PCB MAUFACTURING CAPABILITIES , RIGID AND IMS - February 2012

No.	Item		Capabilities
1	Material Type	RCC Material	Copper thickness 12um, resin thickness 65 and 100um - (shengyi)
		LDPP (Laser drill PP model)	IT-180A 1037 (2.0mil) , IT-180A 1086 (3.0 mil) - ITEQ
		Normal Tg Material FR4	Shenyi, ITEQ, Kingboard, Nelco, Nan Ya.
		Halogen free material (normal Tg) FR4	S1155
		Halogen free material (high Tg) FR4	S1165
		High Tg material FR4	FR408, IT180A, PCL-370HR, N4000-13, N4000-13I
		Hydrocarbon ceramic high Frequency material	Rogers 4350, Rogers 4003, 25FR, 25N
		PTFE high frequency material	Rogers, Taconic, Arlon, Nelco
		PTFE Bonding film	RO3001 (1.5 mil), HT1.5 (1.5mil), Cuclad6700 (1.5mil)
		PTFE PP model	GORE speed Board, Taconic TPG-30, 32, 35
		Others	CEM-1, CEM-3, FR1, FR2, XPC
2	Production Type	Rigid Board	Backboard,HDI,Blind&buried via ,Buried capacitance,Buried resistance,Electrical source thick copper, Back drilling
3	Laminate Model	Blind and Burried Via Type	mechanical blind&burried vias with less than 3 times laminating
		HDI Type (RCC and LDPP)	1+n+1,1+1+n+1+1,2+n+2(buried via≤0.3mm;2 only forRCC),The laser via can be filled with resin or copper
4	Surface Type	Lead free	LF HAL, Flash Gold(based copper≤1OZ),ENIG´Immersion silver, Immersion Tin ,OSP,Hard gold plating,ENIG+OSP, Tin+G/F,ENEPIG ENIG+G/F,Flash Gold+G/F,Immersion silver+G/F,Immersion
		Lead	HASL
5	Surface plating or coating thickness	Tin thickness (HASL)	2-40um(0.4um on large area for HASL)
		Flash Gold	Ni:3-5um;Au≥0.025um
		ENIG	Ni:3-5um;Au:0.05-0.1um
		Immersion Tin	Tin≥1.0um
		Immersion Silver	Sliver:0.1-0.3um
		OSP	0.2-0.3um
		Hard Gold Plating	Au≤2.5um
		ENEPIG	Soldering:Ni:3-5um Pd:0.05-0.1um Au:0.03-0.05um
			bonding:Ni:3-5um Pd:0.1-0.15um Au:0.07-0.15um
		Carbon Thickness	0.10--0.35mm
		Soldermask	10-18um(on copper area),5-8um(on via pad and line corner)
		Peelable Solder Mask	0.20--0.50mm
6	Hole	Hole size (finished) for mechanical drilling	0.10-6.5mm
			A´Min. hole size is 0.25mm for PTFE Material
			B´The hole size is less than 0.30mm for blind & buried via
			C´The hole size is less than 0.30mm for plugging hole with solder mask in pad
			D´Min Connecting Hole size 0.35mm
			E´the hole size range is 0.10-0.40mm for plugging with resin
		Hole size (finished) for Laser drilling	A´the blind hole size range is 0.075-0.15mm for plugging with resin
			B´the blind hole size range is 0.075-0.127mm for filling plating
		Aspect ratio	Max PCB THK 0.6mm for mechanical drilling tool diameter 0.10mm
			Max PCB THK 1.2mm for mechanical drilling tool diameter 0.15mm
			≤16:1(tooling size >0.2mm)
		Hole position tolerance	±3mil
		PTH size tolerance	±3mil
		Press PTH size tolerance	±2mil
		NPTH size tolerance	±2mil(Limited tolerance +0/-2mil or +2/-0mil)
		The relation between hole size (finished) for plugging with resin and board thickness	0.1mm&0.15mm(board THK≤1.6mm),0.2mm(board THK≤2.4mm),0.25mm(board THK≤2.8mm),0.3mm(board THK≤3.2mm)

6	Hole (cont.)	Min laser drill hole	0.10mm(Laser drill Depth ≤65um),0.13mm(Laser drill Depth ≤100um)
		The range of back drill hole size	0.5-6.5mm
		The space between the target layer	≥0.20mm
		Tolerance of backdrill depth	±0.1mm
		Countersink size and angle	Special drill bit:angle 82°,90°,120°(hole size 0.3-10mm) Normal drill bit:angle 130°(≤3.175mm),165°(3.175--6.5mm)
		Countersink angle tolerance	±10°
		Countersink hole size tolerance	±0.20mm
		Slot size tolerance for routing	±0.15mm
		Depth tolerance for blind NPTH slot routing	±0.10mm
7	Pad size	Min pad size for laser drilling	10mil(drill depth≤65um),11mil(drill depth≤100um)
		Min pad size for mechanical drilling	14mil(via 8mil,Base copper 0.5oz and 1oz),20mil(via 8mil,Base copper 2oz),24mil(via 8mil,Base copper 3oz)
		Min pad size for BGA	7 mil
		Pad size tolerance	-0.05
8	Line Width, line space	Inner layer	1/3、1/2OZ:3/3mil
			1OZ:3/4 mil
			2OZ:5/5 mil
			3OZ:6/7 mil
			4OZ:7/11 mil
			5OZ:10/16 mil
		Outer Layer	Base copper 1/3oz(12um): 3/3 mil
			Base copper 0.5oz: 3.5/3.5 mil
			Base copper 1oz: 4.5/5 mil
			Base copper 2oz: 6/8 mil
			Base copper 3oz: 8/14 mil
			Base copper 4oz: 10/16 mil
			Base copper 5oz: 12/20 mil
		Line Width tolerance	≤10mil:±1.0mil
			>10mil:±1.5mil
9	Space	Min Gap between hole wall to line (blind and burried via PCB)	9mil(2 or 3 times laminating)
		Min Gap between hole wall to line (Non blind and burried via PCB)	6mil(≤8layer),8mil(≤14layer),9mil(≤28layer)
		Min gap between laser hole to line (HDI PCB)	6 mil
		Min gap between outline and patern for no copper exposure after routing	8 mil
		V-CUT no copper exposure, distance between V-cut and line and circuit (mm)	H≤1.0mm:0.3(20°),0.33(30°),0.37(45°),0.42(60°) 1.0<H≤1.6mm:0.36(20°),0.4(30°),0.5(45°),0.6(60°) 1.6<H≤2.4mm:0.42(20°),0.51(30°),0.64(45°),0.8(60°) 2.5≤H≤3.0mm:0.47(20°),0.59(30°),0.77(45°),0.97(60°)
		Min width for the isolation tape inner layer	8 mil
		Min gap between hole wall and hole wall (same net)	8 mil

9	Space (cont.)	Min gap between pads for Immersion gold	4 mil
		Min gap between gold fingers	6 mil
		Min gap between pads for HASL	7 mil (10 mil on larger coper area)
		Min gap between Peelable soldermask and pads	16 mil
		Min gap between legend and pad	6 mil
		Min gap between carbon pads	15 mil
10	Metal Base PCB	No of metal base PCB layers	2 - 4 layers
		Outline machining dimension tolerance (including blind slot length)	±0.05mm
		Surface Finsh of PCB	HASL,Flash Gold(based copper≤1OZ),ENIG、Immersion silver, Immersion Tin ,OSP,Hard gold plating,ENEPIG
		Surface finish of metal base	Cu:Ni&Au plating;Al:Anodic oxidation、Hard anodic oxidation coating、chemical passivation
		Thermal conductivity	1-4W/mK
		Metal base PCB	Prebonding,Postbonding,Agglomerate Metal PCB technics,metal core PCB,Buried metal
11	Others	Min core thickness	15 mil
		No of PCB layers	1 to 40 layers
		PCB thcikenss	0.13-7.0(if the boards THK≤0.5mm, the panel size must be ≤18inch)
		Max board size	1000mm x 500mm (please ask)
		Registration between layers	≤5mil
		PCB thickness tolerance	Thickness≤1.0mm:±0.1mm
			Thickness>1.0mm:±10%
			Special PCB THK tolreance (not include special layer by layer space demand):Thickness≤2.0mm:±0.1mm; Thickness2.1-3.0mm:±0.15mm
		Impedance tolerance	±5Ω(<50Ω),±10%(≥50Ω);≥50Ωcan be±5%
		Outline dimensional tolerance	±0.1mm
		Outline location tolerance	±0.1mm
		Min Warpage	0.10%
		Max finished copper on inner layer	10 OZ
		Min isolation between layers	2mil(only for base copper 0.5oz)
		Min legend width and gap	legend width: 4mil;legend high:23mil(for 12um、18um based copper)
		Min internal radius	0.3mm
		V-CUT angle tolerance	±5°
		V-CUT symmetrical tolerance	±4mil
		V-CUT rest thickness tolerance	±4mil
		Outline machining	Routing;V-CUT;Tab connecting;stamp holes
		Min soldermask bride width	4mil(for Green soldermask),5mil(for another soldermask color)(if base copper≤1OZ,can be 5mil)(if base copper is 2-4OZ, can be 6mil)
		Min width of sldermask line (single side)	1.5mil
		Solder mask colour	Green, Yellow,Black, Blue,Red, White, Matte Green
		Legend colour	White, Yellow, Black
		Angle tolerance of gold finger	±5°
		Rest thickness tolerance of gold finger chamfer	±5mil
		Max Test voltage	500V
		Max Test Current	200mA
		Legend print mark type (only in white)	Serial number,Bar code、Planar code

If you have any questions regarding the above please contact Tim Pepper (tim@ixpcb.com).