

Controlled Print

PCB Fabrication Drawing

PWB,PLN,16G,OCP3,SI5,PCIE

Number: RX1NY

Revision: X02

APPROVALS	
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1. Revision History

Rev.	ECO #	Description	Date
X00	N/A	Prototype	03/25/2021
X01	N/A	Prototype – Actual Form Factor	01/25/2022
X02	N/A	Prototype – MMPX footprint update, signal integrity tuning	07/29/2022

2. Revision Control Table

This Drawing	X00	X01	X02							
Mfg. Data File (.ZIP)	X00	X01	X02							

3. Design Parameters

	Outer	Inner
Min. Trace/Trace space	5	n/a
Min. Trace Width	6	n/a
Min. Trace to Via Pad Space	n/a	n/a
Min. Via Hole/Signal Pad Size	8/19	8/19

4. Fabrication Notes

- 1) PWB SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST REVISION OF IPC-6012.
- 2) USE THE MANUFACTURING DATA FILE PROVIDED RX1NY (.ZIP) FOR CONDUCTOR PATTERNS, SOLDERMASK, SILKSCREEN, DRILL AND TEST DATA. REFER TO THE "README.DOC" FILE IN THE ZIP FOR FURTHER INSTRUCTIONS AND CONTACT INFO. REFER TO REVISION CONTROL TABLE FOR REQUIRED REVISION OF THE DATA FILE. ALL UNDIMENSIONED BOARD OUTLINE FEATURES SHALL BE CONTROLLED BY THE MANUFACTURING DATA FILE (.ZIP) WITHIN +/-0.005" TOLERANCE.
- 3) SUPPLIER MUST MARK THE COUNTRY OF ORIGIN IN ON THE SIDE AT THE "MADE IN ____" SITE. LOCATE APPROXIMATELY WHERE SHOWN USING .100" MAXIMUM TEXT HEIGHT.
- 4) SUPPLIER MUST MARK THE PWB WITH THE FIRST 3 CHARACTERS OF THE LATEST REVISION OF THIS DRAWING IN ON THE SIDE AT THE "PWB RX1NY, REV ____" SITE. LOCATE APPROXIMATELY WHERE SHOWN USING .100" MAXIMUM TEXT HEIGHT.
- 5) THE PWB SUPPLIER SHALL CERTIFY THE SUBSTRATE TO THE APPROPRIATE FLAMMABILITY RATING AND MARK EACH FINISHED PWB WITH THEIR UL VENDOR CODE, UL VENDOR LOGO AND UL FLAMMABILITY RATING. LOCATE APPROXIMATELY WHERE SHOWN USING .100" MAXIMUM TEXT HEIGHT.
- 6) ALL SUPPLIER MARKINGS SHALL BE ADDED IN SILKSCREEN (UNLESS OTHERWISE SPECIFIED).
- 7) SOLDERMASK SHALL BE BLUE PHOTO IMAGEABLE.
- 8) SILKSCREEN SHALL BE NON-CONDUCTIVE EPOXY PAINT, .
- 9) ALL HOLE LOCATIONS, EXCEPT WHERE OTHERWISE NOTED IN THIS DRAWING, SHALL BE PER THE DRILL DATA LOCATED IN THE MANUFACTURING DATA FILE (.ZIP). THE QUANTITY OF HOLES SPECIFIED IN THE CHART AND DRILL (.ZIP) FILE IS FOR A SINGLE PWB.
- 10) PWB ELECTRICAL TEST REQUIREMENTS: ALL PWB'S SHALL BE 100% ELECTRICALLY TESTED AND MARKED AS TESTED USING A NETLIST GENERATED FROM THE DRILL AND GERBER DATA. THIS GERBER GENERATED NETLIST SHALL BE COMPARED TO THE SUPPLIED IPC-D-356 (*.IPC) FILE PRIOR TO BOARD FABRICATION. ANY DISCREPANCIES BETWEEN THE GERBER GENERATED NETLIST AND THE IPC-D-356 FILE SHALL BE REPORTED TO END CLIENT. PWB FABRICATION MAY NOT BEGIN UNTIL ALL NETLIST DISCREPANCIES ARE CLEARED IN WRITING BY END CLIENT.
- 11) MAXIMUM ALLOWABLE WARP AND TWIST SHALL BE .007" PER LINEAR INCH MEASURED AT ANY LOCATION OR DIRECTION ON THE PWB.
- 12) LAMINATE MATERIAL SHALL BE TYPE IT150DA, SPECIFICATION SHEET , SHALL BE USED. MATERIALS CAN NOT BE MIXED. THE MATERIAL USED SHALL BE IDENTIFIED ON THE BOARD AS SPECIFIED IN NOTE 5. MATERIAL SELECTION SHALL USE DESIGNATION BELOW:
IT150DA : RX1NY X02
- 13) BOARD FINISH TO BE SOLDER MASK OVER BARE COPPER (SMOBC) WITH .
- 14) USE COPPER MATERIAL AND PLATE OUTER LAYERS, SUCH THAT THE TOTAL MINIMUM AVERAGE PLATING THICKNESS IS INCH ON THROUGH HOLES. FINAL OUTER LAYER COPPER THICKNESS AFTER PLATING SHALL BE .

- 15) THIS BOARD IS IMPEDANCE CONTROLLED AS INDICATED IN SECTION 5. SUPPLIER MAY ADJUST STACKUP AND TRACE WIDTHS TO MEET THESE REQUIREMENTS PROVIDING THE STACKUP MEETS THE TOLERANCES INDICATED IN SECTION 5 AND FINISHED TRACE WIDTHS ARE +/- .001" OF THE DESIGN ARTWORK.
- 16) SUPPLIER SHALL SERIALIZE EACH BOARD AND THE ASSOCIATED COUPON WITH THE SAME SERIAL NUMBER. IMPEDANCE DATA SHALL BE PROVIDED ELECTRONICALLY TO END CLIENT BY SERIAL NUMBER.
- 17) EDGE CONNECTOR PADS SHALL BE PLATED WITH A MINIMUM OF 100 MICRO INCHES (.0001) NICKEL AND A MINIMUM OF 30 MICRO INCHES (.00003) GOLD. FINISHED BOARD THICKNESS MUST BE MAINTAINED ACROSS THE ENTIRE GOLD FINGER AREA.
- 18) SCORE BOTH SIDES OF THE PWB AN EQUAL DEPTH LEAVING THICKNESS FOR BREAKAWAY, SEE SCORING DETAIL.

5. Layer Stackup and Impedance Table

Layer	Info	Thickness
TOP	=====	0.333+Plating
	PP R-5670G 1035*2	4.208(mil)
L2	=====	1 Oz
	Core R-5775G 0.25	9.843(mil)
L3	=====	1 Oz
	PP R-5670G 1035+2116	5.946(mil)
L4	=====	1 Oz
	Core R-5775G 0.25	9.843(mil)
L5	=====	1 Oz
	PP R-5670G 1035+2116	5.946(mil)
L6	=====	1 Oz
	Core R-5775G 0.25	9.843(mil)
L7	=====	1 Oz
	PP R-5670G 1035*2	4.208(mil)
BOT	=====	0.333+Plating

Finished:	62.992 (6.299/-6.299) mil	1.6 (+0.16/-0.16) MM
Designed:	58.268 mil	1.48 MM
Material:	R-5775G	R-5775G

Impedance Information:

Ctrl	Ref	Imp_type	Cust_req	Imp_req	FP_des	Imp_des	mask	H1	Er1	H2	Er2
L1	L2	Single-Ended	8.3	50+/-10%	8.3	50.164	Yes	4.208	3.04		
L1	L2	Differential	6.5/4.5	85+/-10%	6.8/4.2	85.424	Yes	4.208	3.04		
L1	L2	Differential	5/5	100+/-10%	5/5	100.145	Yes	4.208	3.04		
L8	L7	Single-Ended	8.3	50+/-10%	8.3	50.164	Yes	4.208	3.04		
L8	L7	Differential	6.5/4.5	85+/-10%	6.8/4.2	85.424	Yes	4.208	3.04		
L8	L7	Differential	5/5	100+/-10%	5/5	100.145	Yes	4.208	3.04		
L3	L2/L4	Single-Ended	7.5	50+/-10%	7.5	49.596		9.842	3.45	7.196	3.255
L3	L2/L4	Differential	7/5	85+/-10%	7/5	84.977		9.842	3.45	7.196	3.255
L3	L2/L4	Differential	4.5/5	100+/-10%	4.5/5	100.191		9.842	3.45	7.196	3.255
L6	L5/L7	Single-Ended	7.5	50+/-10%	7.5	49.596		9.842	3.45	7.196	3.255
L6	L5/L7	Differential	7/5	85+/-10%	7/5	84.977		9.842	3.45	7.196	3.255
L6	L5/L7	Differential	4.5/5	100+/-10%	4.5/5	100.191		9.842	3.45	7.196	3.255

6. Finished Hole Chart

FINISHED HOLE CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATING	QTY	TOLERANCE
A	8.00	PLATED	1098	+3.00/-3.00
B	8.00	PLATED	321	+3.00/-3.00
C	10.00	PLATED	6	+4.00/-10.00
D	12.00	PLATED	22	+3.00/-10.00
E	12.99	PLATED	2	+ .00/- .00
F	18.00	PLATED	32	+3.00/-3.00
G	28.00	PLATED	22	+3.00/-3.00
H	32.00	PLATED	464	+3.00/-3.00
I	47.00	PLATED	16	+3.00/-3.00
J	28.00	NON-PLATED	64	+3.00/-3.00
K	42.00	NON-PLATED	64	+3.00/-3.00
L	50.00	NON-PLATED	8	+1.00/-2.00
M	94.49	NON-PLATED	2	+3.00/-3.00
N	125.00	NON-PLATED	4	+2.00/- .00
O	148.00	NON-PLATED	4	+3.00/-3.00

TOTAL HOLES: 2129

7. Tolerance Chart

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES INCLUDING SPECIFIED FINISH		
TOLERANCES	Linear: .XX +/- .01 .XXX +/- .005	Angular: +/- 1 degree

8. Dimensional Views

A. Primary Side

