PCB TECHNICAL CAPABILITIES

Category	Description	Technical performance
Data	Gerber data (preferred)	Gerber 274-X, ODB++, Eagle, DXF, HPGL;
Printed circuit boards (pcb)	Technologies	HDI/SBU pcb VIPPO/POFV Radio frequency (RF) pcb Backplane pcb Thermally conductive pcb Power pcb Hybrid pcb Flex pcb Rigidflex pcb
PCB	Types	Single sided Double sided Multilayer
Number of conductive and non-conductive layers	Maximum number of layers	Up to 40 layers (40+ upon request)
Working format	Maximum board size	535mmx610mm
Final pcb thickness	Minimum and Maximum	0,2mm – 6,5mm
Thickness of inner layers	Minimum and Maximum	0,05mm – 3,2mm
Degree of flatness pcb	Twist & Bow	<= 0,75%
Copper thickness	External and internal	1/4oz (9µm) to 11oz (400µm)
Minimum Dialectric Thickness	External and internal	1,4 oz (50µm)
Manufacturing design capability	Minimum line width	50µm
	Minimum trace to trace	30µm
	Minum trace to pad	30µm
	Minimum annular ring	50µm
	Plated hole to copper clearance	150µm
	Non plated Hole to Copper Clearance	150µm
Basic materials – rigid circuits	Material	FR4 FR4 - High Tg FR4 - Halogen Free Non Ansi RF materials ROGERS, TEFLON, ARLON CEM-1 CEM-3 CEM-3 Thermal IMS-Al IMS-Cu
Basic materials – flexible circuits	Polyimide base materials: KREMPEL Panasonic Protective materials: DuPoint	 25µm,50µm,75µm (ED,RA Cu) 25µm,50µm,75µm (ED,RA Cu) 25/25, 50/25;
CNC mechanical drilling	Minimum drilling diameter – through hole Minimum drilling diameter – blind holes Maximum drilling diameter – through hole	0,15mm 0,125mm 6.5mm
CNC laser drilling	Minimum laser hole diameter Maximum laser hole diameter	0,07mm 0,15mm
Tolerances of holes	Plated / Non-plated	IPC6012 (latest version)
Pressfit	Tolerance	+/-0.05mm
Blind holes	Aspect Ratio	1:1
Stacked holes	Aspect Ratio	1:1
Blind holes through buried holes	Aspect Ratio	1:1
Metallization of holes	Aspect Ratio	1:12 (1:16)
Copper pattern	Minimum bond width and insulation	0,07mm (0,0027in) 0,05mm (0,00196in)
Etching	Tolerance	+/-20% (+/-10%)
Soldermask	Colours	Green: semi-matt, glossy; Black: semi-matt, extra matt; White: for LED applications Blue: half matt Red: half mat Yellow: semi-matt Orange: semi-matt FLEX
	Minimum reflection of the soldermask	White, Black: 100 um Red, Blue: 80 um Other colours: 60 um

Silkprint	Colours	White Yellow Black Red Blue Green
Peelable mask	Colour	Blue
Covered bores	Type	III, (IPC4761)
Filled holes	Type	V, VII (IPC4761)
Graphite	resistance	40 Ohm+/-5%
Surface protection	HAL- Lead free HASL- with Tin lead ENIG OSP Immersion Ag Elyt. Ni/Au Hard	1-40 um max 1-40 um Ni.5um.Au.0,05-0,1um – Min.0,3um Au: 0,4um – 2um
Mechanical treatments	Tolerance	Milling: +/-0.1mm (+/-0.07) Scoring: +/-0.1mm Deep milling: +/-0,1mm Chamfering: +/-0.1mm
Special treatments	Technology	Edge plating Jump scoring Edge plating- half holes Pressfit with partially drilled hole (backdrill)
Quality	Electrical test AOI test Impedance control Electrical strength test Thermal test (solder dip) Dimensional control Microsection – analysis Chemistry laboratory	Yes Yes Yes Yes Yes Yes Yes Yes
Standards and certificates	IPC ISO	IPC-A-600 (latest version) Class 2, 3 IPC-6012 (latest version) Class 2, 3 IATF16949, ISO9001, ISO14000, ISO27001