Delta (2308 TT), and King Slide (2059 TT) are our picks.

Risks

Weak demand; further ASP and margin contraction.

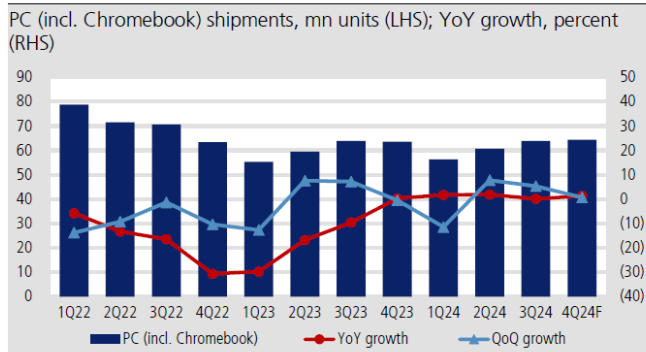
Figure 1: We expect shipments growth for PC, smartphone & server in 2025F

mn units	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24F	1Q25F	2Q25F	3Q25F	4Q25F	2021	2022	2023	2024F	2025F
Total PC (incl. Chromebook)	55.3	59.6	63.8	63.5	56.3	60.7	64.0	64.4	58.9	64.5	69.8	66.4	341.7	284.2	242.3	245.4	259.6
NB (incl. Chromebook)	40.5	44.4	47.4	47.4	41.8	45.9	48.8	48.4	44.2	48.9	53.0	49.9	256.4	208.1	179.9	184.8	196.0
DT	14.8	15.1	16.4	16.1	14.5	14.8	15.2	16.0	14.7	15.6	16.9	16.5	85.3	76.1	62.4	60.6	63.6
Smartphone	293.8	272.0	292.1	326.6	304.3	288.0	302.8	335.3	334.7	311.1	305.9	335.3	1,432.7	1,274.0	1,184.5	1,230.4	1,286.9
iPhone	58.7	45.6	49.9	76.3	52.2	45.7	51.3	77.0	50.0	53.0	55.0	82.0	239.2	233.9	230.6	226.1	240.0
Android SP	235.0	226.4	242.1	250.3	252.1	242.4	251.6	258.3	284.7	258.1	250.9	253.3	1,193.5	1,040.2	953.9	1,004.3	1,046.9
Server	2.7	2.8	2.8	3.0	2.8	2.9	2.9	3.1	3.0	3.2	3.4	3.4	12.9	13.8	11.4	11.8	13.0
White-box	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	3.1	3.6	3.0	3.3	3.9
Enterprise	2.0	2.1	2.1	2.2	2.1	2.2	2.1	2.2	2.2	2.3	2.4	2.2	9.8	10.3	8.3	8.5	9.1
YoY (%)	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24F	1Q25F	2Q25F	3Q25F	4Q25F	2021	2022	2023	2024F	2025F
Total PC (incl. Chromebook)	(29.7)	(16.7)	(9.6)	0.3	1.7	1.9	0.2	1.4	4.6	6.2	9.2	3.1	10.9	(16.8)	(14.7)	1.3	5.8
NB (incl. Chromebook)	(30.7)	(14.1)	(7.9)	2.4	3.0	3.2	2.8	2.0	5.8	6.6	8.7	3.1	12.3	(18.8)	(13.6)	2.7	6.0
DT	(26.9)	(23.5)	(14.0)	(5.2)	(1.8)	(1.8)	(7.4)	(0.5)	1.0	5.0	11.0	2.9	6.9	(10.9)	(17.9)	(3.0)	5.0
Smartphone	(14.3)	(10.6)	(4.7)	1.9	3.6	5.9	3.7	2.7	10.0	8.0	1.0	0.0	6.0	(11.1)	(7.0)	3.9	4.6
iPhone	(3.8)	(6.7)	(1.9)	4.6	(11.2)	0.1	2.7	0.9	(4.2)	16.1	7.2	6.5	19.7	(2.2)	(1.4)	(2.0)	6.1
Android SP	(16.6)	(11.4)	(5.2)	1.2	7.3	7.1	3.9	3.2	12.9	6.5	(0.3)	(1.9)	3.7	(12.8)	(8.3)	5.3	4.2
Server	(19.0)	(16.5)	(16.3)	(19.6)	5.3	4.2	4.2	2.5	7.0	7.0	15.8	10.1	1.9	7.0	(17.9)	4.0	10.0
White-box	(20.9)	(14.6)	(8.9)	(17.2)	5.0	3.9	11.4	14.9	15.0	15.0	20.0	28.2	3.4	14.3	(15.6)	9.0	20.0
Enterprise	(18.3)	(17.2)	(18.7)	(20.5)	5.4	4.3	1.6	(2.0)	4.1	4.2	14.1	2.3	1.5	4.7	(18.7)	2.2	6.2
QoQ (%)	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24F	1Q25F	2Q25F	3Q25F	4Q25F	2021	2022	2023	2024F	2025F
Total PC (incl. Chromebook)	(12.6)	7.6	7.2	(0.5)	(11.4)	7.8	5.4	0.7	(8.6)	9.5	8.4	(5.0)					
NB (incl. Chromebook)	(12.5)	9.6	6.7	(0.0)	(11.9)	9.8	6.3	(0.8)	(8.6)	10.6	8.4	(5.8)					
DT	(12.8)	2.1	8.6	(1.9)	(9.7)	2.1	2.4	5.4	(8.3)	6.1	8.2	(2.2)					
Smartphone	(8.3)	(7.4)	7.4	11.8	(6.8)	(5.3)	5.1	10.7	(0.2)	(7.1)	(1.7)	9.6					
iPhone	(19.5)	(22.3)	9.5	52.8	(31.6)	(12.5)	12.3	50.1	(35.1)	6.0	3.8	49.1					
Android SP	(5.0)	(3.7)	7.0	3.4	0.7	(3.9)	3.8	2.7	10.2	(9.3)	(2.8)	1.0					
Server	(28.6)	5.6	0.1	6.6	(6.5)	4.5	0.0	4.9	(2.4)	4.5	8.3	(0.3)					
White-box	(26.4)	2.1	3.7	6.2	(6.6)	1.0	11.1	9.6	(6.6)	1.0	16.0	17.1					
Enterprise	(29.4)	6.8	(1.2)	6.8	(6.5)	5.7	(3.8)	3.0	(0.6)	5.9	5.3	(7.6)					

Source: Gartner, KGI Research estimates

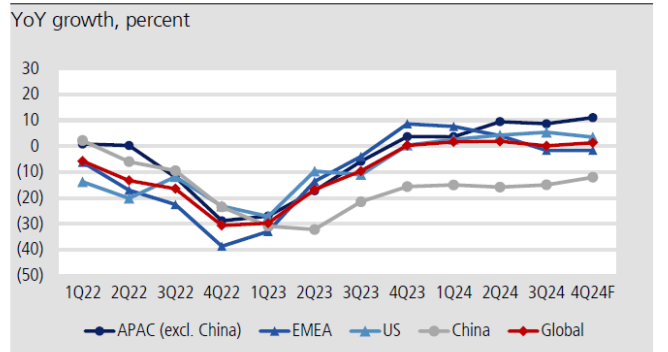
PC

Figure 2: PC (incl. Chromebook) shipments grew 1% QoQ and YoY in 4Q24



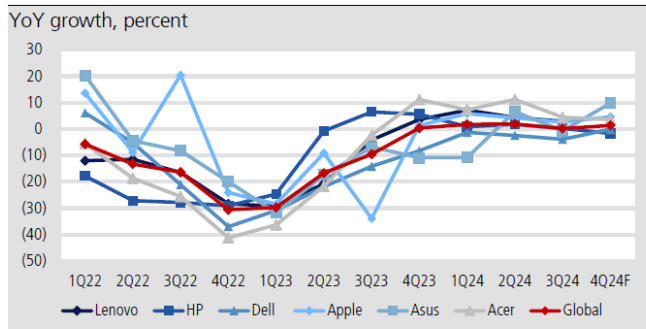
Source: Gartner, KGI Research

Figure 3: PC shipments in US & Japan outgrew the global market in 4Q24; China shipments fell the most at 12% YoY



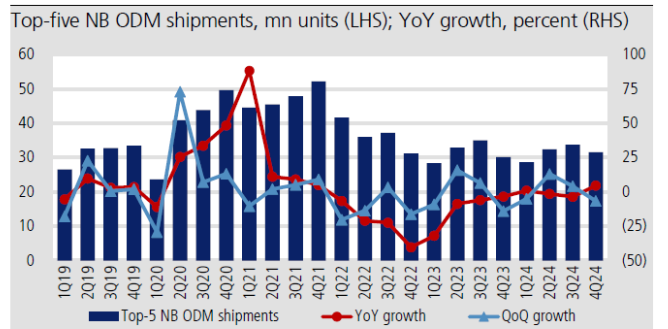
Source: Gartner, KGI Research

Figure 4: Lenovo, Apple, Asustek & Acer gained PC market share in 4Q24



Source: Gartner, KGI Research

Figure 5: Taiwan top-five NB ODM shipments to fall 7% QoQ in 4Q24, beating our forecast



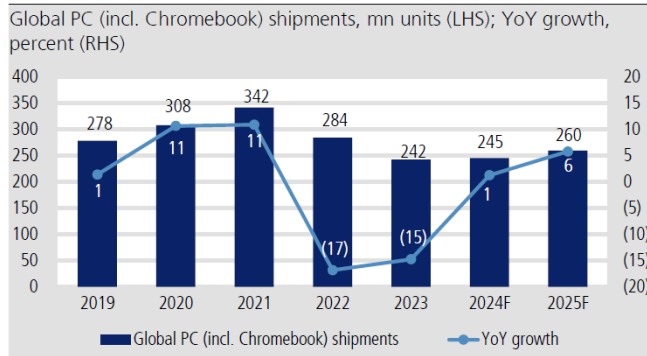
Source: Company data, KGI Research

Figure 6: Top-five NB ODMs' shipments were flat YoY in 2024 and will resume YoY growth in 2025F

NB shipment (mn units)		1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24	1Q25F	2020	2021	2022	2023	2024	2025F
Ticker	Company																			
2382 TT	Quanta	16.9	12.4	15.6	12.8	10.8	12.6	13.1	10.4	10.5	11.7	12.6	11.1	10.0	59.8	75.3	57.7	46.9	45.9	47.3
2324 TT	Compal	11.8	10.4	9.3	7.8	7.6	8.7	9.3	8.3	7.5	8.7	8.3	7.8	7.3	47.8	57.5	39.3	33.9	32.3	33.9
3231 TT	Wistron	5.6	5.8	5.2	4.6	3.9	4.6	5.2	5.3	4.6	5.1	5.2	5.3	4.9	20.4	25.6	21.2	19.1	20.2	20.6
2356 TT	Inventec	5.0	5.4	5.0	4.4	4.4	4.9	4.9	4.5	4.5	4.9	5.2	5.4	4.6	20.0	21.3	19.8	18.7	20.0	21.4
4938 TT	Pegatron	2.4	2.0	2.1	1.6	1.7	2.1	2.5	1.7	1.6	2.0	2.5	2.0	1.8	10.2	10.4	8.0	8.0	8.0	8.2
Top-5 NB ODM		41.7	36.0	37.2	31.2	28.4	32.9	35.0	30.2	28.7	32.4	33.8	31.6	28.5	158.1	190.1	146.0	126.6	126.4	131.4
YoY (%)																				
2382 TT	Quanta	(11.1)	(34.7)	(10.3)	(35.7)	(36.1)	1.6	(16.0)	(18.8)	(2.8)	(7.1)	(3.8)	6.7	(4.9)	70.4	25.9	(23.4)	(18.7)	(2.1)	3.0
2324 TT	Compal	(9.9)	(20.0)	(39.2)	(51.6)	(35.6)	(16.3)	0.0	6.4	(1.3)	0.0	(10.8)	(6.0)	(2.2)	8.8	20.4	(31.7)	(13.7)	(4.7)	5.0
3231 TT	Wistron	3.7	(4.9)	(21.2)	(38.7)	(30.4)	(20.7)	0.0	15.2	17.9	10.9	0.0	0.0	6.0	16.3	25.8	(17.2)	(9.9)	5.8	2.0
2356 TT	Inventec	4.2	8.0	(15.3)	(21.4)	(12.0)	(9.3)	(2.0)	2.3	2.3	0.0	6.1	20.0	2.0	6.1	6.5	(7.0)	(5.6)	7.0	7.0
4938 TT	Pegatron	4.2	(17.3)	(21.3)	(48.4)	(28.7)	4.5	19.9	3.1	(7.5)	(3.4)	(1.0)	18.2	13.2	1.3	2.1	(22.9)	(0.2)	(0.3)	3.0
Top-5 NB ODM		(6.5)	(20.9)	(22.3)	(40.2)	(31.9)	(8.6)	(5.9)	(3.4)	1.0	(1.4)	(3.5)	4.6	(0.4)	26.1	20.2	(23.2)	(13.3)	(0.2)	4.0
QoQ(%)																				
2382 TT	Quanta	(15.1)	(26.6)	25.8	(17.9)	(15.6)	16.7	4.0	(20.6)	1.0	11.4	7.7	(11.9)	(10.0)						
2324 TT	Compal	(26.7)	(11.9)	(10.6)	(16.1)	(2.6)	14.5	6.9	(10.8)	(9.6)	16.0	(4.6)	(6.0)	(6.0)						
3231 TT	Wistron	(25.3)	3.6	(10.3)	(11.5)	(15.2)	17.9	13.0	1.9	(13.2)	10.9	2.0	1.9	(8.0)						
2356 TT	Inventec	(10.7)	8.0	(7.4)	(12.0)	0.0	11.4	0.0	(8.2)	0.0	8.9	6.1	3.8	(15.0)						
4938 TT	Pegatron	(24.2)	(15.5)	5.0	(23.3)	4.7	23.9	20.5	(34.0)	(6.1)	29.4	23.4	(21.2)	(10.0)						
Top-5 NB ODM		(20.2)	(13.6)	3.3	(16.1)	(9.1)	15.9	6.5	(13.9)	(5.0)	13.1	4.2	(6.6)	(9.5)						

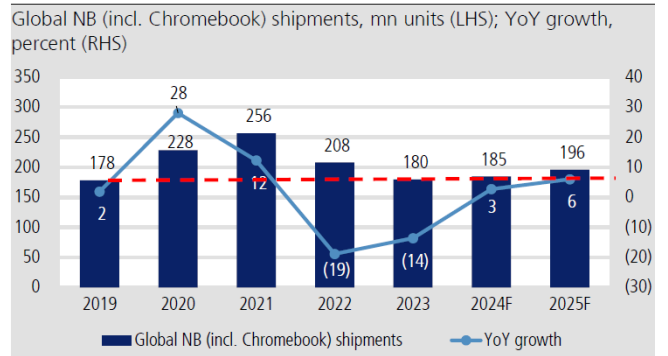
Source: Company data; KGI Research estimates

Figure 7: Global PC shipments grew 1% in 2024F, and will grow 6% YoY in 2025F



Source: Gartner; KGI Research estimates

Figure 8: After a 3% growth in 2024F, global NB shipments to grow 6% next year, exceeding pre-COVID-19 level



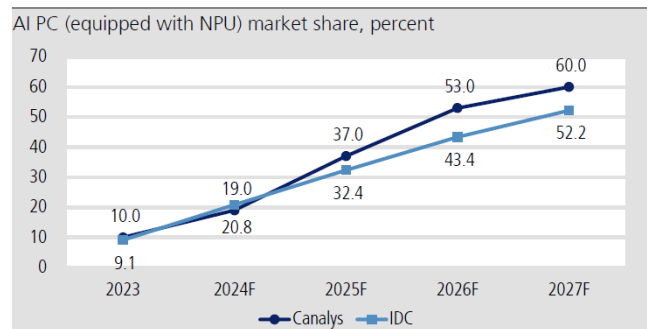
Source: Gartner; KGI Research estimates

Figure 9: AI PC to be aggressively marketed by CPU & NPU giants

Platform	Intel Meteor Lake	Intel Lunar Lake	Intel Arrow Lake	Intel Panther Lake	AMD 7040	AMD 8040	AMD AI300	AMD AI MAX 300	Qualcomm Snapdragon X Elite	Qualcomm Snapdragon X Plus	Qualcomm Canim
Microarchitecture	Redwood cove	Lion cove	Lion cove	Cougar cove	Zen 4	Zen 4	Zen 5	Zen 5	Oryon	Oryon	TBC
Launch Date	4Q23	3Q24	4Q24	2025F	2Q23	1Q24	3Q24	2025F	2Q24	3Q24	4Q25F
Process	Intel 4	Intel 18A	Intel 20A	Intel 18A	TSMC N4	TSMC N4	TSMC N4	TSMC N4	TSMC N4	TSMC N4	TSMC N4
AI architecture	Movidius VPU	Movidius VPU	TBD	TBD	Ryzen AI	Ryzen AI	Ryzen AI	Ryzen AI	Hexagon	Hexagon	Hexagon
TOPS	34 TOPS	120 TOPS	TBD	TBD	33 TOPS	39 TOPS	TBD	>70 TOPS	45 TOPS	45 TOPS	45 TOPS
NPU	11 TOPS	48 TOPS	50 TOPS	120 TOPS	10 TOPS	16 TOPS	50 TOPS	50-60 TOPS	45 TOPS	45 TOPS	45 TOPS
CPU	5 TOPS	5 TOPS									
GPU	18 TOPS	67 TOPS									

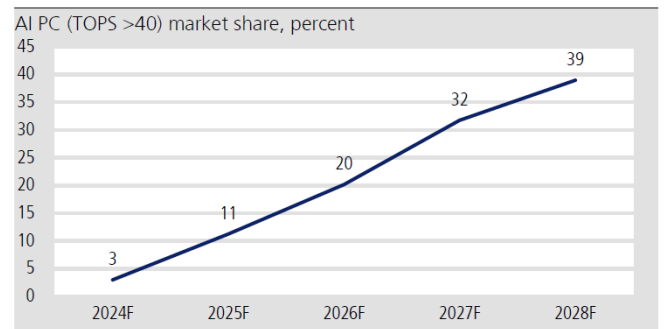
Source: Company data; KGI Research

Figure 10: Canlys & IDC forecast AI PC (equipped with NPU) market share of over 50% by 2027F



Source: Canlys; IDC; KGI Research

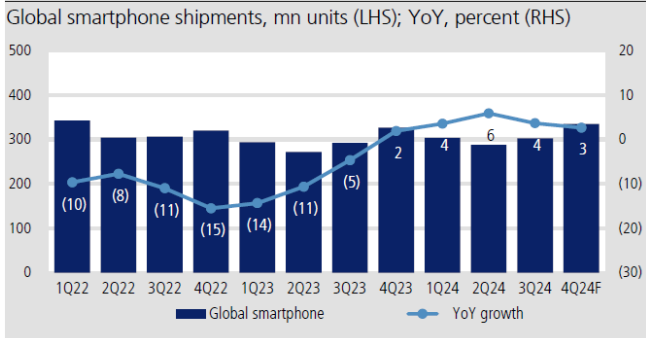
Figure 11: AI PC (TOPS >40) market share to reach double digits in 2025F



Source: IDC; Bloomberg; KGI Research

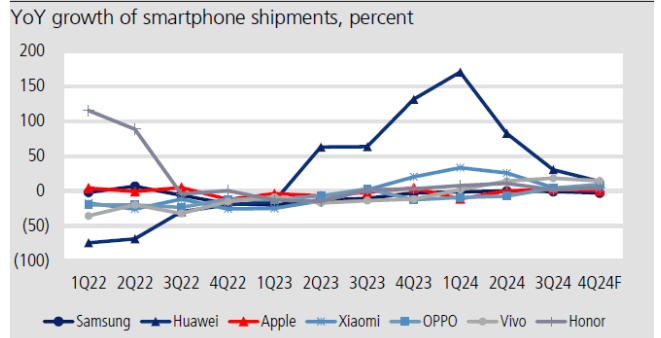
Smartphone

Figure 12: 4Q24 global smartphone shipments grew 3% YoY and 1% QoQ, beating expectation



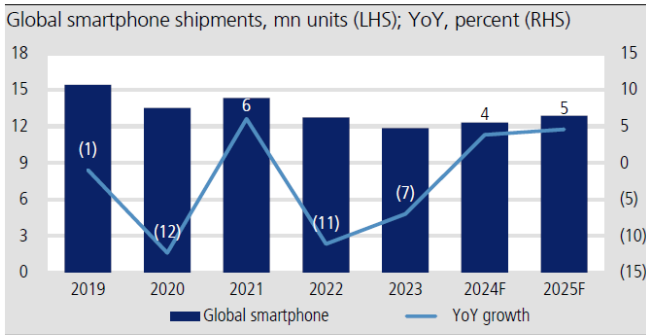
Source: Gartner, KGI Research estimates

Figure 13: Oppo, Vivo & Huawei outperformed in 4Q24 smartphone shipments YoY growth



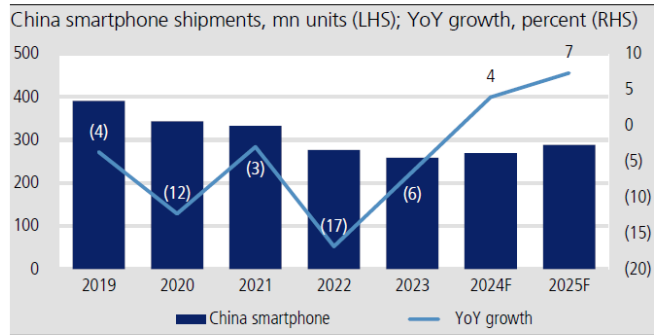
Source: Gartner, KGI Research

Figure 14: Global smartphone shipments returned to YoY growth of 4% in 2024



Source: Gartner, KGI Research estimates

Figure 15: China smartphone demand grew 4% in 2024, in line with the industry



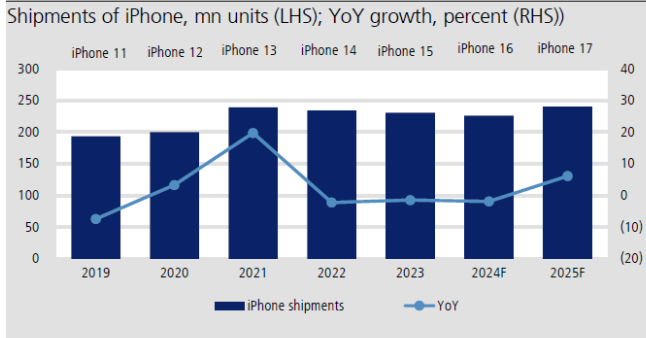
Source: Gartner, KGI Research estimates

Figure 16: iPhone SE4 will be introduced in February, boosting 1H25F demand; bigger display size, AP upgrade to A18, RAM upgrade to 8GB, with Apple Intelligence capability the key highlights

	iPhone SE 4	iPhone SE3	iPhone 16	iPhone 16 Plus	iPhone 16 Pro	iPhone 16 Pro Max
Processor	A18 Bionic (3nm)	A15 Bionic (5nm)	A18 Bionic (3nm)	A18 Bionic (3nm)	A18 Pro Bionic (3nm)	A18 Pro Bionic (3nm)
Display	6.1" OLED 60Hz refresh rate	4.7" LCD (Retina HD)	6.1" OLED (Super Retina XDR) narrow borders Dynamic island 60Hz refresh rate	6.7" OLED (Super Retina XDR) narrow borders Dynamic island 60Hz refresh rate	6.3" OLED (Super Retina XDR) narrow borders Always-On display Dynamic island 120Hz refresh rate	6.9" OLED (Super Retina XDR) narrow borders Always-On display Dynamic island 120Hz refresh rate
Display pixels	2532 x 1170 pixels 460ppi	1334 x 750 pixels 326ppi	2556 x 1179 pixels 460ppi	2796 x 1290 pixels 460ppi	2622 x 1206 pixels 460ppi	2868 x 1320 pixels 460ppi
Camera	48MP Wide (7P) 12MP Ultra Wide (5P) (same as iPhone 15)	12MP Wide	48MP Wide (7P) 12MP Ultra Wide (5P)	48MP Wide (7P) 12MP Ultra Wide (5P)	48MP Ultra Wide (6P) 12MP Telephoto (6P) upgrades to periscope lens ToF	48MP Wide (7P) 48MP Ultra Wide (6P) 12MP Telephoto (1G3P) ToF
Front camera	12MP (6P) (auto focus) (same as iPhone 15)	7MP	12MP (6P) (auto focus)	12MP (6P) (auto focus)	12MP (6P) (auto focus)	12MP (6P) (auto focus)
LiDAR		X	V	V	V	V
Emergency SOS via satellite			V	V	V	V
Connectivity	5G (Apple's own modem)	5G	5G Wi-Fi 7	5G Wi-Fi 7	5G Wi-Fi 7	5G Wi-Fi 7
Storage	from 128GB	64/128/256GB	128/256/512GB	128/256/512GB	128/256/512GB/1TB	256/512GB/1TB
Memory (RAM)	8GB	4GB LPDDR4X	8GB LPDDR5	8GB LPDDR5	8GB LPDDR5X	8GB LPDDR5X
Color		Midnight (black), Starlight (white), Product Red	Black, White, Green, Pink, Blue	Black, White, Green, Pink, Blue	Natural, Desert	Black, White, Natural, Desert
Connector	USB-C	Lightning	USB-C	USB-C	USB-C	USB-C
Wireless charging		X	V	V	V	V
Mechanical parts		Aluminum Frame	Aluminum Frame Ceramic shield	Aluminum Frame Ceramic shield	Titanium alloy frame Ceramic shield	Titanium alloy frame Ceramic shield
Starting price	from US\$499	\$429/\$479/\$579 (64/128/256 GB)	US\$799/\$899/\$1,099 (128/256/512 GB)	US\$899/\$999/\$1,199 (128/256/512 GB)	US\$999/\$1,099/\$1,499 (128/256/512 GB/1TB)	US\$1,199/\$1,399/\$1,599 (256/512 GB/1TB)
Available date	1Q25F	1Q22	3Q24	3Q24	3Q24	3Q24
Dimension		138.4x67.3x7.3mm	147.6x71.6x7.8mm	160.9x77.8x7.8mm	149.6x71.5x8.25mm	163x77.6x8.25
Weight		144g	170g	199g	199g	227g

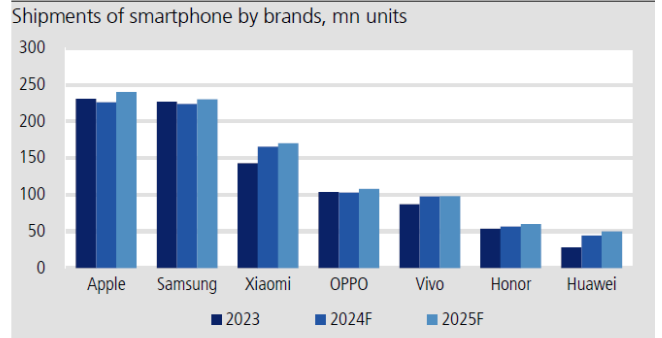
Source: Apple; KGI Research estimates

Figure 17: Shipments of iPhones declined in 2023-24F, but will recover in 2025-26F on quickened replacement cycle



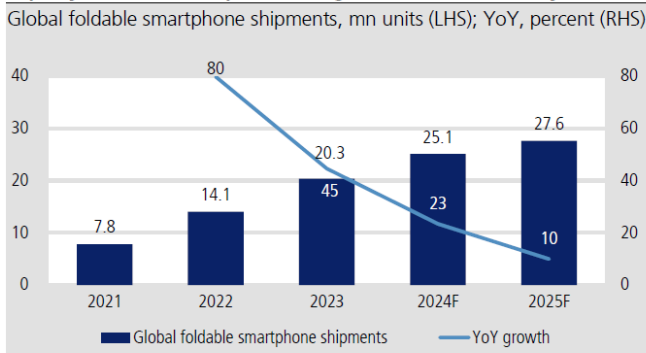
Source: Gartner, KGI Research estimates

Figure 18: Apple to remain No. 1 smartphone vendor in 2025F



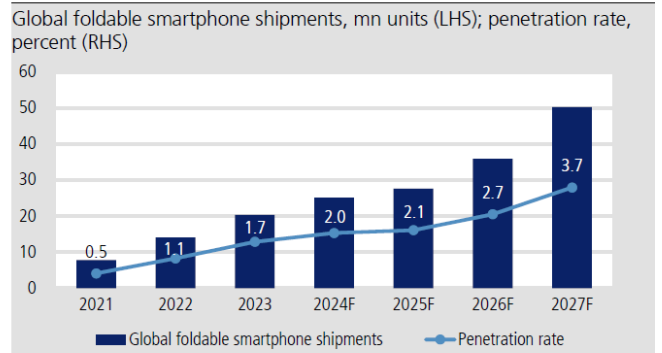
Source: Gartner, KGI Research estimates

Figure 19: Global foldable smartphone shipments to grow rapidly in 2024F, outperforming the overall industry



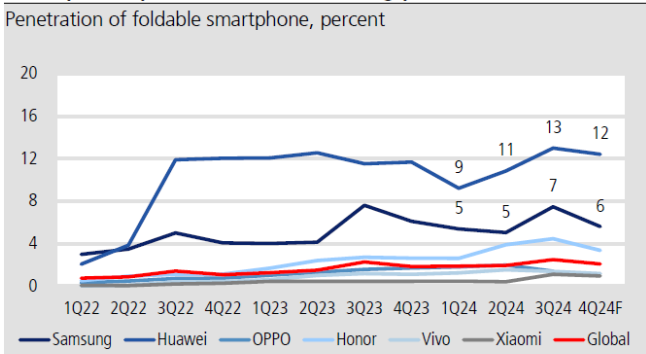
Source: Gartner, KGI Research estimates

Figure 20: Foldable smartphone penetration is rising, to reach 4% in 2027F



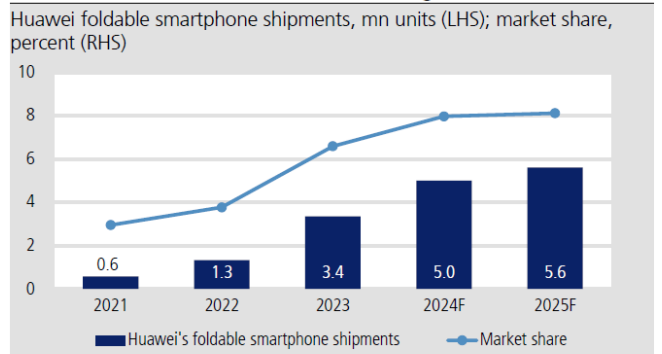
Source: Gartner, KGI Research estimates

Figure 21: Huawei & Samsung have higher foldable smartphone penetration rate among peers



Source: Gartner, KGI Research

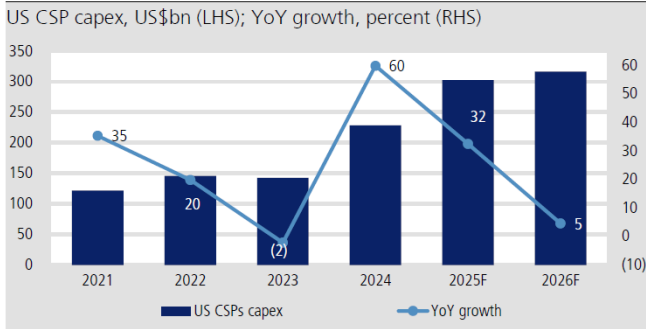
Figure 22: Huawei's foldable smartphone shipments up to 5mn units in 2024, but will see slower growth in 2025F



Source: Gartner, KGI Research estimates

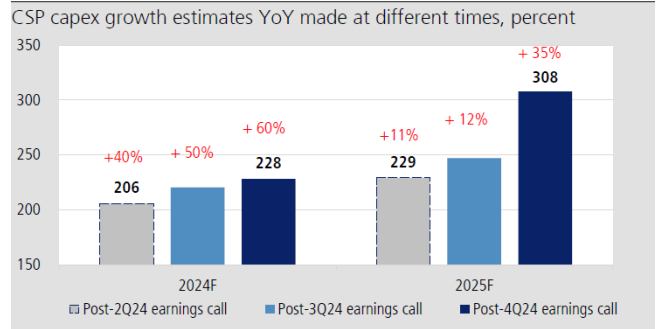
Server

Figure 23: Capex of US CSPs skyrocketed in 2024 with 60% YoY growth boosted by AI data center infrastructure expansion



Source: Bloomberg; KGI Research

Figure 24: 2025F top-four US CSPs' capex revised up in recent quarters, to 35% YoY (based on guidance)



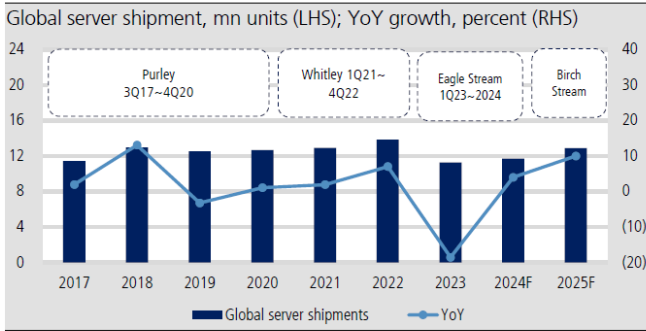
Source: Bloomberg; KGI Research

Figure 25: Major CSPs' capex growth in 2025F still strong on AI expansion

Capex, US\$mn	2019	2020	2021	2022	2023	2024	2025F	2026F
Meta	15,102	15,115	18,567	31,431	27,266	37,256	60,044	63,953
Amazon	16,861	35,044	55,396	58,321	48,133	82,999	99,842	104,390
Microsoft	13,546	17,592	23,216	24,768	35,202	55,552	67,711	74,478
Google	23,548	22,281	24,640	31,485	32,251	52,535	74,886	73,510
Baidu	931	738	1,689	1,586	1,580	1,779	1,826	1,870
Alibaba	6,517	6,379	8,311	5,014	4,477	8,256	7,674	7,577
Tencent	3,927	5,719	4,808	4,611	3,017	6,254	7,011	7,516
Hyperscale subtotal	80,432	102,867	136,627	157,216	151,926	244,632	318,995	333,294
Apple	9,247	8,702	10,388	11,692	9,564	9,995	12,112	13,410
IBM	2,286	2,618	2,062	1,346	1,245	1,127	1,589	1,672
Oracle	1,591	1,833	3,118	6,678	6,935	10,745	15,751	15,850
Paypal	704	866	908	706	623	683	915	980
eBay	508	463	444	420	456	464	491	497
Salesforce	643	710	717	798	736	707	811	890
Netflix	253	498	525	408	349	440	505	561
Uber	588	616	298	252	223	242	330	368
Enterprise subtotal	15,820	16,306	18,460	22,300	20,131	24,402	32,503	34,228
Total	96,793	119,173	155,086	179,516	172,057	269,034	351,497	367,521
YoY growth, percent	2019	2020	2021	2022	2023	2024	2025F	2026F
Meta	8.5	0.1	22.8	69.3	(13.3)	36.6	61.2	6.5
Amazon	25.6	107.8	58.1	5.3	(17.5)	72.4	20.3	4.6
Microsoft	6.0	29.9	32.0	6.7	42.1	57.8	21.9	10.0
Google	(6.3)	(5.4)	10.6	27.8	2.4	62.9	42.5	(1.8)
Baidu	(29.9)	(20.7)	129.1	(6.1)	(0.4)	12.6	2.6	2.4
Alibaba	(11.9)	(2.1)	30.3	(39.7)	(10.7)	84.4	(7.0)	(1.3)
Tencent	17.0	45.6	(15.9)	(4.1)	(34.6)	107.3	12.1	7.2
Hyperscale subtotal	4.0	27.9	32.8	15.1	(3.4)	61.0	30.4	4.5
Apple	(26.7)	(5.9)	19.4	12.6	(18.2)	4.5	21.2	10.7
IBM	(32.7)	14.5	(21.2)	(34.7)	(7.5)	(9.5)	41.0	5.3
Oracle	8.4	15.2	70.1	114.2		54.9	46.6	0.6
Paypal	(14.5)	23.0	4.8	(22.2)	(11.8)	9.6	33.9	7.1
eBay	(22.0)	(8.9)	(4.1)	(5.3)	8.5	1.7	6.0	1.1
Salesforce	8.1	10.4	1.0	11.3	(7.8)	(4.0)	14.7	9.7
Netflix	45.5	96.8	5.4	(22.3)	(14.5)	26.1	14.9	11.0
Uber	5.4	4.8	(51.6)	(15.4)	(11.5)	8.5	36.2	11.8
Enterprise subtotal	(22.0)	3.1	13.2	20.8	(9.7)	21.2	33.2	5.3
Total	(1.3)	23.1	30.1	15.8	(4.2)	56.4	30.7	4.6

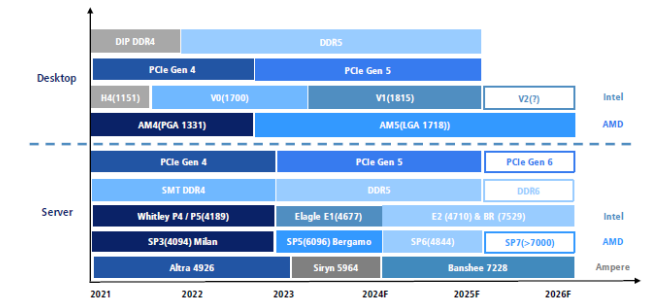
Source: Company data, Bloomberg, KGI Research

Figure 26: Server demand to grow in 2025-26F



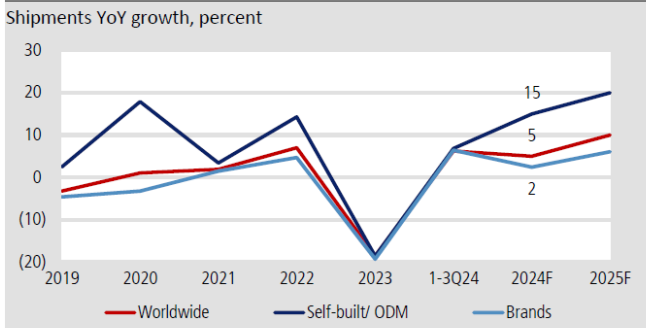
Source: Gartner, KGI Research estimates

Figure 27: Eagle Stream and Birch Stream server platform will see socket, memory & PCIe upgrades



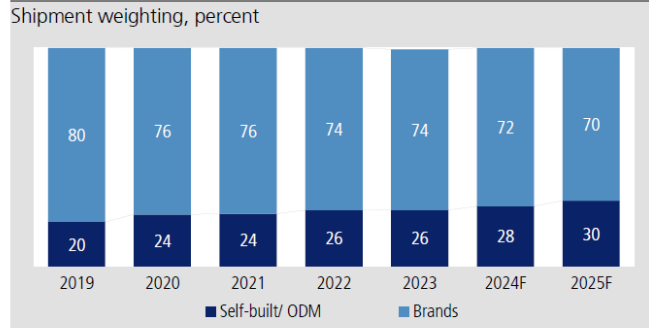
Source: Company data; KGI Research

Figure 28: Self-build/ ODM server demand outgrew brands in 1Q-3Q24



Source: Gartner, KGI Research estimates

Figure 29: Self-build/ ODM shipment weighting growing in recent years, to reach over 30% in 2025F



Source: Gartner, KGI Research estimates

Figure 30: Intel to see Eagle Stream penetration rise in 1H24; Birch Stream to launch in 3Q24

Platform	Intel Whitley	Intel Eagle Stream	Intel Eagle Stream	Intel Birch Stream	Intel Birch Stream	Intel Birch Stream	Intel Oak Stream
Time of launch	2Q21	1Q23	4Q23	2Q24	3Q24	1H26F	2Q26F
CPU	Ice Lake	Sapphire Rapids (Intel 7)	Emerald Rapids (Intel 7)	Sierra Forest (Intel 3, E-core)	Granite Rapids (Intel 3, P-core)	Clearwater Forest (Intel 18A, E-core)	Diamond Rapids (Intel 20A, P-core)
Process	10nm	10nm	10nm++	3nm (equivalent to TSMC's 5nm node)	3nm (equivalent to TSMC's 5nm node)	1.8nm (equivalent to TSMC's 2nm node)	2nm (equivalent to TSMC's 3nm node)
CPU sockets	LGA 4189	LGA 4677	LGA 4677	LGA 7529	LGA 7529	LGA 7529	LGA 9324
CPU cores	26	60	64	288	128	288	TBA
DRAM	8-channel DDR4	8-channel DDR5	DDR5	DDR5	DDR5	DDR5	TBA
PCIe	PCIe 4.0	PCIe 5.0	PCIe 5.0	PCIe 5.0	PCIe 5.0	TBA	TBA
CPU TDP	up to 270W	up to 350W	350-400W	up to 500W	up to 500W	TBA	TBA

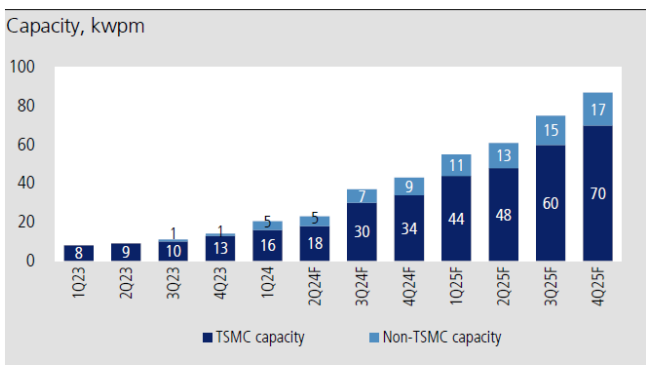
Source: Company data; KGI Research

Figure 31: AMD to see Genoa & Bergamo CPU penetration rise in 1H24; Turin CPU to launch in 3Q24

Platform	AMD Zen 3	AMD Zen 4	AMD Zen 4c	AMD Zen 4	AMD Zen 5	AMD Zen 6
Time of launch	1Q21	4Q22	1H23	3Q23	3Q24	2H25F
CPU	Milan	Genoa	Bergamo	Siena	Turin	Venice
Process	7nm+	5nm	5nm	5nm	3nm	3nm
CPU sockets	FC LGA 4094	FC LGA 6096	FC LGA 6096	FC LGA 4844	FC LGA 6096	TBA
CPU cores	64	96	128	64	256	TBA
DRAM	8-channel DDR4	12-channel DDR5	DDR5	DDR5	DDR5	TBA
PCIe	PCIe 4.0	PCIe 5.0	PCIe 5.0	PCIe 5.0	PCIe 5.0	TBA
CPU TDP	225-280W	320-400W	320-400W	70-225W	155-500W	TBA

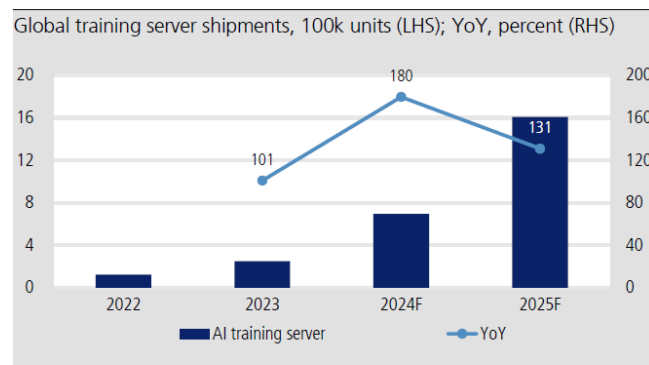
Source: Company data; KGI Research

Figure 32: CoWoS capacity expansion to support rising AI server demand



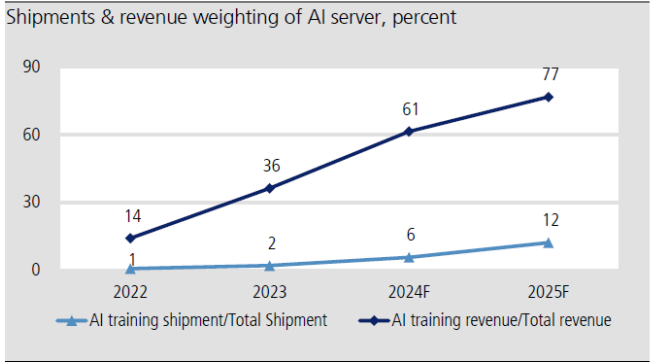
Source: KGI Research estimates

Figure 33: Training server shipments to grow at a 154% CAGR in 2023-25F



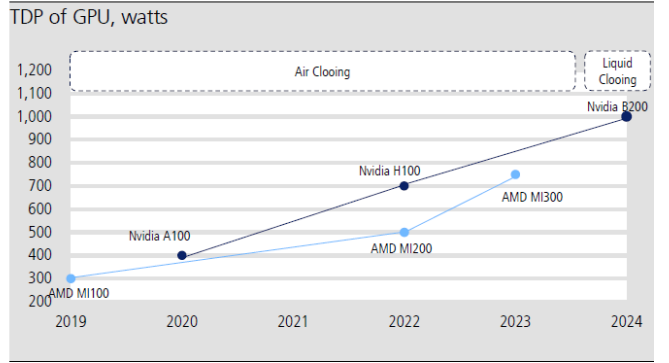
Source: Gartner; KGI Research estimates

Figure 34: AI training server to account for over 70% of total server market value & 12% of total shipments in 2025F



Source: Gartner; KGI Research estimates

Figure 35: Higher TDP of GPUs to boost liquid cooling demand



Source: Company data; KGI Research

Figure 37: Global PC shipments by brand

Vendor	PC (incl. Chromebook) shipments (mn units)																	
	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24F	2019	2020	2021	2022	2023	2024F
Lenovo	18.4	18.1	16.9	15.7	13.0	14.3	16.2	16.3	13.9	15.0	16.6	17.0	65.6	75.1	83.4	69.0	59.8	62.5
HP Inc.	15.9	13.6	12.7	13.2	11.9	13.5	13.5	14.0	12.1	13.7	13.6	13.7	62.8	68.2	74.2	55.4	52.9	53.0
Dell	13.8	13.3	12.0	10.9	9.5	10.4	10.3	10.0	9.4	10.1	9.9	10.0	46.7	50.7	59.6	50.0	40.2	39.4
Apple	7.3	5.3	8.3	5.9	5.2	4.8	5.5	6.0	5.5	5.0	5.6	6.3	18.3	22.0	26.9	26.8	21.5	22.5
Asus	5.6	4.7	5.5	4.9	3.8	3.9	5.1	4.3	3.4	4.1	5.1	4.8	15.2	17.9	21.6	20.7	17.2	17.4
Acer Group	5.5	5.1	4.5	3.6	3.5	4.0	4.4	4.0	3.8	4.4	4.6	4.1	18.4	22.5	24.3	18.7	15.9	16.9
Top-6	66.5	60.0	59.9	54.2	47.1	50.9	55.0	54.6	48.1	52.4	55.4	55.8	227.1	256.4	290.0	240.6	207.5	211.7
Other	12.3	11.5	10.7	9.1	8.3	8.7	8.8	9.0	8.2	8.3	8.5	8.6	51.4	51.8	51.7	43.6	34.8	33.6
Total	78.8	71.5	70.6	63.3	55.3	59.6	63.8	63.5	56.3	60.7	64.0	64.4	278.5	308.2	341.7	284.2	242.3	245.4
	YoY (%)																	
Lenovo	(12.0)	(11.5)	(16.5)	(28.4)	(29.2)	(20.7)	(4.2)	3.6	7.1	4.4	2.9	4.2	9.5	14.5	11.1	(17.3)	(13.4)	4.5
HP Inc.	(17.8)	(27.1)	(27.9)	(29.1)	(24.7)	(0.8)	6.4	5.6	0.9	1.7	0.2	(1.7)	3.5	8.5	8.8	(25.4)	(4.4)	0.2
Dell	6.1	(5.2)	(21.1)	(37.0)	(30.9)	(21.8)	(14.2)	(8.3)	(1.3)	(2.4)	(3.9)	(0.1)	5.4	8.6	17.4	(16.0)	(19.5)	(2.0)
Apple	13.6	(8.8)	20.4	(24.1)	(28.4)	(9.1)	(33.9)	1.3	5.8	4.2	2.6	4.6	(1.0)	20.0	22.4	(0.4)	(19.7)	4.3
Asus	20.3	(4.4)	(8.2)	(20.0)	(31.7)	(17.4)	(6.8)	(10.9)	(10.8)	6.5	(0.7)	9.8	(4.5)	17.3	21.1	(4.5)	(16.9)	1.3
Acer Group	(5.5)	(18.7)	(25.6)	(41.2)	(36.3)	(21.7)	(2.4)	11.1	7.3	11.2	4.4	3.6	(7.0)	22.1	8.0	(22.9)	(15.1)	6.5
Top-6	(5.2)	(14.3)	(16.8)	(30.4)	(29.2)	(15.3)	(8.1)	0.7	2.2	3.0	0.7	2.3	3.6	12.9	13.1	(17.0)	(13.8)	2.0
Other	(8.4)	(7.3)	(14.1)	(32.1)	(32.6)	(24.2)	(17.5)	(1.5)	(1.1)	(4.3)	(3.4)	(4.6)	(7.5)	0.8	(0.2)	(15.7)	(20.2)	(3.4)
Total	(5.7)	(13.3)	(16.4)	(30.6)	(29.7)	(16.7)	(9.6)	0.3	1.7	1.9	0.2	1.4	1.4	10.7	10.9	(16.8)	(14.7)	1.3
	QoQ (%)																	
Lenovo	(16.2)	(1.6)	(6.6)	(6.9)	(17.2)	10.2	12.9	0.6	(14.4)	7.3	11.3	1.9						
HP Inc.	(14.9)	(14.5)	(6.3)	4.0	(9.6)	12.7	0.5	3.2	(13.7)	13.6	(1.0)	1.2						
Dell	(20.1)	(3.7)	(9.6)	(9.5)	(12.3)	8.9	(0.7)	(3.3)	(5.6)	7.7	(2.2)	0.5						
Apple	(6.2)	(27.5)	55.7	(28.3)	(11.5)	(8.0)	13.3	9.9	(7.6)	(9.4)	11.5	12.0						
Asus	(8.1)	(16.0)	17.5	(11.7)	(21.5)	1.5	32.6	(15.6)	(21.4)	21.2	23.6	(6.7)						
Acer Group	(9.4)	(7.9)	(11.8)	(20.1)	(1.8)	13.2	10.0	(9.1)	(5.2)	17.3	3.3	(9.8)						
Top-6	(14.6)	(9.7)	(0.2)	(9.5)	(13.1)	8.1	8.1	(0.8)	(11.8)	8.8	5.8	0.7						
Other	(8.8)	(6.5)	(6.7)	(14.7)	(9.4)	5.1	1.7	1.8	(9.0)	1.7	2.6	0.5						
Total	(13.7)	(9.2)	(1.3)	(10.3)	(12.6)	7.6	7.2	(0.5)	(11.4)	7.8	5.4	0.7						
	Global market share (%)																	
Lenovo	23.3	25.3	23.9	24.8	23.5	24.1	25.3	25.6	24.7	24.6	26.0	26.3	23.6	24.4	24.4	24.3	24.7	25.5
HP Inc.	20.1	19.0	18.0	20.9	21.6	22.6	21.2	22.0	21.4	22.6	21.2	21.3	22.6	22.1	21.7	19.5	21.8	21.6
Dell	17.5	18.6	17.0	17.2	17.2	17.5	16.2	15.7	16.7	16.7	15.5	15.5	16.8	16.5	17.4	17.6	16.6	16.1
Apple	9.3	7.4	11.7	9.4	9.5	8.1	8.6	9.4	9.8	8.3	8.8	9.8	6.6	7.1	7.9	9.4	8.9	9.2
Asus	7.1	6.6	7.8	7.7	6.9	6.5	8.0	6.8	6.0	6.8	8.0	7.4	5.5	5.8	6.3	7.3	7.1	7.1
Acer Group	7.0	7.1	6.4	5.7	6.4	6.7	6.9	6.3	6.7	7.3	7.2	6.4	6.6	7.3	7.1	6.6	6.6	6.9
Top-6	84.4	84.0	84.8	85.6	85.1	85.4	86.2	85.9	85.5	86.3	86.7	86.7	81.6	83.2	84.9	84.7	85.6	86.3
Other	15.6	16.0	15.2	14.4	14.9	14.6	13.8	14.1	14.5	13.7	13.3	13.3	18.4	16.8	15.1	15.3	14.4	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Gartner, KGI Research

Figure 38: Global smartphone shipments by brand

Vendor	Global smartphone shipments (mn units)																	
	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24F	2019	2020	2021	2022	2023	2024F
Samsung	75.2	61.7	64.8	56.5	60.1	53.6	58.0	55.0	59.4	53.6	57.5	53.5	296.2	253.0	272.3	258.2	226.7	224.1
Apple	61.0	48.9	50.9	73.0	58.7	45.6	49.9	76.3	52.2	45.7	51.3	77.0	193.5	199.8	239.2	233.9	230.6	226.1
Xiaomi	40.5	37.8	39.3	33.3	30.4	32.5	40.0	40.1	40.6	41.0	42.1	42.0	126.0	145.8	189.3	151.0	143.0	165.6
OPPO	30.8	26.9	25.7	28.8	27.0	25.0	26.6	25.1	24.5	23.2	27.8	27.5	118.7	111.8	138.2	112.2	103.8	103.0
Vivo	25.0	25.8	24.4	24.7	22.8	21.4	21.1	21.8	23.2	24.5	24.9	25.0	109.6	107.4	136.0	99.9	87.1	97.6
Lenovo	11.7	11.6	10.7	10.3	10.6	10.1	11.7	13.3	12.7	12.8	14.2	15.5	39.3	33.9	51.1	44.3	45.7	55.1
Honor	14.4	14.5	13.5	14.4	12.5	12.3	13.8	14.8	13.5	13.7	14.0	15.5	NA	NA	42.8	56.7	53.4	56.7
Tecno Telecom	8.6	8.3	8.8	9.4	8.7	9.1	9.2	9.9	9.7	9.8	10.0	9.4	21.3	21.3	31.2	35.1	37.0	38.9
TCL Communication	4.3	4.3	3.9	4.0	3.7	3.7	4.3	4.2	4.0	3.6	3.7	3.7	17.7	8.5	13.7	16.6	16.0	14.9
Huawei	5.1	3.7	4.5	4.6	4.3	6.1	7.3	10.5	11.6	11.1	9.5	12.0	240.6	182.6	43.3	17.8	28.2	44.2
Other	66.5	60.8	59.6	61.5	55.0	52.4	50.2	55.4	52.9	49.3	47.9	54.2	377.6	287.1	275.5	248.3	213.0	204.2
Top-10	276.5	243.5	246.8	258.9	238.8	219.6	241.9	271.2	251.4	238.8	255.0	281.1	1,163.0	1,064.2	1,157.2	1,025.7	971.5	1,026.2
Total	342.9	304.3	306.4	320.4	293.8	272.0	292.1	326.6	304.3	288.0	302.8	335.3	1,540.7	1,351.3	1,432.7	1,274.0	1,184.5	1,230.4
	YoY (%)																	
Samsung	(1.8)	6.8	(6.0)	(18.1)	(20.1)	(13.0)	(10.6)	(2.6)	(1.2)	0.0	(0.8)	(2.7)	0.4	(14.6)	7.6	(5.2)	(12.2)	(1.2)
Apple	4.3	(0.7)	5.1	(12.0)	(3.8)	(6.7)	(1.9)	4.6	(11.2)	0.1	2.7	0.9	(7.4)	3.3	19.7	(2.2)	(1.4)	(2.0)
Xiaomi	(17.2)	(25.9)	(11.5)	(25.7)	(24.9)	(14.0)	1.8	20.3	33.5	25.9	5.0	4.8	3.0	15.7	29.8	(20.2)	(5.3)	15.8
OPPO	(19.9)	(20.0)	(23.4)	(11.7)	(12.1)	(7.1)	3.3	(12.6)	(9.3)	(7.2)	4.4	9.4	(0.1)	(5.8)	23.7	(18.8)	(7.5)	(0.8)
Vivo	(35.6)	(19.8)	(32.2)	(15.1)	(8.8)	(17.2)	(13.7)	(11.5)	2.0	14.2	18.4	14.5	7.5	(2.0)	26.7	(26.6)	(12.8)	12.1
Lenovo	8.4	(5.3)	(18.4)	(30.9)	(9.8)	(12.5)	9.4	28.8	20.3	25.8	20.9	16.5	0.4	(13.7)	50.5	(13.3)	3.1	20.6
Honor	115.4	88.7	(4.4)	0.5	(12.7)	(14.9)	1.6	3.3	7.8	11.0	2.0	4.5	NA	NA	NA	32.6	(5.8)	6.1
Tecno Telecom	14.2	14.3	14.5	7.7	1.9	10.2	4.1	5.1	11.8	7.3	8.6	(5.1)	10.1	(0.3)	46.7	12.5	5.3	5.4
TCL Communication	40.2	35.8	8.5	6.1	(14.7)	(13.0)	8.6	5.9	6.9	(5.0)	(14.6)	(12.8)	(19.0)	(52.1)	61.2	21.3	(3.8)	(6.9)
Huawei	(74.1)	(68.5)	(29.6)	(19.7)	(15.2)	63.0	63.5	131.4	170.4	82.7	30.7	13.9	18.6	(24.1)	(76.3)	(59.0)	58.4	56.8
Other	(6.1)	(4.6)	(11.9)	(16.1)	(17.3)	(13.8)	(15.8)	(9.8)	(3.8)	(6.0)	(4.6)	(2.2)	(11.1)	(24.0)	(4.1)	(9.8)	(14.2)	(4.1)
Top-10	(10.5)	(8.5)	(10.8)	(15.3)	(13.6)	(9.8)	(2.0)	4.7	5.3	8.7	5.4	3.7	2.9	(8.5)	8.7	(11.4)	(5.3)	5.6
Total	(9.7)	(7.7)	(11.0)	(15.5)	(14.3)	(10.6)	(4.7)	1.9	3.6	5.9	3.7	2.7	(0.9)	(12.3)	6.0	(11.1)	(7.0)	3.9
	QoQ (%)																	
Samsung	9.0	(18.0)	5.2	(12.9)	6.4	(10.7)	8.1	(5.2)	8.0	(9.7)	7.3	(7.0)						
Apple	(26.4)	(19.8)	4.1	43.4	(19.5)	(22.3)	9.5	52.8	(31.6)	(12.5)	12.3	50.1						
Xiaomi	(9.6)	(6.6)	4.0	(15.3)	(8.8)	7.0	23.1	0.0	1.3	0.9	2.7	(0.1)						
OPPO	(5.6)	(12.5)	(4.3)	11.8	(6.1)	(7.5)	6.5	(5.5)	(2.5)	(5.4)	19.8	(1.0)						
Vivo	(14.2)	3.6	(5.5)	1.1	(7.7)	(6.0)	(1.6)	3.6	6.4	5.3	2.0	0.2						
Lenovo	(21.8)	(1.0)	(7.6)	(3.4)	2.1	(3.9)	15.4	13.7	(4.6)	0.4	10.9	9.5						
Honor	0.4	0.7	(6.4)	6.1	(12.7)	(1.8)	11.7	7.9	(8.9)	1.2	2.7	10.5						
Tecno Telecom	(2.2)	(3.2)	6.9	6.5	(7.5)	4.7	0.9	7.5	(1.6)	0.5	2.1	(6.0)						
TCL Communication	15.1	(1.0)	(8.2)	1.5	(7.4)	0.9	14.5	(1.0)	(6.6)	(10.3)	3.0	1.1						
Huawei	(10.9)	(26.3)	19.8	2.1	(5.9)	41.7	20.2	44.5	9.9	(4.3)	(14.1)	25.9						
Other	(9.4)	(8.5)	(2.0)	3.1	(10.6)	(4.6)	(4.2)	10.4	(4.6)	(6.8)	(2.8)	13.2						
Top-10	(9.6)	(11.9)	1.3	4.9	(7.8)	(8.0)	10.2	12.1	(7.3)	(5.0)	6.8	10.2						
Total	(9.6)	(11.3)	0.7	4.6	(8.3)	(7.4)	7.4	11.8	(6.8)	(5.3)	5.1	10.7						
	Global market share (%)																	
Samsung	21.9	20.3	21.2	17.6	20.5	19.7	19.9	16.8	19.5	18.6	19.0	16.0	19.2	18.7	19.0	20.3	19.1	18.2
Apple	17.8	16.1	16.6	22.8	20.0	16.8	17.1	23.4	17.1	15.9	16.9	23.0	12.6	14.8	16.7	18.4	19.5	18.4
Xiaomi	11.8	12.4	12.8	10.4	10.3	12.0	13.7	12.3	13.3	14.2	13.9	12.5	8.2	10.8	13.2	11.9	12.1	13.5
OPPO	9.0	8.8	8.4	9.0	9.2	9.2	9.1	7.7	8.1	8.0	9.2	8.2	7.7	8.3	9.6	8.8	8.8	8.4
Vivo	7.3	8.5	8.0	7.7	7.7	7.9	7.2	6.7	7.6	8.5	8.2	7.5	7.1	7.9	9.5	7.8	7.4	7.9
Lenovo	3.4	3.8	3.5	3.2	3.6	3.7	4.0	4.1	4.2	4.4	4.7	4.6	2.6	2.5	3.6	3.5	3.9	4.5
Honor	4.2	4.8	4.4	4.5	4.3	4.5	4.7	4.5	4.4	4.7	4.6	4.6	NA	NA	3.0	4.5	4.5	4.6
Tecno Telecom	2.5	2.7	2.9	2.9	3.0	3.4	3.2	3.0	3.2	3.4	3.3	2.8	1.4	1.6	2.2	2.8	3.1	3.2
TCL Communication	1.3	1.4	1.3	1.3	1.3	1.4	1.5	1.3	1.3	1.2	1.2	1.1	1.2	0.6	1.0	1.3	1.3	1.2
Huawei	1.5	1.2	1.5	1.4	1.5	2.2	2.5	3.2	3.8	3.8	3.1	3.6	15.6	13.5	3.0	1.4	2.4	3.6
Other	19.4	20.0	19.5	19.2	18.7	19.3	17.2	17.0	17.4	17.1	15.8	16.2	24.5	21.2	19.2	19.5	18.0	16.6
Top-10	80.6	80.0	80.5	80.8	81.3	80.7	82.8	83.0	82.6	82.9	84.2	83.8	75.5	78.8	80.8	80.5	82.0	83.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Gartner, KGI Research

Figure 39: Global server shipments by brand

Vendor	Server shipments ('000 units)																
	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	2019	2020	2021	2022	2023	1-3Q24
Dell EMC	542	496	526	484	366	362	343	366	332	365	363	2,050	1,950	2,064	2,048	1,437	1,060
HPE	300	269	345	380	252	238	209	212	231	235	216	1,546	1,392	1,319	1,294	911	682
Inspur Electronics	343	340	348	337	212	285	333	275	319	329	354	1,131	1,230	1,323	1,368	1,105	1,002
Lenovo	126	197	236	216	187	171	184	186	200	212	208	755	702	773	775	728	619
Supernico	171	208	227	217	151	120	116	161	147	127	147	N.A.	496	614	823	548	421
xFusion Digital Technologies	120	136	139	144	90	114	105	135	120	142	144	N.A.	N.A.	154	539	444	407
H3C	88	109	92	132	73	90	79	96	99	113	79	254	345	458	422	339	290
PowerLeader	61	60	62	75	47	54	57	65	46	60	63	109	119	150	258	222	169
Sugon	28	36	50	46	29	52	50	55	31	42	49	347	209	213	160	186	123
Others	1,528	1,536	1,354	1,722	1,228	1,240	1,276	1,388	1,228	1,241	1,249	6,344	6,228	5,850	6,140	5,132	3,718
Total	3,307	3,387	3,379	3,754	2,679	2,828	2,830	3,017	2,820	2,947	2,948	12,537	12,672	12,918	13,827	11,353	8,715
	YoY (%)																
Dell EMC	11.0	(6.3)	5.6	(11.7)	(32.6)	(26.9)	(34.8)	(24.2)	(9.3)	0.9	5.8	(9.6)	(4.9)	5.8	(0.8)	(29.8)	(1.0)
HPE	(7.1)	(20.6)	9.0	11.2	(16.0)	(11.6)	(39.3)	(44.2)	(8.3)	(1.1)	3.3	(8.6)	(10.0)	(5.2)	(2.0)	(29.6)	(2.4)
Inspur Electronics	48.8	(2.3)	(2.3)	(13.2)	(38.2)	(16.2)	(4.2)	(18.5)	50.4	15.6	6.1	6.6	8.8	7.5	3.4	(19.2)	20.7
Lenovo	(25.4)	(2.4)	9.1	16.2	48.8	(13.2)	(22.1)	(13.8)	6.7	23.9	13.1	(1.3)	(7.1)	10.1	0.3	(6.0)	14.3
Supernico	28.8	32.2	49.0	26.6	(12.1)	(42.3)	(48.7)	(25.7)	(2.5)	6.0	26.0	N.A.	N.A.	23.8	34.1	(33.4)	8.7
xFusion Digital Technologies	N.A.	N.A.	N.A.	(6.3)	(25.0)	(15.8)	(24.9)	(6.4)	33.8	24.3	37.8	N.A.	N.A.	N.A.	250.5	(17.7)	31.6
H3C	2.4	0.4	(28.3)	(1.3)	(16.8)	(17.3)	(14.2)	(27.4)	34.4	25.0	(0.3)	43.1	35.7	32.6	(7.8)	(19.7)	19.6
PowerLeader	206.8	171.3	126.1	(7.2)	(22.6)	(10.6)	(8.2)	(13.3)	(1.6)	11.5	10.7	26.4	9.6	25.9	71.4	(13.6)	7.3
Sugon	(5.0)	6.0	3.9	(54.7)	4.8	43.2	(0.9)	20.3	5.9	(18.4)	(1.2)	4.3	(39.8)	1.9	(24.8)	16.1	(6.4)
Others	21.3	2.1	(3.1)	2.0	(19.6)	(19.3)	(5.8)	(19.4)	(0.0)	0.1	(2.1)	(3.5)	(1.8)	(6.1)	5.0	(16.4)	(0.7)
Total	20.7	4.4	7.6	(1.1)	(19.0)	(16.5)	(16.3)	(19.6)	5.3	4.2	4.2	(3.2)	1.1	1.9	7.0	(17.9)	4.5
	QoQ (%)																
Dell EMC	(1.0)	(8.6)	6.2	(8.1)	(24.4)	(1.0)	(5.2)	6.8	(9.5)	10.2	(0.5)						
HPE	(12.4)	(10.2)	28.1	10.4	(33.9)	(5.4)	(12.1)	1.4	8.8	2.0	(8.1)						
Inspur Electronics	(11.6)	(0.9)	2.3	(3.2)	(37.1)	34.4	17.0	(17.5)	16.1	3.3	7.3						
Lenovo	(32.3)	56.3	20.0	(8.4)	(13.4)	(8.7)	7.6	1.4	7.2	6.0	(1.9)						
Supernico	0.1	21.5	9.0	(4.6)	(30.5)	(20.3)	(3.0)	38.3	(8.9)	(13.3)	15.3						
xFusion Digital Technologies	(22.0)	13.1	2.8	3.3	(37.6)	26.9	(8.3)	28.7	(10.7)	17.9	1.7						
H3C	(34.1)	23.5	(15.2)	43.1	(44.5)	22.9	(12.1)	21.1	2.8	14.2	(29.9)						
Cisco	(22.4)	21.3	(17.0)	(22.7)	11.1	(15.0)	21.0	4.2	(14.0)	(11.0)	3.1						
PowerLeader	(25.4)	(1.2)	3.2	21.8	(37.8)	14.3	6.0	15.0	(29.3)	29.4	5.2						
ZTE	N.A.	N.A.	N.A.	N.A.	N.A.	130.4	(23.8)	(1.2)	(10.5)	16.6	(4.6)						
Sugon	(72.1)	28.6	38.1	(8.4)	(35.6)	75.9	(4.4)	11.1	(43.3)	35.5	15.7						
Fujitsu	(9.3)	(17.1)	43.1	12.3	(3.7)	(28.1)	1.7	(8.3)	6.1	3.2	(4.5)						
Huawei	(62.9)	23.6	30.2	56.9	(5.0)	15.9	12.4	32.3	(12.1)	10.3	10.2						
Others	(9.5)	0.6	(11.9)	27.2	(28.7)	1.0	2.8	8.8	(11.6)	1.1	0.6						
Others	(8.4)	0.2	(12.9)	28.9	(30.3)	2.2	2.2	8.9	(11.8)	1.2	0.4						
Total	(12.8)	2.4	(0.2)	11.1	(28.6)	5.6	0.1	6.6	(6.5)	4.5	0.0						
	Global market share (%)																
Dell EMC	16.4	14.6	15.6	12.9	13.6	12.8	12.1	12.1	11.8	12.4	12.3	16.4	15.4	16.0	14.8	12.7	12.2
HPE	9.1	7.9	10.2	10.1	9.4	8.4	7.4	7.0	8.2	8.0	7.3	12.3	11.0	10.2	9.4	8.0	7.8
Inspur Electronics	10.4	10.0	10.3	9.0	7.9	10.1	11.8	9.1	11.3	11.2	12.0	9.0	9.7	10.2	9.9	9.7	11.5
Lenovo	3.8	5.8	7.0	5.8	7.0	6.0	6.5	6.2	7.1	7.2	7.1	6.0	5.5	6.0	5.6	6.4	7.1
Supernico	5.2	6.1	6.7	5.8	5.6	4.2	4.1	5.3	5.2	4.3	5.0	N.A.	3.9	4.8	6.0	4.8	4.8
xFusion Digital Technologies	3.6	4.0	4.1	3.8	3.4	4.0	3.7	4.5	4.3	4.8	4.9	N.A.	N.A.	1.2	3.9	3.9	4.7
H3C	2.7	3.2	2.7	3.5	2.7	3.2	2.8	3.2	3.5	3.8	2.7	2.0	2.7	3.5	3.1	3.0	3.3
PowerLeader	1.8	1.8	1.8	2.0	1.7	1.9	2.0	2.2	1.6	2.0	2.1	0.9	0.9	1.2	1.9	2.0	1.9
Sugon	0.9	1.1	1.5	1.2	1.1	1.8	1.8	1.8	1.1	1.4	1.7	2.8	1.7	1.6	1.2	1.6	1.4
Others	46.2	45.4	40.1	45.9	45.8	43.9	45.1	46.0	43.5	42.1	42.4	50.6	49.1	45.3	44.4	45.2	42.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Gartner, KGI Research

All the above named KGI analyst(s) is SFC licensed person accredited to KGI Asia Ltd to carry on the relevant regulated activities. Each of them and/or his/her associate(s) does not have any financial interest in the respectively covered stock, issuer and/or new listing applicant.

Disclaimer

All the information contained in this report is not intended for use by persons or entities located in or residing in jurisdictions which restrict the distribution of this information by KGI Asia Limited ("KGI") or an affiliate of KGI. Such information shall not constitute investment advice, or an offer to sell, or an invitation, solicitation or recommendation to subscribe for or invest in any securities or investment products or services nor a distribution of information for any such purpose in any jurisdiction. In particular, the information herein is not for distribution and does not constitute an offer to sell or the solicitation of any offer to buy any securities in the United States of America, or to or for the benefit of United States persons (being residents of the United States of America or partnerships or corporations organised under the laws of the United States of America or any state, territory or possession thereof). All the information contained in this report is for general information and reference purpose only without taking into account of any particular investor's objectives, financial situation or needs. Such information is not intended to provide professional advice and should not be relied upon in that regard.

Some of KGI equity research and earnings estimates are available electronically on www.kgi.com.hk. Please contact your KGI representative for information. The information and opinions in this report are those of KGI internal research activity. KGI does not make any representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained in this report. The information and opinions contained in this report are subject to change without any notice. No person accepts any liability whatsoever for any loss however arising from any use of this report or its contents. This report is not to be construed as an invitation or offer to buy or sell securities and/or to participate in any investment activity. This report is being supplied solely for informational purposes and may not be redistributed, reproduced or published (in whole or in part) by any means for any purpose without the prior written consent of KGI. Members of the KGI group and their affiliates may provide services to any companies and affiliates of such companies mentioned herein. Members of the KGI group, their affiliates and their directors, officers and employees may from time to time have a position in any securities mentioned herein.