

# Realizing Your Innovations

Over 28 Years of Expertise in PCB Industry and Quick-Turn Services

## Flexible PCB Manufacturing

Since 1997, KINGBROTHER has specialized in high-speed PCB layout design and manufacturing, serving over 18,000 customers worldwide and helping them bring products from prototype to market quickly. With five design centers and four manufacturing bases, we provide comprehensive capabilities for high-end, complex products.

Our product type covers high-speed multi-layer boards, metal-based boards, thick copper boards, and rigid-flex boards, all without minimum order quantity requirements. They are widely applied to communication, automotive, industrial control, AI, and medical equipment. We have become a major supplier for leading global enterprises, with whom we have established long-term and stable cooperative relationships.

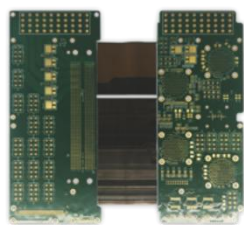
PCB Capability — Kingbrother		
Item	Technical Capabilities	
	Prototype	Volume
Product Type	Embedded Resistor & Capacitor Embedded Magnetic Core Embedded Component Embedded Copper Block Embedded Sub-board 77G Radar Products Self-clinching Nut High resistance carbon oil Substrate-Like PCB IC-Substrate	Single / Double Sided Multi-layer HDI High-frequency Cavity Rigid-flex Heavy Copper Hybrid High-Frequency Mechanical Buried & Blind Via Metal Base Metal Core High-speed Backplane High-speed Optical Module 5G Antenna
Material	Halogen Free/ Lead Free	SHENGYI: S1000H (has UL & CUL) 、S1000-2M (has UL & CUL) 、S1150G、S1170G; Wazam H150、H1170; (both has UL & CUL) ITEQ IT158、IT180A (has UL & CUL) ; TU752、TU865
	High-speed Material	SHENGYI S6N、S7439; Panasonic M6; TU872-SLK、TU883、TU933+、TU943N ; ITEQ IT-170GT

Material		High-frequency Material	Rogers RO4003, RO4350B（has UL）； Taconic TLY-5、TLX-8、TSM-DS3； Panasonic R5575； SHENGYI SG220/255/300； Wazam FSD220/255/300/615T/1020T
		Flex Section Material	Panasonic RF-775； ThinFlex W、High-speed Flex Board (LK series)； Dupont AG Flex Board
		Others	BT Material High Thermal Conductivity Material Copper Base Aluminum Base Rigid PI (VT901), Buried Capacitor Material, Buried Resistor Copper Foil, Magnetic Core Material, High Resistance Carbon ink.
Signal Transfer Rate		Max: 112Gbps	Max: 25Gbps
Layers	FR4	68	30
	Rigid-Flex	Total/Flexible:32/24	Total/Flexible:20/12
	Hybrid High-Frequency	28	20
	Pure PTFE	24	16
	HDI	48/5+N+5	28/4+N+4
	Substrate	10	6
	Rigid Board	Max:550mm*900mm	Max:550mm*620mm
Size	Double-sided Flexible Board	Max:2000*200mm	Max:1250*200mm
Max Final Board Thickness		12mm	6.5mm
Via Diameter	Mechanical Hole	Min:0.10mm	Min:0.15mm
	Laser Hole	Min:0.10mm	Min:0.10mm
	Half Hole	Min:0.30mm	Min:0.40mm
Via to Via Clearance	Same Nets	Min:0.13mm	Min:0.2mm
	Different Nets	Min:0.25mm	Min:0.30mm
Via to inner layer copper/track	≤10L	Min:0.125mm	Min:0.15mm
	>10L	Min:0.15mm	Min:0.18mm
Aspect Ratio		20:1	16： 1
Solder Bridge	Green	Min:3.0 mil	Min:4.0 mil
	Other Colors	Min:4.5 mil	Min:5.0 mil
Resin Filling Via Diameter		0.08-0.8 mm	0.1-0.6 mm
Impedance Tolerance		±5%	±10%
Gold Thickness	ENIG	MAX: 5-8u"	MAX: 3-8u"
	Soft Ni/Au Plating	MAX: 80-120u"	MAX: 1-3u"
	Hard Ni/Au Plating	MAX: 80 u"	MAX: 30 u"
Surface Finish		HASL-LF; OSP; Immersion Ag; Immersion Tin; ENIG; ENEPIG; Plating Gold	

Special Capabilities	Thick Copper with Blind Buried Via Metal Core Rigid-flex Embedded Copper Block Hybrid High-frequency Gold Finger Back Drilling Deep Slot Milling Hole on Pad Half Hole	Countersink Hole Sidestep Slot Via Overlapping Via Peelable Mask Laser Cutting Resin Filling Mixed Surface Treatment Buried Components Buried Sub-board Self-clinching Nut Welding Metal Board
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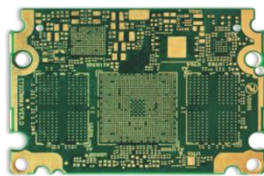
# The Circuits Solutions

## 1.High Multi-Layer Rigid-Flex Board



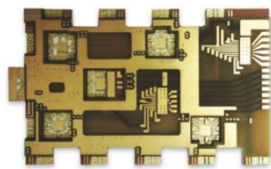
**Application:** communication  
**Layers:** 26L (flex 8 layers)  
**Thickness:** 4.0mm  
**Minimum line width/space:** 4.0mil/4.0mil

## 2.Three Steps HDI Board



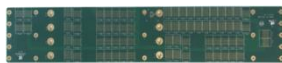
**Application:** communication  
**Material:** TU872SLK  
**Layers:** 12L  
**Thickness:** 1.6mm  
**Minimum line width/space:** 2.0mil/2.0mil

## 3.High-Frequency Hybrid Material for Cavity Board



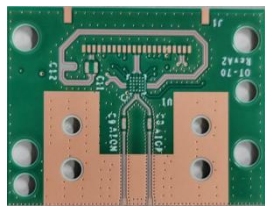
**Application:** communication  
**Material:** RO4350B+S1000-2  
**Layers:** 8L  
**Thickness:** 1.5mm  
**Special technology:** three-times cavity

## 4.High-Speed Backplane Board



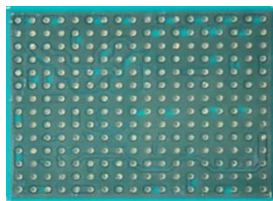
**Applications:** communication  
**Material:** M6  
**Layers:** 26L  
**Thickness:** 5.5mm  
**Minimum line width/space:** 4.5mil/4.5mil

## 5.Substrate(-Like)



**Application:** communication  
**Material:** TU933 high-speed substrate + NBF PP  
**Layers:** 6L  
**Blind holes:** 50μm  
**BGA:** 150μm  
**Blind hole diameter ratio:** 1:1

## 6.FCCSP Package Substrate



**Application:** Analog-to-digital converter processors  
**Material:** SI10US + NBF film  
**Layers:** 6L  
**Thickness:** 0.35mm  
**Line width and space:** ≥25/50μm

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