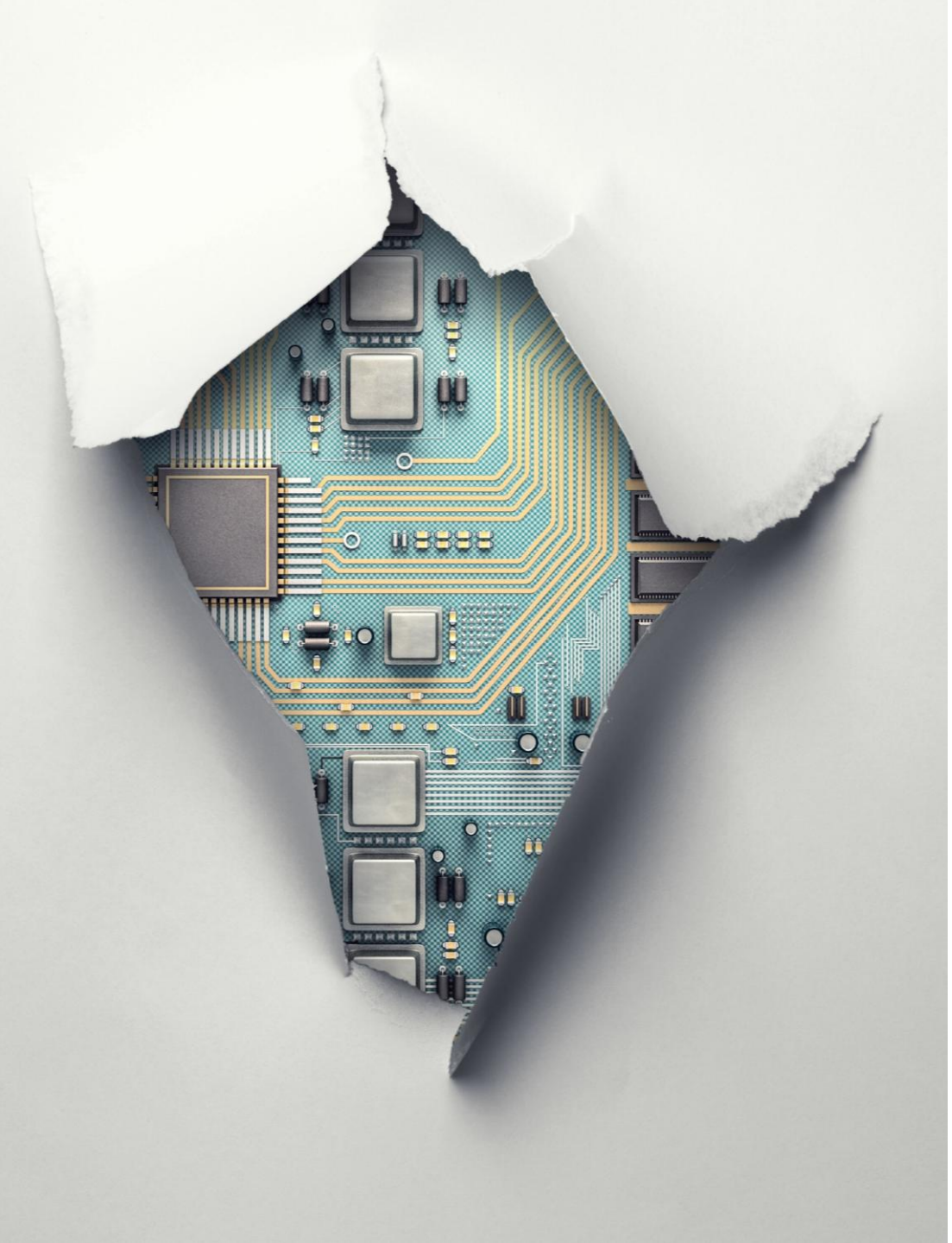


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PCB Material - Supply Chain Market Situation (Sep 2026)

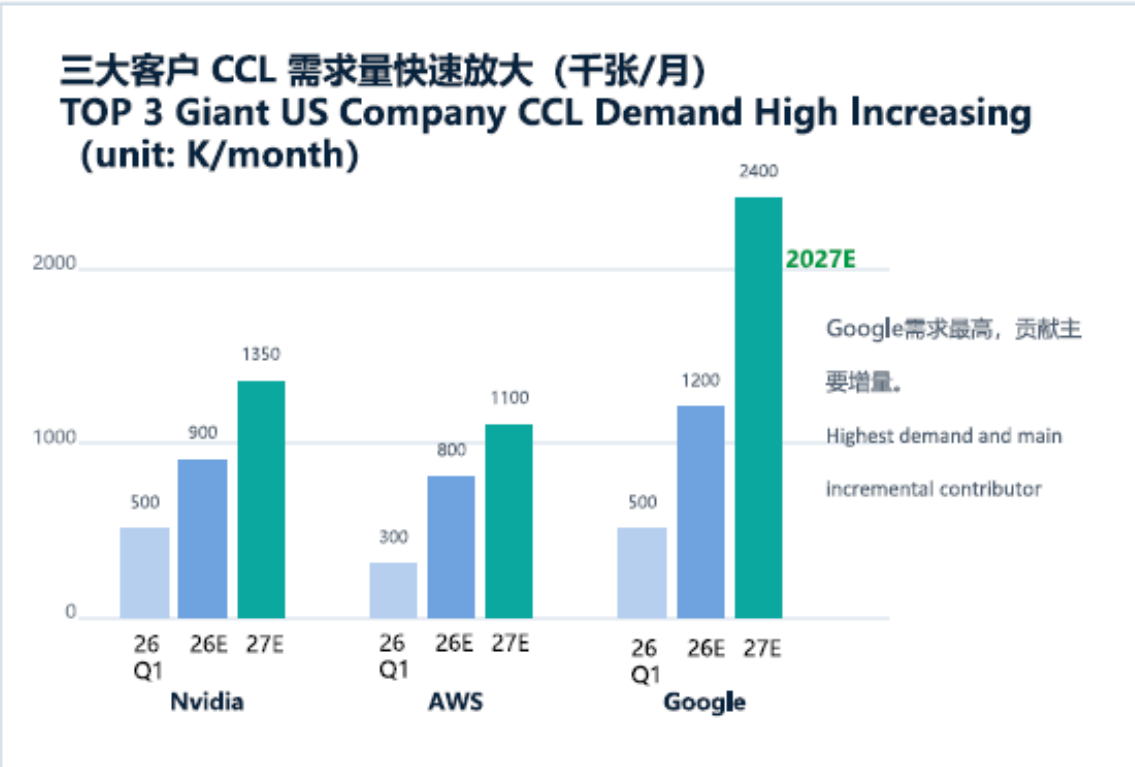
PCB Material - Supply Chain Market Situation (Sep 2026)

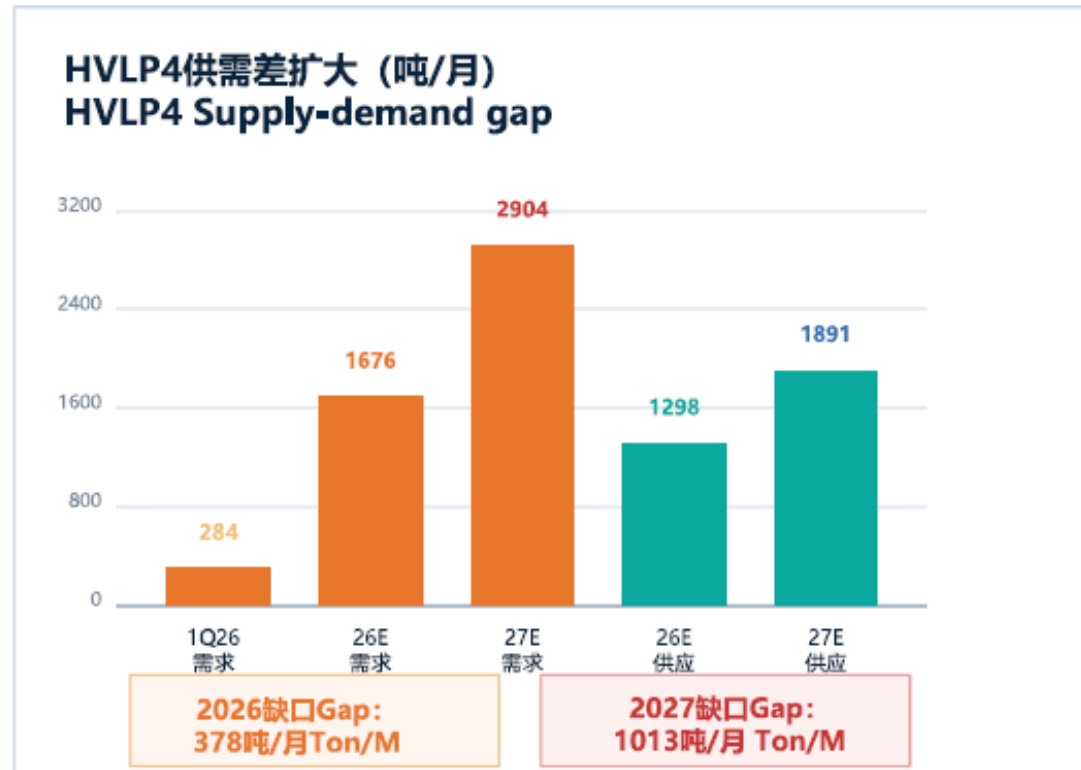
Con il presente documento redatto con nostri partner operanti in Cina, desideriamo condividere la situazione di mercato dei PCB per meglio comprendere andamento domanda, colli di bottiglia dei processi manifatturieri e motivazioni tecnologiche che portano alla situazione attuale in termini di incremento di tempi e costi dei PCB. L'intento è quello di mettere a fattor comune con i nostri clienti le varie esperienze per poter studiare la miglior strategia per controllare costi e gestire i rischi di fermi produttivi: ***il team Techboard resta a completa disposizione per studiare ogni caso specifico per il quale possa servire il contributo di specialisti in materia***

背景：AI数据中心需求爆发式高速增长
Background: AI Market Explosive And Rapid Demand Growth

AI数据中心拉动高端CCL和HVLP4铜箔需求；AI data centers driving up demand for high-end CCL and HVLP4 copper foil.

2027年HVLP4铜箔供需缺口扩大到约1013吨/月；The supply-demand gap of HVLP4 copper foil will widen to 1,013 tons per month in 2027.





PCB市场增长趋势
PCB Market Increasing Forecast

- **AI数据中心是近年电子产品市场增长的核心动力，包括AI服务器、交换机、光模块等核心产品；**
- **与此相对应，高端PCB，即HLC、高阶HDI、载板产品的增长将大幅领先于常规通孔板和FPC**
- AI data centers have emerged as the core driver of growth in the electronic product market in recent years, covering core products such as AI servers, switches and optical modules.
- Accordingly, high-end PCBs, including HLC, high-end HDI and substrate products, will see growth significantly outpacing that of conventional through-hole boards and FPCs.



	$Bn	2023	'24/'23	2024	'25E/'24	2025E	'26F/'25E	2026F	2030F	'25-'30* CAAGR
Computers	*PC*	226	3.5%	234	8.5%	254	1.8%	259	295	3.0%
	Server/Data Storage	200	45.5%	291	41.9%	413	42.1%	587	859	15.8%
	Other Computer	147	-2.8%	143	0.7%	145	2.8%	149	173	3.6%
Communication	*Mobile Phones*	390	6.8%	416	7.5%	447	1.6%	454	552	4.3%
	Wired Infrastructure	161	-3.4%	156	10.1%	171	13.0%	193	226	5.8%
	Wireless Infrastructure	81	-9.9%	73	7.5%	79	6.5%	84	105	5.9%
Consumer	*TV*	87	0.7%	87	-3.1%	84	-1.7%	83	74	-2.6%
	Audio/Video/Personal	143	1.0%	144	6.7%	154	5.0%	162	192	4.6%
	Other Consumer	99	-1.1%	98	2.0%	100	3.6%	104	119	3.8%
Automotive		282	-4.8%	268	3.6%	278	0.9%	281	336	3.8%
Industrial		307	1.8%	312	2.3%	319	8.5%	346	429	6.1%
Medical		138	4.7%	144	7.2%	155	5.0%	162	194	4.6%
Military/Aerospace		172	8.7%	187	9.1%	204	9.3%	223	280	6.5%
	Total	***$2,431***	***5.0%***	***$2,554***	***9.8%***	***$2,803***	***10.1%***	***$3,086***	***$3,833***	***6.5%***

CCL当前短缺情况
CCL Market Current Shortage Situation

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玻纤布短缺与高端转产共同推高 CCL 成本
The shortage of glass fiber cloth and production shift to high-end products jointly push up CCL costs.

18-24月/M

织布机交付周期
Delivery lead time of looms for Fiber Glass

高端织布机扩产受设备交付限制，短期新增供给有限。

40-50Mil

miter/month GAP for Fiber Glass In Whole Market

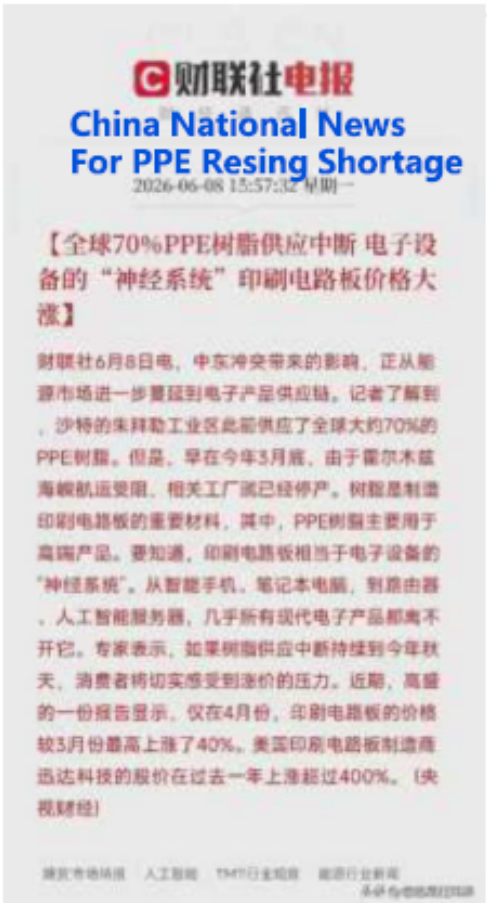
1080 极度缺货，2116 和 7628 也开始缺布。1080 glass cloth extremely scarce; shortages spread to 2116 & 7628.

+ 200~400%

CCL Price Increasing
覆铜板涨价

涨价传导链条 Cost Transmission Chain

1. **高端织布机短缺**
   Shortage of high-end weaving looms
   设备交付 18-24 月，库存仅约 2 周
2. **玻纤布产能转高端**
   Capacity Shift of Fiberglass Cloth to High-End Grades
   通用布供给被挤出，低端替代空间变小
3. **上游原料同步抬升**
   Upstream Raw Materials Price Hikes
   铜、环氧树脂、原油链条共同加压
4. **CCL 成本重估**
   CCL Cost Reassessment
   薄板/厚板理论涨幅进入



财联社电报

China National News For PPE Resing Shortage

2026-06-08 15:57:32 星期一

【全球70%PPE树脂供应中断 电子设备的“神经系统”印刷电路板价格大涨】

财联社6月8日电，中东冲突带来的影响，正从能源市场进一步蔓延到电子产品供应链。记者了解到，沙特的朱拜勒工业区此前供应了全球大约70%的PPE树脂。但是，早在今年3月底，由于霍尔木兹海峡航运受阻，相关工厂就已经停产。树脂是制造印刷电路板的重要材料，其中，PPE树脂主要用于高端产品。要知道，印刷电路板相当于电子设备的“神经系统”。从智能手机、笔记本电脑，到路由器、人工智能服务器，几乎所有现代电子产品都离不开它。专家表示，如果树脂供应中断持续到今年秋天，消费者将切实感受到涨价的压力。近期，高盛的一份报告显示，仅在4月份，印刷电路板的价格较3月份最高上涨了40%。美国印刷电路板制造商迅达科技的股价在过去一年上涨超过400%。（央视财经）

2026年玻纤布价格走势
Accelerated Upturn in Fiberglass Cloth Prices Post 2026

TECHBOARD GROUP

环氧树脂（Resin）

13870 -> 16233 元/吨

中东冲突，PPE树脂停产断供
Middle East Conflicts Cause PPE Resin Shutdown and Supply Shortages



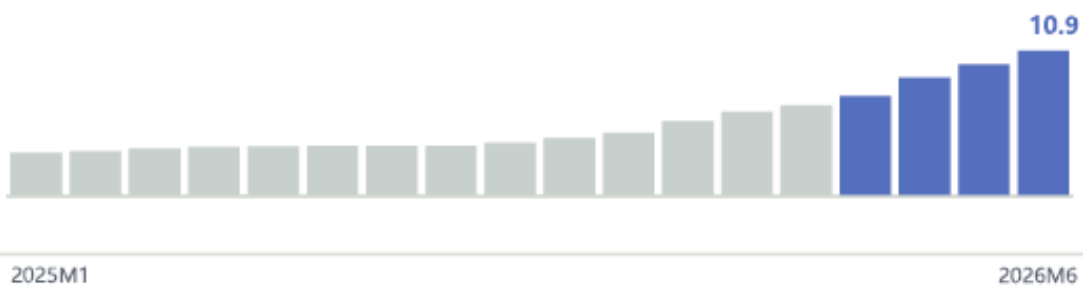
7628 玻纤布(7628 Fiber Glass)

3.5 -> 7.5 元/米



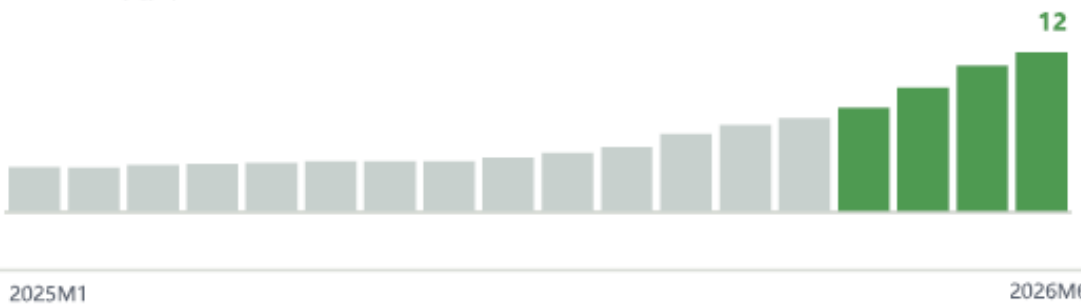
2116 玻纤布 玻纤布(2116 Fiber Glass)

3.2 -> 10.9 元/米



1080 玻纤布 (1080 Fiber Glass)

3.3 -> 12 元/米

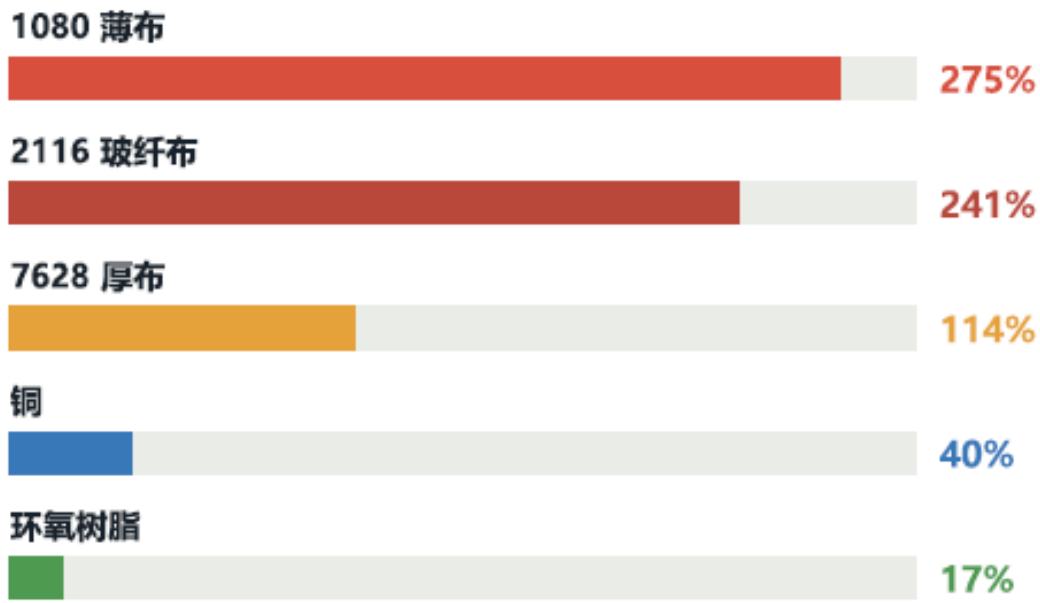


读图：2026M3-M6 是关键变盘窗口；树脂高位回落但仍高于基准，玻纤布三类产品继续上行。
Chart Highlights: Mar-Jun 2026 Critical for Trend Shift; Resins Pull Back But Stay Above Benchmark, Three Grades of Fiberglass Cloth Rise Continuously

CCL 行情的核心是玻纤布涨幅远超其他原料
CCL Price Increasing Core Reason From Fiber Glass Cloth Than Others.

TECHBOARD GROUP

原材料涨幅对比
Raw Material Price Gain Comparison



1080 薄布涨幅约为铜的 6.9 倍、环氧树脂的 16 倍。
1080 thin cloth rises 6.9x vs copper and 16x vs epoxy resin

市场状态 Shortage Status

1080 极度缺货 Extreme supply shortage	2116 缺布 Cloth supply tightens.
7628 已开始减产 Output reduction commenced.	CCL 等布生产 Production on hold pending glass fabric

CCL 工厂只有历史最低位得玻璃布库存，几乎是0%库存
Record-low Inventories，Almost 0% Stock

Severe Shortage of Global High-End Glass Fabric;
One Japanese Enterprise Controls 90% Market Share, With NVIDIA CEO Jensen Huang Making an In-Person Visit to Lock Up Supplies

China Central Television Finance Channel Reported CCL supplier Hangzhou Huazheng,
Shows few fiber glass cloth raw material Stock In May 2026 (From prvious 3~6month stock to 0 stock)

We also visited several Key CCL Suppliers, the similar situation with very few Fiber glass in stock June 2026.

全球高端玻纤布紧缺，这家日企占据了90%市场！黄仁勋亲自登门抢购！

• 2026年01月15日

1月14日消息，据日经新闻报道，由于人工智能（AI）需求爆发，驱动AI芯片载板所需的高端玻璃纤维布（glass cloth，简称"玻纤布"）供应短缺，就连苹果公司都被迫与英伟达、台积、亚马逊、微软等科技巨头展开争夺战。面向台湾用户的BourseAgiFR的报料显示，英伟达CEO黄仁勋为了稳固其AI芯片所需的高端玻纤布的供应，近日还亲自拜访了玻纤布龙头供应商日东纺（Nittobo）。

英伟达CEO黄仁勋为了稳固其AI芯片所需的高端玻纤布的供应，近日还亲自拜访了玻纤布龙头供应商日东纺（Nittobo）

高端玻纤布为何如此紧缺？日东纺独占90%市场

资料显示，玻纤布是IC载板与印刷电路板（PCB）的关键零组件，也是打造电子设备所需的最基础的材料，这些基板主要承载处理器并负责信号传输。由于玻纤布的制造需在约1,300℃高温下进行熔融拉丝，设备须使用昂贵的铂金材料，且每一根纤维都必须比头发更细、完全圆润、不得含有气泡。业界人士指出，玻纤布的稳定性决定了基板品质。

当前，AI芯片与高阶处理器对于数据传输的稳定性与传输速度要求极高，就需要用到特殊规格的低膨胀系数（Low-CTE）的高阶玻纤布（又称"T-glass"），因为其具有尺寸稳定、刚性高、利于高速信号传输等特性，能支撑AI芯片与高阶处理器所需的高层、高密度设计。





PCB成本涨价逻辑
Logic Behind PCB Cost Increases

涨价不是单一材料问题——而是 AI 需求增加；玻纤布、铜/树脂和 CCL 产能紧缺。

The price surge stems not from a single material factor, but from rising AI demand coupled with capacity shortages in glass fiber cloth, copper, resin and CCL.

高端CCL需求（N/A/G 客户）
Demand for high-end copper clad laminates (CCL) from N/A/G customers
+270%
高端CCL需求从1300万张/月提升至4850万张/月。

HVLP4 需求（N/A/G 客户）
HVLP4 material demand (N/A/G customers)
+490%
HVLP4需求从284吨/月提升至1676吨/月。

1080玻纤布 Price
Price of 1080 fiberglass cloth
+340%
25年1月3.2元/米，26年5月12元/米。

CCL/PP factory loading 供应商负荷
+155%
5月供应商在手订单约为月产能1.46倍。

CCL Price Increasing 薄板涨幅
+260%(E)

PCB价格持续上涨
PCB prices keep rising continuously.
26年H1年累计 2026H1 **+70%**
26年全年累计 2026 Total **+120%**

01
AI算力投资
AI High Investment
服务器/交换机/光模块拉动高端PCB

02
高端材料挤占 Capacity crowding-out by high-end materials
玻纤布产能向106/1080/M6+倾斜
Production capacity of fiberglass cloth is shifting toward 106, 1080 and M6+ grades, even to 2116.

03
成本与交期共振 Cost and delivery lead time rise in tandem
铜、树脂、玻布涨价且CCL产能超负荷
Prices of copper, resin and glass cloth surge, with CCL capacity overloaded.

04
CCL短缺和涨价 CCL Shortage and Cost up
锁量、替代、分流、动态调价同步推进
Volume Locking, Substitution, Diversion & Dynamic Pricing

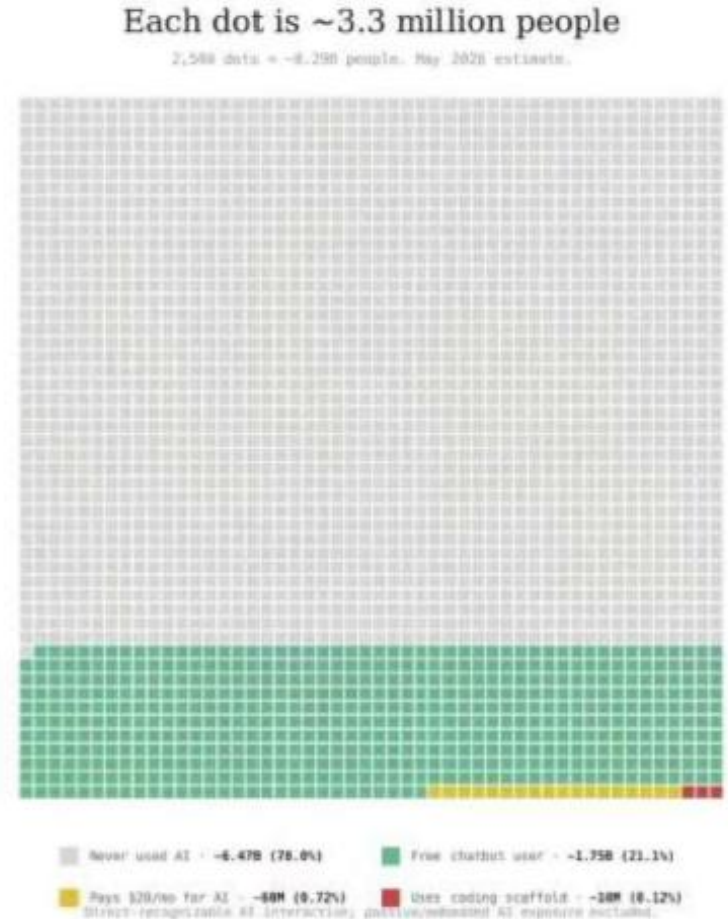
CCL原材料短缺持续时间预测-AI的需求
CCL Raw Material Shortage Duration Forecast- AI Demand

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全球数据中心资本支出持续增长，PCB需求的主引擎转向AI基础设施
Surging global data center Capex shifts PCB demand’s core driving force to AI infrastructure.

目前AI的实际渗透率还很低，预计AI数据中心的资本投资仍将持续保持在一个高位。
Currently, the actual penetration rate of AI is still very low, and capital investment in AI data centers is expected to remain at a high level.





才3个红点，就已经把全球算力干到缺货了？

相信大家之前也刷到过这样的图了，但这是最新的~ May 2026

截至目前，原来全球有 78% 的人还没用过 AI...

CCL原材料短缺持续时间预测-玻璃部产能能扩张受限
CCL Raw Material Shortage Duration Forecast- Limited Capacity Expansion

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106 / 1080 / 1086 / 3313 玻布短期严重欠料
Acute near-term shortage of glass cloth

18-24月/M
织布机排期
Weaving Loom Delivery Lead Times

6-9月/M
客户认证
Customer Qualification

Core Equipment Bottleneck 供给

JAT910 等高端织布机是 106/1080 超薄布关键设备，全球产能有限，国内扩产受排期约束。
JAT910 and other premium weaving looms are essential for 106/1080 ultra-thin cloth production; global capacity is tight, and domestic capacity expansion is restricted by delivery lead times.

上游原料短缺 Upstream Raw Material Shortage 原料

电子纱扩产需 2-3 年；铂铑合金漏板（玻纱生产耗材）价格高且供应紧张，电子纱产能增长缓慢制约玻布产出。
Electronic yarn capacity expansion takes 2–3 years. Expensive and scarce platinum-rhodium alloy bushings limit electronic yarn capacity growth, thereby restraining glass fabric output.

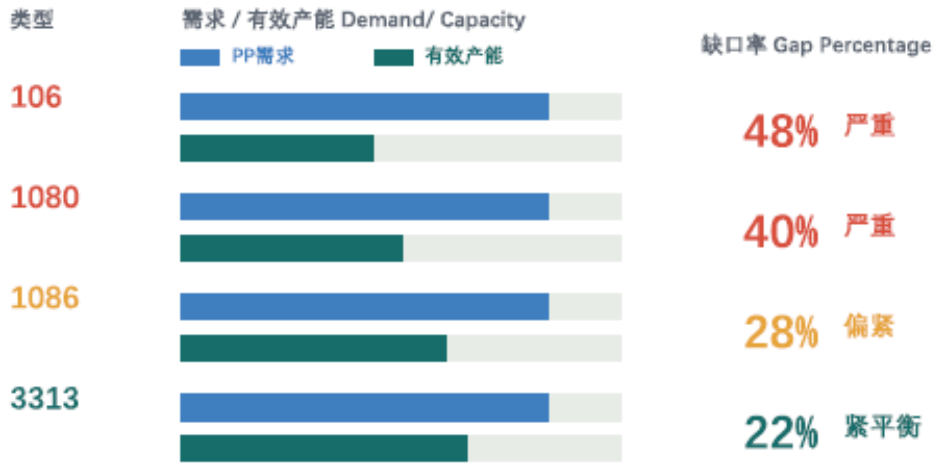
需求增长迅猛 Robust Demand Growth 需求

小型化、轻量化和高密度化推动 HDI、多层板 PP 需求；5G/AI/IoT 同步拉动中布。
Miniaturization, lightweight & high-density trends lift PP demand for HDI and multi-layer boards; 5G/AI/IoT jointly fuel medium cloth uptake.

技术认证壁垒 Technical Certification Barriers 技术

Low-Dk、Q布需稳定配方、张力和温度控制；普通布转高端布产能折损 60%-70%。
Low-Dk & Q cloth demand precise control over formulation, tension and temperature; capacity suffers a 60%–70% reduction when switching from conventional to high-end products.

市场需求和产能短缺比例
Market Demand and Factory Supply Shortage Rate



结论 Conclusion

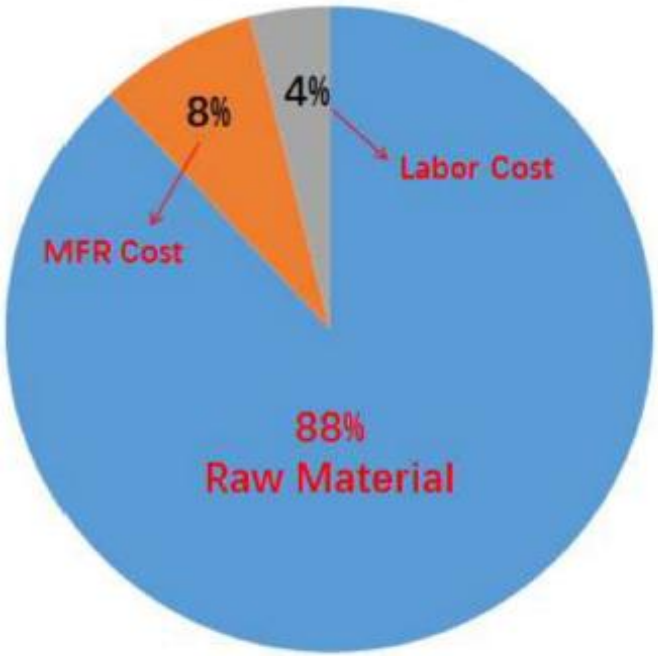
106、1080 缺口最深，属于严重欠料；1086、3313 受 AI/5G 与高端 PCB 拉动进入偏紧区间。短期缓解取决于高端织布机、电子纱与认证节奏，预计 6-12 个月内难明显反转。 106 & 1080 suffer severe material shortages with the widest supply deficit; AI, 5G and high-end PCBs tighten supply of 1086 & 3313. Relief relies on high-end looms, electronic yarn and certification timeline; meaningful improvement is not expected in 6–12 months.

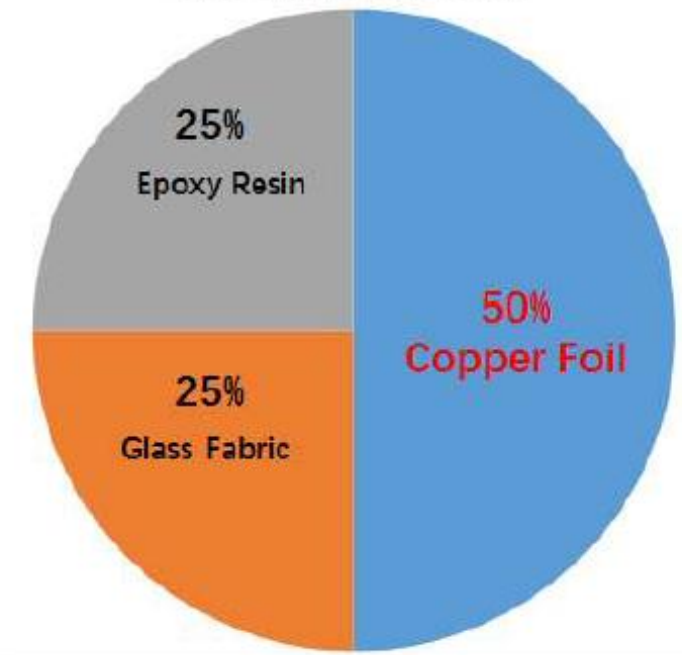
CCL Information Of PCB Key Material（PCB主材CCL市场情况）

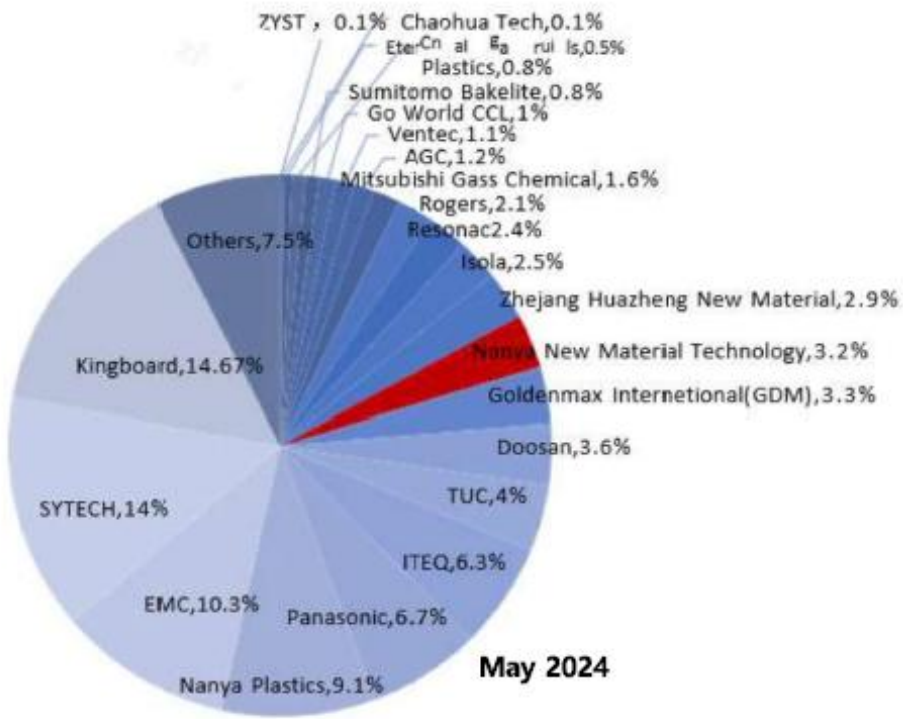
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The key cost for CCL is copper foil，glass fabric, epoxy resin, all these material taking up about 88%. The balance 12% is manufacturing cost(8%) and labor cost(4%) . Global capacity of CCL is 645.9M m2. Only KB/SY/Nanya have the capability to integrate all raw material. Other CCL suppliers are more easy to be affected by the market.

PCB的最主要和核心材料是CCL，而CCL由铜，玻璃布，树脂构成，此三种材料占CLL的88%，其余12%是制造和人工费；全球CCL的年产能是654百万平米，主要由供应商是建滔&生益&台湾南亚主导,此三家合计市场占比超45%，前5大家材料占比约60%,头部前2家材料完全有能力引领整个材料的市场走势，其余家则将紧随跟进。







Only a small group of manufacturers operate in the CCL and glass fabric markets.

TOP CCL Supplier Capacity Utilization Status And Lead Time (July 2026)
主要CCL供应商产能稼动和交期情况

TECHBOARD GROUP

当前前5大CCL供应商其产能稼动率超150%(除KB料,其主要客户是消费品市场或者KB自己的PCB板厂），但KB材料涨幅次数和比例均超其它CCL厂，目前除KB料外，其余供应商的交期都是4~7周或者更长，且其对各家供应商限额供货，超出后就无法供应，只能等下月的额度，因此当前板材厂严重缺货，各个PCB板厂只能保供优先，价格其次；

The capacity utilization rate of the top 5 CCL suppliers has exceeded 150%. Except for KB, which mainly serves consumer and its own PCB factories, KB has implemented more rounds of price hikes and percentage than other CCL manufacturers. Excluding KB materials, the lead time of other suppliers stands at 4 ~ 7 weeks or even longer.

All suppliers adopt allocated supply quotas; orders exceeding the quota cannot be fulfilled and have to wait for the next month's allocation. Currently, there is a severe shortage of copper clad laminates. PCB manufacturers are prioritizing material supply over price.

project		Actual monthly production capacity (10,000 sheets) 实际月产能/万张	April 2026 sales 26年7月销量	top three models in April 2026 / 10,000 standard sheets 26年7月前三大型号销量/万标准张			Is there a supply limit? 是否限额供应	Delivery time 交期			
CPCA Ranking	Company Name		万张 (10,000 sheets)	Model 1	Model 2	Model 3		Supplier's current order quantity 供应商再手订单	Percentage of production capacity 占产能比例	LT/Weeks (within the credit limit) 交期	Shortage Risk 备注
1	KB Laminates	845	730	KB6165F: 2.10 million copies	KB6160: 1. 6 million copies	KB5150F: 1.4 million copies	20,000	900	107%	5~7 weeks	High Risk -Poor negotiability on price and lead time -Uncontrollable price hikes and order quotas
2	生益科技 Guangdong Shengyi	960	950	S1000H: 2.5 million sheets	S1000-2M: 2.0 million sheets	S1150G: 1.8 million sheets	140,000	1400	146%	6-8Weeks	Middle-High Risk 1.Reduce output to all standard FR4 in June 2026 2.Reduce TG150 and push to TG170
3	台光 EMC	536	551	EM-890K: 1 million copies	EM-370(Z): 0.88 million sheets	EM-390: 0.7 million sheets	45,000	1100	204%	8~12weeks	High Risk Only want to support AI
4	台湾南亚 Taiwan Nanya	540	520	NP-155F: 1.56 million sheets	NP-175FBH: 1.05 million sheets	NPG-151: 0.95 million sheets	50,000	680	126%	5-6Weeks	Middle Risk
5	联茂 ITEQ	446	425	IT968G: 0.75 copies	IT170GRA1 0.7 million sheets	IT170GRA2: 0.6 million sheets	150,000	680	152%	/	Extreme High Risk Stop IT150 at 12nd June
6	南亚新材	380	345	NY2150：1.06 million sheets	NY2170：0.75million sheets	NY3150HF：0.42million sheets	70,000	500	132%	5-7Weeks	Middle Risk
7	浙江华正	320	260	H150P(LF)：0.95 million sheets	H150HF：0.49 million sheets	H1170：0.46 million sheets	100,000	400	125%	5-7Weeks	Middle Risk