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Greater China Technology Hardware | Asia Pacific

2026 TPCA Show Takeaways

In our PCB supply chain coverage, our order of preference is: TUC, EMC, Co-Tech, UMTC, NYPCB, and GCE, based on upside to our price targets.

Howard Kao
Equity Analyst
Howard.Kao@morganstanley.com +886 2 2730-2989

Irene Yen
Equity Analyst
Irene.Yen@morganstanley.com +886 2 2730-2869

Andy Meng, CFA
Equity Analyst
Andy.Meng@morganstanley.com +852 2239-7689

Key Takeaways

- PTFE offers the best SI but is harder to process; TW CCL makers are less bullish on PTFE and are also exploring HC, HC+PTFE hybrid & BCB.
- Thin E-glass cloth shortages and price hikes to last through 1H27, at least, as looms stay scarce and lines shift to LDK/T-glass.
- EPM's ABF laminators (95%+ global share) are a key bottleneck to ABF substrate expansion, with 2+ year lead times and no new greenfield capacity until 2029.
- Glass core substrate is likely not commercially viable in the next 2-3 years, with crack inspection after ABF lamination currently being problematic.

Implications to our coverage: If next-gen AI server racks do not adopt PTFE-based CCL, we think the outcome would skew positive for EMC and TUC but slightly negative for Shengyi. We expect the material choice to be confirmed by mid-2027 at the latest. Additionally, with EMC expecting its substrate CCL capacity to more than double by end-2028, Unimicron and other substrate makers gain an alternative supply source, which we view as positive. Substrate CCL carries higher gross margins than PCB CCL, so a higher contribution from this business should improve EMC's profitability as S572T ramps from 4Q26. On ABF substrate, lead times of at least two years for key equipment such as EPM's ABF laminators imply that new greenfield ABF substrate capacity can only ramp from 2029 onwards. This aligns with our view that ABF substrate undersupply will deepen in 2027-28. Substrate sizes going to 230mm x 230mm by 2028, implying only 4 substrates per panel, is also supportive of our positive view on demand. This would make it very difficult to control yield, as one area of defect on the panel would imply 25% yield loss.

PTFE CCL: Adoption of glass cloth-free PTFE CCLs in next-gen AI server systems was the topic investors asked about most at the booths. As we have written previously (here and here), pure PTFE CCLs could deliver the best signal integrity (SI), making them the preferred solution for midplane/switch PCBs for some customers. However, their processability at PCB makers remains a challenge for now, particularly for high-layer-count boards. In addition, multilayer boards (MLBs) using PTFE require special high-temperature presses capable of reaching close to 400°C, as standard vacuum presses are insufficient. In response, Taiwanese CCL suppliers are also exploring other materials that could deliver M10-and-beyond performance, including hydrocarbon (HC)-based, HC+PTFE hybrid and benzocyclobutene (BCB)-based CCLs. We expect the CCL material for the next-gen AI server rack to be confirmed by mid-2027 at the latest.

Other key takeaways can be found on the following page.



the 2027 Extel Asia Research Survey. Voting opens 10 November 2026.

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Substrate CCL: S572T, the most advanced substrate CCL on display at EMC's booth, enters mass production in 4Q26, with volumes expected to increase sequentially throughout 2027. EMC expects its substrate CCL capacity to more than double from current levels by end-2028 and said it will have multiple major ABF substrate customers. It added that it has qualified additional low-CTE glass sources to ensure sufficient supply.

Glass cloth shortage: Several CCL suppliers still cite thin E-glass cloth as the key material bottleneck. They generally expect the shortage to persist through 1H27 with continued price hikes, and one supplier believes it could last through late 2027. In their view, the tightness in electronic-grade glass cloth stems from insufficient supply of Japanese-made looms, as well as from existing glass cloth suppliers either prioritizing in-house demand or converting production lines to LDK1/2 and T-glass cloth to meet strong AI demand. One glass cloth supplier noted it remains reluctant to adopt non-Toyota looms given the higher defect rates and repair costs.

ABF laminator: We also visited the booth of Eternal Materials (1717.TW, Not Covered), whose subsidiary Eternal Precision Mechanics (EPM, 7795.TW, Not Covered) holds 95%+ global market share in vacuum laminators used to laminate ABF onto substrate cores. EPM's ABF laminators are now one of the key bottlenecks in ABF substrate capacity expansion. Our checks with EPM suggest equipment lead times have stretched to at least two years and EPM's new greenfield capacity will not come online until 2029; until then, EPM can only debottleneck by optimizing existing capacity and leasing idle capacity from third parties. For context, a new ABF substrate plant may require at least 10 sets of EPM's most advanced three-stage vacuum laminator and pre-track machine, depending on factory layout.

Glass core substrate: Microcracks and the resulting package reliability issues are currently the two key technical bottlenecks for glass core substrates. Existing automated optical inspection (AOI) tools struggle to detect and identify microcracks in the glass core, and laminating multiple layers of Ajinomoto Build-up Film (ABF) onto it makes inspection impossible, according to Shinko. One equipment supplier also flagged metallization of high-aspect-ratio through-glass vias (TGVs) as very challenging. We understand this supplier is not involved in copper pillar mass transfer, an alternative approach to TGV metallization.

