

China PCB and CCL Sector

Remain steadfast through turbulence

Equities

China
Communications Technology

Time to turn more positive after sharp correction given solid earnings growth

We remained patient amid the China PCB/CCL sector's six-month 100-200% rally earlier this year. Now, after the sector has fallen 25-30% since July, we turn more positive as we believe the recent correction looks overdone due to: 1) profit-taking; 2) AI capex concerns; 3) deleverage-driven selling, while our coverage universe's fundamentals remain intact. UBS tech team forecasts [Nvidia's GPU shipments to rise +17%/+36%](#) while [top 5 hyperscaler capex at +84%/+45% YoY](#) in 2026/27E. We see new growth drivers from optical modules, Kyber orthogonal backplane, ASICs and higher-spec CCL materials emerging, offering potential volume and content value gains and a favourable competitive landscape for select companies we cover. Trading at an attractive **25x** NTM UBSe PE, we forecast a **46% EPS CAGR** in 2026-28 for our coverage versus Wind consensus of 35%.

CCL: FR4 fuels near-term earnings; AI mix paves a longer runway

We believe the durability of the current conventional CCL upcycle is underestimated despite FR4 CCL prices exceeding the previous cycle peak, as supply remains tight due to AI-driven capacity absorption. We conservatively forecast FR4 CCL prices of Rmb365/sheet by 1H27, supported by lingering shortages in CCL and upstream materials (E-glass). **Kingboard (KBL)** and **Shengyi Tech (SYT)** are likely to be key beneficiaries given their scale, quality and bargaining power, while AI exposure fuel further growth. We see SYT as well positioned to benefit from AI CCL upgrades and KBL as likely to lift its AI exposure via upstream materials before penetration into high-speed/AI CCL. CCL industry consolidation is likely to continue as supply constraints increasingly favour the largest as well as vertically integrated firms.

PCB: Optical, ASIC & backplane to support growth beyond Rubin spec upgrades

Besides Rubin's spec upgrades, we believe 800G/1.6T optical module PCBs and ASIC units can fuel near-term earnings growth. We prefer suppliers such as **Shennan** and **Avary** for their high-end manufacturing capabilities (mSAP, HDI, HLC) and established relationships with key customers. We believe the market has not fully realised Shennan's optical module PCB revenue potential, which could reach 25% of total revenue in 2027E, lifting PCB's 2026/27E YoY growth to 38%/48%. We see Shennan's current valuation as the most attractive given its exposure to optical module PCBs, with upside from the optionality of Kyber backplane adoption not yet priced in (similarly for SYT through potential backplane CCL allocation). We expect the [Kyber orthogonal backplane to still launch with Feynman in 2028](#) and could lift SYT/Shennan's 2026-29E earnings CAGR to 44%/47% from our current estimates of 38%/39%.

SYT/Shennan most preferred; [initiate on KBL at Buy](#); upgrade Avary to Buy

Sector-wise, we continue to favour CCL/upstream companies and select PCB names. We keep SYT and Shennan as our top picks, followed by KBL and Avary (all rated Buy). We raise SYT / Shennan / Avary's PTs by 98% / 66% / 136% to Rmb192.00 / Rmb473.00 / Rmb130.00, reflecting stronger AI order visibility, share-gain opportunities and continued margin expansion. We initiate coverage on KBL with a HK\$58.00 PT based on 17x 2027E PE. We upgrade Avary from Neutral to Buy based on a 40x 2027E PE on the back of a higher 42% 2026-29E earnings CAGR from optical and AI PCB led growth, as major planned capacity expansion ramps. We remain Neutral on FastPrint as valuation remains demanding despite our above-consensus EPS; we may turn more positive when AI/Optical module PCBs and ABF substrate begin to contribute meaningfully.

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UBS Research THESIS MAP

MOST FAVORABLE

LEAST FAVORABLE

SYT, Shennan, KBL, Avary

PIVOTAL QUESTIONS

Q: How do the Rubin and Kyber backplane delays change the PCB outlook?

Only to a limited extent in the near term, in our view, and we believe the extended timeline could be a share gain opportunity for potential entrants as qualification windows extend. We expect backplane to feature in Feynman, ramping up from 2028; we estimate the backplane PCB TAM to be Rmb1.2bn/31.8bn/48.0bn in 2028/29/30. We expect Avary to enter Rubin through HDI qualification, while Shennan's backplane know-how positions it as a potential supplier, alongside SYT on CCL, where we see a PTFE-hybrid solution as the most feasible. Shennan and Avary look well positioned for near-term growth in: 1) optical module PCB, benefiting a handful of suppliers with mSAP know-how; and 2) ASIC, which would see higher unit growth vs. GPUs in 2026/27E.

Q: Is the market underappreciating the conventional CCL upcycle?

Yes. We believe the market is overlooking the sustainability of this upcycle and pricing in an approaching peak. We think this cycle could be more extended than past cycles due to structural S/D drivers as well as upstream material tightness, with AI crowding out conventional supply and adding incremental demand while near-term supply responses remain limited. We forecast an industry electronic fabric S/D gap of over 10% through 2027E as effective capacity is bottlenecked by Toyota's loom equipment while peers reallocate capacity towards AI/specialty fabric. A conventional CCL upcycle is likely to benefit KBL and SYT, as it remains the primary earnings driver for both.

Q: What is the earnings impact and what is mispriced?

For our top picks, we raise 2027/28E earnings by 58%/92% for SYT and 30%/80% for Shennan, putting us 8-29% above consensus. We believe the market is not fully pricing in: 1) SYT's leverage to the conventional CCL upcycle, with segment revenue rising 103%/52% in 2026/27E alongside GPM expansion, also helped by a greater AI CCL mix; 2) Shennan's optical module PCB revenue potential, lifting PCB segment growth to 38%/48% YoY in 2026/27E; and 3) the adoption of Kyber backplane, which we expect to lift 2026-29 earnings CAGRs from 38%/39% to 44%/47% for SYT/Shennan, could support potential valuation upside of 59%/50% versus 37%/24% on our current price targets.

UBS VIEW

Sector-wise, we continue to favour CCL/upstream and remain selective on PCB names. We expect KBL and SYT to benefit from more sustainable conventional CCL upcycle through 2027, while emerging AI exposure delivers the next leg of growth. For PCB, we are selective on companies with: 1) share gain potential at Nvidia for longer-term growth; and 2) near-term earnings drivers from optical module PCB and ASIC, which we see at both Shennan and Avary.

EVIDENCE

1) UBS forecast top 5 hyperscalers' capex to increase 84%/45% YoY in 2026/27E; 2) [KBL has hiked FR-4 CCL prices multiple times YTD](#), with monthly hikes since March; 3) E-glass fabric has seen monthly price hikes YTD, with prices now at historical highs; 4) we forecast the number of ex-Nvidia accelerator units to increase 49%/98% YoY in 2026/27E versus Nvidia GPU (SIP) units of 17%/36%.

WHAT'S PRICED IN?

The Wind PCB sector index has fallen 25% from its June all-time peak, and we view market pessimism as stemming from a later backplane timeline alongside broader weakness in sentiment towards AI infrastructure names. Companies in our coverage now trade within the 30-50x 12-month fwd PE range as the 2019-21 5G upcycle. We forecast our covered companies to record a 46% earnings CAGR in 2026-28 vs. 33% in 2019-21, suggesting further re-rating upside.

Figure 1: Our China PCB coverage by preference– ratings, earnings and price target changes

Company	Ticker	Market cap (US\$m)	Price 07-Aug (US\$m)	Old price target (US\$m)	New price target (US\$m)	Old Rating	New Rating	EPS Revision			Old target PE multiple	New target PE multiple	P/E (x)			NP CAGR	PEG		ROE	
								2026E	2027E	2028E			2026E	2027E	2028E		26-29E	27PE/26-29E	2026E	2027E
UBS-G China PCB/CCL Sector Coverage																				
Shengye Technology	600183.SS	50,393	140	97	192	Buy	Buy	38%	57%	91%	35x (on 26E)	40x (on 27E)	43.3	29.2	20.8	38%	0.8	41%	47%	52%
Shennan Circuits	002916.SZ	38,677	383	285	473	Buy	Buy	-1%	27%	73%	38x (on 26E)*	40x (on 27E)*	51.5	32.5	23.9	39%	0.8	26%	31%	31%
Kingboard Laminates	1898.HK	15,331	38	-	58	-	Buy	-	-	-	-	17x (on 27E)	18.1	11.5	9.2	30%	0.4	36%	45%	45%
Avary	002938.SZ	34,838	101	55	130	Neutral	Buy	0%	8%	9%	24x (on 26E)	40x (on 27E)	45.7	31.2	21.8	42%	0.7	13%	16%	20%
Shenzhen FastPrint	002436.SZ	8,514	34	26	37	Neutral	Neutral	-32%	19%	12%	58x (on 26E)*	55x (on 27E)*	109.8	50.2	33.3	67%	0.7	7%	12%	16%
Sector average													53.7	30.9	21.8	43%	0.7	25%	30%	33%

Source: LSEG, UBS estimates. Note: The EPS changes of Shennan, Avary and FastPrint impacted by an increased number of shares outstanding. *Implied 2027E PE as valuation is based on SOTP.

PCB/CCL sector: Multiple AI growth drivers ahead

We initiate coverage on Kingboard Laminates (KBL) at Buy and add the company to our top picks within the China PCB/CCL sector alongside Shengyi Tech (SYT) and Shennan Circuits (raising our PTs by 98% and 66%). Sector valuations have fallen materially following news of Kyber orthogonal backplane delays ([link](#)) and the broader weakness in investor sentiment on the sustainability of AI infrastructure build-out, but we believe the fundamentals of select companies remain intact while the market seems to be overlooking opportunities in two areas with attractive risk/reward.

We prefer: **1) upper-stream CCL companies: SYT/KBL**, which are benefiting from an unprecedented and more sustainable conventional CCL upcycle through 2027E as margins expand in their core businesses while emerging AI exposure (specialty/AI glass fabric including Low-Dk/T/Q-glass for KBL and AI-grade CCL/PTFE for SYT) delivers the next leg of growth; and **2) PCB: Shennan/Avary**, with share gain potential at Nvidia and diversified AI PCB exposure from optical module and ASIC, given their leading manufacturing know-how (HDI/mSAP) and ample capacity to fulfil demand, in our view.

Kyber backplane & Rubin delays as share gain opportunities

As we mentioned [previously](#), the backplane timeline is in line with our expectation based on our early industry study of upstream CCL vendors in May, suggesting the adoption of the orthogonal backplane is likely to start with Feynman. Despite a later timeline, we believe the Kyber orthogonal backplane will unlikely be cancelled and could potentially lead to content value/market share gain opportunities for PCB/CCL suppliers.

We see emerging solutions such as a PTFE-based CCL solution gaining traction in recent sampling trials of the Kyber backplane, while a longer sampling period provides more time for yield improvement and supply chain preparation. We now believe the M9/PTFE-hybrid CCL solution appears to be the most feasible option for the backplane, where PTFE would be used in critical low-loss layers while M9-level hydrocarbon and Low-Dk2 glass fabric are retained in core layers. We expect SYT and Shennan to be major beneficiaries of the Kyber backplane, with even higher leverage if a PTFE-hybrid solution is adopted.

UBS estimates Feynman's rack volumes of 1.0k/26.5k/40.0k in 2028/29/30E, which could represent a Kyber backplane PCB TAM of Rmb1.2bn/Rmb31.8bn/Rmb48.0bn. Our base-case forecasts for Shennan and SYT do not factor in earnings contributions from the Kyber backplane. But we estimate that backplane adoption upside potential could add roughly Rmb2,862m and Rmb2,544m in incremental profits to SYT and Shennan's 2029E bottom line, on the back of our somewhat conservative assumptions of a 20%/50% supplier wallet share for backplane PCB/CCL, respectively.

Figure 2: Our estimates for the potential TAM of the Kyber backplane

Rack Units	2026E	2027E	2028E	2029E	2030E
Blackwell (NVL72)	17,778	1,863			
Blackwell Ultra (NVL72)	48,608	27,537	4,738		
Rubin (NVL72)	6,150	58,826	20,000		
Rubin Ultra (NVL 72)		1,800	70,000	20,000	984
Feynman (NVL144/288)			1,000	26,500	40,000
Total	72,536	90,026	95,738	46,500	40,984

Kyber Backplane TAM	2026E	2027E	2028E	2029E	2030E
Feynman (NVL144/288) Rack			1,000	26,500	40,000
Backplane per Rack			4	4	4
Backplane ASP (Rmb '000)			300	300	300
Backplane TAM (Rmb mn)			1,200	31,800	48,000

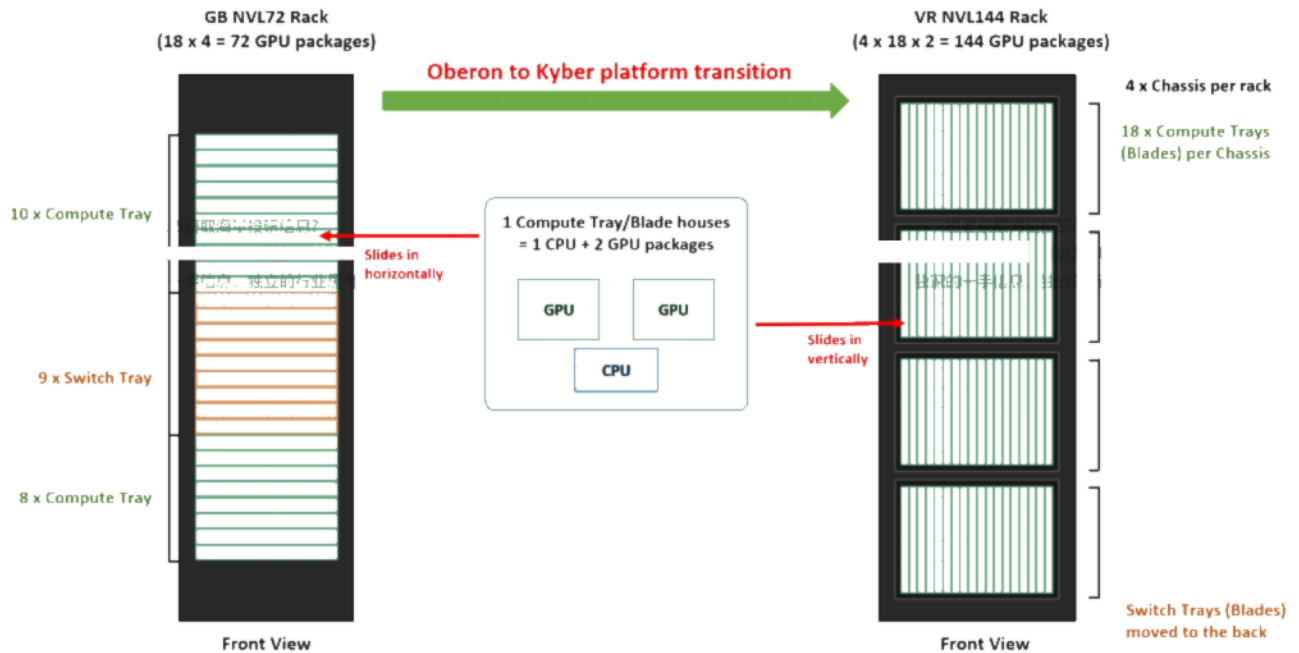
Source: UBS estimates

We forecast a SYT/Shennan earnings CAGR of 38%/39% over 2026-29E, and estimate this could accelerate to 44%/47% if SYT/Shennan secure Kyber backplane allocation. We believe this could lead to potential valuation upside to our current PTs, driven by multiples expansion from higher earnings growth. Our current PTs imply 37%/24% price upside, while we estimate backplane could support potential valuation upside of 59%/50% for SYT/Shennan (assuming target PEG remain the same as our base-case valuations). Therefore, we believe current valuations for SYT and Shennan look

attractive, with upside potential from the Kyber orthogonal backplane not priced in.

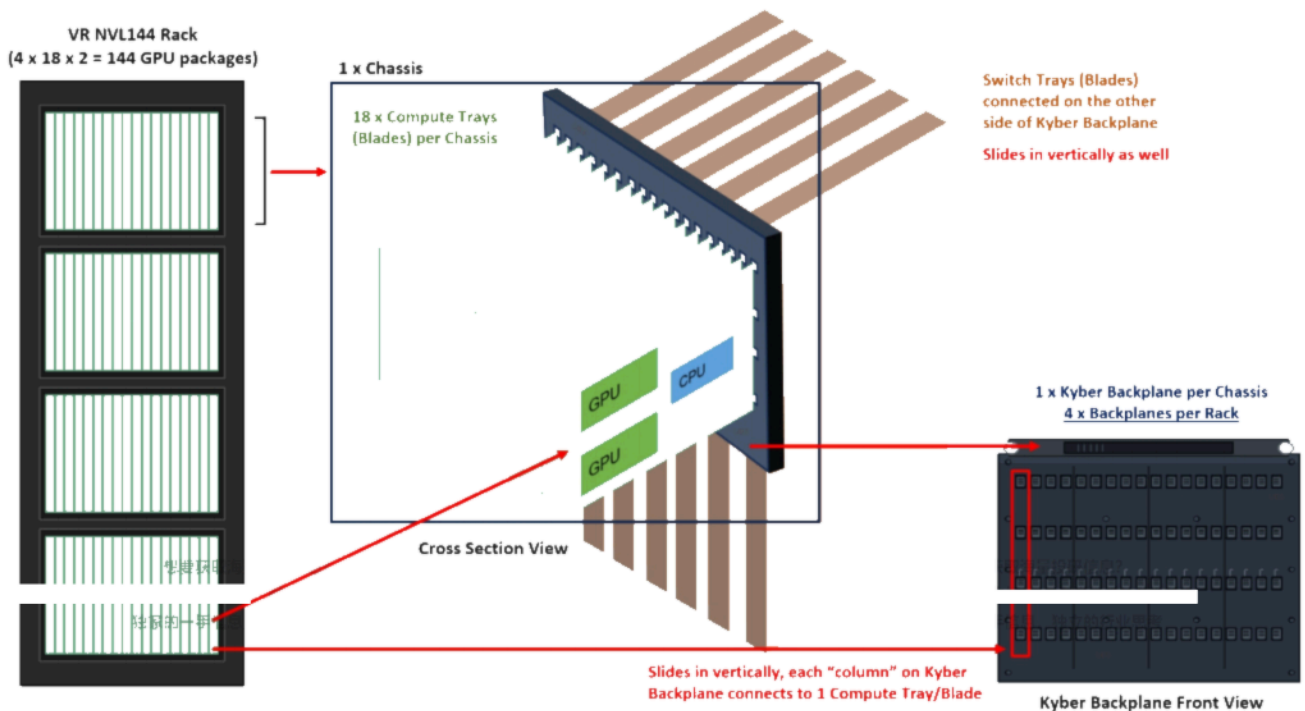
Figure 3: Oberon (NVL72) versus Kyber (NVL144) rack comparison

Oberon NVL72 vs Kyber NVL144



Source: UBS

Figure 4: Kyber (NVL144) orthogonal backplane cross-section depiction



Source: UBS

In our [Q126 PCB sector GTC preview](#), we noted that the M9 + Q-glass + HVLP4 could be a feasible CCL solution, but our latest industry study suggests the Q-glass combination is on hold after two failed sampling trials in Q126, likely due to Q-glass processing difficulties in a 100+ layers form factor, inadequate supply and higher costs versus other possible solutions (such as Low-Dk2 glass fabric with meaningfully higher yields). We see CCL makers pivoting to alternative solutions, which include: 1) M9 + PTFE-hybrid, which

has passed Nvidia's verification; and 2) M10 + Low Dk2 (both solutions use HVLP4 copper foil), with final design lock-in for the Kyber backplane expected in Q426 and multiple rounds of sampling currently underway ([we met with Victory Giant at our H-share Corporate Day](#) and it indicated that more than 10 material/vendor combinations are still being considered, including various layer count designs).

We now lean towards PTFE as the longer-term beneficiary given its much better Dk/Df performance than alternatives and a longer runway for potential adoption in other PCBs (compute tray Midplane / LPU / switch board) for future generations, making it more worthwhile for R&D. We expect Shennan to be one of SYT's PCB partners on the backplane, which would mark Shennan's first entry into Nvidia, if not earlier.

We believe SYT is leading the PTFE CCL formula for the Kyber backplane, while other CCL suppliers remain in early sample stages. However, the technical bar remains high for PTFE CCL production as challenges exist for both the CCL and PCB sides: 1) PTFE is very soft and difficult to drill cleanly, producing burrs that hurt yields; and 2) CTE mismatch with copper creates warpage risk in high-layer-count lamination as well as adhesion difficulties. We think SYT has addressed these issues by adding SiO2 filler to increase rigidity while lowering CTE, alongside adding hydrocarbon coating for better adhesion. This has likely led to production yields increasing to about 40-50% from 20%, putting the solution on track for the mass production timeline, according to our industry studies.

Despite Q-glass's optimal Dk/Df performance over other speciality/AI-grade glass fabrics, we believe Q-glass's processing difficulty has shown to be higher than expected, especially for HLC products such as the backplane, and hence alternatives that primarily use Low-Dk2 (with M10) are also being sampled in parallel. Therefore, we expect greater demand for Low-Dk2 in the near-term and likely a longer product lifecycle. We believe a domestic AI CCL supplier was the first to send samples for the M10 solution in February, followed by Doosan, SYT and EMC around June.

Figure 5: PTFE outperforms alternative resins on Dk / Df performance

Prepreg Components	Dk @10GHz	Df @10GHz
Resins		
Epoxy	3.8 - 4.2	0.017 - 0.023
PPO	2.6 - 2.8	0.002
Hydrocarbon (BCB/PPO blend)	2.5 - 2.7	0.0007 - 0.0015
PTFE (neat or SiO2-filled)	2.0 - 3.1	0.0002 - 0.0005
Glass fabrics		
E-glass	6.6 - 7.1	0.0035 - 0.006
Low CTE / T-glass	4.6 - 4.9	0.002 - 0.003
Low Dk1 / NE-glass	4.4 - 4.9	0.001 - 0.003
Low Dk2 / NER-glass	4.0 - 4.3	0.0008 - 0.002
Q-glass	3.8	0.0001 - 0.0003

Source: UBS estimates

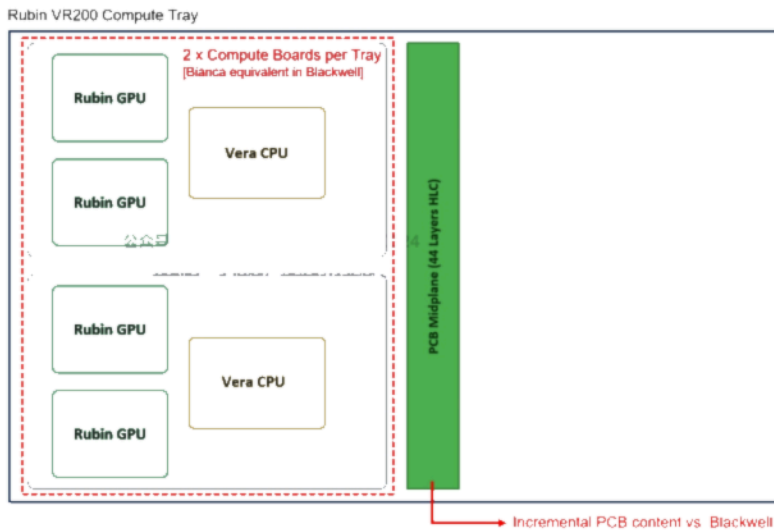
We believe Shennan could become a supplier of the Kyber backplane PCB, especially if a PTFE-hybrid solution is adopted. We think the combination of large-scale manufacturing HLC PCB and know-how of PTFE processing is a rare capability among PCB vendors. Shennan stands out to us on both fronts with a track record in communication-product backplanes, with the capability for up to 120 layers HLC PCB prototypes currently, as well as experience with high-frequency products that utilise similar PTFE-based solutions. We think Shennan's leading expertise in AI-grade PCBs is underpinned by its domestic leadership in BT/ABF packaging substrates and mSAP, which imposes even stricter requirements on line width and spacing. Overall, we believe this positions the company for wallet share gains in key AI accelerator projects. That said, PCB peers such as Victory Giant (VGT), WUS and Kinwong could also see wallet share gains in the Kyber backplane given existing customer relationships and more ample manufacturing capacity coming online from 2028E (according to our PCB capacity tracker). We expect there to be multiple PCB/CCL suppliers for the Kyber backplane.

Rubin MP to Q426; Avary enters Rubin while VGT share remains largely intact

We believe the Rubin volume ramp-up is likely to start in Q426, versus initial expectations of August, driven by upstream chip and material supply constraints rather than PCB manufacturing issues, according to our discussions with suppliers. We see no evidence of further material delays, with VGT already progressing to small-batch

production in July. Despite market chatter about VGT losing significant wallet share on Rubin, we expect VGT to maintain a roughly 50% share across all products at Nvidia when Rubin reaches the MP stage and majority HDI PCB share. Meanwhile, we expect Avary would gain allocation for Rubin compute tray.

Figure 6: PCB midplane in Rubin VR200 Compute Tray



Source: UBS

We expect the Rubin Compute Board to run M8 + Low-Dk1 on 26L (up from 22L) HDI. For Switch Board, it is likely to adopt a 32-layer HLC, with M8.5 + Low-Dk2 (M9 for critical signal-intensive layers, M8 or below for the remaining), but we expect current CCL shipments for switch tray PCBs to still utilise a M8 + Low-Dk2 solution. For the new 44L Midplane within the Rubin compute tray, we expect M9 + Low-Dk2 to be adopted.

For LPU, we expect the timeline to be brought forward so that it becomes part of the Rubin line-up. We believe the LPU form factor will likely follow Hopper/HGX, with eight LPU accelerators on a single UBB PCB within a compute tray and 32 trays in total, making up 256 LPUs per rack. The 52L UBB PCB is likely to adopt M9 + Low-Dk2 versus previous expectations of M9 + Q-glass. According to our studies, M9 + Q delivers only c.5% better SI performance over M9 + Low-Dk2 on the LPU board, which we think does not justify Q-glass's roughly 2x ASP premium over Low-Dk2 currently. Overall, this represents broader Low-Dk2 adoption and HVLP4 copper foil upgrade (from HVLP2/3 in the GB series) across all CCL across Rubin PCBs.

Figure 7: Rubin VR200 PCB/CCL specs versus Blackwell GB300

Rubin PCBs	Blackwell GB300	Rubin VR200
Compute Board		
- Prepreg	M8 + Low Dk1	M8 + Low Dk1
- Copper Foil	HVLP 3	HVLP 4
- PCB Layers	22L	26L
Switch Board		
- Prepreg	M8 + Low Dk1	M8 / 8.5 + Low Dk2
- Copper Foil	HVLP 3	HVLP 4
- PCB Layers	24L	32L
Midplane (Compute Tray)		
- Prepreg	-	M9 + Low Dk2
- Copper Foil	-	HVLP 4
- PCB Layers	-	44L
LPU Board		
- Prepreg	-	M9 + Low Dk2
- Copper Foil	-	HVLP 4
- PCB Layers	-	52L

Source: UBS estimates

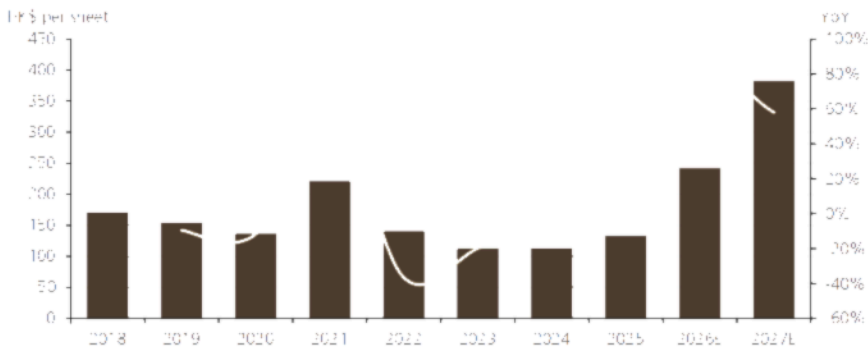
We forecast total CCL demand for Rubin at around 1 million sheets a month at full ramp-up versus 400-500k at the GB300 full ramp-up, with the bottleneck being HBM4 supply, in our view. Monthly CCL shipments for Elite Material (EMC) and SYT were 100k pieces respectively for GB300, and EMC is already running at around 150k pieces a

month for Rubin. We expect Rubin CCL supplier allocation to broadly track that of Blackwell at roughly 2 : 1.5 : 1 for Doosan : EMC : SYT. We expect Doosan to be allocated primarily to HDI compute boards, with EMC and SYT splitting the switch board allocation 50/50, and EMC receiving incremental allocation on the compute-tray Midplane. For the Rubin Ultra compute board, we believe SYT has already passed qualification; we expect Nvidia may allow all three qualified CCL vendors to participate, from which SYT could see incremental growth from.

Conventional CCL upcycle intact; pessimism likely overdone

We were among the early movers calling for a CCL upcycle back in H225 (link, link). Current conventional CCL prices have risen above the previous upcycle peak of about Rmb220/sheet, and we believe this cycle will be more sustainable than current market expectations. We now forecast price hikes to continue through H127, with prices reaching Rmb365/sheet under what we consider a conservative scenario.

Figure 8: Our estimates for KBL's conventional FR4 CCL ASP per sheet



Source: UBS estimates

We expect KBL and SYT to be direct beneficiaries of this AI-driven CCL upcycle as the two largest conventional CCL makers globally. Conventional CCL price hikes are playing out as we expected previously, with YTD increases nearly doubling since the end of 2025 and the magnitude of hikes intensifying. In aggregate, KBL has completed multiple rounds of price hikes YTD, with monthly FR4/prepreg hikes since March, two hikes in April and a step-up to increases of 15% in both June and July from 10% previously. We believe SYT's FR4 CCL prices track closely to KBL's and were the primary driver of SYT's H126 preliminary earnings, with profits more than doubling YoY (link) as conventional CCL still makes up the majority of its volume mix at around 80%.

Figure 9: Simplified illustration of CCL structure



Source: UBS

Figure 10: Conventional versus AI CCL materials

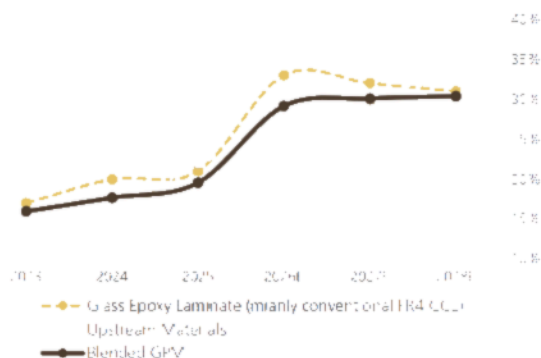
	Conventional FR4 CCL	AI-grade CCL
Glass Fabric	E-glass	Specialty: Low Dk / T-glass (Low-CTE) / Q-glass
Copper Foil	RTI / HTI	HVLP / 2 / 3 / 4
Resin	epoxy	PI / Polyimide / PTFE

Source: UBS

We believe accelerating price hikes are driven by conventional supply shortfalls as production capacity shifts towards AI-grade CCL on top of cost pass-throughs from rising E-glass fabric prices (also in tight supply) and copper prices. We estimate KBL's 15% FR4 CCL hike in June led to a roughly Rmb35 price increase per sheet, while glass fabric costs (the largest cost component) only had a c.Rmb6/sheet step-up MoM. As a result, we believe at least 50% of each marginal price increase could flow directly into gross profits for these companies, leading to meaningful margin expansion while the

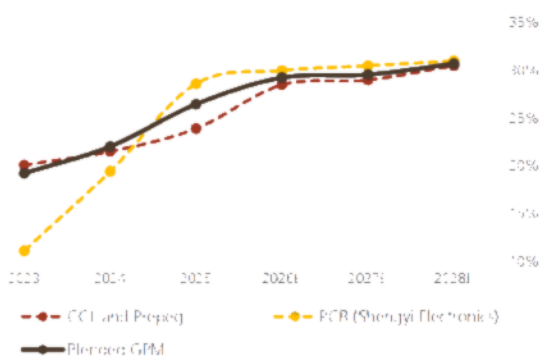
upcycle extends further. Additionally, KBL's vertical integration capability in upstream materials, including self-sufficient supply of glass fabric, copper foil and resin, could enable further margin expansion versus pure-play CCL peers.

Figure 11: KBL segment and blended GPM forecasts



Source: Company data, UBS estimates

Figure 12: SYT segment and blended GPM forecast



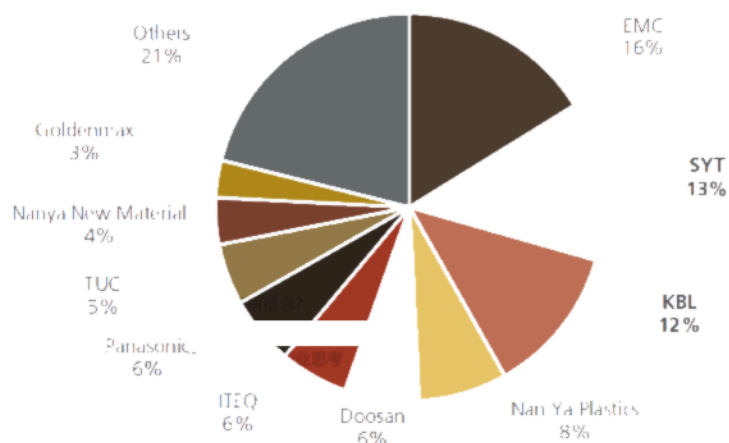
Source: Company data, UBS estimates

We forecast KBL's blended GPM to expand 10ppts/11ppts versus 2025 to 29% in 2026 and 30% in 2027, driven by: 1) conventional FR4 CCL price hikes into 2027E, with blended ASP increasing 82%/58% YoY in 2026E/2027E; and 2) an increasing margin-accretive AI-grade/speciality glass fabric mix, leading to the Upstream Materials segment's GPM expansion of 2ppts/7ppts in 2026E/27E, to 24%/29% from 22% in 2025. We expect SYT's margins to track closely to current FR4 CCL GPM at 25% versus 23% a year ago, alongside an increasing margin-accretive AI-grade CCL mix lifting overall CCL/prepreg segment GPMs by 5ppts versus 2025 to 29% in 2026E. We estimate SYT's overall blended GPM to expand by 3ppts to 29% in 2026.

CCL market to further consolidate as conventional capacity shifts to AI

We expect conventional CCL demand to outstrip supply through 2026-27. We believe the S/D imbalance is primarily driven by a shift to high-speed/AI-grade CCL capacity, which is crowding out conventional CCL supply, with limited near-term expansion plans potentially providing little relief. We estimate roughly 30% of global CCL capacity has shifted to high-speed/AI CCL compared with the previous upcycle in 2021.

Figure 13: CCL market share by supplier, 2025



Source: Prismark

A more concentrated market versus PCB, with big players shifting to high-end

For the overall CCL market, the CR10 dominates roughly 80% of the market, with SYT/KBL at 13%/12% global share and the remainder split between: 1) APAC ex-China companies with a larger AI-grade CCL mix: EMC 16% market leader, Nan Ya Plastic 8%,

Panasonic 6%, Doosan 6%, ITEQ 6%, and TUC 5%; and 2) emerging China suppliers penetrating AI CCL products. APAC ex-China companies have rapidly shifted most conventional capacity towards higher-speed, higher-margin CCL for AI compute/network-related applications. As we mentioned previously, Panasonic exited conventional CCL orders after Nittobo ceased E-glass production. EMC has also largely exited the conventional CCL market, with its current AI CCL mix at c.60% of overall revenues, up from just single digits five years ago.

Our CCL capacity expansion analysis (according to our tracker) suggests limited conventional supply will likely come online by end-2027, supporting sustainable price hikes into 2027E. From announced CCL expansion plans, we expect KBL to be the only supplier ramping up supply meaningfully in 2027, adding 750k sheets per month from its Jiangxi and Thailand plants, which represent a modest 8% increase over its existing glass epoxy CCL capacity base and less than 1% for the overall industry.

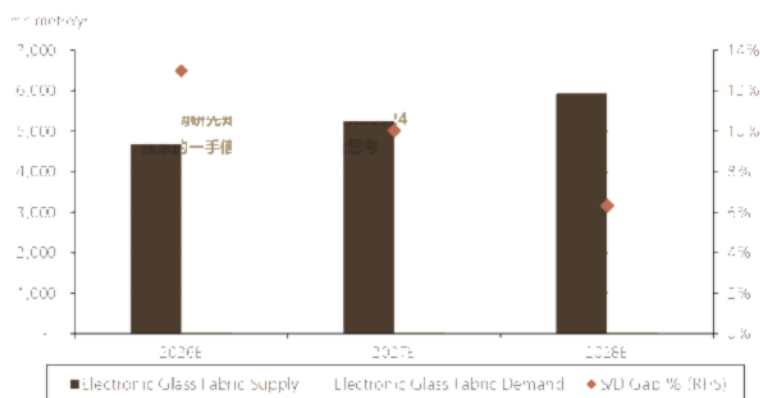
We believe the conventional supply tightness could persist beyond 2027 as supply generally takes time to respond. Conventional greenfield CCL typically takes at least 1.5 years to reach MP, and brownfield space is limited because existing sites are already fully utilised. We expect CCL makers to continue directing incremental 2026-27 capacity towards high-speed/AI grades as part of a strategic mix shift, even though conventional CCL offers more attractive near-term price upside, in our view.

All meaningful capacity coming online is purpose-built for AI. We expect KBL's conventional capacity to be retained for traditional customers, with the company only going high-end through new dedicated expansion from 2027E onwards, starting with its Kaiping plant for M6+ products, while SYT's Thailand and Songshan Lake lines are also purpose-built for AI-grade CCL. Similarly, tier-1 incumbents such as EMC, Panasonic and Doosan have announced plans to at least double their high-speed/AI CCL capacity in the next few years, while new entrants from China (Nanya New Material, Wazam and Goldenmax) have also committed to new capacity exclusively for high-end products.

At the same time, E-glass (a critical component for conventional FR4 CCL) is facing similar supply tightness, favouring larger CCL companies (KBL/SYT) with materials self-sufficiency or procurement scale. We expect this to lead to further consolidation of the competitive landscape, as long-tail CCL companies may have to refuse orders if they are unable to secure sufficient E-glass supply as industry demand outpaces supply. But in the near term, compared with previous cycles, we believe smaller CCL peers could still benefit from the price hike cycle as their product/customer mix improves and orders spill over from tier-1 peers. In contrast, we foresee more disruption for PCB makers that lack the procurement scale to secure sufficient CCL supply. We see smaller PCB suppliers being squeezed between upstream suppliers asking for hefty premiums over contract prices for CCL as supply tightens, while cost pass-throughs are likely to become more difficult for price-sensitive end customers.

Conventional CCL upcycle is supported by upstream E-glass supply tightness

Figure 14: Industry electronic glass fabric (E-glass + speciality/AI) supply/demand forecasts



Source: UBS estimates

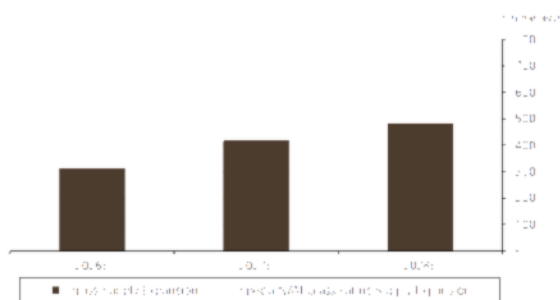
We view market concern about E-glass oversupply from KBL/Jushi capacity expansion plans as overdone and forecast the supply-demand gap in the electronic glass fabric industry (including speciality) to remain above 10% through 2027. This is because: 1) effective capacity from E-glass expansion will likely be constrained by a lack of Toyota fabric jet looms (equipment for weaving glass yarns into fabric), where Toyota holds a monopoly position; and 2) while E-glass fabric demand remains stable, while supply gets crowded out by AI-grade/speciality glass fabric capacity expansion, in our view.

Looking at announced plans, KBL and Jushi's nominal E-glass capacity is slated to increase by 1.4bn metres a year in 2026-28, with end-2028 capacity representing a roughly 80% increase over their collective 2025 base (or c.34% over industry's E-glass 2025 capacity base). However, effective supply could be bottlenecked by loom delivery cadence, and we estimate KBL and Jushi's E-glass output to increase by only 12%/36%/63% in 2026/27/28 versus their 2025 output.

E-glass still represents most of the total electronic glass fabric volumes, accounting for over 95% in 2025, with the speciality glass fabric mix growing to around 10% in 2028E. E-glass still makes up most of KBL's capacity (100% for Jushi), KBL and Jushi are among the top three global electronic glass fabric producers and the two together account for c.40% of current industry output. While we see Taiwan Glass is shifting to AI more aggressively (holding 18-20% of the overall electronic fabric market and 40% of the speciality market behind Nittobo), it plans to increase speciality/AI glass fabric output by 40-50% in 2027 and has added a Phase III expansion project by investing NT\$2bn, expected completion in 2027, according to company comments [reported](#).

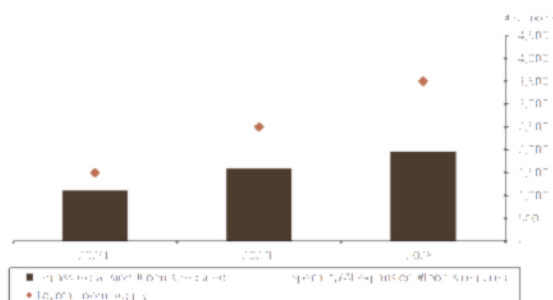
Despite Toyota expanding loom capacity modestly, we estimate loom demand from glass fabric expansion plans in 2026-27 to be more than double available supply. We see current Toyota loom capacity at around 100 units/month, increasing to 200/month by end-2026 and likely peaking at 300/month by end-2027, given its historical discipline and cautious stance on capacity additions. We see no viable domestic loom alternative to displace Toyota's weaving equipment in the near term due to commercial yield gaps versus Toyota looms and carry meaningful downtime risk, which becomes increasingly costly as ASPs rise, especially for speciality AI-grade glass materials.

Figure 15: E-glass and speciality/AI glass fabric effective supply expansion in 2026-28E



Source: Company data, UBS estimates

Figure 16: Toyota's loom output in 2026-28E insufficient to cover planned glass fabric expansions



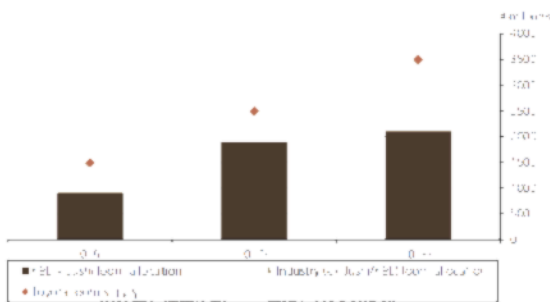
Source: Company data, UBS estimates

We estimate KBL and Jushi combined have locked up over 60% of Toyota's loom order allocation for 2026-27 to support their announced E-glass expansion plans. Current Toyota loom orders have already been booked out to 2030. KBL/Jushi's large loom procurements and over a decade of vendor relationships effectively prevent peers from moving ahead in the order queue despite intensifying shortages, in our view.

E-glass fabric capacity is being crowded out by AI-grade speciality glass fabric demand, mirroring the S/D dynamic we see for conventional CCL. As most of the loom allocation is locked up by KBL and Jushi, we believe peers looking to expand speciality/AI capacity would need to repurpose their existing loom fleets. We estimate around 400m metres of annual E-glass supply (about 40% of Jushi's 2025 E-glass capacity) could potentially be repurposed for speciality/AI fabric production in 2026-27. Excluding these potential loom conversions, we forecast a 10%-plus industry supply-demand gap for electronic fabric in 2026-27, which suggests the tightness scenario for E-glass could be even more

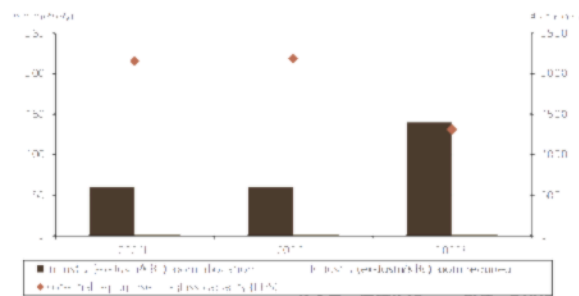
severe than current assumptions suggest.

Figure 17: Jushi and KBL take the majority of Toyota's loom output allocation in 2026-28E ...



Source: Company data, UBS estimates

Figure 18: ...pushing suppliers to convert loom fleets previously used for E-glass towards speciality/AI

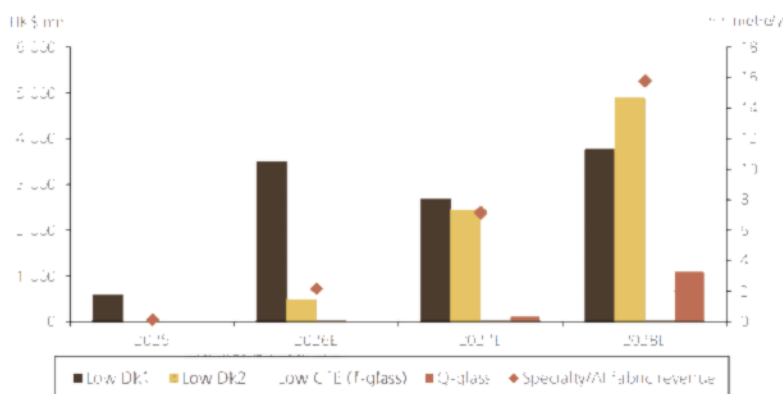


Source: Company data, UBS estimates

Outside of KBL and Jushi, all other meaningful announced glass fabric capacity expansion plans are dedicated to speciality/AI: 1) Nittobo has raised its capex plan to > ¥100bn targeting a roughly 3x increase in T-glass capacity and a 2.5x increase in NE-R (Low-Dk2) capacity by end-FY27; 2) Taiwan Glass's three-phase expansion plan as mentioned earlier; and 3) China suppliers: Guangyuan New Material, Taishan Fiberglass, Grace Fabric and Chongqing Polycomp have collectively committed more than Rmb150bn to expanding annual high-end fabric capacity by over 300m metres, though the majority of the supply is likely to come online from 2028F.

KBL is also breaking into the speciality/AI fabric market. We believe the company is better positioned than domestic peers given: 1) domestic first mover with one Low-Dk 1 line in full production since H225 that has already passed customer verification; 2) long-standing supply relationships with EMC/tier-1 CCL customers built from its conventional business; 3) one of the largest Toyota loom fleets and order allocations in 2026/27E to support both speciality and E-glass expansion plans; and 4) deep know-how enabling faster ramps at higher yields on advanced speciality grades, with Low-Dk 2/T-glass targeting MP in 2026 and Q-glass in 2027E. We forecast KBL's speciality glass fabric revenue to increase from HK\$47m in 2025 to HK\$5,263m in 2028. Please see further details in our [KBL initiation report](#).

Figure 19: KBL speciality/AI glass fabric revenue and output in 2026-28E



Source: Company data, UBS estimates

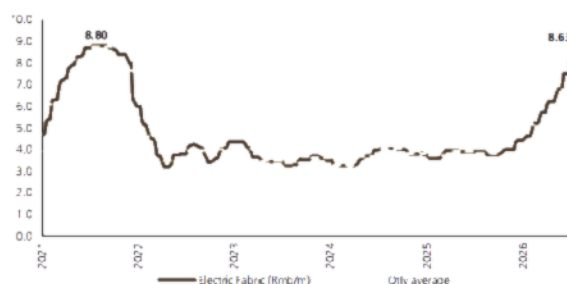
We see clear economic incentives for peers to shift capacity towards AI, with speciality/AI fabric commanding higher profitability per loom than E-glass. We estimate Low-Dk1 to be 1.4x more profitable per loom than 7628 (at around Rmb150k GP per loom per month versus c.Rmb110k for 7628), with Low-Dk2/T-glass potentially being 5-6x more profitable (c.Rmb600k per loom), and more for Q-glass, despite speciality grades' 70% lower per-loom throughput versus 7628. In our view, this is driven by higher ASPs and GPMs: 1) Low-Dk1 ASP at Rmb35/m and GPM of 55%; 2) Low-Dk2 ASP at Rmb120/m and GPM of 65%; 3) T-glass ASP at Rmb100/m and GPM of 70%; and 4) Q-glass ASP at Rmb300/m.

Figure 20: Current speciality/Al glass fabric unit economics support loom conversion from E-glass

	ASP/m (Rmb)	GPM	GP (Rmb)	GP/mo/Loom
7628 (E-glass)	10	40%	4	112,000
1080 (Thin E-gls)	13	50%	7	84,500
Low Dk1	35	55%	19	154,000
Low Dk2	120	65%	78	624,000
T-glass (Low-C T1)	100	70%	70	560,000
Q-Glass	300	>70%	>200	>1,000,000

Source: Company data, UBS estimates

Figure 21: 7628 E-glass price reaching the previous cycle high in July 2026



Source: SCI

We expect the profitability premium on speciality grades to support our expectation of further loom conversion to speciality grades, further tightening the supply of E-glass. As a result, we expect E-glass fabric price hikes to continue through 2027, supporting conventional CCL price increases. 7628 E-glass fabric ASP has nearly doubled from Rmb5/metre at the end of 2025 to >Rmb9/m in Aug 2026, above its historical high of Rmb8.8/m, with the magnitude of monthly price hikes stepping up to 15% MoM in July from less than 10% earlier in the year.

On the demand side, we estimate overall electronic fabric demand growth of 8.5% a year through 2028, in line with the industry's historical growth rate of 7-8%, and expect 2026 to track above this level owing to AI-driven acceleration and order pull-forward from anticipated supply shortfalls. For E-glass, we are also seeing incremental use cases from AI, where AI server boards require both speciality fabric and thin E-glass for less critical layers, with each layer of speciality fabric usage driving demand for several additional layers of thin E-glass. We also note potential E-glass usage in CPU packaging alongside T-glass, which could add further demand and benefit from strong CPU unit growth driven by rising agentic AI workloads ([link](#)).

Conventional CCL demand remains intact while supply crowded out by AI

We believe conventional CCL demand has become structurally more diversified and resilient than in the 2021 upcycle. The end-market mix for SYT/KBL has shifted away from consumer electronics, which are experiencing weakness from rising memory costs. At the same, incremental demand from new end markets, including AI servers-related components such as ancillary power delivery PCBs, is increasing. We think this will likely create a firmer base to support higher conventional CCL prices in the near term.

We expect AI infrastructure build-out to contribute meaningful incremental volumes for conventional CCL. Notably, server power delivery boards, including VRMs, PSUs and DC-DC converters, rely predominantly on conventional FR4 high-Tg materials paired with thick copper foils to handle the elevated current loads and thermal demands of modern AI infrastructure. KBL indicated server and power boards currently represent >10% of CCL shipments and it expects this to rise significantly in 2027. We estimate SYT's current end-market unit mix to be: 1) Autos: 30% (with secular content growth from rising EV penetration driving PCB content); 2) Communications: 15%; 3) Consumer Electronics: 12%; 4) Home Appliances: 12% (lowered from 15% through mix optimisation); 5) Aerospace: 8%; 6) Industrial/Medical: 8%; and others.

We believe the combination of structurally tight supply and resilient demand has shifted negotiating power towards CCL producers, with demand now running materially ahead of supply. This is evident in SYT and KBL selectively choosing customers and orders, rejecting capacity lock-in requests and actively reweighting their mix towards higher-end, higher-margin products. SYT's rigid CCL lines have been operating at full utilisation since Q225, while KBL's inventory levels have remained at zero for at least the past three months, with lead times currently exceeding one month.

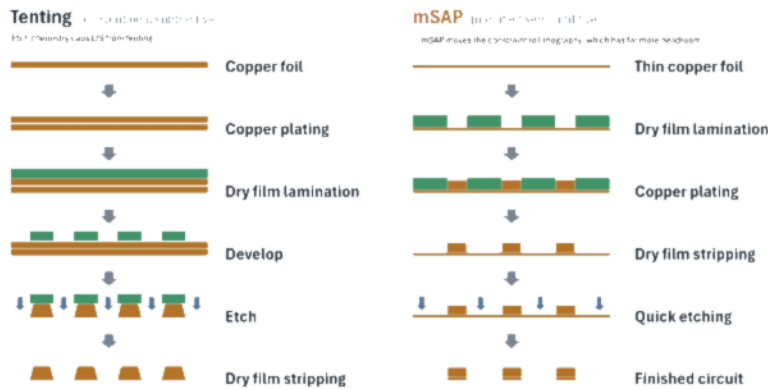
Customers are proactively offering higher prices and, in some cases, pursuing supply with the help of government "red-headed" directives. As a result, we see limited downside from weaker smartphone/consumer electronics units for SYT and KBL. Even

with current conventional CCL prices close to doubling from end-2025 levels, we expect downstream OEM customers to accept higher prices. This is because PCBs remain a critical enabling component while conventional FR4 PCBs represent only a single-digit percentage of total BOM cost across customers' end markets for SYT and KBL.

Optical module and ASIC PCB as near-term growth drivers

We believe optical module PCBs will likely be the key revenue growth driver for Shennan and Avary as 800G and 1.6T optical module demand accelerates and they make up the majority of volumes from 2026E onwards, directly benefiting PCB makers with the mSAP capability required for 800G modules and above. We believe only a handful of PCB suppliers possess the mSAP (Modified Semi-Additive Process) manufacturing capabilities at scale and sufficient capacity in place to capitalise on this potential growth.

Figure 22: Conventional tenting versus mSAP PCB process

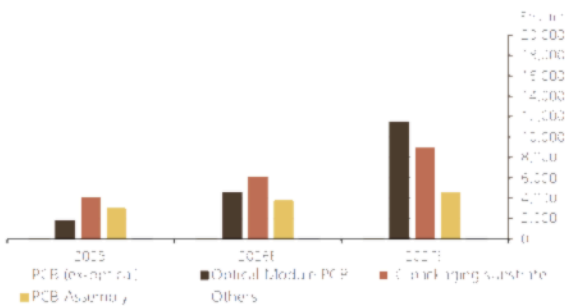


Source: UBS

Shennan's mSAP know-how was built from its position as the domestic leader in BT and ABF packaging substrates, where line width and spacing are finer than even the most advanced AI HDI boards today, requiring mSAP manufacturing expertise. With ample mSAP capacity in place, Shennan currently has a 40% market share in optical module PCBs, fulfilling demand from domestic optical module makers, per our industry studies. We forecast Shennan's optical module PCB revenue to at least double in both 2026E and 2027E from under Rmb2bn in 2025.

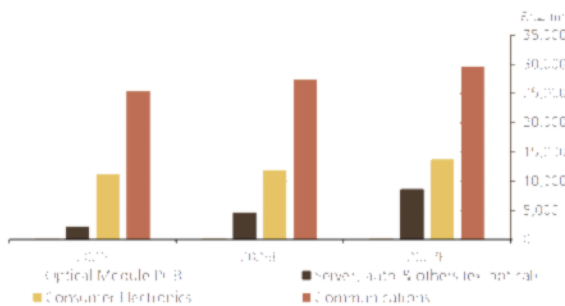
We see strong potential for Avary given its years of experience manufacturing SLP (substrate-like PCB) boards for Apple at mass volumes, which also use mSAP, with manufacturing experience dating back to 2019. We view this capability as directly transferable to optical module PCBs and expect it to support a faster capacity expansion than peers. We expect Avary to hold a 20% optical module PCB market share in 2026, with 50% of its Rmb16.8bn 2026 capex directed towards expanding its mSAP and HDI capacity. Avary indicated that mSAP and HDI demand currently run ahead of supply, which supports the company's decision to pivot aggressively into AI rigid PCBs (from its legacy flexible PCB business). It has 10 new factories under construction to maintain its dominance as the largest PCB maker globally (as we noted in our AIC panel with Avary).

Figure 23: Shennan's revenue forecasts by segment



Source: Company data, UBS estimates

Figure 24: Avary's revenue forecasts by segment



Source: Company data, UBS estimates

We expect the optical module PCB TAM to at least double in 2027. We see strong optical module PCB revenue growth over the next few years driven by:

1) Accelerating 800G and 1.6T optical module demand taking the majority of volumes from 2026E onwards, unlike 400G optical modules, which do not require mSAP processes. 800G marked the first partial adoption of mSAP but still relies in part on tenting, which caps at c.50/50 μm , while 1.6T runs at even finer 25/25 μm to 30/30 μm line width/spacing, with higher layer counts and build-up layers.

2) As a result, content value steps up as mSAP content rises and transmission speeds increase. We estimate the optical module PCB ASPs to approximately double at each iteration from 400G to 800G to 1.6T. Shennan's 1.6T optical module PCB mix increased from below 5% in 2025 to 10% in Q126, while its 800G mix rose to c.40-50%. We believe faster-than-expected 1.6T growth in 2027E could provide further upside.

3) NPO modules add incremental units of mSAP PCB demand, likely at an even larger PCB size than transceivers. We expect NPO to contribute meaningful demand from 27'.

Figure 25: Optical module PCB spec comparison

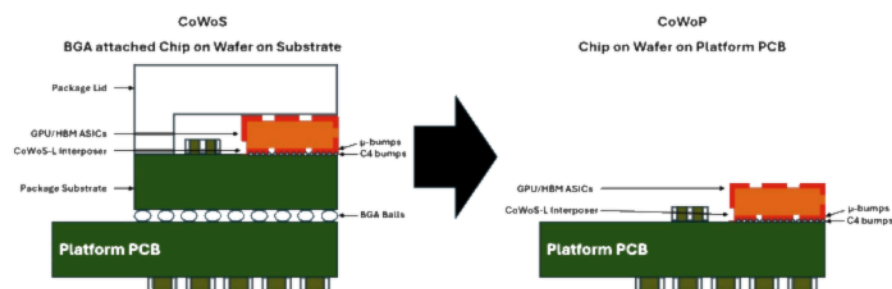
	400G	800G	1.6T
PCB Process	Substrative Tenting	Tenting / mSAP	mSAP
Line Width / Spacing	> 50 / 50 μm	30 / 30 - 50 / 50 μm	25 / 25 - 30 / 30 μm
Layer Count	10 - 12L	12 - 14L	14 - 18L
CCL Grade	M6	M7 / M8	M8 / M9

Source: UBS

We also note VGT (a leader in AI HDI PCB) is another mSAP-capable supplier, with its current optical module mSAP line at Huizhou Factory 4 running close to full utilisation and demand visibility into 2027F. We see VGT expanding mSAP capacity by building two new dedicated plants for 1.6T optical module PCBs, with capacity reserved for its GPU customer. We think other PCB suppliers without scaled mSAP production currently remain early on the curve, as we see the majority of announced mSAP capacity expansion coming online from 2028E onwards, and should find it harder to catch up. We believe this is likely to benefit incumbents while demand outstrips supply.

Longer term, we see continued demand for PCB spec upgrades driven by increasing AI compute and networking data transmission needs, which may spur further mSAP demand. As mentioned by our Taiwan PCB/Substrates analyst ([Taiwan PCB/Substrates "Still at the early innings of a multi-year upcycle"](#)), CoWoP (Chip-on-Wafer-on-PCB) is an advanced packaging architecture that targets lower cost and improved scalability by eliminating the ABF substrate layer. It directly bonds the silicon interposer plus xPU + HBM assembly onto a large platform PCB and shifts system-level routing to advanced mSAP and HDI PCB technologies. This enables shorter interconnect paths, improving signal and power integrity, while the lidless design supports more efficient thermal dissipation. However, we see CoWoP as still being at the pre-commercialisation stage, awaiting more visibility on its potential adoption timeline.

Figure 26: CoWoS to CoWoP – removal of package lid/substrate and BGA balls



Source: Company data, UBS

ASIC accelerates to outpace Nvidia/GPU benefiting well exposed suppliers

The UBS tech team estimates overall ex-Nvidia accelerator (predominantly ASICs) units to account for the majority of industry volumes in 2026 at 8.8m (49% increase YoY) versus 8.1m (17% YoY) GPU (SiP) units from Nvidia. In 2027E, ex-Nvidia accelerator units could reach 17.5m (98% YoY), while Nvidia's GPU units grow 36% YoY to 11.0m units. Among ASICs, we expect TPUs and Trainium/Inferentia to make up the majority of unit shipments. We estimate TPU units in 2026/2027 at 4.2m/10.0m (58%/140% YoY) and Trainium/Inferentia units at 2.5m/3.2m (218%/28%YoY).

Figure 27: AI GPU/ASIC supply chain companies

Semiconductors	Google	Meta	Microsoft	Amazon	Oracle	NVIDIA
Foundry + CoWoS	TSMC	TSMC	TSMC	TSMC	N/A	TSMC
Assembly Outsourcing	ASE, Amkor	ASE	ASE	ASE	N/A	ASE, Amkor
Back-end Test	King Yuan (Broadcom, NVIDIA)	King Yuan (Broadcom, NVIDIA)	King Yuan	ASE, King Yuan	N/A	King Yuan, ASE (2nd source)
ASIC Design Service	Broadcom through vSt	Broadcom	GUC Maia 100/200 & Cobalt, MRVL Maia 300	Tranium 2/3 MRVL	N/A	N/A
IC Distribution	Mediatek v8t, GUC Axion	WT Micro (Broadcom)	N/A	Alchip T1/T3	N/A	N/A
HBM	ASIC server: Hynix 67% / Samsung 33%	ASIC server: Micron 63% / Samsung 37%	NVDA server: (Hynix 60%+, Micron 24%, Samsung 15%)	ASIC Server: Hynix 84%, Samsung 16%	N/A	Hynix 60%+, Micron 24%, Samsung 15%
BMC	Google internal	Aspeed	Aspeed	Aspeed	N/A	Aspeed
Test Platform	Advantest	Advantest	Advantest	Teradyne	N/A	Advantest FT, Chroma SLT, Teradyne
Probe Card	MPI (CHPT load board)	MPI	NVDA server: TPI	MPI	N/A	TPI

Hardware	Google	Meta	Microsoft	Amazon	Oracle	NVIDIA
ASIC Server	Celestica (TPU tray & L11), Hon Hai (CPU tray & L11, Inventec (CPU L6)	Quanta + Celestica	Hon Hai	Accton, Fabrinet L6	N/A	N/A
GPU Server	NVIDIA	NVIDIA, AMD	NVIDIA, AMD	Wiwynn, Jabil L11	NVIDIA	NVIDIA
GPU Server Racks	Quanta, Hon Hai from VR	Hon Hai, Quanta	Hon Hai, Quanta	Quanta	Hon Hai, Quanta, Wistron, Dell, SMCI	Hon Hai, Quanta, Wistron, SMCI etc.
Switch/Networking	Celestica	Celestica, Nvidia, Cisco, Arista, Accton	Arista, Nvidia	Accton, Celestica	Mitac	Wistron ODM Spectrum, Hon Hai Switch Tray
Substrate	Unimicron, Nanya PCB (late 26)	Unimicron	Unimicron	Unimicron, Semco	N/A	Ibiden, Unimicron
PCB	Victory, ISU Petasys, Shennan, DSBJ	Isu Petasys (Switch), Shennan	ISU Petasys (Switch), Avary (small share)	Shengyi Elect., Avary (small share)	N/A	HDI: Victory, Unimicron, MLB: Wu, TTM, ISU, Avary
CCL	Panasonic, Shengyi, Elite Material	Elite Material	N/A	Elite Material, Shengyi Tech	N/A	Panasonic, Isola, Shengyi, Elite, Doosan
Heatspreader/Stiffener	GPU lid: Jentech, TPU stiffener: Jentech	GPU lid: Jentech	GPU lid: Jentech	GPU lid: Jentech, AWS lid/stiffener: Jentech		Lid/stiffener main: Jentech, legacy: I-Chun
Liquid Cooling (ASIC)	Boyd, Cooler Master, AVC	AVC, Auras	AVC	AVC, Auras	N/A	N/A
Liquid cooling GPU	Cooler master, Vertiv, AVC	AVC, Auras, Delta (L2A)	AVC, Delta (L2A)	AVC, Auras, Delta (L2A)		AVC, Auras, Jentech, CoolerMaster
Power Supply Unit	Delta	Delta	Delta, Lite-On	Delta, Lite-On (T3/T4 rack)		Delta, Lite-On, Megmeet

Source: Company data, UBS estimates

Figure 28: AI server GPU/accelerator unit forecasts ('000 units)

('000 Units)	2025	2026E	2027E
NVIDIA			
I40S	38		
I4200	593		
H20 / H20E	441		
B200 (8Hi)	1,441		
GB200 (2x GPU - 8Hi)	1,080	103	
B300 (12Hi)	587	867	50
GB300 (2x GPU - 12Hi)	778	2,358	900
R200 (12Hi)		540	1,320
RV200 (2x GPU - 12Hi)		740	2,640
R300 (8Hi)			650
RV300 (2x GPU - 8Hi)			800
*Other GPU/Accel	107	300	300
Total Units	5,066	4,908	6,660
% YoY	3%	-3%	36%
Total SiPs	6,924	8,109	11,000
% YoY	38%	17%	36%
AMD			
M300	71		
M325X (12Hi)	224	18	
M355X (12Hi)	221	470	
M308X	96	62	
M450 (12Hi)		275	1,650
M5XX (16Hi)			220
*Other GPU/Accel	4	6	8
Total Units	616	831	1,878
% YoY	41%	35%	126%
Google			
TPU v5e	134		
TPU v5p	1,916		
TPU v6e	426	640	
TPU v7	90	2,790	1,500
TPU v8t (Dual die AX)		250	4,000
TPU v8t (Single die X)		450	4,400
*Other TPU/Accel	77	37	100
Total Units	2,643	4,167	10,000
% YoY	19%	58%	140%

('000 Units)	2025	2026E	2027E
Amazon			
Inferentia 2	88		
Trainium 2 / 2.5	496	590	60
Inferentia 3	162	96	25
Trainium 3		1,780	2,800
Trainium 4			280
*Other Accel	37	28	30
Total Units	783	2,494	3,195
% YoY	-8%	218%	28%
Intel / Habana			
Gaudi 3	188	56	
Gaudi 4		35	70
*Others	25	18	16
Total Units	213	109	86
Microsoft			
Maia 100	34	4	
Maia 200		33	35
Maia 300			22
*Others	8	8	8
Total Units	42	45	65
Meta			
MTIA v1	421	25	
MTIA v2	30	30	
MTIA v3	5	110	105
MTIA v4			340
*Others	28	6	20
Total Units	484	171	465
Tesla			
Dojo	62	64	63
*Others	44	26	22
Total Units	106	90	85
Others			
Total Units	1,019	918	1,719
Total GPU / accelerator units	12,829	16,933	28,493
Nvidia GPU (SiP) units	6,924	8,109	11,000
% YoY		17%	36%
Ex-Nvidia accelerator units	5,905	8,824	17,493
% YoY		49%	98%

Source: Company data, UBS estimates

We view our covered names as well positioned to the ASIC ramp-up. 1) SYT supplies CCL to Nvidia, Google and Amazon (and PCB through Shengyi Electronics). 2) Shennan holds PCB allocation at Google and Meta. 3) Avary, apart from its early entry into the Rubin compute tray, holds a small PCB share at Amazon and Microsoft. We believe these companies look well positioned for further market share gains across the key ASIC projects ramp-up over the next few years.

We see suppliers' product mixes expanding to capture growing ASIC orders. According to our industry studies, EMC's CCL volume for Google already matches volume for Nvidia and could reach 2x Nvidia's volume by end-2026 and 3x by mid-2027. We expect margins from TPUs to be higher than those of existing GPU projects and foresee smoother cost pass-through amid upstream material cost inflation. We see VGT, which has been the major HDI PCB supplier to Nvidia, striving for a similar shift and targeting a 50/50 ASIC/GPU revenue split within the next two years, with 2027E Google orders expected to be broadly in line with Nvidia's, lifting AI revenue to around 70% of total revenue from below 50% in 2025.

We note ASIC platforms also moving towards the compute and switch tray architecture adopted in Blackwell, which introduces additional HDI content. Google adopted HDI at V7 with a 24-layer compute board and a 32-layer HLC switch board. We expect ASIC boards to stay mostly HLC at 20-40 layers in 2026 before a broader HDI migration from 2027E, driven by rising accelerator pin counts and demand for finer line widths and spacing that HLC processes cannot deliver. We believe higher layer counts and wider HDI adoption should lift content value for PCB makers and drive share gains, particularly for those with superior HDI know-how.

Packaging substrates: Still a memory-driven story with no signs of weakness

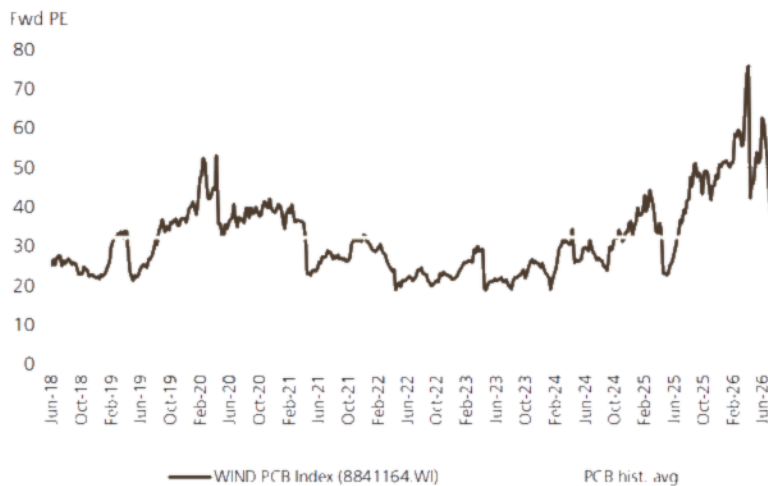
We reiterate our expectation for BT substrate price hikes through 2026 as tightness of raw materials (for example T-glass and HVLP copper foil) and the unprecedented memory upcycle have compelled customers to secure supply. China's BT substrate makers [Shennan](#) and [FastPrint](#) both announced Q226 preliminary results, with Shennan's net profit up 55%/59% YoY/QoQ at the midpoint and FastPrint up 369%/367% YoY/QoQ. We believe full utilisation and GPM expansion at their BT substrate plants since Q225 have been major contributors to their continued bottom-line growth, aside from AI optical module PCBs. [UBS Tech team now forecasts](#) blended DRAM/NAND ASP to increase 19%/20% QoQ in Q326E and 10%/8% QoQ in Q426E, after rising 38%/69% QoQ in Q226. We do not foresee the DDR/NAND upcycle ending until Q228/Q427E, which we think should set Shennan and FastPrint up to deliver elevated BT substrate GPM of 30-35% for longer.

PCB and CCL capacity oversupply situation unlikely, market concerns overdone

Capacity additions, especially from Chinese players, have led to concerns about oversupply across the AI PCB supply chain. We believe CAPEX is more disciplined among upstream vendors including high-end CCL and upstream materials, versus PCB suppliers, which are more eager to seize the opportunity to become tier-1 through AI, and thus are more aggressive and willing to expand. Our study on new capacity plans across major CCL and PCB players suggest a slight CCL undersupply situation. Though PCB capacity additions look more aggressive than upstream, we see no real risk of high-end PCB oversupply in the next two years for two main reasons: **1)** The move to a higher layer count and more complicated PCB design drives down production yield and compresses output level multiple times compared to what current announced capacity expansion suggests. **2)** Not all announced PCB expansion will translate to effective supply as investments plans are done in various phases and dynamically adjusted depending on future market conditions. Some suppliers planning to expand are not yet qualified by GPU/accelerator customers, hence the announced expansions may fall through if they fail to pass qualification or end demand softens during the process.

Get in touch for our PCB and CCL capacity expansion trackers.

WHAT'S PRICED IN?

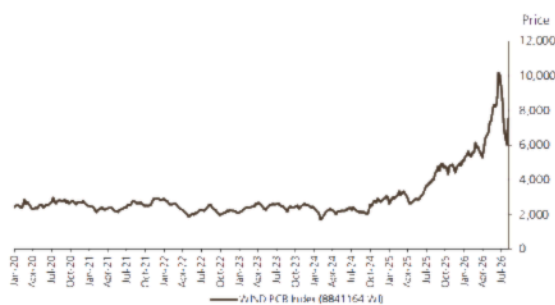


Valuations of PCB/CCL companies in this AI cycle are above the levels of the previous upcycle, which was driven by 5G

Source: Wind

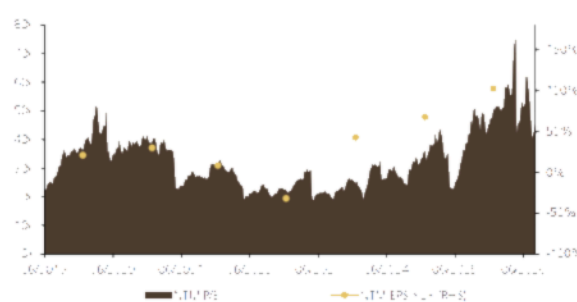
The Wind PCB sector index (8841164.WI) has fallen 25% from its all-time peak in June. We believe market pessimism has stemmed from a later Kyber backplane timeline into 2028/29, on top of a broader weakness in investor sentiment towards AI supply chain names. For Kyber, we see implications from two areas: 1) a later Kyber timeline suggests backplane manufacturing headwinds are more severe than expected and that a PCB backplane format may not be the ideal scale-up solution, while alternative optical scale-up solutions could be nearing commercial maturity by then. 2) Oversupply concerns mirroring previous upcycle endings as the majority of announced PCB capacity expansions come online from 2028 onwards, amid the potential demand hit if the Kyber backplane is no longer adopted. We believe the PCB backplane and optical scale-up solutions could coexist, given their respective advantages and end-customer preferences, and see no real risk of high-end PCB oversupply in the next two years.

Figure 30: Wind PCB index price



Source: Wind

Figure 31: Wind PCB index NTM PE vs. NTM EPS YoY



Source: Wind

We gauge where we are in the AI cycle by benchmarking against the China PCB sector's previous upcycle (30-50x NTM PE in 2019-21). We note that the previous upcycle was driven by 5G-led content growth alongside temporary input tightness, with sector valuations beginning to derate ahead of the earnings peak as NTM earnings growth decelerated. We think the AI cycle shares similar growth drivers in terms of content value from spec upgrades and unit shipments. But we do not believe the sector is at that point yet. We forecast a 46% earnings CAGR for our coverage in 2026-28 compared with 33% in 2019-21, and do not expect 2026/2027 earnings to represent the peak. We expect AI to drive server PCB demand expansion of 5-10x, significantly higher than the 2-3x seen during the 4G-to-5G network upgrade. We think the AI-driven upcycle could be higher for longer and have a wider group of beneficiaries, suggesting further re-

rating upside potential for the sector as orders continue to materialise, especially as upstream material tightness has become more severe. In our view, the market is pricing the sector on its historical cyclical earnings profile and likely overlooking the structural shifts in earnings durability from AI.

Figure 32: APAC PCB/CCL sector comps

Company	Ticker	Market cap (US\$m)	Price 07-Aug (LC\$)	Rating	P/E (x)			P/B (x)			ROE (%)		
					2026E	2027E	2028E	2026E	2027E	2028E	2026E	2027E	2028E
PCB and substrates													
Shengyi Technology	600183.SS	50,393	140.0	Buy	43.3	29.2	20.8	15.7	12.4	9.7	40.7	47.2	52.1
Shennan Circuits	002916.SZ	38,627	382.6	Buy	51.5	32.5	23.9	12.4	8.3	6.8	26.3	30.8	31.5
Kingboard Laminates	1888.HK	15,331	38.4	Buy	18.1	11.5	9.2	5.8	4.6	3.8	35.8	44.7	45.1
Avary	002938.SZ	34,838	101.4	Buy	45.7	31.2	21.8	5.2	4.6	4.0	13.3	15.8	19.6
Shenzhen FastPrint	002436.SZ	8,514	33.8	Neutral	109.8	50.2	33.3	6.5	5.8	5.1	7.3	12.2	16.3
Victory Giant	300476.SZ	39,837	280.2	Not Rated	29.2	17.3	11.8	4.7	4.3	3.9	16.6	25.9	34.3
WUS Printed Circuit Kunshan	002463.SZ	35,384	125.9	Not Rated	41.2	26.7	18.1	12.8	9.6	6.6	30.2	34.8	35.2
Zhen Ding	4958.TW	13,890	473.0	Not Rated	27.7	17.1	11.5	4.8	2.5	n.a	14.0	11.7	n.a
Kinsus	3189.TW	11,943	823.0	Buy	69.8	37.6	22.1	10.0	8.4	6.6	15.3	24.3	33.5
Unimicron	3037.TW	45,513	955.0	Buy	40.0	24.4	16.0	10.8	8.1	5.9	30.9	37.9	42.8
Nan Ya PCB	8046.TW	21,639	1,080.0	Neutral	84.9	44.3	30.9	13.2	10.8	8.8	16.6	26.7	31.3
Tripod	3044.TW	6,421	394.0	Not Rated	13.9	10.9	8.2	3.9	3.4	n.a	24.4	27.9	n.a
Ibiden	4062.T	34,031	19,110.0	Buy	30.3	68.0	45.7	2.5	8.6	7.4	13.4	17.4	20.5
Samsung Electro-Mechanics	009150.KS	67,804	1,278,000.0	Buy	61.5	26.9	17.2	8.5	6.7	4.9	15.0	27.8	32.9
Sector					47.6	30.6	20.7	8.3	7.0	6.1	21.4	27.5	32.9

Source: Company data, ISEF, Wind, UBS estimates. Note: Not rated are consensus estimates; others are UBS estimates.

Figure 33: Summary of rating and estimate changes

Company	Ticker	Market cap (US\$m)	Price 07-Aug (LC\$)	Old price target (LC\$)	New price target (LC\$)	Old Rating	New Rating	EPS Revision			Old target PE multiple	New target PE multiple	P/E (x)			NP CAGR 26-29E	PEG 27PE/26-29E	ROE		
								2026E	2027E	2028E			2026E	2027E	2028E			2026E	2027E	2028E
UBS-S China PCB/CCL Sector Coverage																				
Shengyi Technology	600183.SS	50,393	140	97	192	Buy	Buy	38%	57%	91%	35x (on 26E)	40x (on 27E)	43.3	29.2	20.8	38%	0.8	41%	47%	52%
Shennan Circuits	002916.SZ	38,627	383	285	473	Buy	Buy	-1%	27%	73%	38x (on 26E)*	40x (on 27E)*	51.5	32.5	23.9	39%	0.8	26%	31%	31%
Kingboard Laminates	1888.HK	15,331	38	-	58	-	Buy	-	-	-	-	17x (on 27E)	18.1	11.5	9.2	30%	0.4	36%	45%	45%
Avary	002938.SZ	34,838	101	55	130	Neutral	Buy	0%	8%	9%	24x (on 26E)	40x (on 27E)	45.7	31.2	21.8	42%	0.7	13%	16%	20%
Shenzhen FastPrint	002436.SZ	8,514	34	26	37	Neutral	Neutral	-32%	19%	12%	58x (on 26E)*	55x (on 27E)*	109.8	50.2	33.3	67%	0.7	7%	12%	16%
Sector average													53.7	30.9	21.8	43%	0.7	25%	30%	33%

Source: LSEG, UBS estimates. Note: EPS changes for Shennan, Avary and FastPrint are impacted by an increased number of shares outstanding * Implied 2027E PE since valuations are based on SO1P.

Rating and estimate changes

Shengyi Technology (reiterate Buy, price target at Rmb192.00): We maintain our Buy rating and raise our PE-based price target from Rmb97.00 to Rmb192.00 based on 40x 2027E PE (previously 35x 2026E) on the back of a 38% EPS CAGR in 2026-29E. We raise our 2026/2027/2028 NP estimates 38%/57%/91%, bringing us 21-29% above consensus, as we factor in [preliminary H126 results](#) (net profit to parent of Rmb3.2bn, up 124% YoY at the midpoint) and raise our shipments and ASP growth forecasts due to a stronger-than-expected conventional CCL upcycle and improved AI order visibility. We now forecast conventional FR4 CCL price hikes to continue through H226 into H127, with prices more than doubling in 2026. As a result, we expect overall CCL/Prepreg segment revenue rising 103%/52% in 2026/27E alongside GPM expansion, also helped by a greater AI CCL mix. We estimate SYT's overall blended GPM to expand by 3ppts to 29% in 2026 from 2025 levels.

Additionally, we believe Shengyi is likely to become a key CCL supplier if a PTFE solution is adopted for the Kyber backplane. We estimate Shengyi's 2026-29 earnings CAGR could accelerate to 44% if it secures Kyber backplane allocation. We estimate this could lead to potential valuation upside relative to our current price target, driven by multiples expansion on higher growth. Our current price target implies a 37% price upside, while we estimate the adoption of backplane could support potential valuation upside of 59% for Shengyi (assuming target PEG remains the same as our base-case valuation).

Shengyi trades at 44x NTM PE after the stock rebounded after correcting 49% from its all-time peak in June, 3SD above its historical average. Shengyi has been running at full capacity YTD, producing both high-speed and conventional CCL. It is an approved CCL

vendor to global leading AI customers (Nvidia, Intel, AMD, Google and Amazon), network equipment providers (Arista, Accton and Star-Net) and server vendors (Dell, HPE, Inspur and Lenovo). We believe the current valuation looks attractive as we think the market may be overlooking Shengyi's earnings leverage to a sustainable conventional CCL upcycle, as the majority of its shipments are still FR4-grade, while not pricing in the Kyber backplane option value. Based on our industry studies, we expect Shengyi to gain market share in next-gen products of NA AI server customers.

Figure 34: SYT's 2026-28 earnings – our estimates versus consensus

Rmb mn	2026E						2027E						2028E					
	UBS-S new	UBS-S old	Diff%	Reuters	Diff%	WIND	UBS-S new	UBS-S old	Diff%	Reuters	Diff%	WIND	UBS-S new	UBS-S old	Diff%	Reuters	Diff%	WIND
Revenue	52,407	40,854	28%	41,138	27%	40,888	75,876	54,077	40%	55,725	36%	55,117	98,085	63,345	55%	78,913	24%	68,946
YoY	84%	44%		45%		46%	45%	32%		35%		35%	29%	17%		42%		25%
Gross profit	15,329	12,079	27%	11,234	36%	n.a.	22,433	15,592	44%	15,992	40%	n.a.	30,114	17,876	68%	21,597	39%	n.a.
GPM	29.3%	29.6%		27.3%		n.a.	29.6%	28.8%		28.7%		n.a.	30.7%	28.2%		27.4%		n.a.
Net Profit	7,815	5,634	39%	6,070	29%	6,033	11,596	7,327	58%	8,988	29%	8,801	16,282	8,462	92%	13,449	21%	11,662
NPM	14.9%	13.8%		14.8%		14.8%	15.3%	13.5%		16.1%		16.0%	16.6%	13.4%		17.0%		16.9%
EPS	3.23	2.35	38%	2.51	29%	2.50	4.80	3.05	57%	3.72	29%	3.64	6.74	3.53	91%	5.57	21%	4.83
YoY	133%	69%		81%		80%	48%	30%		48%		46%	40%	15%		50%		33%

Source: Reuters, Wind, UBS estimates

Shennan Circuits (reiterate Buy, price target at Rmb 473.00): We maintain our Buy rating and raise our price target from Rmb285.00 to Rmb473.00 based on an SOTP methodology, where we value the core business at 40x 2027E PE (previously 35x 2026E) on the back of a core earnings CAGR in 2026-29E of 37%, and the ABF business at 35x 2029E (unchanged), discounted to present value. We raise our 2026/2027/2028 EPS estimates by -1%/+27%/+73%, bringing us -4% to 14% compared with consensus, as we factor in [preliminary H126 results](#) (net profit to the parent company at Rmb1.35bn, up 55% YoY at midpoint) and reflect shipment and ASP growth in 2026-28E, driven by a higher AI product contribution from North American ASIC customers as well as optical module PCBs primarily for domestic customers.

Figure 35: Shennan's 2026-28 earnings – our estimates versus consensus

Shennan Circuit Rmb mn	2026E						2027E						2028E					
	UBS new	UBS old	Diff	Wind	Reuters	Diff	UBS new	UBS old	Diff	Wind	Reuters	Diff	UBS new	UBS old	Diff	Wind	Reuters	Diff
Revenues	31,995	32,010	0%	31,181	31,179	3%	45,242	38,410	18%	39,717	40,094	13%	59,523	42,199	41%	49,701	49,445	20%
Gross profit	9,698	9,902	-2%	n.a.	9,140	6%	14,593	11,942	22%	n.a.	12,190	20%	19,831	12,511	59%	n.a.	16,390	21%
Operating expense	4,061	4,214	-4%	n.a.	n.a.	n.a.	5,615	4,916	14%	n.a.	n.a.	n.a.	7,438	5,449	36%	n.a.	n.a.	n.a.
Pre-tax profit	5,265	5,268	0%	n.a.	5,635	-7%	8,686	6,644	31%	n.a.	8,143	7%	12,105	6,681	81%	n.a.	10,629	14%
Net profit	4,956	5,003	-1%	5,418	5,167	-4%	8,033	6,163	30%	7,454	7,455	8%	11,181	6,195	80%	9,859	9,802	14%
EPS	7.43	7.50	-1%	8.13	7.75	-4%	11.78	9.24	27%	10.93	10.93	8%	16.03	9.29	73%	14.14	14.05	14%
Sales chg YoY %	35.3%	35.4%	-0.1ppt	31.9%	31.9%	3.5ppt	41.4%	20.0%	21.4ppt	27.4%	28.6%	12.8ppt	31.6%	9.9%	21.7ppt	25.1%	23.3%	8.2ppt
Gross margin %	30.3%	30.9%	-0.6ppt	n.a.	29.3%	1.0ppt	32.3%	31.1%	1.2ppt	n.a.	30.4%	1.9ppt	33.3%	29.6%	3.7ppt	n.a.	33.1%	0.2ppt
Opex/sales %	12.7%	13.2%	-0.5ppt	n.a.	n.a.	n.a.	12.4%	12.8%	-0.4ppt	n.a.	n.a.	n.a.	12.5%	12.9%	-0.4ppt	n.a.	n.a.	n.a.
Net margin %	15.5%	15.6%	-0.1ppt	17.4%	16.6%	-1.1ppt	17.8%	16.0%	1.7ppt	18.8%	18.6%	-0.8ppt	18.8%	14.7%	4.1ppt	19.8%	19.8%	-1.0ppt

Source: Reuters, Wind, UBS estimates

We forecast Shennan's 2026 optical module PCB revenue to be at least double the level of c.Rmb1.9bn recorded in 2025 and doubling again in 2027, representing c.39% of its PCB segment revenue by 2027E and driving segment growth of 38%/48% YoY in 2026E/2027E, as mSAP capacity expands from two lines to around six in 2027E. Additionally, we believe Shennan is likely to become a supplier of the Kyber backplane PCB, marking its entry into the Nvidia supply chain, if it has not entered by then. We estimate Shennan's earnings could accelerate to 47% if it secures Kyber backplane allocation. We believe this could lead to valuation upside relative to our current price target, driven by multiples expansion on higher growth. Our current price target implies a 24% price upside, while the adoption of backplane could support a valuation upside of 50% for Shennan (assuming target PEG remains the same as our base-case valuation). Shennan trades at 40x NTM forward PE after rebounding from a 40% correction from its all-time peak in July, 1.5SD above its historical average. We believe the market has likely priced in near-term high utilisation driven by overseas AI PCB and domestic BT substrate orders, but has not fully priced in the potential earnings contribution from optical module PCBs, the Kyber backplane upside potential and the potential from domestic ABF demand.

Avary (upgrade to Buy, price target at Rmb 130.00): We upgrade Avary from Neutral to Buy and raise our price target from Rmb130.00 to Rmb55.00, primarily based on a higher multiple of 40x 2027E PE; on the back of a 42% 2026-29E NP CAGR. We raise our 2027/28/29 EPS estimates by 8-9% and expect AI PCB earnings contributions to ramp up meaningfully from 2028 onwards, as we account for the 10 new factories currently under construction coming online.

We previously valued Avary based on a 24x 2026E PE, in line with consumer electronics peers as the majority of its revenue still comes from Apple and AI penetration had been limited. We now raise our valuation based on higher AI order visibility, with its HDI PCB having passed customer qualification and likely to be adopted in the upcoming Rubin series. At the same time, we view Avary as one of the major beneficiaries of optical module PCBs given its mSAP process expertise built from years of experience manufacturing SLP products for iPhones. We expect Avary's core CE business to remain resilient supported by stronger UBSe iPhone shipments +9% in 2026E, overall SP market -10% ([link](#)), alongside FPC content growth from the upcoming foldable model. Avary is trading at 36x NTM PE, 2SD above its historical average of 20x. We believe the market has likely priced in a mild pickup in consumer electronics sales this year from more resilient iPhone shipments and has awarded Avary a higher valuation due to improved sentiment from an overall AI-driven PCB upcycle, but the potential earnings contribution from AI/optical module PCB revenue does not appear to be fully priced in yet.

Figure 36: Avary's 2026-28 earnings – our estimates versus consensus

RMB mn	2026E						2027E						2028E					
	UBS-Se new	UBS-Se Old	% chg	Wind	Reuters	Diff	UBS-Se new	UBS-Se Old	% chg	Wind	Reuters	Diff	UBS-Se new	UBS-Se Old	% chg	Wind	Reuters	Diff
Revenues	46,267	47,787	-3.2%	47,501	46,346	-0.2%	59,545	60,495	-1.6%	59,646	62,253	-4.3%	78,648	76,865	2.3%	75,188	79,442	-1.0%
Gross profit	11,101	10,407	6.7%	n.a.	10,514	5.6%	15,030	13,455	11.7%	n.a.	14,518	3.5%	20,989	17,992	16.7%	n.a.	19,015	10.4%
Operating expense	5,077	4,675	9.8%	n.a.	n.a.	-	6,371	5,384	18.3%	n.a.	n.a.	-	8,415	6,726	25.1%	n.a.	n.a.	n.a.
Operating profit	5,896	5,890	0.1%	n.a.	n.a.	-	8,733	7,641	14.3%	n.a.	n.a.	-	12,499	10,843	15.3%	n.a.	n.a.	n.a.
Pre-tax profit	5,896	5,890	0.1%	n.a.	5,690	3.6%	8,732	7,641	14.3%	n.a.	8,584	1.7%	12,498	10,843	15.3%	n.a.	11,921	4.8%
Net profit	5,376	5,384	-0.1%	5,442	5,039	6.7%	7,884	6,973	13.1%	7,645	7,602	3.7%	11,274	9,894	13.9%	10,374	10,543	6.9%
Reported EPS	2.32	2.32	-0.1%	2.35	2.17	6.7%	3.25	3.01	8.1%	3.15	3.14	3.7%	4.65	4.27	8.9%	4.28	4.35	6.9%
Sales chg YoY %	18.2%	22.1%	-3.9ppt	21.3%	18.4%	-0.2ppt	28.7%	26.6%	2.1ppt	25.6%	34.3%	-5.6ppt	32.1%	27.1%	5.0ppt	26.1%	27.6%	4.5ppt
Sales chg QoQ %	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross margin %	24.0%	21.8%	2.2ppt	n.a.	22.7%	1.3ppt	25.2%	22.2%	3.0ppt	n.a.	23.3%	1.9ppt	26.7%	23.4%	3.3ppt	n.a.	23.9%	2.8ppt
Opex/sales %	11.0%	9.7%	1.3ppt	n.a.	n.a.	n.a.	10.7%	8.9%	1.8ppt	n.a.	n.a.	n.a.	10.7%	8.8%	2.0ppt	n.a.	n.a.	n.a.
Pre-tax margin %	12.7%	12.3%	0.4ppt	n.a.	12.3%	0.5ppt	14.7%	12.6%	2.0ppt	n.a.	13.8%	0.9ppt	15.9%	14.1%	1.8ppt	n.a.	15.0%	0.9ppt
Net margin %	11.6%	11.2%	0.4ppt	11.5%	10.9%	0.7ppt	13.2%	11.5%	1.7ppt	12.8%	12.2%	1.0ppt	14.3%	12.9%	1.5ppt	13.8%	13.3%	1.1ppt
EPS YoY	43.8%	44.0%	-0.2ppt	45.6%	34.8%	9.0ppt	40.2%	29.5%	10.7ppt	34.1%	44.7%	-4.0ppt	43.0%	41.9%	1.1ppt	35.7%	38.7%	4.3ppt

Source: Reuters, Wind, UBS estimates

FastPrint (reiterate Neutral, PT Rmb37.00): We maintain our Neutral rating and raise our PT from Rmb26.00 to Rmb37.00 based on an SOTP methodology where we value the core business at a 40x 2027E PE (previously 35x 2026E); the ABF business at 45x 2030E PE (discounted back to present, previously 40x), which implies total 2027E PE of 55x, on the back of a higher 2026-29E EPS CAGR of 65%. We revise our 2026/27/28 EPS estimates -32%/+19%/+12% as we factor in weaker-than-expected prelim H126 results but also moderate upside from optical module PCBs. We estimate optical PCB revenues could reach Rmb1.6/4.2bn in 2026/27E (representing 16%/28% of overall revenues) and capturing 10-15% of industry share by revenue in the same period. We believe investors have fairly priced in recovering rising BT substrate ASPs from memory demand, but may be too optimistic about ABF mass production timeline, as the stock trades at a demanding valuation of 77x NTM consensus PE.

Figure 37: Fastprint's 2026-28 earnings – our estimates versus consensus

FastPrint Circuit Rmb mn	2026E						2027E						2028E					
	UBS New	UBS Old	Diff	Wind	Diff		UBS New	UBS Old	Diff	Wind	Diff		UBS New	UBS Old	Diff	Wind	Diff	
Revenues	9,937	11,527	-14%	9,002	10%		15,297	14,396	6%	11,188	37%		20,273	16,340	24%	14,004	45%	
Gross profit	2,376	2,929	-19%	n.a.			4,369	3,771	16%	n.a.			6,159	4,762	29%	n.a.		
Operating expense	1,708	2,007	-15%	n.a.			2,711	2,368	14%	n.a.			3,532	2,493	42%	n.a.		
Core operating profit	667	922	-28%	n.a.			1,659	1,403	18%	n.a.			2,627	2,269	16%	n.a.		
Net profit	547	760	-28%	460	19%		1,250	954	31%	765	63%		1,883	1,536	23%	1,219	55%	
EPS	0.31	0.45	-32%	0.26	19%		0.67	0.56	19%	0.41	63%		1.01	0.91	12%	0.66	55%	
Sales YoY %	38.1%	53.1%	-15ppt	25.1%	13ppt		53.9%	24.9%	29ppt	24.3%	30ppt		32.5%	41.8%	-9ppt	25.2%	7ppt	
Gross margin %	23.9%	25.4%	-2ppt	n.a.	n.a.		28.6%	26.2%	2ppt	n.a.	n.a.		30.4%	29.1%	1ppt	n.a.	n.a.	
Opex/sales %	17.2%	17.4%	0ppt	n.a.	n.a.		17.7%	16.5%	1ppt	n.a.	n.a.		17.4%	15.3%	2ppt	n.a.	n.a.	
NP YoY %	305.7%	459.2%	-153ppt	241.1%	65ppt		128.4%	25.6%	103ppt	66.3%	62ppt		50.6%	102.2%	-52ppt	59.3%	-9ppt	
Net margin %	5.5%	6.6%	-1ppt	5.1%	0ppt		8.2%	6.6%	2ppt	6.8%	1ppt		9.3%	9.4%	0ppt	8.7%	1ppt	

Source: Wind, UBS estimates

UBS Research THESIS MAP a guide to our thinking and what's where in this report:**PIVOTAL QUESTIONS****Q: Will SYT raise CCL ASP to reflect higher raw material costs and robust market demand?**

Yes. We expect strong CCL order momentum to continue in H226, accompanied by ASP upside. Many CCL vendors like KBL have made multiple price increases YTD, supported by monthly E-glass fabric price hikes YTD. We believe SYT's current UTR is at 100%, given order intake has exceeded capacity as PCB makers facing a raw material shortage have pulled in orders. SYT also raised CCL prices to reflect raw material costs and S/D dynamics in 2H25. Moreover, robust demand from AI servers and automotive has helped further improve its ASP through a growing contribution from high-speed CCL. We currently assume 91%/49% YoY ASP growth for CCL in 2026/27E.

Q: Can SYT improve its GPM?

Yes. We expect glass fabric prices to keep rising while copper prices could fluctuate at high levels, epoxy resin likely would remain relatively stable. With a rising CCL ASP, we believe SYT could protect its GPM against higher raw material costs with smoother cost pass throughs especially for conventional CCL products. We also expect a better mix of server products, with customers adopting more high-speed, low-loss/ultra low loss products (M8/M9-level) in AI servers, which generate a double-digit pts higher GPM than traditional M4/6-level products. We forecast SYT's overall GPM to reach 30% in 2026E vs. 22.0% in 2024, driven mainly by a 7ppt increase in GPM for its CCL and prepreg segment.

UBSVIEW

We maintain our Buy rating and raise our PE-based price target from Rmb97.00 to Rmb192.00 based on 40x 2027E PE (previously 35x 2026E) on the back of a 38% EPS CAGR in 2026-29E. We raise our 2026/2027/2028 NP estimates 38%/57%/91%, bringing us 21-29% above consensus, as we factor in [preliminary H126 results](#) (net profit to parent of Rmb3.2bn, up 124% YoY at the midpoint) and raise our shipments and ASP growth forecasts due to a stronger-than-expected conventional CCL upcycle and improved AI order visibility.

EVIDENCE

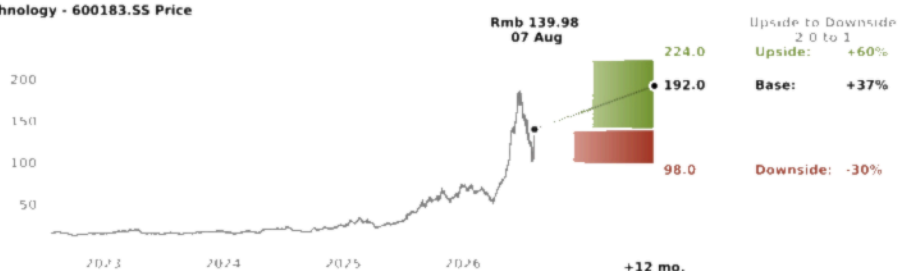
SYT is an approved CCL vendor to leading global customers in AI (Nvidia, Intel, AMD, Google, Amazon), network equipment (Arista, Accton, Star-Net) and servers (Dell, HPE, Inspur, Lenovo, Sugon). Based on our checks, we expect SYT to gain market share in North America via the next-gen products of AI server customers, while the mild upcycle in conventional CCL continues to provide a buffer against downside in earnings.

WHAT'S PRICED IN?

Shengyi trades at 44x NTM PE after the stock rebounded after correcting 49% from its all-time peak in June, 3SD above its historical average. We see current valuation as attractive as we believe the market may be overlooking Shengyi's earnings leverage to a sustainable conventional CCL upcycle as its majority of shipments are still FR4-grade, while not pricing in Kyber backplane upside potential.

UPSIDE/DOWNSIDE SPECTRUM

Shengyi Technology - 600183.SS Price

**Value drivers 2027E**

	CCL shipments YoY	CCL ASP YoY	PCB sales YoY	Blended GPM	Operating margin
Rmb224.00 upside	5.00%	80.00%	50.00%	32.00%	20.00%
Rmb192.00 base	3.00%	49.00%	32.00%	29.10%	17.90%
Rmb98.00 downside	0.00%	20.00%	20.00%	25.00%	14.00%

Source: UBS estimates

COMPANY DESCRIPTION

Shengyi Technology, founded in 1985, is the world's leading electronic circuit base maker. Its main product, Copper Clad Laminate (CCL), is the most crucial material used in printed circuit board (PCB) manufacturing. The company is headquartered in Dongguan, Guangdong ...

UBS Research THESIS MAP a guide to our thinking and what's where in this report:

PIVOTAL QUESTIONS

Q: Will Shennan be one of the main beneficiaries of optical module PCB demand?

We forecast Shennan's 2026 optical module PCB revenue to be at least double the level of c.Rmb1.9bn recorded in 2025 and doubling again in 2027, representing c.39% of its PCB segment revenue by 2027E and driving segment growth of 38%/48% YoY in 2026/27E, as mSAP capacity expands from two lines to around six in 2027E. Shennan's mSAP knowhow was built from its position as the domestic leader in BT and ABF packaging substrate, where line width and spacing run finer than even the most advanced AI HDI boards today. With ample mSAP capacity in place, Shennan currently holds c.40% market share in optical module PCB, fulfilling demand from domestic optical module makers.

Q: Will BT substrate see better demand in 2026?

Yes. We expect BT substrate orders and ASP to benefit from a memory upcycle. Material shortage should support near-term order momentum and UTR for BT substrate vendors. [UBS tech team forecasts](#) DRAM industry bit end-demand up 40% YoY in '27 (was +36%) after +21% in '26. We believe Shennan's BT substrate will enjoy robust order growth and ASP upside in 2026 as memory demand sustains through 2027 and T-glass supply remains tight. Besides overall memory order volume and ASP upside, we expect share gains at customers to be a key growth driver for Shennan.

UBS VIEW

We maintain Buy and raise our SOTP price target from Rmb285.00 to Rmb473.00, with its core business valued at 40x 2027E earnings on the back of faster core earnings CAGR in 2026-29E (37%), and its ABF business at 35x 2029E (unchanged). We raise 2026/27/28E EPS by -1%/+27%/+73%, putting us -4% to 14% compared with consensus, as we factor in [preliminary H126 results](#) (net profit to the parent company at Rmb1.35bn, up 55% YoY at midpoint) and to reflect shipment and ASP growth in 2026-28E, driven by a higher AI product contribution from NA ASIC customers as well as optical module PCBs mostly for domestic customers. We believe Shennan would likely become a potential supplier for the Kyber backplane PCB, especially if a PTFE-hybrid solution is adopted.

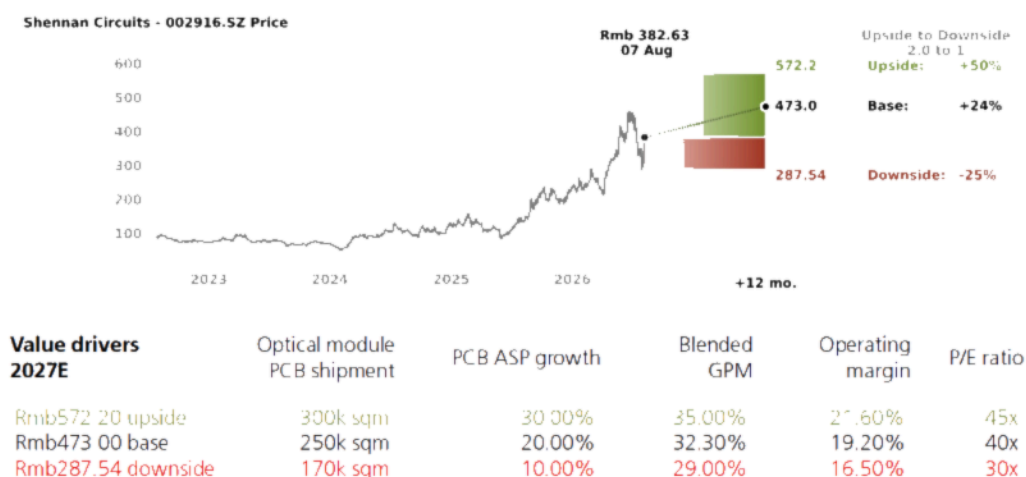
EVIDENCE

1) Shennan have proven track record in communication-product backplanes historically as well as experience with high-frequency products that utilizes PTFE. 2) Shennan currently holds c.40% market share in optical module PCB. 3) Net profit to the parent grew 55% YoY in H126 at the midpoint to Rmb1.35bn. 4) BT substrate orders were driven by growing orders from domestic key customers and some pull-in as customers faced tightness in raw material supplies; its UTR has been close to 100% with further order visibility towards the year end.

WHAT'S PRICED IN?

Shennan trades at 40x NTM forward PE after rebounding from a 40% correction from its all-time peak in July, 1.5SD above its historical average. We believe the market has likely priced in near-term high utilisation driven by overseas AI PCB and domestic BT substrate orders, but has not fully priced in the potential earnings contribution from optical module PCBs, the Kyber backplane upside potential and the potential from domestic ABF demand.

UPSIDE/DOWNSIDE SPECTRUM



Source: UBS estimates

COMPANY DESCRIPTION

Shennan Circuits is the world's 4th largest PCB maker as of 2024, according to Prismark. The company manufactures PCB and IC substrates, and provides EMS solutions for a wide range of devices used in telecoms, consumer electronics, industrial, healthcare, aerospace, automobiles ...

UBS Research THESIS MAP a guide to our thinking and what's where in this report:

PIVOTAL QUESTIONS

Q: Will Avary be one of the beneficiaries of AI PCB demand?

Yes, with growing exposure. We believe Avary has passed qualifications for most of AI customers and will supply compute tray HDI from Rubin vs. only ancillary PCBs previously. Avary sees PCB revenue opportunity for AI/data center/communication about c.Rmb5bn in 2026 and >Rmb10bn in 2027 driven by visible orders from leading AI/CSP customers. On optical module PCB, Avary's competitive edge rests on years of high-end PCB mass-production experience (mSAP since 2019 on SLP products for Apple) and superior yield ramp speed versus peers. We estimate optical module PCB revenue could grow close to 10x YoY in 2026E to c.Rmb2bn and >3x in 2027E.

Q: Can the core consumer electronics business remain intact?

Yes. Despite memory and other component cost inflations likely impacting smartphone demand, we believe Avary's majority Apple revenue provides resilience on Avary's core consumer electronic business. UBS forecasts -10%/+2% smartphone sell-in unit growth in 2026/27E with Apple outperforming the broader market at +9%/+3% in the same period. Moreover we see FPC content growth potential from the upcoming foldable model alongside edge AI devices with constrained device space that favour Avary's high-end FPC.

UBS VIEW

We upgrade Avary from Neutral to Buy and raise our price target from Rmb130.00 to Rmb142.50, primarily based on a higher multiple of 40x 2027E PE; on the back of a 42% 2026-29E NP CAGR. We raise our 2027/28/29 EPS estimates by 8-9% and expect AI PCB earnings contributions to ramp up meaningfully from 2028 onwards, as we account for the 10 new factories currently under construction coming online. We previously valued Avary based on a 24x 2026E PE, in-line with consumer electronics peers as majority of revenues still come from Apple, and limited AI penetration progress. We now revise up given higher AI order visibility. At the same time we view Avary as one of the major beneficiaries from optical module PCBs given their mSAP process expertise built from years of experience manufacturing SLP products for iPhones. We expect Avary's core CE business would remain resilient from stronger iPhone shipments.

EVIDENCE

1) UBS forecasts -10%/+2% smartphone sell-in unit growth in 2026/27E with Apple outperforming the broader market at +9%/+3%; 2) UBSe DRAM/NAND upcycle extends to Q228/Q427E with memory BoM cost reaching 36%/55% of flagship/mid-to-low-end models by 4Q27E; 3) Avary is investing Rmb16.8bn in FY26 capex (c.2.5x FY25), 70% for AI PCB capacity expansion (of which 70% for HDI/mSAP, 30% for HLC), while FY27/28 capex is also guided above Rmb10bn with 10 new factories under construction (6 operational in 2027, 4 in 2028-29).

WHAT'S PRICED IN?

Avary is trading at 36x NTM PE, 2SD above its historical average of 20x. We believe the market has likely priced in a mild pickup in consumer electronics sales this year from more resilient iPhone shipments and has awarded Avary a higher valuation due to improved sentiment from an overall AI-driven PCB upcycle, but the potential earnings contribution from AI/optical module PCB revenue is not fully priced in yet.

UPSIDE/DOWNSIDE SPECTRUM



Value drivers (2027E)	Communications revenue growth	Consumer electronics rev. growth	Server & auto rev. growth	Blended GM	OPEX ratio
Rmb142.50 upside	+0%	18%	150%	28.3%	10.0%
Rmb130.00 base	8%	15%	135%	25.2%	10.7%
Rmb80.81 downside	6%	10%	100%	21.1%	11.5%

Source: UBS estimates

COMPANY DESCRIPTION

Avary is a leading PCB manufacturer based in China. It supplies flexible printed circuit boards (FPCs) used in smartphones, notebooks, servers and automobiles, etc. Avary spun off from its Taiwan-listed parent company, Zhen Ding Technology (4958.TW), and listed as an A-share in 2018.

UBS Research THESIS MAP a guide to our thinking and what's where in this report:

PIVOTAL QUESTIONS

Q: Will demand for BT and ABF substrates improve in 2026?

Yes. We expect BT substrate orders and ASP to benefit from a memory upcycle. Material shortage should support near-term order momentum and UTR for BT substrate vendors. [UBS tech team forecasts](#) DRAM industry bit end-demand up 40% YoY in '27 (was +36%) after +21% in '26. We believe FastPrint's BT substrate will enjoy robust order growth and ASP upside in 2026 as memory demand sustains through 2027 and T-glass supply remains tight. Besides overall memory order volume and ASP upside, we expect share gains at customers to be a key growth driver for FastPrint. Recent tightness of CPU supply may also expedite FastPrint's ABF sampling at overseas CPU customers.

Q: Will FastPrint be one of the major beneficiaries of optical module PCB demand?

Likely but limited by capacity in the near-term. Despite proven mSAP capability, we believe limited mSAP capacity would be the bottleneck for material earnings contribution from optical module PCB products in the near-term. FastPrint's Beijing Xingfei plant is currently at MP stage for 1.6T optical module PCBs at 6k sqm/mo capacity, we estimate optical PCB revenues could reach Rmb1.6/4.2bn in 2026/27E (representing 16%/28% of overall revenues) and capturing 10-15% of industry share by revenue in the same period. FastPrint is building capacity at Zhuhai plant to add 10k sqm/mo; we expect the new capacity to be fully ramped in 2029E, until its optical module PCB earnings contribution can be meaningfully realized.

UBS VIEW

We maintain our Neutral rating and raise our PT from Rmb26.00 to Rmb37.00 based on an SOTP methodology where we value the core business at a 40x 2027E PE (previously 35x 2026E); the ABF business at 45x 2030E PE (discounted back to present, previously 40x), which implies total 2027E PE of 55x, on the back of a higher 2026-29E EPS CAGR of 65%. We revise our 2026/27/28 EPS estimates -32%/+19%/+12% as we factor in weaker-than-expected prelim H126 results but also moderate upside from optical module PCBs. We continue to believe it is a key beneficiary of China's ambitions to localise its AI/server supply chain.

EVIDENCE

1) FastPrint announced Rmb3.9bn private placement to expand mSAP PCB and FCCSP substrate capacity. Rmb2.0bn is for +10k-sqm/mo PCB line for optical transceivers, which requires mSAP for 1.6T; Rmb1.18bn is for +25k-sqm/mo FCCSP capacity mainly for memory chips, construction would take 2 years. 2) UBSe DRAM/NAND upcycle extends to Q228/Q427E with DRAM industry bit end-demand up 40% YoY in '27 (was +36%) after +21% in '26 and total NAND industry bit end demand up 23% YoY in '26 and 26% in '27 (was 20/26%).

WHAT'S PRICED IN?

We believe investors have fairly priced in recovering BT substrate utilization and rising ASP from memory demand, but may be optimistic on ABF mass production timeline as the stock trades at demanding valuations of 77x NTM consensus P/E, +2.5SD above historical average and above its 2020 peak level, when the company announced its plan to expand into ABF.

UPSIDE/DOWNSIDE SPECTRUM



Source: UBS estimates

COMPANY DESCRIPTION

Shenzhen FastPrint Circuit Technology is a Chinese company that designs and develops printed circuit boards (PCBs). FastPrint is the largest Chinese manufacturer for small-batch sample boards. It was listed on A-share in 2010 and has production sites in China, the UK and the US.

Shengyi Technology (600183.SS)

	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Income Statement (Rmbm)										
Revenues	16,586	20,388	28,431	52,407	24.3	75,876	44.8	98,085	116,127	126,026
Gross profit	3,191	4,493	7,526	15,329	103.7	22,433	46.3	30,114	36,598	40,753
EBITDA (UBS)	2,115	2,861	5,213	10,349	98.5	14,896	43.9	20,536	25,641	29,301
Depreciation & amortisation	(824)	(863)	(913)	(1,057)	-15.8	(1,314)	-24.4	(1,765)	(2,138)	(2,376)
EBIT (UBS)	1,291	1,998	4,300	9,292	116.1	13,581	46.2	18,771	23,504	26,926
Associates & investment income	37	55	143	78	-45.4	92	17.9	104	92	96
Other non-operating income	57	103	75	156	107.1	90	-42.4	118	134	121
Net interest	(114)	(89)	(102)	(206)	-101.8	(164)	-20.6	(69)	(61)	42
Exceptionals (incl goodwill)	0	0	0	0	-	0	-	0	0	0
Pre-tax profit	1,271	2,068	4,416	9,320	111.0	13,600	45.9	18,925	23,669	27,184
Tax	(123)	(200)	(524)	(1,133)	-116.0	(1,632)	-44.1	(2,271)	(2,840)	(3,262)
Profit after tax	1,149	1,868	3,892	8,187	110.4	11,968	46.2	16,654	20,829	23,922
Preference dividends	0	0	0	0	-	0	-	0	0	0
Minorities	15	(129)	(558)	(372)	33.3	(372)	0.0	(372)	(372)	(372)
Extraordinary items	0	0	0	0	-	0	-	0	0	0
Net earnings (local GAAP)	1,164	1,739	3,334	7,815	134.4	11,596	48.4	16,282	20,457	23,550
Net earnings (UBS)	1,164	1,739	3,334	7,815	134.4	11,596	48.4	16,282	20,457	23,550
Tax rate (%)	9.6	9.7	11.9	12.2	2.3	12.0	-1.3	12.0	12.0	12.0
Per Share (Rmb)										
EPS (UBS, diluted)	0.50	0.74	1.39	3.23	132.1	4.80	48.4	6.74	8.47	9.75
EPS (local GAAP, diluted)	0.50	0.74	1.39	3.23	132.1	4.80	48.4	6.74	8.47	9.75
EPS (UBS, basic)	0.50	0.74	1.39	3.23	132.7	4.80	48.4	6.74	8.47	9.75
DPS (net) (Rmb)	0.45	0.60	1.20	2.41	101.1	3.58	48.4	5.36	6.74	7.76
Cash EPS (UBS, diluted) ¹	0.85	1.11	1.77	3.67	107.4	5.34	45.5	7.47	9.35	10.73
Book value per share	5.95	6.34	6.88	8.93	29.8	11.29	26.4	14.42	17.48	20.43
Average shares (diluted)	2,328	2,350	2,399	2,416	0.7	2,416	0.0	2,416	2,416	2,416
Balance Sheet (Rmbm)										
Cash and equivalents	2,775	2,016	1,744	529	-69.1	2,263	327.5	2,196	4,214	7,907
Other current assets	11,224	14,597	17,645	34,067	94.1	41,268	21.1	52,421	62,895	67,370
Total current assets	13,999	16,613	19,389	34,596	78.4	43,531	25.8	54,618	67,109	75,277
Net tangible fixed assets	9,064	8,635	9,729	12,354	27.0	16,351	31.4	19,490	21,997	23,403
Net intangible fixed assets	383	626	620	628	1.3	628	0.0	628	628	628
Investments / other assets	1,511	1,769	3,031	3,020	0.4	3,020	0.0	3,020	3,020	3,020
Total assets	24,957	27,643	32,770	50,598	54.4	63,529	25.6	77,755	92,753	102,327
Trade payables & other ST liabilities	4,765	6,855	9,337	20,488	119.4	27,448	34.0	34,037	41,551	43,845
Short term debt	2,532	2,994	2,743	2,482	-9.5	2,482	0.0	2,482	2,482	2,482
Total current liabilities	7,297	9,849	12,080	22,971	90.2	29,931	30.3	36,519	44,033	46,327
Long term debt	1,306	558	903	2,702	199.1	2,702	0.0	2,702	2,702	2,702
Other long term liabilities	653	731	877	887	1.2	1,125	26.8	1,178	1,231	1,325
Preferred shares	0	0	0	0	-	0	-	0	0	0
Total liabilities (incl pref shares)	9,256	11,138	13,859	26,560	91.6	33,758	27.1	40,398	47,966	50,354
Common s/h equity	13,983	14,905	16,724	21,701	29.8	27,436	26.4	35,021	42,452	49,637
Minority interests	1,717	1,600	2,187	2,337	6.9	2,337	0.0	2,337	2,337	2,337
Total liabilities & equity	24,957	27,643	32,770	50,598	54.4	63,530	25.6	77,756	92,754	102,327
Cash Flow (Rmbm)										
Net income (before pref divs)	1,164	1,739	3,334	7,815	134.4	11,596	48.4	16,282	20,457	23,550
Depreciation & amortisation	824	863	913	1,057	15.8	1,314	24.4	1,765	2,138	2,376
Net change in working capital	147	(1,407)	(1,072)	(5,128)	-378.5	(241)	95.3	(4,565)	(2,959)	(2,181)
Other operating	608	261	2,099	979	-53.4	0	-	0	0	0
Operating cash flow	2,743	1,456	5,274	4,723	-10.4	12,669	168.2	13,482	19,635	23,745
Tangible capital expenditure	(1,067)	(915)	(2,371)	(4,020)	-69.6	(5,311)	32.1	(4,904)	(4,645)	(3,781)
Intangible capital expenditure	0	0	0	0	-	0	-	0	0	0
Net (acquisitions) & disposals	3	10	20	0	-	238	-	52	53	94
Other investing	(98)	(29)	(582)	(615)	-5.8	0	-	0	0	0
Investing cash flow	(1,162)	(934)	(2,933)	(4,635)	58.1	(5,073)	9.4	(4,852)	(4,592)	(3,686)
Equity dividends paid	(1,287)	(1,279)	(1,408)	(2,915)	-107.0	(5,861)	-101.1	(8,697)	(13,025)	(16,365)
Share issues / (buybacks)	318	773	35	0	-	0	-	0	0	0
Other financing	(15)	(490)	(1,378)	(55)	96.0	0	-	0	0	0
Change in debt & pref shares	(935)	(281)	136	1,672	NA	0	-	0	0	0
Financing cash flow	(1,919)	(1,276)	(2,616)	(1,298)	50.4	(5,861)	-351.7	(8,697)	(13,025)	(16,365)
Cash flow inc/(dec) in cash	(338)	(754)	(275)	(1,210)	340.0	1,734	(66)	(66)	2,018	3,693
FX / non cash items	7	(5)	3	(5)	-	(1)	86.4	0	0	0
Balance sheet inc/(dec) in cash	(331)	(759)	(272)	(1,215)	-246.9	1,733	-	(66)	2,018	3,693

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.¹ Cash EPS (UBS, diluted) is calculated using UBS net income adding back depreciation and amortization.

Valuation (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
P/E (local GAAP, diluted)	32.8	25.9	28.9	43.3	29.2	20.8	16.5	14.4
P/E (UBS, diluted)	32.8	25.9	28.9	43.3	29.2	20.8	16.5	14.4
P/CEPS	19.2	17.3	22.7	38.1	26.2	18.7	15.0	13.0
Equity FCF (UBS) yield %	4.4	1.2	3.0	0.2	2.2	2.5	4.4	5.9
Dividend yield (net) %	2.7	3.1	3.0	1.7	2.6	3.8	4.8	5.5
P/BV	2.8	3.0	5.8	15.7	12.4	9.7	8.0	6.9
EV/revenues (core)	2.5	2.4	3.5	6.6	4.6	3.5	3.0	2.7
EV/EBITDA (UBS core)	19.6	16.8	19.3	33.4	23.2	16.8	13.4	11.8
EV/EBIT (core)	32.1	24.0	23.4	37.2	25.5	18.4	14.7	12.8
EV/OpFCF (core)	31.7	25.8	24.0	39.4	25.5	18.9	14.8	12.9
EV/op. invested capital	2.5	2.9	5.4	14.4	11.6	9.7	8.2	7.4
Enterprise value (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Market cap.	38,298	45,072	96,756	340,028	340,028	340,028	340,028	340,028
Net debt (cash)	1,363	1,299	1,719	3,278	3,788	2,954	1,979	1,979
Buy out of minorities	2,347	2,289	2,998	3,177	3,177	3,177	3,177	3,177
Pension provisions/other	0	0	0	0	0	0	0	0
Total enterprise value	42,008	48,661	101,473	346,483	346,993	346,160	345,184	345,184
Non core assets	(630)	(689)	(812)	(841)	(841)	(841)	(841)	(841)
Core enterprise value	41,378	47,972	100,661	345,643	346,153	345,319	344,344	344,344
Growth (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Revenue	(7.9)	22.9	39.4	84.3	44.8	29.3	18.4	8.5
EBITDA (UBS)	(18.6)	35.2	82.2	98.5	43.9	37.9	24.9	14.3
EBIT (UBS)	(31.6)	54.8	115.2	116.1	46.2	38.2	25.2	14.6
EPS (UBS, diluted)	(24.2)	48.0	87.8	132.7	48.4	40.4	25.6	15.1
Net DPS	0.0	33.3	100.0	101.1	48.4	49.8	25.6	15.1
Margins & Profitability (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Gross profit margin	19.2	22.0	26.5	29.3	29.6	30.7	31.5	32.3
EBITDA margin	12.8	14.0	18.3	19.7	19.6	20.9	22.1	23.3
EBIT (UBS) margin	7.8	9.8	15.1	17.7	17.9	19.1	20.2	21.4
Net earnings (UBS) margin	7.0	8.5	11.7	14.9	15.3	16.6	17.6	18.7
ROIC (EBIT)	7.9	11.9	23.0	38.8	45.5	52.6	55.7	57.7
ROIC post tax	7.2	10.8	20.3	34.1	40.0	46.3	49.0	50.8
ROE (UBS)	8.5	12.0	21.1	40.7	47.2	52.1	52.8	51.1
Capital structure & Coverage (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Net debt / EBITDA	0.5	0.5	0.4	0.4	0.2	0.1	0.0	(0.1)
Net debt / total equity %	6.8	9.3	10.1	19.4	9.8	8.0	2.2	(5.2)
Net debt / (net debt + total equity) %	6.3	8.5	9.1	16.2	8.9	7.4	2.1	(5.5)
Net debt/EV %	3.2	2.7	1.7	0.9	1.1	0.9	0.6	(0.3)
Capex / depreciation %	129.5	106.1	NM	NM	NM	NM	NM	159.1
Capex / revenue %	6.4	4.5	8.3	7.7	7.0	5.0	4.0	3.0
EBIT / net interest	11.7	23.1	43.5	45.4	NM	NM	NM	-
Dividend cover (UBS)	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.3
Div. payout ratio (UBS) %	90.0	81.1	86.3	74.6	74.6	79.6	79.6	79.6
Revenues by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
CCL and Prepeg	12,632	14,791	17,774	35,993	54,580	71,894	85,984	92,863
PCB	3,135	4,484	9,144	14,815	19,556	24,289	28,054	30,859
Others	819	1,113	1,513	1,599	1,740	1,902	2,089	2,304
Total	16,586	20,388	28,431	52,407	75,876	98,085	116,127	126,026
EBIT (UBS) by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Others	1,291	1,998	4,300	9,292	13,581	18,771	23,504	26,926
Total	1,291	1,998	4,300	9,292	13,581	18,771	23,504	26,926

Source: Company accounts, UBS estimates (UBS) metrics use reported figures which have been adjusted by UBS analysts

Shennan Circuits (002916.SZ)

Income Statement (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Revenues	13,526	17,907	23,647	31,995	35.3	45,242	41.4	59,523	69,212	75,732
Gross profit	3,170	4,447	6,696	9,698	44.2	14,593	50.5	19,831	23,112	24,916
EBITDA (UBS)	2,351	3,476	5,160	7,268	40.9	10,883	49.7	14,495	17,009	18,415
Depreciation & amortisation	(1,227)	(1,461)	(1,626)	(1,841)	-13.2	(2,177)	-18.3	(2,460)	(2,885)	(3,242)
EBIT (UBS)	1,124	2,015	3,533	5,427	53.6	8,707	60.4	12,035	14,124	15,173
Associates & investment income	1	4	3	4	26.5	4	-9.0	4	4	4
Other non-operating income	327	74	149	(55)	-	69	-	76	54	67
Net interest	(54)	(70)	(62)	(112)	-21.2	(94)	16.3	(11)	26	91
Exceptionals (incl goodwill)	0	0	0	0	-	0	-	0	0	0
Pre-tax profit	1,398	2,023	3,624	5,265	45.3	8,686	65.0	12,105	14,208	15,335
Tax	(1)	(145)	(345)	(307)	11.0	(652)	-112.1	(923)	(993)	(1,131)
Profit after tax	1,398	1,879	3,279	4,957	51.2	8,034	62.1	11,182	13,215	14,204
Preference dividends	0	0	0	0	-	0	-	0	0	0
Minorities	0	(1)	(3)	(1)	61.8	(1)	0.0	(1)	(1)	(1)
Extraordinary items	0	0	0	0	-	0	-	0	0	0
Net earnings (local GAAP)	1,398	1,878	3,276	4,956	51.3	8,033	62.1	11,181	13,214	14,203
Net earnings (UBS)	1,398	1,878	3,276	4,956	51.3	8,033	62.1	11,181	13,214	14,203
Tax rate (%)	0.0	7.1	9.5	5.8	-38.7	7.5	28.5	7.6	7.0	7.4
Per Share (Rmb)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
EPS (UBS, diluted)	2.73	3.66	4.91	7.43	51.3	11.78	58.4	16.03	18.95	20.36
EPS (local GAAP, diluted)	2.73	3.66	4.91	7.43	51.3	11.78	58.4	16.03	18.95	20.36
EPS (UBS, basic)	2.73	3.66	4.91	7.43	51.3	11.78	58.4	16.03	18.95	20.36
DPS (net) (Rmb)	0.90	1.50	2.45	2.91	18.7	4.61	58.3	6.41	7.58	8.15
Cash EPS (UBS, diluted) ¹	5.12	6.51	7.35	10.19	38.7	14.97	46.8	19.56	23.08	25.01
Book value per share	25.71	28.50	25.72	30.87	10.0	46.20	49.7	56.61	69.14	81.93
Average shares (diluted)	513	513	667	667	0.0	682	2.3	697	697	697
Balance Sheet (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Cash and equivalents	1,443	1,553	998	1,519	52.1	8,817	NM	12,876	18,673	24,925
Other current assets	7,154	9,301	12,656	15,982	26.3	21,542	34.8	27,831	31,716	34,677
Total current assets	8,597	10,854	13,654	17,501	28.2	30,359	73.5	40,707	50,389	59,602
Net tangible fixed assets	10,083	12,396	13,339	15,794	18.4	18,142	14.9	21,039	23,691	25,750
Net intangible fixed assets	544	585	639	630	-1.4	630	0.0	630	630	630
Investments / other assets	3,383	1,467	2,951	4,020	36.2	4,020	0.0	4,020	4,020	4,020
Total assets	22,607	25,302	30,583	37,945	24.1	53,151	40.1	66,396	78,731	90,003
Trade payables & other ST liabilities	5,668	6,773	9,194	12,419	35.1	16,693	34.4	21,970	25,563	27,917
Short term debt	757	716	831	1,120	34.8	1,120	0.0	1,120	1,120	1,120
Total current liabilities	6,425	7,489	10,024	13,539	35.1	17,812	31.6	23,089	26,683	29,037
Long term debt	2,407	2,577	2,679	3,043	13.6	3,043	0.0	3,043	3,043	3,043
Other long term liabilities	588	590	699	751	7.4	751	0.0	751	751	751
Preferred shares	0	0	0	0	-	0	-	0	0	0
Total liabilities (incl pref shares)	9,420	10,656	13,402	17,333	29.3	21,606	24.7	26,883	30,477	32,831
Common s/h equity	13,184	14,617	17,149	20,580	10.0	31,513	53.1	39,480	48,222	57,139
Minority interests	3	29	31	32	3.2	32	0.0	32	32	32
Total liabilities & equity	22,607	25,302	30,583	37,945	24.1	53,151	40.1	66,396	78,731	90,003
Cash Flow (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Net income (before pref divs)	1,398	1,878	3,276	4,956	51.3	8,033	62.1	11,181	13,214	14,203
Depreciation & amortisation	1,227	1,461	1,626	1,841	13.2	2,177	18.3	2,460	2,885	3,242
Net change in working capital	(316)	(1,208)	(1,423)	221	-	(1,287)	-	(1,011)	(292)	(606)
Other operating	281	851	359	(2,114)	-	0	-	0	0	0
Operating cash flow	2,589	2,982	3,838	4,904	27.8	8,923	82.0	12,630	15,806	16,839
Tangible capital expenditure	(3,247)	(2,523)	(3,760)	(5,036)	33.9	(4,524)	10.2	(5,357)	(5,537)	(5,301)
Intangible capital expenditure	0	0	0	0	-	0	-	0	0	0
Net (acquisitions) & disposals	(314)	598	4	2	-48.5	0	-	0	0	0
Other investing	0	0	0	0	-	0	-	0	0	0
Investing cash flow	(3,561)	(1,925)	(3,756)	(5,034)	34.0	(4,524)	10.1	(5,357)	(5,537)	(5,301)
Equity dividends paid	(513)	(462)	(769)	(1,635)	-112.5	(1,983)	-21.3	(3,213)	(4,472)	(5,285)
Share issues / (buybacks)	0	31	0	1,655	NM	4,882	195.0	0	0	0
Other financing	(617)	(10)	(61)	(5)	91.9	0	-	0	0	0
Change in debt & pref shares	1,117	133	207	647	212.4	0	-	0	0	0
Financing cash flow	(13)	(307)	(623)	662	-	2,899	337.9	(3,213)	(4,472)	(5,285)
Cash flow inc/(dec) in cash	(985)	750	(541)	533	-	7,298	NM	4,059	5,797	6,252
FX / non cash items	244	(639)	(14)	(12)	13.3	0	-	0	0	0
Balance sheet inc/(dec) in cash	(741)	110	(555)	520	-	7,298	NM	4,059	5,797	6,252

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.¹ Cash EPS (UBS, diluted) is calculated using UBS net income adding back depreciation and amortization.

Valuation (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
P/E (local GAAP, diluted)	27.9	25.9	30.9	51.5	32.5	23.9	20.2	18.8
P/E (UBS, diluted)	27.9	25.9	30.9	51.5	32.5	23.9	20.2	18.8
P/CEPS	14.9	14.6	20.6	37.5	25.6	19.6	16.6	15.3
Equity FCF (UBS) yield %	(1.7)	0.9	0.1	(0.1)	1.7	2.8	3.9	4.4
Dividend yield (net) %	1.2	1.6	1.6	0.8	1.2	1.7	2.0	2.1
P/BV	3.0	3.3	5.9	12.4	8.3	6.8	5.5	4.7
EV/revenues (core)	3.0	2.8	4.1	8.2	5.7	4.3	3.6	3.3
EV/EBITDA (UBS core)	17.1	14.5	18.6	36.2	23.9	17.5	14.6	13.5
EV/EBIT (core)	35.7	25.0	27.1	48.5	29.8	21.1	17.6	16.4
EV/OpFCF (core)	36.8	26.6	28.3	48.3	30.3	21.3	17.7	16.5
EV/op. invested capital	2.9	3.2	5.3	12.3	10.4	8.8	7.7	7.1
Enterprise value (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Market cap.	39,043	48,622	93,677	260,635	260,635	260,635	260,635	260,635
Net debt (cash)	1,094	1,730	2,125	2,578	(1,005)	(6,684)	(11,612)	(11,612)
Buy out of minorities	7	32	34	35	35	35	35	35
Pension provisions/other	0	0	0	0	0	0	0	0
Total enterprise value	40,144	50,384	95,837	263,248	259,665	253,986	249,058	249,058
Non core assets	(4)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Core enterprise value	40,140	50,381	95,834	263,245	259,662	253,983	249,055	249,055
Growth (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Revenue	(3.3)	32.4	32.1	35.3	41.4	31.6	16.3	9.4
EBITDA (UBS)	(14.7)	47.9	48.4	40.9	49.7	33.2	17.3	8.3
EBIT (UBS)	(35.4)	79.3	75.4	53.6	60.4	38.2	17.4	7.4
EPS (UBS, diluted)	(16.7)	34.3	34.2	51.3	58.4	36.1	18.2	7.5
Net DPS	(10.0)	66.7	63.5	18.7	58.3	39.2	18.2	7.5
Margins & Profitability (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Gross profit margin	23.4	24.8	28.3	30.3	32.3	33.3	33.4	32.9
EBITDA margin	17.4	19.4	21.8	22.7	24.1	24.4	24.6	24.3
EBIT (UBS) margin	8.3	11.3	14.9	17.0	19.2	20.2	20.4	20.0
Net earnings (UBS) margin	10.3	10.5	13.9	15.5	17.8	18.8	19.1	18.8
ROIC (EBIT)	8.1	12.9	19.6	25.3	34.7	41.7	43.8	43.3
ROIC post tax	8.1	12.0	17.7	23.8	32.1	38.5	40.7	40.1
ROE (UBS)	11.0	13.5	20.6	26.3	30.8	31.5	30.1	27.0
Capital structure & Coverage (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Net debt / EBITDA	0.7	0.5	0.5	0.4	(0.4)	(0.6)	(0.9)	(1.1)
Net debt / total equity %	13.1	11.9	14.6	12.8	(14.8)	(22.1)	(30.1)	(36.3)
Net debt / (net debt + total equity) %	11.5	10.6	12.8	11.4	(17.3)	(28.3)	(43.0)	(57.0)
Net debt/EV %	2.7	3.4	2.2	1.0	(0.4)	(2.6)	(4.7)	(7.1)
Capex / depreciation %	NM	172.6	NM	NM	NM	NM	191.9	163.5
Capex / revenue %	24.0	14.1	15.9	15.7	10.0	9.0	8.0	7.0
EBIT / net interest	20.8	28.9	57.3	48.6	NM	NM	-	-
Dividend cover (UBS)	3.0	2.4	2.0	2.6	2.6	2.5	2.5	2.5
Div. payout ratio (UBS) %	33.0	41.0	49.9	39.2	39.1	40.0	40.0	40.0
Revenues by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
PCB	8,073	10,494	14,359	19,763	29,224	41,141	2,299	4,006
IC Substrate	2,306	3,171	4,148	6,174	9,013	10,239	386	793
PCBA	2,119	2,823	3,075	3,844	4,612	5,535	399	571
Others	1,028	1,419	2,065	2,214	2,393	2,608	66,128	70,362
Total	13,526	17,907	23,647	31,995	45,242	59,523	69,212	75,732
EBIT (UBS) by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Others	1,124	2,015	3,533	5,427	8,707	12,035	14,124	15,173
Total	1,124	2,015	3,533	5,427	8,707	12,035	14,124	15,173

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts

Avary Holding Shenzhen (002938.SZ)

Income Statement (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Revenues	32,066	35,140	39,147	46,267	18.2	59,545	28.7	78,648	98,347	116,654
Gross profit	6,842	7,297	8,417	11,101	31.9	15,030	35.4	20,989	27,917	33,797
EBITDA (UBS)	6,173	6,344	7,100	9,185	29.4	13,796	50.2	18,600	24,158	27,432
Depreciation & amortisation	(2,944)	(3,066)	(3,148)	(3,499)	-11.2	(5,573)	-59.3	(6,602)	(7,484)	(6,970)
EBIT (UBS)	3,229	3,278	3,953	5,686	43.8	8,223	44.6	11,998	16,674	20,462
Associates & investment income	(4)	10	15	7	-52.7	10	50.5	11	9	10
Other non-operating income	119	425	7	(60)	-	143	-	184	183	170
Net interest	227	332	310	263	-15.1	356	35.3	305	342	828
Exceptionals (incl goodwill)	0	0	0	0	-	0	-	0	0	0
Pre-tax profit	3,571	4,044	4,284	5,896	37.6	8,732	48.1	12,498	17,208	21,470
Tax	(285)	(425)	(570)	(545)	4.5	(873)	-60.3	(1,250)	(1,721)	(2,147)
Profit after tax	3,287	3,619	3,713	5,351	44.1	7,859	46.9	11,248	15,487	19,323
Preference dividends	0	0	0	0	-	0	-	0	0	0
Minorities	0	1	25	25	2.7	25	0.0	25	25	25
Extraordinary items	0	0	0	0	-	0	-	0	0	0
Net earnings (local GAAP)	3,287	3,620	3,738	5,376	43.8	7,884	46.6	11,274	15,512	19,348
Net earnings (UBS)	3,287	3,620	3,738	5,376	43.8	7,884	46.6	11,274	15,512	19,348
Tax rate (%)	8.0	10.5	13.3	9.2	-30.6	10.0	8.7	10.0	10.0	10.0
Per Share (Rmb)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
EPS (UBS, diluted)	1.42	1.56	1.61	2.22	37.5	3.25	46.6	4.65	6.40	7.98
EPS (local GAAP, diluted)	1.42	1.56	1.61	2.22	37.5	3.25	46.6	4.65	6.40	7.98
EPS (UBS, basic)	1.42	1.56	1.61	2.22	37.5	3.25	46.6	4.65	6.40	7.98
DPS (net) (Rmb)	0.50	1.00	1.00	0.67	-33.5	0.98	46.6	1.39	1.92	2.39
Cash EPS (UBS, diluted) ¹	2.69	2.88	2.97	3.66	23.2	5.55	51.6	7.37	9.48	10.85
Book value per share	12.78	13.84	14.73	19.32	31.1	21.91	13.4	25.58	30.58	36.64
Average shares (diluted)	2,320	2,319	2,318	2,425	4.6	2,425	0.0	2,425	2,425	2,425
Balance Sheet (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Cash and equivalents	10,912	13,497	12,032	14,609	21.4	13,209	-9.6	14,222	27,707	40,902
Other current assets	9,811	10,138	11,101	15,529	39.9	17,004	9.5	23,265	28,781	33,041
Total current assets	20,723	23,635	23,133	30,138	30.3	30,212	0.2	37,487	56,488	73,942
Net tangible fixed assets	15,264	15,738	17,494	27,864	59.3	33,009	18.5	37,418	34,852	33,714
Net intangible fixed assets	1,292	1,218	1,594	1,636	2.6	1,636	0.0	1,636	1,636	1,636
Investments / other assets	4,999	3,951	6,628	8,628	30.2	8,628	0.0	8,628	8,628	8,628
Total assets	42,278	44,543	48,850	68,266	39.7	73,486	7.6	85,170	101,604	117,921
Trade payables & other ST liabilities	7,689	7,930	8,692	13,383	54.0	12,332	-7.9	15,107	19,412	21,034
Short term debt	4,151	3,274	3,939	5,430	37.8	5,430	0.0	5,430	5,430	5,430
Total current liabilities	11,840	11,204	12,631	18,813	48.9	17,762	-5.6	20,537	24,842	26,464
Long term debt	0	180	376	893	137.7	893	0.0	893	893	893
Other long term liabilities	763	837	1,092	1,124	2.9	1,124	0.0	1,124	1,124	1,124
Preferred shares	0	0	0	0	-	0	-	0	0	0
Total liabilities (incl pref shares)	12,603	12,221	14,099	20,830	47.7	19,779	-5.0	22,554	26,859	28,481
Common s/h equity	29,651	32,110	34,137	46,845	37.7	53,117	13.4	62,025	74,155	88,849
Minority interests	25	212	613	590	3.8	590	0.0	590	590	590
Total liabilities & equity	42,278	44,543	48,850	68,266	39.7	73,486	7.6	85,170	101,604	117,921
Cash Flow (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Net income (before pref divs)	3,287	3,620	3,738	5,376	43.8	7,884	46.6	11,274	15,512	19,348
Depreciation & amortisation	2,944	3,066	3,148	3,499	11.2	5,573	59.3	6,602	7,484	6,970
Net change in working capital	1,616	92	(354)	344	14.4	(2,526)	-	(3,486)	(1,212)	(2,637)
Other operating	121	303	574	656	14.4	0	-	0	0	0
Operating cash flow	7,969	7,082	7,105	9,875	39.0	10,930	10.7	14,389	21,784	23,681
Tangible capital expenditure	(3,477)	(2,765)	(6,570)	(16,002)	-143.6	(10,718)	-33.0	(11,011)	(4,917)	(5,833)
Intangible capital expenditure	0	0	0	0	-	0	-	0	0	0
Net (acquisitions) & disposals	0	0	(87)	0	-	0	-	0	0	0
Other investing	(976)	(121)	(487)	(12)	97.5	0	-	0	0	0
Investing cash flow	(4,454)	(2,886)	(7,145)	(16,015)	-124.2	(10,718)	-33.1	(11,011)	(4,917)	(5,833)
Equity dividends paid	(1,624)	(1,160)	(2,318)	(2,318)	0.0	(1,613)	-30.4	(2,365)	(3,382)	(4,654)
Share issues / (buybacks)	24	28	197	9,600	NM	0	-	0	0	0
Other financing	(216)	118	(129)	(3)	97.6	0	-	0	0	0
Change in debt & pref shares	1,008	(696)	828	1,681	103.0	0	-	0	0	0
Financing cash flow	(809)	(1,710)	(1,422)	8,960	-	(1,613)	-	(2,365)	(3,382)	(4,654)
Cash flow inc/(dec) in cash	2,706	2,486	(1,462)	2,820	-	(1,401)	-	1,013	13,485	13,195
FX / non cash items	(1)	99	(3)	(243)	NM	0	-	0	0	0
Balance sheet inc/(dec) in cash	2,705	2,585	(1,465)	2,577	-	(1,401)	-	1,013	13,485	13,195

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.¹ Cash EPS (UBS, diluted) is calculated using UBS net income adding back depreciation and amortization.

Valuation (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
P/E (local GAAP, diluted)	17.4	19.3	26.2	45.7	31.2	21.8	15.9	12.7
P/E (UBS, diluted)	17.4	19.3	26.2	45.7	31.2	21.8	15.9	12.7
P/CEPS	9.2	10.5	14.2	27.7	18.3	13.8	10.7	9.3
Equity FCF (UBS) yield %	7.8	6.2	0.5	(2.6)	0.1	1.4	7.2	7.6
Dividend yield (net) %	2.0	3.3	2.4	0.7	1.0	1.4	1.9	2.4
P/BV	1.9	2.2	2.9	5.2	4.6	4.0	3.3	2.8
EV/revenues (core)	1.6	1.7	2.2	4.9	3.8	2.9	2.2	1.9
EV/EBITDA (UBS core)	8.1	9.5	12.4	24.6	16.4	12.2	9.1	8.0
EV/EBIT (core)	15.5	18.5	22.2	39.7	27.5	18.9	13.1	10.7
EV/OpFCF (core)	14.8	18.4	22.4	39.5	28.4	19.4	13.2	10.8
EV/op. invested capital	2.3	2.8	3.8	7.2	5.5	4.6	4.2	4.2
Enterprise value (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Market cap.	57,220	70,027	98,118	235,074	235,074	235,074	235,074	235,074
Net debt (cash)	(5,902)	(8,402)	(8,880)	(8,002)	(7,586)	(7,392)	(14,641)	(14,641)
Buy out of minorities	25	212	613	590	590	590	590	590
Pension provisions/other	0	0	0	0	0	0	0	0
Total enterprise value	51,342	61,837	89,852	227,662	228,078	228,271	221,023	221,023
Non core assets	(1,316)	(1,307)	(1,932)	(1,995)	(1,995)	(1,995)	(1,995)	(1,995)
Core enterprise value	50,026	60,529	87,920	225,667	226,083	226,277	219,028	219,028
Growth (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Revenue	(11.4)	9.6	11.4	18.2	28.7	32.1	25.0	18.6
EBITDA (UBS)	(25.9)	2.8	11.9	29.4	50.2	34.8	29.9	13.6
EBIT (UBS)	(39.8)	1.5	20.6	43.8	44.6	45.9	39.0	22.7
EPS (UBS, diluted)	(34.4)	10.2	3.3	37.5	46.6	43.0	37.6	24.7
Net DPS	(28.5)	100.0	0.0	(33.5)	46.6	43.0	37.6	24.7
Margins & Profitability (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Gross profit margin	21.3	20.8	21.5	24.0	25.2	26.7	28.4	29.0
EBITDA margin	19.2	18.1	18.1	19.9	23.2	23.6	24.6	23.5
EBIT (UBS) margin	10.1	9.3	10.1	12.3	13.8	15.3	17.0	17.5
Net earnings (UBS) margin	10.3	10.3	9.5	11.6	13.2	14.3	15.8	16.6
ROIC (EBIT)	14.6	15.4	17.2	18.3	20.1	24.6	32.0	39.3
ROIC post tax	13.4	13.8	14.9	16.6	18.1	22.1	28.8	35.3
ROE (UBS)	11.4	11.7	11.3	13.3	15.8	19.6	22.8	23.7
Capital structure & Coverage (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Net debt / EBITDA	(1.1)	(1.6)	(1.1)	(0.9)	(0.5)	(0.4)	(0.9)	(1.3)
Net debt / total equity %	(22.8)	(31.1)	(22.2)	(17.5)	(12.8)	(12.6)	(28.6)	(38.7)
Net debt / (net debt + total equity) %	(29.5)	(45.1)	(28.5)	(21.2)	(14.7)	(14.4)	(40.1)	(63.0)
Net debt/EV %	(11.5)	(13.6)	(9.9)	(3.5)	(3.3)	(3.2)	(6.6)	(12.7)
Capex / depreciation %	118.1	90.2	NM	NM	192.3	166.8	65.7	83.7
Capex / revenue %	10.8	7.9	16.8	NM	18.0	14.0	5.0	5.0
EBIT / net interest	-	-	-	-	-	-	-	-
Dividend cover (UBS)	2.8	1.6	1.6	3.3	3.3	3.3	3.3	3.3
Div. payout ratio (UBS) %	35.3	64.0	62.0	30.0	30.0	30.0	30.0	30.0
Revenues by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Mobile communication	23,513	24,236	25,437	27,413	29,606	31,678	0	0
Consumer electronics	7,975	9,754	11,287	11,974	13,770	16,248	0	0
Servers, auto, and others	578	1,150	2,423	6,881	16,169	30,722	0	0
Others	0	0	0	(1)	0	0	98,347	116,654
Total	32,066	35,140	39,147	46,267	59,545	78,648	98,347	116,654
EBIT (UBS) by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Others	3,229	3,278	3,953	5,686	8,223	11,998	16,674	20,462
Total	3,229	3,278	3,953	5,686	8,223	11,998	16,674	20,462

Source: Company accounts, UBS estimates (UBS) metrics use reported figures which have been adjusted by UBS analysts

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Income Statement (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Revenues	5,360	5,817	7,195	9,937	38.1	15,297	53.9	20,273	25,302	25,825
Gross profit	1,250	923	1,408	2,376	68.7	4,369	83.9	6,159	7,987	8,329
EBITDA (UBS)	398	241	754	1,237	64.2	2,361	99.8	3,380	4,428	4,787
Depreciation & amortisation	(355)	(562)	(655)	(672)	-1.6	(879)	-30.9	(958)	(1,035)	(1,133)
EBIT (UBS)	43	(321)	99	566	N/A	1,481	161.8	2,421	3,393	3,654
Associates & investment income	147	2	42	59	41.0	34	-41.9	45	46	42
Other non-operating income	(76)	(120)	(72)	(89)	-25.0	(84)	5.9	(68)	(75)	(73)
Net interest	(81)	(136)	(156)	(159)	-2.1	(140)	1.0	(151)	(161)	(154)
Exceptionals (incl goodwill)	0	0	0	0	-	0	-	0	0	0
Pre-tax profit	33	(575)	(87)	376	-	1,291	243.3	2,247	3,203	3,469
Tax	91	44	(17)	(67)	-288.4	(129)	-93.1	(225)	(320)	(347)
Profit after tax	124	(531)	(104)	309	-	1,162	275.7	2,023	2,883	3,122
Preference dividends	0	0	0	0	-	0	-	0	0	0
Minorities	87	333	239	238	-0.3	88	-63.1	(139)	(322)	(1)
Extraordinary items	0	0	0	0	-	0	-	0	0	0
Net earnings (local GAAP)	211	(198)	135	547	305.7	1,250	128.4	1,883	2,561	3,121
Net earnings (UBS)	211	(198)	135	547	305.7	1,250	128.4	1,883	2,561	3,121
Tax rate (%)	0.0	0.0	0.0	17.8	-	10.0	-43.7	10.0	10.0	10.0
Per Share (Rmb)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
EPS (UBS, diluted)	0.12	(0.12)	0.08	0.31	286.7	0.67	118.8	1.01	1.38	1.68
EPS (local GAAP, diluted)	0.12	(0.12)	0.08	0.31	286.7	0.67	118.8	1.01	1.38	1.68
EPS (UBS, basic)	0.12	(0.12)	0.08	0.31	286.7	0.67	118.8	1.01	1.38	1.68
DPS (net) (Rmb)	0.05	0.05	0.05	0.07	51.5	0.17	128.4	0.30	0.41	0.50
Cash EPS (UBS, diluted) ¹	0.34	0.22	0.47	0.69	47.1	1.15	67.3	1.53	1.94	2.29
Book value per share	3.16	2.92	3.15	5.22	65.8	5.82	11.5	6.66	7.74	9.01
Average shares (diluted)	1,690	1,690	1,695	1,778	4.9	1,856	4.4	1,856	1,856	1,856
Balance Sheet (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Cash and equivalents	2,152	618	859	2,469	187.6	1,524	-38.3	1,048	765	2,478
Other current assets	3,687	3,765	4,668	6,697	43.5	9,529	42.3	11,753	13,507	12,725
Total current assets	5,839	4,383	5,526	9,166	65.9	11,053	20.6	12,801	14,272	15,203
Net tangible fixed assets	4,855	6,168	6,070	8,523	40.4	9,067	6.4	9,731	10,720	11,653
Net intangible fixed assets	568	682	685	673	-1.8	673	0.0	673	673	673
Investments / other assets	3,673	2,434	2,800	3,105	10.9	3,139	1.1	3,184	3,230	3,272
Total assets	14,935	13,668	15,082	21,467	42.3	23,932	11.5	26,389	28,895	30,801
Trade payables & other ST liabilities	2,868	2,570	2,530	3,986	57.5	5,338	33.9	6,224	6,735	6,287
Short term debt	1,154	1,218	1,586	1,795	13.2	1,795	0.0	1,795	1,795	1,795
Total current liabilities	4,021	3,788	4,116	5,781	40.5	7,133	23.4	8,019	8,530	8,082
Long term debt	3,189	2,869	3,657	4,103	12.1	4,103	0.0	4,103	4,103	4,103
Other long term liabilities	1,417	1,434	1,565	1,570	0.3	1,570	0.0	1,570	1,570	1,570
Preferred shares	0	0	0	0	-	0	-	0	0	0
Total liabilities (incl pref shares)	8,628	8,092	9,338	11,455	22.7	12,807	11.8	13,693	14,203	13,755
Common s/h equity	5,334	4,935	5,348	9,683	81.1	10,797	11.5	12,367	14,363	16,717
Minority interests	973	641	395	329	16.9	329	0.0	329	329	329
Total liabilities & equity	14,935	13,668	15,082	21,467	42.3	23,932	11.5	26,389	28,895	30,801
Cash Flow (Rmbm)	12/23	12/24	12/25	12/26E	%ch	12/27E	%ch	12/28E	12/29E	12/30E
Net income (before pref divs)	211	(198)	135	547	305.7	1,250	128.4	1,883	2,561	3,121
Depreciation & amortisation	355	562	655	672	2.6	879	30.9	958	1,035	1,133
Net change in working capital	1,904	(178)	(957)	(608)	-36.5	(1,480)	-143.4	(1,338)	(1,243)	335
Other operating	(2,345)	191	105	(222)	-	(34)	84.5	(45)	(46)	(42)
Operating cash flow	125	376	(63)	389	-	615	58.0	1,458	2,307	4,547
Tangible capital expenditure	(1,878)	(1,126)	(848)	(3,296)	-288.8	(1,424)	-56.8	(1,622)	(2,024)	(2,066)
Intangible capital expenditure	0	0	0	0	-	0	-	0	0	0
Net (acquisitions) & disposals	169	48	(51)	(7)	85.2	0	-	0	0	0
Other investing	(81)	(107)	152	(26)	-	0	-	0	0	0
Investing cash flow	(1,790)	(1,185)	(746)	(3,329)	-346.0	(1,424)	-57.2	(1,622)	(2,024)	(2,066)
Equity dividends paid	(235)	(245)	(82)	(83)	-1.2	(137)	-65.4	(313)	(565)	(768)
Share issues / (buybacks)	1,050	0	0	3,900	-	0	-	0	0	0
Other financing	(93)	(117)	(448)	35	-	0	-	0	0	0
Change in debt & pref shares	1,851	(281)	1,587	768	-51.6	0	-	0	0	0
Financing cash flow	2,572	(643)	1,057	4,621	337.0	(137)	-	(313)	(565)	(768)
Cash flow inc/(dec) in cash	907	(1,452)	248	1,681	N/A	(946)	-	(476)	(283)	1,713
FX / non cash items	41	(81)	(8)	(70)	N/A	0	-	0	0	1
Balance sheet inc/(dec) in cash	948	(1,534)	241	1,611	N/A	(946)	-	(476)	(283)	1,713

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.¹ Cash EPS (UBS, diluted) is calculated using UBS net income adding back depreciation and amortization.



Valuation (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
P/E (local GAAP, diluted)	NM	NM	NM	NM	50.2	33.3	24.5	20.1
P/E (UBS, diluted)	NM	(94.5)	NM	NM	50.2	33.3	24.5	20.1
P/CEPS	39.9	51.6	33.8	49.3	29.5	22.1	17.4	14.7
Equity FCF (UBS) yield %	(7.8)	(4.0)	(3.4)	(5.1)	(1.4)	(0.3)	0.5	4.3
Dividend yield (net) %	0.4	0.4	0.3	0.2	0.5	0.9	1.2	1.5
P/BV	4.2	3.8	5.0	6.5	5.8	5.1	4.4	3.8
EV/revenues (core)	4.8	3.9	4.3	6.3	4.1	3.1	2.5	2.4
EV/EBITDA (UBS core)	64.9	93.5	41.1	50.2	26.4	18.5	14.2	13.1
EV/EBIT (core)	>100	NM	>100	>100	42.1	25.9	18.5	17.2
EV/OpFCF (core)	>100	NM	>100	>100	46.8	27.4	19.2	17.1
EV/op. invested capital	2.9	2.5	3.2	5.1	4.1	3.7	3.3	3.1
Enterprise value (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Market cap.	22,560	18,741	26,639	57,449	57,449	57,449	57,449	57,449
Net debt (cash)	2,646	3,523	4,296	4,739	4,900	5,255	5,445	5,445
Buy out of minorities	973	641	395	329	329	329	329	329
Pension provisions/other	0	0	0	0	0	0	0	0
Total enterprise value	26,179	22,905	31,331	62,516	62,677	63,033	63,223	63,223
Non core assets	(348)	(347)	(342)	(341)	(341)	(341)	(341)	(341)
Core enterprise value	25,831	22,558	30,989	62,175	62,336	62,691	62,881	62,881
Growth (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Revenue	0.1	8.5	23.7	38.1	53.9	32.5	24.8	2.1
EBITDA (UBS)	(43.9)	(39.4)	NM	64.2	90.8	43.2	31.0	8.1
EBIT (UBS)	(90.5)	-	-	NM	161.8	63.5	40.1	7.7
EPS (UBS, diluted)	(62.2)	-	-	NM	118.8	50.6	36.0	21.9
Net DPS	(37.5)	(3.3)	0.6	51.5	128.4	80.8	36.0	21.9
Margins & Profitability (%)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Gross profit margin	23.3	15.9	19.6	23.9	28.6	30.4	31.6	32.3
EBITDA margin	7.4	4.1	10.5	12.5	15.4	16.7	17.5	18.5
EBIT (UBS) margin	0.8	(5.5)	1.4	5.7	9.7	11.9	13.4	14.1
Net earnings (UBS) margin	3.9	NM	1.9	5.5	8.2	9.3	10.1	12.1
ROIC (EBIT)	0.5	NM	1.0	4.6	9.8	14.4	18.0	17.7
ROIC post tax	0.5	NM	1.0	3.8	8.8	13.0	16.2	16.0
ROE (UBS)	3.6	(3.9)	2.6	7.3	12.2	16.3	19.2	20.1
Capital structure & Coverage (x)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Net debt / EBITDA	8.2	15.7	6.4	3.8	2.2	1.6	1.2	1.0
Net debt / total equity %	51.8	67.8	83.8	46.6	46.2	42.3	37.5	27.3
Net debt / (net debt + total equity) %	34.1	40.4	45.6	31.8	31.6	29.7	27.3	21.5
Net debt/EV %	10.1	15.4	13.7	7.6	7.8	8.3	8.6	8.0
Capex / depreciation %	NM	NM	129.4	NM	161.9	169.2	195.5	182.4
Capex / revenue %	NM	19.4	11.8	NM	9.3	8.0	8.0	8.0
EBIT / net interest	2.4	-	0.9	3.9	10.8	16.3	21.4	24.0
Dividend cover (UBS)	2.5	-	1.6	4.2	4.0	3.3	3.3	3.3
Div. payout ratio (UBS) %	40.0	-	61.1	23.9	25.0	30.0	30.0	30.0
Revenues by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Others	5,360	5,817	7,195	9,937	15,297	20,273	25,302	25,825
Total	5,360	5,817	7,195	9,937	15,297	20,273	25,302	25,825
EBIT (UBS) by division (Rmbm)	12/23	12/24	12/25	12/26E	12/27E	12/28E	12/29E	12/30E
Others	43	(321)	99	566	1,481	2,421	3,393	3,654
Total	43	(321)	99	566	1,481	2,421	3,393	3,654

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.

Valuation Method and Risk Statement

Risks to China's PCB and CCL sectors include: 1) slower-than-expected AI deployment globally and in China; 2) hyperscalers' capex plans for IDCs and servers being weaker than expected; 3) higher-than-expected tariffs affecting demand for consumer electronics and automobile; and 4) unexpected tightening of environmental regulations in China.

Shengyi Technology:

Our valuation of Shengyi Technology is based on a PE methodology.

Downside risks: 1) severe raw material price inflation; 2) slower exit of low-end CCL capacity and intensifying competition; and 3) weakening end demand from home appliance, telecommunication, automotive, or data communication

Shennan:

Shennan Circuit - We value the company using a sum-of-the-parts methodology, in which both the core business and the new ABF business are valued based on PE. Downside risks: 1) slower-than-expected server demand pick-up in China and the rest of the world; 2) stronger-than-expected pricing pressure from clients and intensifying competition; and 3) longer time to breakeven for ABF business.

Kingboard Laminates:

We value Kingboard Laminates based on a P/E valuation methodology. We see key downside risks as: 1) slower-than-expected conventional FR4 CCL price hikes; 2) ramp and customer qualification of specialty/AI glass fabric products slower-than-expected; 3) supply of conventional FR4 CCL easing from faster-than-expected capacity ramps by peers; 4) less-than-expected AI infrastructure CAPEX growth.

Avary:

Our valuation of Avary is based on target PE methodology. Upside risks: 1) faster FPC/SLP adoption in the Android camp; 2) earlier launches of new AR/VR headsets or devices equipped with mini-LED displays; 3) meaningful orders from auto-related business. Downside risks: 1) more severe ASP cuts in existing FPC parts; 2) underwhelming iPhone shipment numbers; 3) lacklustre demand for AR/VR products and limited application of mini-LED on new devices; 4) unfavourable FX changes.

FastPrint:

We value FastPrint Circuit using the sum-of-the-parts method, in which both the core business and the new ABF business are valued based on PE. Upside risks include: 1) core PCB growth due to higher-than-expected market demand; 2) faster-than-expected customer orders for its ABF substrate; and 3) better-than-expected profitability of FCBGA/ABF packaging substrate business. Downside risks include: 1) slower-than-expected ramp-up of new ABF capacities; and 2) core PCB business recovery does not outperform the China PCB market.