

Process Technology	Capability Element	Working Capability 2020	Developmental Capability (2020-2021 Horizon)
<b>THE PCB CONNECT GROUP RIGID CAPABILITY - AUGUST 2020</b>			
Short Form Capability as of August 2020	Layer Count Production & QTA	1-40L Production & Quick Turnaround	>60 Layer
	Maximum Board Size (mm)	1100 x 610	1400 x 610
	Board thickness range (mm)	0.15 to 10mm	0.15 to 14mm
	Board thickness tolerance	T<1.0 mm: ±0.08mm ; 1.0≤T<1.6mm:±0.13mm ; 1.6≤T<2.0mm:±0.15mm ; 2.0≤T<2.4mm:±0.20mm ; 2.4≤T<3.0mm:±0.25mm ; 3.0≤T<3.5mm:±0.28mm ; 3.5≤T<4.0mm:±0.30mm ; T≥4.0mm: ±10%	T<1.0 mm: ±0.08mm ; 1.0≤T<1.6mm:±0.13mm ; 1.6≤T<2.0mm:±0.15mm ; 2.0≤T<2.4mm:±0.20mm ; 2.4≤T<3.0mm:±0.25mm ; 3.0≤T<3.5mm:±0.28mm ; 3.5≤T<4.0mm:±0.30mm ; T≥4.0mm: ±10%
Materials Selection (for full list of PCB Materials available please contact your local PCB Connect Group Business	Standard Rigid Material	Shengyi, Elite, Kingboard, NanYa, TUC, Grace, Ventec, Isola, Taconic, Rogers, Panasonic, Nelco, ITEQ	Shengyi, Elite, Kingboard, NanYa, TUC, Grace, Ventec, Isola, Taconic, Rogers, Panasonic, Nelco, ITEQ
	Low Loss Material Capability	Megtron-4 + 4S, S7038,S7439, S7439C,TU872SLK, FR408HR, EM-828, EM888, N4000-13 + N4800-20 range of materials, IT968	Megtron-4 + 4S, S7038,S7439, S7439C,TU872SLK, FR408HR, EM-828, EM888, N4000-13 + N4800-20 range of materials, IT968
	Metal Base Partners	Berquist, Kinwong, Ventec, Doosan, Denka, Arlon	Berquist, Kinwong, Ventec, Doosan, Denka, Arlon
	Ceramic Material Partners	Rogers, Arlon, Shengyi, Taconic	Rogers, Arlon, Shengyi, Taconic
	PTFE Partners	Panasonic, Arlon, Rogers	Panasonic, Arlon, Rogers
Copper Weight Inner Layer	Maximum Copper Weight Inner Layer	12 oz	15 oz
Copper Weight Outer Layer	Maximum Copper Weight Outer Layer	12 oz	15 oz
Inner Layer Capability	Min Line width/Spacing (0.5oz)	0.0762 mm	0.0762 mm
	Min Line width/Spacing (1.0oz)	0.0762 mm	0.0762 mm
	Min Line width/Spacing (2.0oz)	0.1524 mm	0.1524 mm
	Min Line width/Spacing (3.0oz)	0.1778 mm	0.1778 mm
Outer Layer Capability	The Min distance hole to copper	0.15mm min	0.15mm min
	The Min Regisation for laminate	~+/-0.10mm	~+/-0.10mm
Controlled Impedance	Min Line width/Spacing (0.5 oz)	0.0762 mm	2/2 Mil
	Controlled Impedance +/- %	+/-7%	+/- 5%
Drilling Capability	Drill bit Range	0.15mm-6.8mm	0.15mm-6.8mm
	Minimum Mechanically Drilled Hole	0.15mm	0.10mm
	Slot tolerance	~+/-0.0762 mm	~+/-0.0762 mm
	Minimum Slot Width	0.4mm	0.4mm
	Minimum Distance Between Via Wall	0.15mm	0.15mm
	Hole wall roughness	<25um	<25um
	The min depth for control routed	0.15mm	0.15mm
	The depth tolerance for controlled routing	~+/-0.0762 mm	~+/-0.0762 mm
	The Max depth for backdrill	6.0mm	6.0mm
	The min backdrill hole	0.15mm	0.15mm
	Backdrill depth tolerance	~+/-0.1016 mm	~+/-0.1016 mm
	Backdrill accuracy	~+/-0.0508 mm	~+/- 0.0508 mm
	Aspect Ratio PTH	20:01	22:01
	Aspect Ratio Blind Via Hole	0.8:1	1.4:1
	Finished Hole Tolerance PTH	~+/-0.05 mm	~+/-0.05 mm
	Finished Hole Tolerance NPTH	~+/-0.025 mm	~+/-0.025 mm
	copper plated tolerance	< 5um	< 5um
Color for soldermask	Green, Blue, Red, Yellow, Black, White		

Soldermask	Soldermask Brands Available	Taiyo, Peters, Rongda, Lianzhi	Taiyo, Peters, Rongda, Lianzhi
	Soldermask thickness	At trace shoulder:>10 (0.01016 mm) On copper surface:>15 (0.01498 mm)	At trace shoulder:>10 (0.01016 mm) On copper surface:>15 (0.01498 mm)
	Coverage for soldermask plug	60%	60%
	Coverage for resin fill plug	100%	100%
	Minimum Solder Mask Dam	0.10mm	0.05mm
	Minimum Solder Mask Clearance	0.075mm	0.025mm
Silkscreen	Available Silkscreen Colour	White, Yellow, Black	White, Yellow, Black
Surface finish	Available Surface Finishes	ENIG, Immersion Tin,HASL,Pb free HASL,OSP, Plated heavy Au,Immersion Ag, ENEPIG, ASIG, Selective Hard and Soft Gold,	ENIG, Immersion Tin,HASL,Pb free HASL,OSP, Plated heavy Au,Immersion Ag, ENEPIG, ASIG, Selective Hard and Soft Gold,
Gold finger	Au thickness	0.025-1.51um	0.025-1.51um
	Ni thickness	2-12 um	2-12 um
	Chamfer angle	15°~60°	15°~60°
	Chamfer length	No limit	No limit
Routing Process	Chamfer length tolerance	~+/-0.1 mm	±0.1MM
	Profile tolerance	~+/-0.0762 mm	~+/-3mil
	The min Routed tooling	0.8mm	0.8mm
V-CUT	Jump V-score	Y	Y
	The min distance for jump V-score	5.0mm	5.0mm
	The Max work panel	580*900mm	580*900mm
	The Max board thickness	4.00mm	4.00mm
	The tolerance for v-score remain thickness	±0.10mm	±0.10mm
	Angle	30°,45°, 60°	30°,45°, 60°
Buried capacitance	The accuracy for the v-score both sides	~+/-0.1mm	±0.1mm
	Capacitance material (3M c-ply)	3M C-PLY	3M C-PLY
	Single etch Or double etch	Double sided etch	Double sided etch
Peelable soldermask		14L	16L
Carbon Print		Available	Available
Mixed Substrates		Available	Available
	FR4 and Rogers	Available	Available
Heavy copper (over 5.0oz inner layer)	FR4 and PTFE	Available	Available
	over 5.0oz inner layer	Available	Available
Epoxy via Plugging to IPC4761 Type VI	The Max layers	20L	20L
	Availiable	Min via size : 0.3mm Aspect Ratio : 10:1	Min via size : 0.3mm Aspect Ratio : 10:1
Control depth Drill	Accuracy	~+/-0.1mm	~+0.1mm
	Aspect Ratio	1:01	1:01
<b>THE PCB CONNECT GROUP HDI CAPABILITY - AUGUST 2020</b>			
HDI Constructions	1+N+1	Available	Available
	2+N+2	Available	Available
	3+N+3	Available	Available
	4+N+4	Available	Available
	Any Layer Interconnect (ALIC)	Available	Available
Material	HDI normal core	ITEQ, Shengyi,EMC	ITEQ, Shengyi,EMC
	HDI normal Prepreg	106/2113	106/2113
Board thickness	The Max board thickness	10mm	10mm
	The Min board thickness	0.3mm	0.3mm
Layers	The Max	32L	32L
Inner layer	Min Line width/Spacing	0.0762 mm	0.0762 mm
	The Min distance hole to copper	0.15mm	0.15mm
Laser drill	The Min Laser vias	0.075mm	0.075mm
	Aspect Ratio	1:01	1:01
Fill vias by plating	Filled vias by plating	Available	Available
Laminate	Copper foil (1/4oz,1/3oz,3/8oz)	Available	Available
	Registration	~+/-0.1mm	~+/-0.1mm
Laser drill method	LDD	Yes	Yes
	Large window	Bigger than hole size for 0.075mm(Single side)	Bigger than hole size for 0.075mm(Single side)
	Same window	ok	ok
Outer layer	Min Line width/Spacing	0.0762 mm	0.0762 mm
	The Min distance hole to copper	0.15mm	0.15mm