PCB technical capability table for PCB Train (online) and Newbury Electronics (by RFQ)

SERVICE:	PCB Train Express (online)	PCB Train (online)		Newbury Electronics PCB fabrication	
Nature of service	**Fast PCB manufacturing service for bench-top test and rapid prototyping. Note limit on technical specifications**	**Wide range of popular PCB specifications**		**PCB fabrication technology not covered by PCB Train**	**Emerging technology & advanced PCB specifications not covered elsewhere**
Layer count	**1, 2, 4**	**1, 2**	**4, 6, 8, 10, 12**	**Up to 32 layers, subject to overall thickness**	**Over 32 layers**
Quotation method	Online	Online	Online	By RFQ after data review	By RFQ after data review
IPC Class available	Class 1 only	Class 1 only	Class 1 only	Class 1,2, & 3 available by RFQ	Class 1,2, & 3 available by RFQ
Buried via technology	No	No	No	Available by RFQ	Available by RFQ
Blind via technology	No	No	No	Available by RFQ	Available by RFQ
Design rule check (DRC)	No	Yes	Yes	Yes	Yes
Manufacturability check	Yes	Yes	Yes	Yes	Yes
Handling frame available	No	Yes	Yes	Yes	Yes
Assembly service available	No	Yes	Yes	Yes	Yes
Number of layers	1, 2, 4	1, 2	4, 6, 8, 10, 12	up to 32 layers, subject to overall thickness	over 32 layers
Laminate thickness	0.8mm & 1.6mm	0.5, 0.8, 1.0, 1.2, 1.6, 2.4, 3.2 mm	0.8, 1.2, 1.6, 2.4, 3.2 mm	Any thickness not listed under PCB Train up to 3.2mm	3.2mm to 5.0mm
PCB fabrication | Laminate specification	FR4 Standard Tg,	FR4 Standard Tg and High Tg	FR4 Standard Tg, Al(Cuclad)	FR4, Standard Tg and High Tg, Polyimide, PTFE, Rogers, Taconic	Ask us to review and quote. We will process any available material compatible with our process
1 oz Cu thickness, outers (finish thickness after plating)	35 microns	35 microns	35 microns	35 microns	Ask us to review and quote
2 oz Cu thickness, outers (finish thickness after plating)	n/a	70 microns	70 microns	70 microns	Ask us to review and quote
3 oz Cu thickness, outers (finish thickness after plating)	n/a	105 microns	n/a	105 microns	Ask us to review and quote
Copper thickness (inner-cores), start = finish thickness	35 microns	n/a	35 microns	35 microns	Ask us to review and quote
Solder resist available	No	Yes	Yes	Yes	Yes
Solder resist colours	n/a	Green, Red, Blue, White ,Black	Green, Red, Blue, White ,Black	Green, Red, Blue, White ,Black	Ask us to review and quote
Legend available	No	Yes	Yes	Yes	Yes
Legend colours (digital ink-jet)	n/a	White	White	White	White
Legend colours (screen print)	n/a	Yellow, Black	Yellow, Black	Yellow, Black	Yellow, Black
Nos. of holes	No limit	No limit	No limit	No limit	No limit
Minimum drilled hole size	0.5mm (FHS)	0.2mm (FHS)	0.2mm (FHS)	0.2mm (FHS)	0.15mm (FHS)

Maximum drilled hole size	6.5mm (FHS)	6.5mm (FHS)	6.5mm (FHS)	6.5mm (FHS)	6.5mm (FHS)
Min finished hole size (1.5mm thick aluminium base only)	n/a	0.60mm	n/a	0.6mm	0.6mm
None PTH hole diameter tolerance +/-	+ 50 /-0 micron	+ 50 /-0 micron	+ 50 /-0 micron	+ 50 /-0 micron	+ 50 /-0 micron
PTH hole diameter tolerance +/-	+100 /-0 micron	+100 /-0 micron	+100 /-0 micron	+100 /-0 micron	+100 /-0 micron
Max plated hole aspect ratio	6:1	6:1	6:1	8:1	8:1
Via hole filling	n/a	n/a	n/a	Yes	Yes
Profile complexity	Single ccts only, no panelisation, no cut-outs	No limit (see router minimum diameter)	No limit (see router minimum diameter)	No limit (see router minimum diameter)	No limit (see router minimum diameter)
Surface Finish	Immersion silver only	Immersion Silver or ENIG (Au/Ni)	Immersion Silver or ENIG (Au/Ni)	HASL (Pb/Sn) & Lead free, Immersion Silver or ENIG (Au/Ni)	Other finishes, ask us to review and quote
Gold (electrolytic) available	No	n/a online, ask us to quote	n/a online, ask us to quote	Up to 5 microns hard electrolytic gold	Other gold finishes, ask us to review and quote
Electrical test	1 & 2 layer: no ET, 4 layer: full ET included	Full ET included	Full ET included	Full ET included	Full ET included
Side to side printing alignment	25 microns	25 microns	25 microns	25 microns	25 microns
Min track & gap (17 micron / 1/2 oz Cu thickness)	n/a	0.127mm	0.127mm	0.1mm	0.075mm
Min track & gap (35 micron / 1oz Cu thickness)	0.2mm	0.15mm	0.15mm	0.15mm	0.1mm
Min track & gap (70 micron / 2oz Cu thickness)	n/a	0.2mm	0.2mm	0.2mm	0.15mm
Solder resist to copper pad clearance	n/a	0.1mm	0.1mm	0.1mm	0.05mm
Copper pad to hole	0.125mm	0.125mm	0.125mm	0.1mm	0.05mm
Copper track to copper plane clearance within a ground plane (35 micron / 1oz Cu thickness)	0.125mm	0.125mm	0.125mm	0.1mm	0.1mm
Copper track to copper plane clearance within a ground plane (70 micron / 2oz Cu thickness)	n/a	0.25mm	0.25mm	0.25mm	0.20mm
Minimum board size	10mm x 10mm	10mm x 10mm	10mm x 10mm	5mm x 5mm	5mm x 5mm
Maximum board size	400mm x 300mm	550mm x 400mm	550mm x 400mm	550mm x 400mm	Ask us to review and quote
Maximum board size	400mm x 300mm	550mm x 400mm	550mm x 400mm	550mm x 400mm	Ask us to review and quote
Mechanical	No scoring. No chamfering. No countersinking. No rebating.	No scoring. No chamfering. No countersinking. No rebating.	No scoring. No chamfering. No countersinking. No rebating.	Scoring available Chamfering available Countersinking available Rebating available	Scoring available Chamfering available Countersinking available Rebating available
Minimum router cutter dia.	2.0mm	2.0mm	2.0mm	0.8mm	0.5mm
Legend text line width (digital ink-jet)	n/a	50 micron minimum	50 micron minimum	50 micron minimum	50 micron minimum
Legend character height (digital ink-jet)	n/a	1.0 mm minimum	1.0 mm minimum	1.0 mm minimum	1.0 mm minimum
Legend to copper pad clearance (digital ink-jet)	n/a	50 micron minimum, 125 micron typical	50 micron minimum, 125 micron typical	50 micron minimum, 125 micron typical	50 micron minimum
Legend text line width (screen-print)	n/a	150 micron minimum	150 micron minimum	150 micron minimum	150 micron minimum
Legend character height (screen-print)	n/a	1.0mm minimum	1.0mm minimum	1.0mm minimum	1.0mm minimum
Legend to copper pad clearance (screen-print)	n/a	75 micron minimum	75 micron minimum	75 micron minimum	75 micron minimum

Dielectric constant (Dk) of FR4 prepregs	4.2	4.2 4.2	Other laminates available, ask us to quote	Other laminates available, ask us to quote
Multi-layer builds and dimensions	Multi-layer builds	Multi-layer builds	Standard & custom multi-layer build available, ask us to quote	Standard & custom multi-layer build available, ask us to quote
Ask us to quote by completing the form below or email sales@newburyelectronics.co.uk				