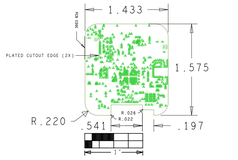
REVISIONS			
REV	DESCRIPTION	APPROVED	DATE

maxim integrated	THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO MAXIM. NO PART OF THIS DRAWING MAY BE IN ANY WAY REPRODUCED, DISCLOSED TO OTHERS, OR USED WITHOUT PRIOR WRITTEN AUTHORIZATION.
HARDWARE NAME: MAXREFDES178_CONNECTIVITY_BOARD_APPS_A	
HARDWARE NUMBER:	
ENGINEER: GB	DESIGNER: KA
DATE: 02/4/2021	ODB++/GERBER: FAB_NOTES



IMPEDANCE TABLE

IMPEDANCE TOLERANCE: +/-10%

LAYER	50 OHM TRACE WIDTH	65 OHM TRACE WIDTH	90 OHM TRACE WIDTH/SPACE	75 OHM TRACE WIDTH/SPACE
TOP	0.00850	-	0.00590/0.00910	-
BOTTOM	-	-	0.00590/0.00910	-

NOTE: DO NOT EDIT THIS TABLE MANUALLY-USE IMPEDANCE TABLE GENERATOR FROM MAXIMTOOLS.

LAMINATION DIAGRAM

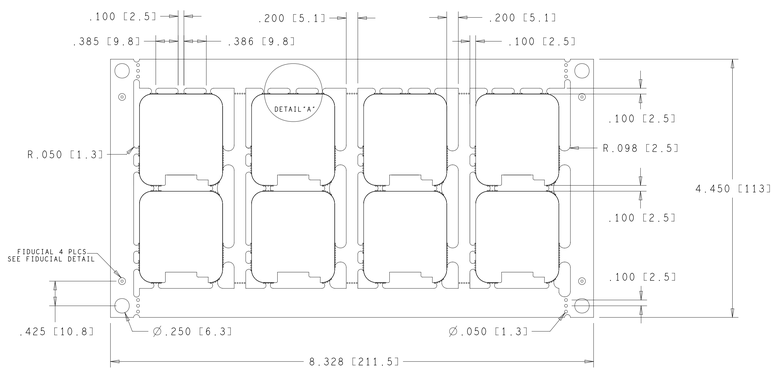
LAYER NUMBER	LAYER NAME	COPPER THICKNESS (OZ,INCH)	DIELECTRIC THICKNESS (INCH)	DIELECTRIC MATERIAL
1	TOP	1 OZ, 0.0014" MIN		FOIL
			0.00352	ISOLA 370HR/EQUIVALENT
2	L02_GND	1 OZ, 0.0014"		
			TBD	ISOLA 370HR/EQUIVALENT
3	L03_SIG	1 OZ, 0.0014"		
			TBD	ISOLA 370HR/EQUIVALENT
4	L04_GND	1 OZ, 0.0014"		
			TBD	ISOLA 370HR/EQUIVALENT
5	L05_PWR	1 OZ, 0.0014"		
			TBD	ISOLA 370HR/EQUIVALENT
6	L06_SIG	1 OZ, 0.0014"		
			TBD	ISOLA 370HR/EQUIVALENT
7	L07_GND	1 OZ, 0.0014"		
			0.00352	ISOLA 370HR/EQUIVALENT
8	BOTTOM	1 OZ, 0.0014" MIN		FOIL

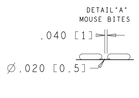
THE FINISHED PCB THICKNESS TO BE: 0.0625" +/- 0.010"

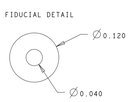
DRILL CHART: TOP to BOTTOM

ALL UNITS ARE IN MILS

FIGURE	SIZE	TOLERANCE	PLATED	QTY	NOTES
A	5.0	+3.0/-3.0	PLATED	142	
B	6.0	+3.0/-4.0	PLATED	420	
C	23.62	+3.0/-3.0	NON-PLATED	1	
D	66.93	+3.0/-3.0	NON-PLATED	1	
DC	51.18x23.62	+3.0/-3.0	PLATED	3	
YW	74.8x23.62	+3.0/-3.0	PLATED	2	
YU	78.74x27.56	+3.0/-3.0	PLATED	2	
G	33.46x19.69	+3.0/-3.0	NON-PLATED	1	







NOTE:
REMOVE EXCESS BURR ON MOUSE BITE. MINIMUM OF 5 MILS BURR IS ACCEPTABLE.

NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS ARE IN INCHES (EXCEPT WHERE NOTED).

MATERIAL: (USE CHECKED ITEMS FOR MATERIAL)

2. BOARD MATERIAL:
   (X) ISOLA 370HR OR EQUIVALENT
   ( ) ISOLA-FR408HR OR EQUIVALENT
   ( ) NELCO-4000-13
   ( ) MEGTRON 6
   ( ) ROGERS 4350B
   ( ) ROGERS 4003C
   ( ) OTHER _____

3. THE PCB SHALL BE FABRICATED TO IPC-6012, TYPE X, CLASS 2. WORKMANSHIP SHALL CONFORM TO IPC-A-600, CLASS 2, CURRENT REVISIONS.
4. BOARD MATERIAL & CONSTRUCTION SHALL MEET THE REQUIREMENTS OF UL796 WITH FLAMMABILITY RATING OF 94V-0.
5. OVERALL BOARD THICKNESS REFER TO LAMINATION DIAGRAM; TOLERANCE APPLIES AFTER ALL LAMINATION AND PLATING PROCESSES. IT IS TO BE MEASURED FROM TOP PCB METAL TO BOTTOM PCB METAL UNLESS OTHERWISE SPECIFIED.
6. BOW & TWIST NOT TO EXCEED 0.0075 IN. (0.75%) PER LINEAR INCH. BOW & TWIST SHOULD BE MEASURED PER IPC-TM-650, METHOD 2.4.22.

TOOLING:

7. PHOTO ETCH CIRCUITRY PER ENCLOSED GERBER RS274X OR ODB++ FORMAT FILE. DRILL LOCATION AND SIZE CONTROLLED BY EXCELLON CNC DRILL FILE.
8. IMPEDANCE REQUIREMENTS: IF NO STACKUP IS DEFINED, THE VENDOR IS ALLOWED TO ADJUST THE DIELECTRIC THICKNESS AND TRACE WIDTHS TO MEET THE IMPEDANCE REQUIREMENT. IF SPECIFIED, VENDOR MUST FOLLOW AND MEET THE REQUIREMENTS LISTED IN THE IMPEDANCE TABLE. ANY ADJUSTMENTS MADE TO THE DEFINED STACKUP, TRACE WIDTH & SPACING THAT IMPACT THE REQUIREMENTS MUST HAVE WRITTEN APPROVAL FROM MAXIM.
9. ALL TRACES FILLETED OPTION TO ENHANCE RELIABILITY AT PAD JUNCTIONS WHERE SPACING PERMITS, UNLESS OTHERWISE SPECIFIED:
   ( ) FILLETED
   (X) NOT FILLETED
10. LAYER TO LAYER REGISTRATIONS SHALL BE WITHIN .003 INCHES. LEGEND TO LEGEND +/- 0.007 INCHES
11. FINISHED COPPER WEIGHT/THICKNESS:
   (X) REFER TO LAMINATION DIAGRAM FOR FINISHED COPPER WEIGHT/THICKNESS REQUIREMENTS. THE STARTING COPPER WEIGHT/THICKNESS CAN VARY AS LONG AS THE FINISHED COPPER WEIGHT/THICKNESS IS NOT LESS THAN THE SPECIFIED VALUE, UNLESS OTHERWISE SPECIFIED.
   ( ) OTHER _____

SURFACE FINISH:

12. USE CHECKED ITEMS FOR PLATING
   ( ) ELECTRODEPOSITED HARD GOLD PLATE, TYPE 1 (99.7% MIN GOLD), GRADE C (KNOOP HARDNESS 130-200), CLASS 1 (50-100 MICRO INCHES THICK) IN ACCORDANCE WITH MIL-G-45204C. GENERAL SURFACING REQUIREMENTS MUST MEET ANSI/IPC-A-600(CURRENT REV) SECTION 4.0, CLASS 3 (50-100 MICROINCHES THICK) OVER ELECTRODEPOSITED NICKEL PLATE IN ACCORDANCE WITH ANSI/IPC-A-600D, SECTION 4.0, CLASS 3 (200-600 MICROINCHES THICK).
   (X) FINISH CONDUCTOR SURFACES: IMMERSION GOLD, 1.58-3.94 MICRO INCHES OVER 118-236 MICRO INCHES MINIMUM OF ELECTROLESS NICKEL.
   ( ) FINGERS TO BE GOLD PLATED.
   ( ) OTHER _____
13. DRILL SIZES ARE FINISHED HOLE SIZES. ALL HOLES SHALL BE LOCATED WITHIN .005 DTP,UNLESS SPECIFIED. MINIMUM BARREL PLATING OF .001 IN. PLATED HOLES SHALL NOT BE ROUGH OR IRREGULAR SO AS TO HINDER PROPER SOLDER WICKING. BARREL RELIEF ON SOLDERMASK ALLOWED ON UNFILLED VIA IN PAD HOLES.

SOLDERMASK:

14. SOLDERMASK OVER BARE COPPER OR BARE GOLD (BOTH SIDES) WITH LIQUID PHOTO IMAGEABLE (LPI) INK
   (X) CUSTOM MAXIM TEAL SOLDER MASK, PANTONE #326C.
   ( ) OTHER _____

SILKSCREEN:

15. APPLY SILKSCREEN USING A NON-CONDUCTIVE EPOXY INK
   (X) WHITE
   ( ) OTHER _____
16. VENDOR LOGO & DATE CODE REQUIREMENT. DATE CODE FORMAT MUST BE YYWW ONLY
   (X) PLACE ON BOTTOM LEGEND LAYER. IF NO BOTTOM LEGEND SUPPLIED, CREATE BOTTOM LEGEND LAYER TO ADD.
   ( ) PLACE ON TOP LEGEND LAYER. IF NO TOP LEGEND SUPPLIED,CREATE TOP LEGEND LAYER TO ADD.
   ( ) OTHER _____

TESTING:

17. FINAL ELECTRICAL TEST TO BE PERFORMED USING PROVIDED IPC-D-356A NETLIST OR ODB++ FORMAT FILE. (REQUIRED UNLESS OTHERWISE SPECIFIED IN QUOTE) THE PCB SHALL HAVE A VERIFICATION STAMP.
18. A TIME DOMAIN REFLECTOMETER REPORT FOR EACH IMPEDANCE CONTROLLED LAYER AND A CERTIFICATE OF COMPLIANCE SHALL BE PROVIDED BY VENDOR AT TIME OF SHIPMENT. INSTANCES WHERE TDR TESTING CAN'T BE PERFORMED BECAUSE THE TRACE LENGTH IS TOO SHORT ON THE OUTER LAYERS AT THE PIN ESCAPES IS ACCEPTABLE, ALL OTHER INSTANCES MUST BE REPORTED.

MISCELLANEOUS:

19. IF PRESENT, ALL BLIND/BURIED VIAS WITH AN ASPECT RATIO <1:1 TO BE PLATED SHUT WITH COPPER WHEN USED AS VIA-IN PAD OR AS A STACKED VIA. BLIND/BURIED VIAS WITH AN ASPECT RATIO >1:1 TO BE FILLED WITH NON-CONDUCTIVE EPOXY, UNLESS OTHERWISE SPECIFIED.
20. FOR ALL DRILL INFORMATION REFER TO DRILL CHART.
   (X) NON-CONDUCTIVE EPOXY, FILL AND CAP ALL 0.005 AND 0.006 INCH DRILLED VIAS.
   ( ) SILVER, FILL AND CAP ALL 0.XXXX INCH DRILLED VIAS.
21. FINISHED SURFACE CONTACTS AND FILLED VIAS TO BE FREE OF ANY PITS, SCRATCHES PROBE MARKS OR OTHER DEFORMITIES THAT COULD EFFECT THE APPERANCE AND PERFORMACE OF THE CONTACT SURFACE. CONTACTS ARE TO BE AS FLAT AS POSSIBLE, NOT TO EXCEED +/- 0.001" OF FLATNESS.
22. THIEVING:
   ( ) SUPPLIER MAY ADD THIEVING TO COMPENSATE FOR LOW COPPER DENSITY AREAS ON THIS DESIGN.
   (X) SUPPLIER MAY NOT ADD THIEVING TO COMPENSATE FOR LOW COPPER DENSITY AREAS ON THIS DESIGN.
23. PEMNUT
   ( ) PEMNUTS TO BE INSTALLED BY FABRICATOR..
   ( ) PEMNUTS NOT TO BE INSTALLED BY FABRICATOR.
   (X) NOT APPLICABLE.

TOLERANCES UNLESS OTHERWISE SPECIFIED

FRACTIONS +/- 1/64 | DECIMALS .XX +/- .01, .XXX +/- .005 | ANGLES +/- 1/2°

MATERIAL: SEE NOTES

FINISH: SEE NOTES

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DRAWN BY: KA	DATE: 02/4/2021
CHECKED BY:	DATE:
APPR. BY:	DATE:
APPR. BY:	DATE:

maxim integrated™

HARDWARE NAME: MAXREFDES178_CONNECTIVITY_BOARD_APPS_A

HARDWARE NUMBER: XX-XXXXX-XXX | REV A

NOT TO SCALE | TEMPLATE REV: | SHEET 1 OF 1