



MULTECH PCB TECHNOLOGIES CO., LIMITED
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Capability for Rigid flex board

Items	project	capability	limited capability	comment
other	recognized software	CAM350、PROTEL、PADS、POWERPCB、AUTOCAD、GENESIS、ORCAD	/	
info	Gerber format	RS-274-D、RS-274-X	/	
	drill format	EXCELLON format	/	
	layer count (flex layer)	2-10layers	11-20layers	
	Final thickness	0.2-3.0mm	3.0-4.0mm	
	tolerance of boad thickness (thickness>1.0mm)	±10%	/	
	tolerance of boad thickness (thickness≤1.0mm)	±0.1mm	/	
	min. board size	10mm*15mm	/	
	max. board size	16inch*22inch	16inch*29inch	
	impedance tolerance	single ended: ±5Ω(≤50Ω), ±10%(>50Ω)	single ended: ±3Ω(≤50Ω), ±5%(>50Ω)	
		difference pairs: ±5Ω(≤50Ω), ±10%(>50Ω)	difference pairs: ±3Ω(≤50Ω), ±5%(>50Ω)	
	type of HDI	/	1+n+1(hole size≤0.4mm)	
	min. warp and twist	0.75% (symmetrical layer building) , 2% (unsymmetrical layer building.)	1.5% (unsymmetrical layer building)	
sapcing between lines and rigid-flex boundary	0.5mm	0.3mm		
inner layer	min line width (12, 18um copper, before compensation)	3.5mil	3.0mil	
	min line width (35umcopper, before compensation)	4mil	3.5mil	
	min line width(70umcopper, before compensation)	6mil	5mil	
	min. line spacing(12, 18um copper, after compensation)	3.3mil	2.8mil	
	min. line spacing(35um copper, after compensation)	3.5mil	3.0mil	
	min. line spacing(70um copper, after compensation)	5mil	4.5mil	
	spacing and width of inner net(12、18um copper, after compensation)	5/5mil	/	
	spacing and width of inner net(35um copper, after compensation)	6.5/5mil	/	

spacing and width of inner net (70um copper, after compensation)	10/8mil	/	
annular ring (IPCIII, before compensation)	7mil (≤ 6 layer), 9mil (7-11layer), 13mil (≥ 12 layer)	6mil(≤ 6 layer), 8mil(7-11layer), 12mil(\geq)	
annular ring(blind via, before compensation)	4mil	3mil	
Min width of internal isolated strip	10 mil	8mil	
min isolated ring of hole	6mil (≤ 6 layer), 8mil (7-11layer), 12mil (≥ 12 layer)	5mil(≤ 6 layer), 6mil(7-11layer), 10mil(\geq)	
max. copper in internal	2oz	3oz	
min. spacing between board outline to copper.	10mil	8mil	
min line width (18um copper, before compensation)	4mil	3.5mil	
min line width (35um copper, before compensation)	4.5mil	4.0mil	
min line width (48um copper, before compensation)	5.0mil	4.5mil	
min line width (70um copper, before compensation)	6.0mil	5.5mil	
min line width (105um copper, before compensation)	10mil	9.0mil	
min. spacing in external (18umcopper, before compensation)	3.5mil	3.0mil	
min. spacing in external (35umcopper, before compensation)	4.0mil	3.5mil	
min. spacing in external (48umcopper, before compensation)	5.0mil	4.5mil	
min. spacing in external (70umcopper, before compensation)	6mil	5.5mil	
min. spacing in external (105umcopper, before compensation)	7.5mil	7mil	
flex layer is in the surface of board, min. line width in external(18um copper, before compensation)	5mil	4.5mil	
flex layer is in the surface of board, min. line width in external (35um copper, before compensation)	5.5mil	5.0mil	
flex layer is in the surface of board, min. line width in external (48um copper, before compensation)	6.0mil	5.5mil	
flex layer is in the surface of board, min. line width (70um copper, before compensation)	7.0mil	6.5mil	

outlayer	flex layer is in the surface of board, min. spacing in external (18um copper, after compensation)	4.5mil	4.0mil	
	flex layer is in the surface of board, min. spacing in external (35um copper, after compensation)	5.0mil	4.5mil	
	flex layer is in the surface of board, min. spacing in external (48um copper, after compensation)	5.5mil	5.0mil	
	flex layer is in the surface of board, min. spacing in external (70um copper, after compensation)	6.5mil	6.0mil	
	annular ring width of via in external (IPC II, 18um copper, before compensation)	4mil	4mil	
	annular ring width of via in external (IPC II, 35um copper, before compensation)	5mil	5mil	
	annular ring width of via in external (IPC II, 48um copper, before compensation)	6mil	6mil	
	annular ring width of via in external (IPC II, 70um copper, before compensation)	8mil	8mil	
	annular ring width of via in external (IPC II, 105um copper, before compensation)	10mil	10mil	
	annular ring width of via in external (IPC III, 18um copper, before compensation)	5mil	5mil	
	annular ring width of via in external (IPC III, 35um copper, before compensation)	6mil	6mil	
	annular ring width of via in external (IPC III, 48um copper, before compensation)	7mil	7mil	
	annular ring width of via in external (IPC III, 70um copper, before compensation)	9mil	9mil	
	annular ring width of via in external (IPC III, 105um copper, before compensation)	11mil	11mil	
	min. pad size (not BGA pad)	refer to the capacity of line width in above, lone pad is 7mil*10mil	/	
	Min. BGA pad size	12mil(8mil for electrical soft gold board)	10mil(7mil for electrical soft gold board)	
	line width which close to NPTH holes	8mil	6mil	
	max. copper in external	3oz	5oz	
	distance between copper to board edge	8mil	/	
	diameter of laser drill	/	4mil-6mil (6mil preferable)	
max. buried via	0.4mm	/		
max. hole	6.3mm	/		

Drilling	aspect ratio	10:1	12:1	
	ratio of laser drill and depth	/	0.8:1	
	distance between plated holes(drill) and other conductors	6mil (≤ 6 layer)	5mil (≤ 6 layer)	
		8mil (7~11layer)	6mil (7~11layer)	
		12mil (≥ 12 layer)	10mil (≥ 12 layer)	
	distance between laser drill and other conductors(1 rank HDI)	/	6mil	
	tolerance of non-plated holes	± 2 mil(limited is +0/-2mil or +2mil/-0)	/	
	distance between plated hole to the boundary of rigid-flex	0.5mm	/	
	distance between holes	14mil	12mil	
Solder mask and silk screen	min. solder mask dam(copper $\leq 10Z$)	4mil(green, red and blue), 5mil(black),	/	
	min. solder mask dam(copper2-4OZ)	6mil, 8mil	/	
	min. solder mask clearance	2.5mil	2.0mil	
	min. solder mask clearance of non-plated holes	4mil	/	
	solder mask thickness (1 time, copper is less than 48um)	copper surface (10-18um), covered vias (5-8um), corner of line ≥ 10 um	/	
	solder mask color	(green, black,blue,red, matte gree.)	white	
	silk color	white, yellow and black.	/	
Surface treatment	Surface treatment	(HASL/LF HASL, ENIG, ENEPIG, electrical gold, soft gold, hard gold, immersion silver, immersion tin, OSP)	/	
	mixed surface treatment	ENIG+OSP, ENIG+gold finger, electrical gold+ gold fingers	/	
Routing	tolerance of board outline	± 4 mil(exclude complicated board outline and cutout)	/	