IT Hardware

AWS Trainium 3 to boost 2H26F AI-related sales

Key message

1. Amazon Web Services (AWS; US) migrated its ASIC AI chip from Trainium 2 (T2) to Trainium 3 (T3) in late-2Q26, and air-cooled server shipments will commence in 2H26F and liquid-cooled server shipments from 4Q26F, with increased volume in 2027F.
2. We estimate 2026F T3 AI server shipments to grow 30-50% YoY, with chip shipments up to around 2.4mn units this year and up to 3.3-3.4mn units in 2027F.
3. Drivers are demand from Anthropics (US) and OpenAI (US). Key server upgrades include a rack design with scale-up switch inside the rack and liquid-cooling (T3 Max), a new design from previous air-cooling solutions for T2. PCB and CCL, power supply, BBU and AEC are also upgraded for T3, boosting L11 rack ASP.
4. T3 ASIC chip design service partners are Alchip (3661 TT) and Marvell (US). L11 ASIC AI server rack will be mainly assembled by Wiwynn (6669 TT) and some by Jabil (US), while UBB is made by Accton (2345 TT), Fabrinet (US) and Wiwynn, switch tray by Wiwynn, NIC by Accton and USI (CN), and CPU tray by Hon Hai (2317 TT). Key beneficiaries of the T3-related demand hike are Asia Vital Components (3017 TT), Taiwan Microloops (6831 TT), Delta (2308 TT), Lite-On IT (2301 TT), AES-KY (6781 TT), Dynapack (3211 TT), Co-Tech (8358 TT), TUC (6274 TT), Elite Material Corp. (2383 TT), Gold Circuit (2368 TT), Chenbro (8210 TT) and King Slide (2059 TT).

Event

Amazon Web Services (AWS; US) migrated its ASIC AI chip from Trainium 2 (T2) to Trainium 3 (T3) in late-2Q26, and air-cooled server shipments will commence in 2H26F and liquid-cooled server shipments from 4Q26F, with increased volume in 2027F. We estimate AI server shipments in T3 generation (2H26-2027F) should grow 30-50% from T2, with T3 chip shipments up to 3.3-3.4mn units in 2027F.

Impact

Growing demand for T3 ASIC AI chip. We expect strong demand for AWS' ASIC chip from several clients and believe the computing power of its T3 server will be double that of T2, with 40% higher energy efficiency. Anthropic (US) has committed to investing over US$100bn in AWS over the next 10 years, including the adoption of T2 and T3 chips to build, train and run its Claude AI models. We estimate Anthropic will achieve a combined scale of 1GW for T2 and T3 and bring them into operation by end-2026F. OpenAI (US) plans to utilize 2GW of AWS' Trainium chip capacity to assist in building generative AI applications and agent tools, and to enable customers to build, deploy, and manage AI agents. We estimate AWS' Trainium chip shipments to grow from 1.6mn units in 2025 to around 2.4mn units in 2026F, and further to 3.3-3.4mn units in 2027F. We estimate T3 chip shipments in 2H26F of 1.5-2.0mn units, rising to over 3mn unis next year. Air-cooled T3 (PDS) is the mainstream ASIC chip, while liquid-cooled T3 (Max) will see increased ramp up in 2027F, with liquid-cooling penetration rising from less than 10% in 2H26F to around 40-50% next year. Based on T3 ASIC rack specs, there will be 32 chips in an air-cooled rack (two chips per tray, 16 trays per rack), and 72 chips in a liquid-cooled rack (four chips per tray, 18 trays per rack). Inside each rack will also be switch trays to connect ASICs, with four trays for air-cooled racks and 10 for liquid-cooled. T3 ASIC chip design service partners are Alchip (3661 TT, NT$4,035 , OP) and Marvell (US). L11 ASIC AI server rack will be mainly assembled by Wiwynn (6669 TT, NT$5,015, OP) and some by Jabil (US), while UBB is made by Accton (2345 TT, NT$2,455, OP), Fabrinet (US) and Wiwynn, switch tray by Wiwynn, NIC by Accton and USI (CN), and CPU tray by Hon Hai (2317 TT, NT$237, OP).

Supply chain sales taking off from 3Q26F; switch tray design to fully connect ASIC & CPU, liquid-cooled solutions to be main upgrade. Several Taiwanese AWS suppliers reported June sales growth MoM, and most expect QoQ sales growth in 3Q26F on T3-related shipments ramp-up, such as Asia Vital Components (AVC; 3017 TT, NT$2450, OP), Taiwan Microloops (6831 TT, NT$775, NR), Accton and Elite Material Corp. (EMC; 2383 TT, NT$5,220, OP). When Nvidia (US) launched Oberon architecture (GB NVL72) featuring a fully-interconnected scale-up topology with a 72-chip cluster scale, numerous ASIC chip and GPU manufacturers adjusted future rack design roadmaps to emulate this architecture, and AWS was the first (apart from Nvidia) to deliver and deploy a fully-interconnected, switched, scaled-up architecture for T3 PDS. Inside the rack, it has four switch trays to connect 32 ASIC ICs and four CPUs in a PDS air-cooled rack, and 10 switch trays to connect 72 ASIC ICs and 18 Graviton CPUs in T3 Max liquid-cooled models. Each T3 PDS rack is designed with two power (1U each) and two BBU (2U each) trays, while each T3 Max is designed with three power trays (1U each) and three BBU (2U each) trays. We expect BBU suppliers like AES-KY (6781 TT, NT$1,175, OP) and Dynapack (3211 TT, NT$389, OP) to be the major beneficiaries. In the T3 PDS air-cooled design, ASIC chip and CPU thermal content value will expand by 20-30% from T2 due to its 3D VC design, while CPU and NIC demand will expand on stronger rack shipments. In the T3 Max liquid-cooled design, the ASP of ASIC chip and CPU could grow 3-4 times from the air-cooling thermal content value. We expect AVC, Cooler Master (TW; unlisted) and Taiwan Microloops to be the main air- and liquid-cooling business beneficiaries. For heat spreader stiffener, T3 ASP will grow 10-20% versus T2 on a larger chip size, Jentech (3653 TT, NT$3,195, OP) being the key supplier.

PCB/ CCL & power supply spec upgrades in T3. T3 maintains a 26-layer PCB configuration; however, with CCL upgraded to HVLP4, we estimate CCL and PCB ASP will rise 15-20%. Key beneficiaries include new copper foil supplier Co-Tech Development (8358 TT, NT$523, OP) and CCL supplier TUC (6274 TT, NT$1,575, OP), and existing suppliers EMC, Gold Circuit Electronics (GCE; 2368 TT, NT$1,135, OP) and First Hi-tec (5439 TT, NT$331, NR), which will enjoy market share expansion to 50-60% and 15-20%, respectively, in T3, amid PCB supply chain consolidation. Cable cartridge will be supplied by Amphenol (US) and TE (US) for both PDS and Max models, while rail kit will be supplied mainly by King Slide (2059 TT, NT$8,260, OP), and chassis mainly by Chenbro (8210 TT, NT$1,175, OP) and AVC. For power supply design for T3, a 50V DC power rack solution rated at 500kW is already in production starting 2Q26, which we believe is for power demand of two liquid-cooled T3 Max racks. We consider such a design as a unique route for AWS as most ongoing power rack projects for power supply vendors operate at HVDC, either ±400V or 800V. AWS itself also has HVDC projects under development, with MW-level 800V DC power rack scheduled to enter production in 4Q26F. While the adoption of power racks will likely be optional, we see power supply unit (PSU) spec upgrades given rising penetration of 5.5kW and 8.5kW PSU, leading to substantial content growth for base-level T3 rack. We estimate a 50-60% overall power supply dollar content increase in T3 versus T2, likely from US$25-30k to US$40-45k. Delta (2308 TT, NT$1,890, OP) and Lite-On IT (2301 TT, NT$213, OP) are key beneficiaries. We also believe Bizlink (3665 TT, NT$1,980, OP) will benefit from spec upgrade for both power whip (from 50A to 100A) and AEC (from 400G to 800G). We thus conclude that the main component upgrades for T3 are in thermal, power, PCB/ CCL, BBU, power supply and AEC. Therefore, we estimate the total assembly price will expand by 5-10% for air-cooled T3 PDS rack from T2, while liquid-cooled T3 Max rack ASP will more than double from air-cooled to US$1.4-1.6mn, vs. GB300's US$3.9-4.0mn and VR200's likely over US$7mn. We expect the supply chain to see further positives in 2027F on higher liquid-cooled T3 Max shipments.

Stocks for Action

We see T3 ASIC AI as an additional catalyst for rising AI server demand, aside from GB300 and VR200 upgrades from 3Q26F. Trainium is one of the sizeable ASIC AI solutions, and T3 and Trainium 4 (T4) migration will continue in 2026-28F to fuel supply chain sales and earnings. These suppliers have high AWS sales weightings: Taiwan Microloops (over 70% in 2026F), AES-KY (60-70%), Chenbro (60-65%), Accton (over 50%), Wiwynn (over 40% in 2H26F), AVC (25-35% in 2026-27F), GCE (30-35%), EMC (25-30%), Lite-On IT (over 30%), King Slide (over 20%), Dynapack (over 20%), Bizlink (10-15%), and Delta (<10%). These firms are our top picks under solid T3-related demand in 2H26-2027F.

Risks

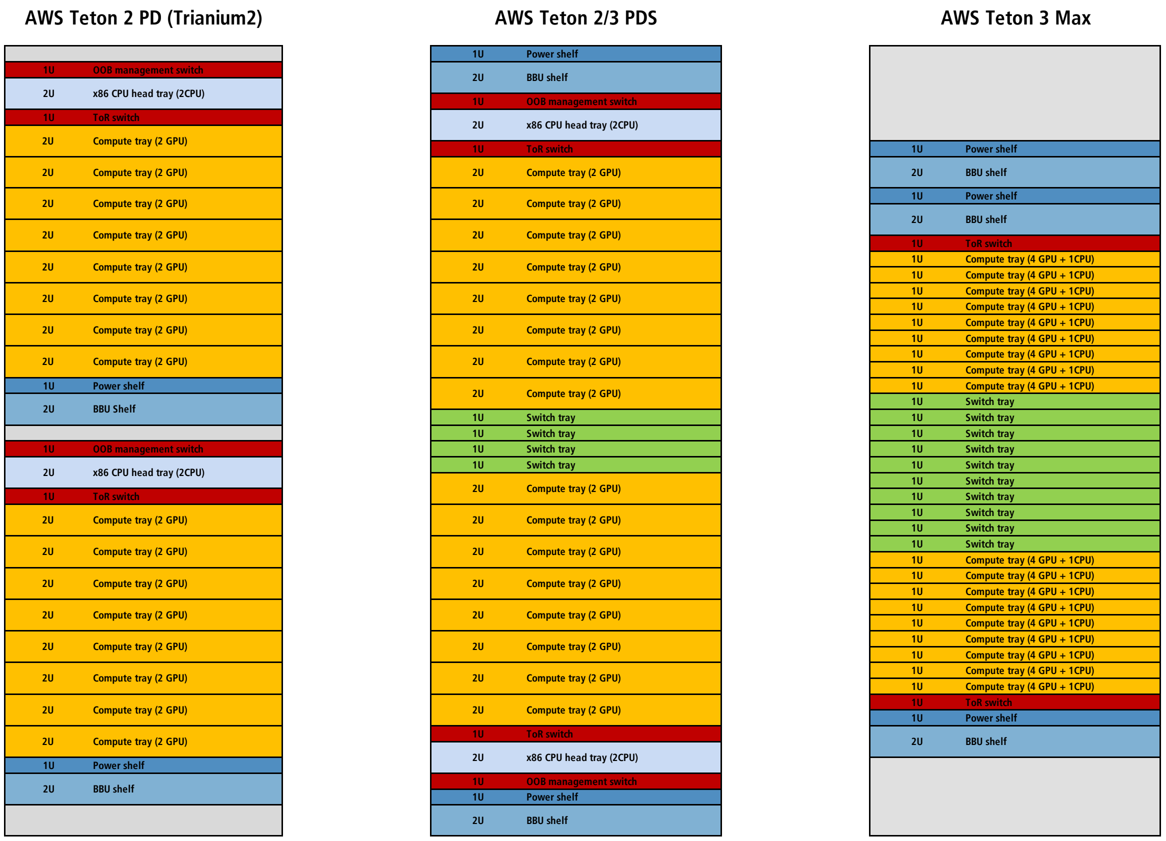
Slower-than-expected demand; model transition delay.

Figure 1: AWS' T3 ASIC rack design adds switch tray inside the rack & liquid-cooling as an option

Chip	Trainium 2	Trainium 3	
Launch	2023–2024	2025	
Process Node	~7nm/5nm	3nm	
Primary Role	Training + inference	Large-model training + inference	
Memory Bandwidth (TB/s)	2.9	4.9	
HBM type	HBM 3E 8-Hi	HBM 3E 12-Hi	
HBM capacity	96GB	144GB	
TDP	500W	700W	
Rack design			
Rack name	Teton 2 PD	Teton 3 PDS	Teton 3 Max
Thermal solution	Air cooled	Air cooled	Liquid cooled
Host CPU	x86/ Graviton 3	x86/ Graviton 4/5	Graviton 4/5
Compute tray	16	16	18
Switch tray		4	10
Rack structure	8+8	8+4+8	9+10+9
ASIC per compute tray	2	2	4
CPU per compute tray	2 CPU per CPU tray	2 CPU per CPU tray	1
Switch IC per switch tray		2	2
ASIC per rack	32	32	72
CPU per rack	4	4	18
Switch IC per rack		8	20
PSU spec per tray	3kw or 5.5kw *6	5.5kw *6	8.5kw*6
Power shelf per rack	2	2	3
CCL Level	Compute Tray M7 OAM M6	Compute Tray M8 OAM M6	Compute Tray M8 OAM M6
PCB Layer Count	Compute Tray 26L OAM 3N HDI 24L	Compute Tray 26L OAM 3N HDI 24L	Compute Tray 26L OAM 3N HDI 24L
Networking (Gb/s)	800	400	400

Source: KGI Research

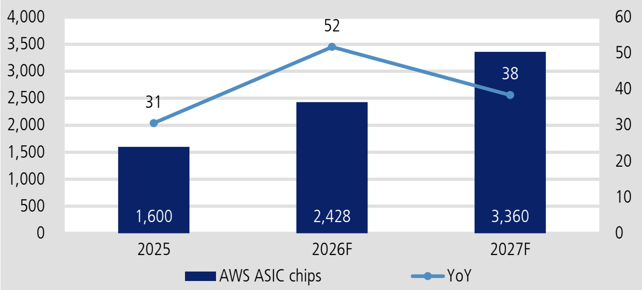
Figure 2: AWS' T3 ASIC rack design is a rack integration of ASIC, CPU & switch



Source: KGI Research

Figure 3: AWS' ASIC chip shipments to grow significantly by over 30% annually in 2026-27F

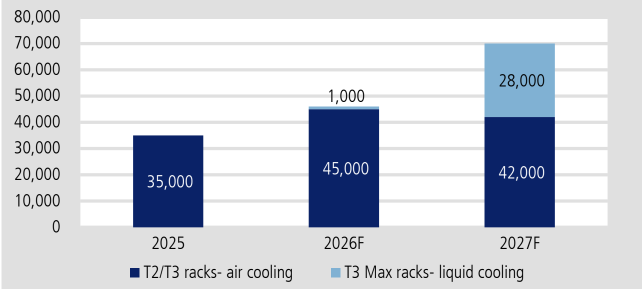
AWS ASIC chip shipments, k chips



Source: Company data; KGI Research estimates

Figure 4: Penetration of liquid-cooled rack in AWS to increase to 45-50% by 2027F

AWS rack shipments, units



Source: Company data; KGI Research estimates

Figure 5: Higher AWS sales weighting at Taiwan Microloops, Alchip, AES-KY, Chenbro, Accton & Wiwynn

Industry	Company	Ticker	2026F AWS sales weighting (%)
Chip	Alchip	3661 TT	60-70
	TSMC	2330 TT	< 5
	ASE	3711 TT	< 5
	KYEC	2449 TT	5-10
	Marvell	MRVL US	10-20
ODM	Hon Hai	2317 TT	<10
	Wiwynn	6669 TT	45-55
	Celestica	CLS US	10-15
	Jabil	JBL US	15-20
	Inventec	2356 TT	5-15
	Quanta	2382 TT	10-20
Power	Delta	2308 TT	Single digit
	Lite-On	2301 TT	25-30
AEC/power whip/busbar	BizLink	3665 TT	10-15
	Credo	CRDO US	30-35
Networking	Accton	2345 TT	50-60

Industry	Company	Ticker	2026F AWS sales weighting (%)
Thermal	AVC	3017 TT	25-35
	Auras	3324 TT	<10
	Fositek	6805 TT	5-10
	Jentech	3653 TT	<10
	Taiwan Microloops	6831 TT	>70
PCB/CCL	GCE	2368 TT	30-35
	EMC	2383 TT	25-30
	TUC	6274 TT	20-25
	FHT	5439 TT	45-50
	Co tech	8358 TT	15-20
Mechanical (chassis / rail kit)	King Slide	2059 TT	15-25
	Chenbro	8210 TT	60-65
	AVC	3017 TT	25-35
	Nan Juen	6584 TT	20-25
BBU	AES	6781 TT	60-70
	Dynapack	3211 TT	35-45

Source: KGI Research

Figure 6: Comparison – Cloud peer valuations

Sector	Company	Ticker	Market cap. (US$mn)	Share price (LCY)	Rating	Target Price (LCY)	EPS (LCY)		EPS YoY (%)		PE (x)		PB (x)		ROE (%)		Cash yield (%)	
							2026F	2027F	2026F	2027F	2026F	2027F	2026F	2027F	2026F	2027F	2025	2026F
ODM	Hon Hai	2317 TT	105,512	237.0	Outperform	315.0	17.94	21.46	31.8	19.6	13.2	11.0	1.8	1.6	13.7	15.3	3.0	4.0
	Inventec	2356 TT	7,446	65.4	Neutral	55.0	3.24	4.05	33.5	25.3	20.2	16.1	3.0	2.9	15.0	18.2	3.1	4.0
	Quanta	2382 TT	45,722	373.0	Outperform	430.0	23.13	27.43	18.9	18.6	16.1	13.6	5.5	5.1	35.3	38.9	4.2	5.0
	Wistron	3231 TT	15,695	155.5	Outperform	225.0	13.96	18.29	54.4	31.0	11.1	8.5	2.4	2.0	22.6	25.1	3.5	5.3
	Wiwynn	6669 TT	29,577	5,015.0	Outperform	6,475.0	325.58	436.17	18.4	34.0	15.4	11.5	6.1	4.9	43.8	47.6	2.9	3.6
	Gigabyte Tech	2376 TT	6,952	327.0	Outperform	495.0	32.00	34.00	75.9	6.3	10.2	9.6	3.3	3.0	34.2	32.4	3.7	6.5
	Asustek Computer	2357 TT	15,628	663.0	Outperform	835.0	53.65	57.64	(10.6)	7.4	12.4	11.5	1.8	1.7	14.6	15.2	6.3	6.5
	Asrock	3515 TT	833	212.5	Outperform	325.0	20.45	26.00	33.8	27.2	10.4	8.2	2.0	1.8	20.2	23.5	5.2	5.8
Socket/ Connector/cable	Lotes	3533 TT	7,018	1,965.0	Outperform	3,100.0	95.08	129.17	35.5	35.9	20.7	15.2	5.1	4.3	25.9	30.6	1.8	2.4
	Bizlink Holding	3665 TT	12,258	1,980.00	Outperform	2,600.00	66.09	106.99	41.9	61.9	30.0	18.5	7.1	5.4	25.5	33.3	0.8	1.1
	Aces	3605 TT	471	84.90	Outperform	120.00	5.47	7.51	25.6	37.3	15.5	11.3	1.6	1.5	10.9	13.6	1.8	2.5
	Argosy*	3217 TT	495	173.0	Not rated	N.A.	13.65	15.70	7.6	15.0	12.7	11.0	3.1	2.6	28.9	31.4	5.8	5.8
	Alltop	3526 TT	652	312.0	Outperform	415.0	23.03	30.35	35.7	31.8	13.5	10.3	4.8	4.8	35.8	47.0	5.4	7.3
Rail kit	King Slide Works	2059 TT	24,980	8,260.0	Outperform	8,850.0	206.36	295.01	99.9	43.0	40.0	28.0	20.6	14.9	59.3	61.8	0.6	1.3
	Nan Juen International	6584 TT	1,486	663.0	Outperform	800.0	17.40	26.65	211.3	53.2	38.1	24.9	12.3	9.9	35.2	44.1	0.4	1.3
Thermal	Sunonwealth	2421 TT	1,311	144.0	Outperform	182.0	11.21	13.10	41.2	16.8	12.8	11.0	4.0	3.6	32.8	34.7	0.0	5.5
	Auras	3324 TT	2,865	970.0	Outperform	1,450.0	59.27	81.87	109.7	38.1	16.4	11.8	6.3	4.8	43.5	46.5	1.2	2.6
	AVC	3017 TT	30,520	2,450.0	Outperform	3,450.0	94.49	132.70	92.2	40.4	25.9	18.5	14.8	10.2	67.1	64.6	0.9	1.6
	Fositek	6805 TT	3,242	1,490.0	Outperform	2,800.0	66.17	93.30	113.4	41.0	22.5	16.0	10.5	7.7	53.7	55.9	0.8	2.0
	Kaori	8996 TT	3,956	1,335.0	Outperform	2,270.0	23.08	42.75	154.6	85.2	57.8	31.2	21.5	14.3	43.1	55.1	0.3	0.9
	Microloops*	6831 TT	1,660	775.0	Not rated	N.A.	15.20	31.83	207.6	109.5	51.0	24.3	15.1	10.7	35.0	46.7	0.4	1.1
Heat spreader	Jentech	3653 TT	14,878	3,195.0	Outperform	4,840.0	53.96	112.49	46.8	108.5	59.2	28.4	18.0	14.4	32.4	56.4	0.7	1.0
BBU	Simplo Tech	6121 TT	2,624	447.0	Outperform	450.0	34.30	34.93	12.1	1.8	13.0	12.8	2.1	2.0	16.1	15.7	4.9	5.4
	AES-KY	6781 TT	3,185	1,175.0	Outperform	1,450.0	49.20	66.78	28.8	35.7	23.9	17.6	5.3	4.6	23.5	28.1	1.6	2.1
	Dynapack*	3211 TT	1,905	389.0	Not rated	N.A.	12.69	20.51	40.2	61.7	30.7	19.0	5.1	5.3	18.7	31.1	3.0	N.A.
Chassis	Chenbro	8210 TT	4,673	1,175.0	Outperform	1,905.0	49.65	68.00	70.9	37.0	23.7	17.3	10.5	8.1	49.7	52.6	1.2	2.1
BMC	Aspeed Tech	5274 TT	19,023	14,415.0	Outperform	21,130.0	191.62	334.60	84.4	74.6	75.2	43.1	62.2	34.3	88.7	102.5	0.6	1.0
Silcon photonics	Land Mark Opto	3081 TT	5,593	1,905.0	Outperform	1,080.0	13.12	21.43	183.3	63.4	145.2	88.9	49.5	47.1	34.8	54.3	0.2	0.6
CCL	Iteq	6213 TT	4,373	379.0	Outperform	442.0	9.79	14.74	135.3	50.5	38.7	25.7	6.0	5.2	16.0	21.5	0.8	1.7
	Elite Material	2383 TT	59,358	5,220.0	Outperform	6,860.0	92.16	171.51	121.2	86.1	56.6	30.4	28.0	17.3	56.3	70.1	0.5	1.1
	Taiwan Union	6274 TT	14,434	1,575.0	Outperform	1,650.0	30.91	51.35	161.7	66.1	51.0	30.7	19.4	13.7	42.4	52.5	0.5	1.2
ABF	Unimicron Tech	3037 TT	42,355	840.0	Outperform	1,000.0	14.31	27.77	226.6	94.1	58.7	30.2	10.6	8.2	20.4	31.8	0.2	0.8
PCB	Gold Circuit	2368 TT	18,624	1,135.0	Outperform	1,550.0	35.31	55.21	81.2	56.4	32.1	20.6	13.1	9.3	47.1	53.6	0.9	1.7
Power	Delta	2308 TT	155,798	1,890.0	Outperform	2,940.0	41.54	72.01	79.5	73.4	45.5	26.2	13.8	10.0	34.5	44.2	0.6	1.1
	Lite-On Tech	2301 TT	15,656	213.0	Outperform	230.0	8.87	13.08	33.5	47.6	24.0	16.3	4.9	4.7	21.3	29.5	2.3	3.1
	Chicony Power	6412 TT	1,140	89.6	Not rated	N.A.	5.41	6.63	4.0	22.6	16.6	13.5	2.1	2.5	12.7	18.4	4.1	4.9
	AcBel Polytech*	6282 TT	1,527	56.2	Not rated	N.A.	N.M.	N.M.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.M.	N.M.	1.4	N.A.
Foundry	TSMC	2330 TT	2,008,028	2,440.0	Outperform	3,000.0	103.21	131.31	55.8	27.2	23.6	18.6	8.4	6.2	41.4	38.6	0.9	1.1
OSAT	Ase Technology H	3711 TT	92,158	651.0	Outperform	588.0	17.00	25.34	81.5	49.1	38.3	25.7	7.3	6.4	20.0	26.0	1.0	0.8
	King Yuan Electronics	2449 TT	12,301	317.0	Outperform	380.0	9.23	14.37	2.5	55.6	34.3	22.1	7.0	5.9	21.4	29.0	0.3	1.7
Design service	Alchip Tech	3661 TT	11,039	4,035.0	Outperform	6,185.0	128.95	171.78	86.4	33.2	31.3	23.5	6.8	5.7	23.5	26.4	0.9	1.6
	Global Unichip	3443 TT	19,053	4,480.0	Outperform	5,245.0	48.02	116.55	70.7	142.7	93.3	38.4	36.0	21.7	43.5	70.4	0.4	0.8
Networking	Luxnet	4979 TT	1,934	428.0	Outperform	250.0	9.94	N.A.	84.2	N.A.	43.0	N.A.	11.3	N.A.	28.8	N.A.	0.5	0.9
	Accton Tech	2345 TT	43,716	2,455.0	Outperform	1,850.0	61.74	N.A.	31.0	N.A.	39.8	N.A.	19.6	N.A.	55.6	N.A.	0.6	1.3

* Bloomberg consensus

Source: Bloomberg; KGI Research estimates

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