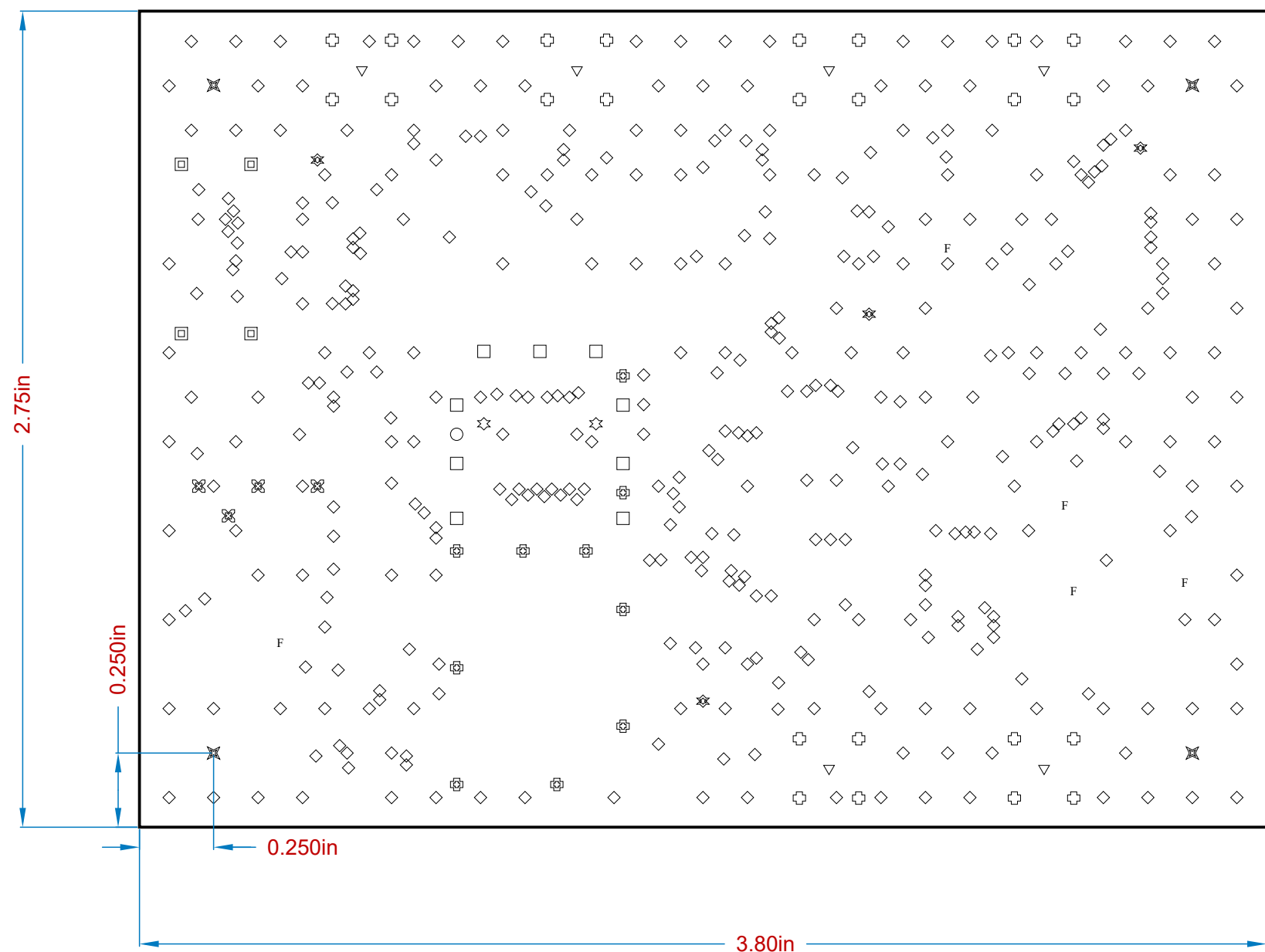


Fabrication Notes:

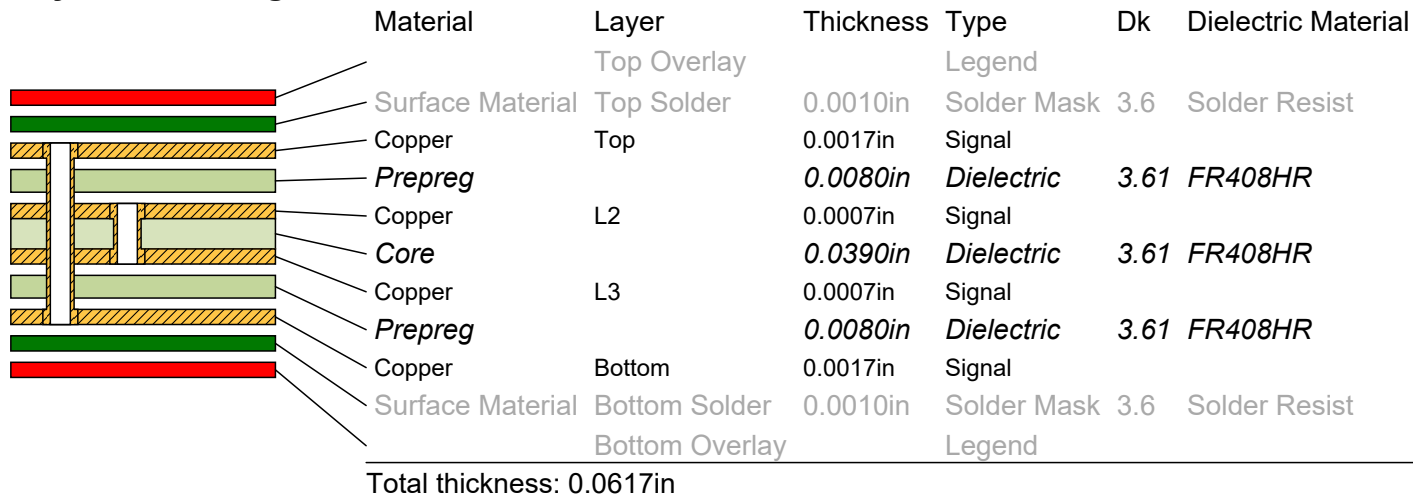
1. LATEST VERSION OF ALL REFERENCED SPECIFICATIONS ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
2. FABRICATE IN ACCORDANCE WITH IPC-6012A, CLASS 2 UNLESS OTHERWISE SPECIFIED.
3. INSPECT IN ACCORDANCE WITH IPC-A-600, CLASS 2 UNLESS OTHERWISE SPECIFIED.
4. MATERIAL: BASE LAMINATE, COPPER CLAD, GLASS-BASED EPOXY RESIN, FLAME RETARDENT, TYPE GF, FINISHED BOARD MUST MEET UL94V-0. MUST CONFORM TO IPC-4101/98/99/101/126, Tg>170° C, Td>330° C, T260>30 MIN, T288>5 MIN, CTEz (50-260° C) <3.5% (6 PASSES). MATERIAL MUST BE RoHS COMPLIANT. BOARD THICKNESS AND COPPER WEIGHT (CU) SHOWN ON LAYER STACKUP DETAIL. THICKNESS TOLERANCE: +/-10%
5. FINAL CONDUCTOR SURFACE FINISH TO BE PLATED WITH IMMERSION GOLD OVER ELECTROLESS NICKEL OVER COPPER (NiAu):
6. FINISHED PRODUCT TO BE RoHS-COMPLIANT AND MEET EU RoHS DIRECTIVE.
7. UL LOGO AND DATE CODE & VENDOR CODE MUST APPEAR IN ETCH ON PRIMARY SIDE; SECONDARY SIDE IS ACCEPTABLE IF THERE IS NO ROOM ON PRIMARY SIDE.
8. DIMENSIONAL TOLERANCES ON PCB ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED.
 - a. HOLE TO HOLE +/- .005"
 - b. HOLE TO EDGE +/- .010"
 - c. EDGE TO EDGE +/- .010"
 - d. WARP AND TWIST OF BOARD SHALL NOT EXCEED 1%
 - e. CONDUCTOR WIDTHS AND SPACING SHALL BE WITHIN +/- 0.0005" OF GERBER DATA.
 - f. REMOVE ALL BURRS AND BREAK SHARP EDGES 0.015" MAXIMUM.
 - g. 0.060" MAXIMUM RADUIS ON ANY INSIDE CORNER.
9. TOOLING HOLES MUST BE PRIMARY DRILLED AT THE SAME TIME AS PLATED-THRU HOLES. ALL HOLES MUST BE WITHIN .003" OF RADIAL TRUE POSITION.
10. PLATED-THRU HOLES TO HAVE COPPER WALL THICKNESS NOT LESS THAN 0.001" THICKNESS TO BE DETERMINED BY IPC-6012, CLASS 2.
11. GLOBAL AND LOCAL FIDUCIALS MUST BE FREE OF ANY MARKINGS.
12. REMOVE ALL NON-FUNCTIONAL PADS ON INNER LAYERS.
13. THEFTING OF OUTER LAYERS IS NOT ACCEPTABLE UNLESS APPROVED BY CUSTOMER. IF APPROVAL IS GRANTED THE FOLLOWING RULES APPLY:
 - a. THEFTING TO CARD EDGE SPACING 0.100" MINIMUM.
 - b. THEFTING TO FIDUCIAL SPACING 0.200" MINIMUM.
 - c. THEFTING TO NON-PLATED THROUGH HOLES 0.200" MINIMUM.
 - d. THEFTING TO ALL OTHER FEATURES 0.100" MINIMUM.
 - e. THERE SHALL BE NO EXPOSED THEFTING IN ANY AREAS FREE OF SOLDER MASK
14. FULL NETLIST TESTING REQUIRED UNLESS OTHERWISE SPECIFIED. TESTING SHOULD CONFORM TO IPC-ET-652.
15. PRIOR TO BOARD FABRICATION, COMPARE GERBER (OR ODB++) DATA TO SUPPLIED IPC-D-356 NETLIST. REPORT ALL DISCREPANCIES.
16. SILKSCREEN TO BE PERMANENT NON-CONDUCTIVE (LEGIBLE) INK AND NOT TO COVER ANY PORTION OF A COMPONENT PAD. FABRICATOR TO CLIP ANY NON-CONFORMING SILKSCREEN NOMENCLATURE. COLOR TO BE WHITE.
17. USE LPI SOLDER MASK OVER BARE COPPER PER SUPPLIED ARTWORK PER IPC-SM-840C, CLASS T. MUST BE RoHS COMPLIANT. SOLDER MASK SHALL BE CAPABLE OF FIVE SOLDER EXPOSURES AT 500 DEGREES F. COLOR TO BE GREEN.
18. IMPEDANCE CONTROLLED BOARD. SEE TRANSMISSION LINE STRUCTURE TABLE.
19. USE GERBER FILE "BOARD" FOR BOARD DIMENSIONS



Transmission Line Structure Table


Transmission Line	Target Impedance	Trace layer	Wide Trace Width	Gap	Reference layers
Coated Microstrip	50	Top	0.0153in		L2
Edge-Coupled Coated Microstrip	100	Top	0.0067in	0.0050in	L2
Coated Microstrip	50	Bottom	0.0153in		L3
Edge-Coupled Coated Microstrip	100	Bottom	0.0067in	0.0050in	L3

Layer Stack Legend



Drill Table

Symbol	Count	Hole Size	Hole Length	Hole Tolerance	Plated	Hole Type
◇	409	0.0120in		+0.0030in/-0.0120in	Plated	Round
⊗	4	0.0315in		+/-0.0030in	Plated	Round
○	1	0.0335in		+/-0.0030in	Plated	Round
⊞	4	0.0354in	(Mixed)	+/-0.0030in	Plated	Slot
□	9	0.0374in		+/-0.0030in	Plated	Round
✱	4	0.0400in		+/-0.0030in	Plated	Round
F	5	0.0402in		+/-0.0030in	Plated	Round
⊕	10	0.0413in		+/-0.0030in	Plated	Round
▽	6	0.0591in		+/-0.0030in	Plated	Round
☆	2	0.0630in		+/-0.0030in	Non-Plated	Round
⊞	24	0.0669in		+/-0.0030in	Plated	Round
✱	4	0.1250in		+/-0.0030in	Plated	Round
482 Total						

Atom Computing Inc. 918 Parker St., Ste. A-13 Berkeley, CA 94710					
DRAWN		FABRICATION DRAWING, LOMBARDO PCB			
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C. GRIGER	05/31/2024				