

CCL: PTFE for Midplane

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What's new

We see Nvidia has selected PTFE as the preferred material for Rubin Ultra midplane, we provide our view below.

Comments

Nvidia to Adopt PTFE for Midplane: Our checks indicate that the M9+Q glass solution has not delivered satisfactory electrical performance, and PTFE has been selected as the preferred midplane material. 1) PTFE offers superior high-frequency transmission characteristics with lower loss, which is able to support the 337G+ Serdes in Rubin Ultra platform. 2) While previous PTFE solutions faced manufacturing challenges due to its softness and tendency to generate drilling burrs, newly developed filler-modified (with SiO₂) PTFE significantly improves mechanical rigidity. We see both electrical performance test and manufacturing feasibility test have been passed.

PTFE replacing fiber cloth: We believe PTFE-based CCL will not adopt glass fiber where PTFE is coated with hydrocarbon resin and laminated directly with copper foil. According to our checks, modified PTFE is priced at ~RMB150k/ton, one CCL would consume 800g of PTFE, and the pricing for the PTFE-based CCL could reach RMB2500. The final midplane design is yet to be confirmed with potential solutions including 78 or 108 layers, and a mixed lamination with PTFE CCL/M9-Q/ABF-filled CCL. We expect midplane final design to be finalized in July.

PTFE Beneficiaries: We expect **Shengyi Tech (600183 SH)** to emerge as the primary supplier for PTFE CCL while **TPE (8039 TT)** will likely be the secondary supplier though it is still working on qualification process. On the upstream side, **Dongyue Group (0189 HK)** is currently Shengyi's key PTFE material supplier while other potential PTFE suppliers include **Daikin (6367 JP)** and **Haohua Chemical (600378 CH)**. Based on our preliminary order estimation, we project the PTFE-based CCL market to reach RMB8bn in 2027 for Kyber with further ramp up in Feynman platform. However, given manufacturing complexity, midplane production may begin in late 2026. Additionally, due to these manufacturing challenges, we see PCB players also standing to benefit from the new design, as the PCB value-to-CCL content ratio is expected to increase to 3–3.5x, compared to the current ~2–2.5x seen in HLC PCBs.

Risks

1) AI demand slowing down; 2) Geo-political risks; 3) Competition.

Rating definitions Benchmark: Hang Seng Index (Hong Kong)

Company ratings	Buy	Stock expected to outperform benchmark by more than 10%
	Hold	Expected stock relative performance ranges between -10% and 10%
	Underperform	Stock expected to underperform benchmark by more than 10%

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