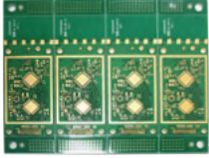




PCB Board Capabilities

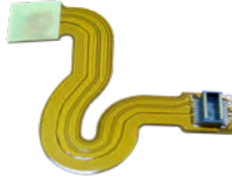
Types



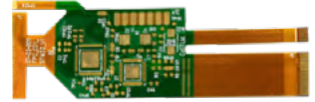
Rigid Printed
Circuit (PCB)



Ceramic Circuit
Boards (MCPCB)



Flexible Printed
Circuit (FPC)



Rigid-Flex
Circuit (RFPC)

Production Capacity

		Standard	High-end
Layer		2-12	8-22
PP Laminate			
Material		FR4 (TG130 ° ~170 °), FR4 (High TG150 ° ~200 °), FR5 (TG135 ° ~175 °), FR4 + Rogers, FR4 + polymer, TFE (RF-35), HALOGEN FREE, Ceramic base boards, Cu-base boards, Al-base boards, Arlon, FR2 (CAM 1)	
Largest panel size		18"x24" (457.2 x 609.6 mm)	24"x26" (609.6 x 660.4 mm)
Board thickness	Maximum board thickness	5.00mm	6.00mm
	Minimum board thickness	0.4mm (4L) 0.3mm (2L)	0.38mm (4L) 0.25mm (2L)
Thinnest PP thickness		0.064 mm	0.051 mm
Copper			
Inner layer copper thickness		0.5 ~ 2.0 oz	0.3 ~ 3.0 oz
Outer layer copper thickness		0.5 ~ 2.0 oz	0.3 ~ 4.0 oz
Via Holes			
Stack up		FPC or standard Printed board	blind vias / buried vias
Minimum Via		0.3mm	0.2mm
Smallest laser drill size		0.10mm	0.076mm
Aspect ratio		6/1	12/1
Trace			
Line width/spacing in outer layer		4/4 mil	3/3 mil
Minimum SMT spacing pitch		0.3mm	0.2mm
Minimum BGA spacing pitch		0.15 mm	0.1mm
Solder mask and surface treatment			
Minimum solder mask print width		0.102 mm	0.076mm
Solder mask print registration tolerance control		+/- 3 mil	+/- 2 mil
Surface treatment		HASL(Hot solder leveling), IMAU/ENIG(Immersion gold), Immersion Silver, Immersion Tin, OSP/Entek, Lead-free HASL, Soft gold, Flash gold	
Others			
Impedance control		45 ohm +/-10%	40 ohm +/-7%



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PCB Assembly Capabilities

- Build-to-Order
- Component Purchasing and Sourcing
- High-Mix / Low-Volume, Low-Mix / High-Volume PCBA
- Wide Body PCBA Capability
- Clean / No-Clean Processes
- Press Fit Connector / Compliant PIN Assembly
- RoHS/REACH Compliant Manufacturing
- High Complexity & High Density PCBA
- In-House Conformal Coating



Type of Assembly

- THD [Thru-Hole]
- SMT [Surface Mount Technology]
- SMT & THD mixed
- Double-sided SMT and/or THD assembly

Technologies

- IPC Class 1,2,3 Assembly Processes
- μ BGA, PGA, LGA, BGA
- PoP and 01005s

Assembly Processes availability

- Lead-Free [RoHS]
- Leadless [SnPb]

Test Capabilities

- Test System Development
- ICT & SDX
- Functional & AOI
- ESS & Flying Probe
- Burn-In Chambers

Certifications / Standards

- ISO 9001:2015
- ISO 14001:2015
- ISO 13485:2016
- IPC-A-610 Class I, II, III
- UL

Process Capability

- Minimum part size: 01005
- Minimum IC pitch: 0.25 mm
- Minimum BGA ball diameter: 0.2mm
- Minimum BGA ball pitch: 0.25 mm
- Maximum PCB size: 560mm x 330mm
(No minimum size limit)





Conformal Coatings

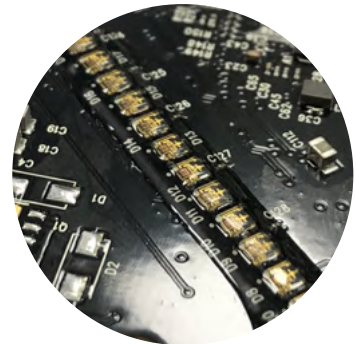
Environment-friendly coatings comply with EU's RoHS Directive. Additionally, we have lead-free, halogen-free and low VOC initiatives to support our customers.

Specific features:

- Dielectric properties
- Thermal stability
- Barrier properties

Ultra-thin and pinhole-free, we are providing conformal coatings with exceptional properties, including:

- Outstanding dielectric properties
- Outstanding chemical and moisture barrier properties
- Bio-compatible and bio-stable protection
- Ultra-thin, conformal coating of all exposed surfaces
- Outstanding multi-layer penetration
- Thermal stability up to 450°C (short-term)
- Unparalleled ultraviolet stability



Coating Selection Chart

	Methods	Cost	Functions	Advantages	Disadvantages
Acrylic	spraying, brushing, dipping	low cost	moisture / dust resistance, mechanical reinforcement	Easily applied and removed, easy rework and repair, rapid cure, -65°C to +125°C	Poor chemical and solvent resistance, low abrasion resistance, flammable, softens at high temperature
Urethane	spraying, brushing, dipping, printing	lowest cost	moisture / dust chemical resistance, biologically inert, mechanical reinforcement	Good chemical resistance, good adhesion and humidity resistance	Long cure time, difficult to remove and rework
Epoxy	brushing, printing	medium cost	moisture / dust chemical resistance, biologically inert, mechanical reinforcement	Good adhesion, opaque, excellent chemical, abrasion, moisture and humidity resistance	Difficult to remove, shrinks during curing, stress on components during thermal extremes
Silicon	spraying, brushing, dipping, printing	medium cost	moisture / dust oil resistance, mechanical reinforcement, thermal insulator	-55°C to +200°C, good humidity, corrosion and chemical resistance, adheres well to most PCB components / materials	Difficult to remove, poor adhesion, low abrasion resistance
Parylene	vacuum deposition	high cost	moisture / dust / oil / chemical / electrical resistance, antimicrobial	Coats almost everything, excellent chemical and abrasion resistance, excellent adhesion, best solvent and extreme temperature resistance, high dielectric strength	Difficult to remove, not ideal for long-term exposure outdoors, susceptible to contamination
Nanocoat	spraying, dipping, low pressure deposition	medium cost	moisture / dust / chemical resistance	Easy to rework, so nanocoat goes virtually everywhere	Sensitive to abrasion, long cure time, properties vary across industry



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PCBA Portfolio



- Layer count : 10
- Board dimensions : 89.7*111.3 mm
- Board material : FR4 High Tg
- Board thickness : 1.8mm
- Copper thickness : 18 um
- Finishing : Immersion gold



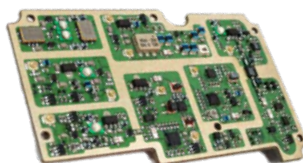
- Layer count : 10
- Board dimensions : 69.5*59.1 mm
- Board material : FR4 High Tg
- Board thickness : 1.5 mm
- Copper thickness : 18 um
- Minimum line width : 0.1 mm
- Minimum spacing : 0.08 mm
- Finishing : Immersion gold
- Vias coverage



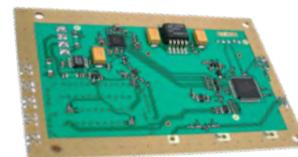
- Layer count: 4
- Board dimensions: 250x233.34 mm
- Board thickness: 1.80 mm
- Board material: FR4 High Tg
- Finishing: HASL (Hot solder leveling)
- Multi-board expandable



- Layer count: 14
- Board dimensions : 95*52 mm
- Board material : FR4
- Board thickness : 1.7 mm
- Copper thickness : 18/36/36/18
- Finishing : ImAu
- Edge plating : ImAu
- Impedance : 50 Ohm



- Layer count : 8
- Board dimensions : 95*52 mm
- Board material : FR4
- Board thickness : 1.5 mm
- Copper thickness : 18 um
- Finishing : ImAg



- Layer count : 4
- Board dimensions : 106x70 mm
- Board thickness : 1.45mm
- Board material : FR4 +Rogers
- Copper thickness : 18 / 36 / 36 / 18
- Silkscreen : Black
- Finishing : Immersion gold



- Layer count : 16
- Board dimensions : 189x175 mm
- Board thickness : 1.65 mm
- Board material : FR4 High Tg
- Finishing : Immersion gold
- BGA components



- Layer count : 4
- Board dimensions : 189.5 x 165 mm
- Board material : FR4 Standard
- Board thickness : 1.3 mm
- Copper thickness : 18um
- Finishing : HASL
- Press-fit connectors



- Layer count : 10, up to 1500 components
- Board dimensions : 56 x 139.2 mm
- Board material : FR4 High Tg
- Board thickness : 1.3 mm
- Copper thickness : 18/35 um
- Finishing : Immersion gold
- Multiple microBGA
- SMT Populated EMI Shields