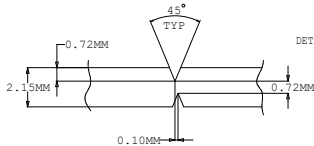


FABRICATION NOTES:

- FABRICATE PCB IN ACCORDANCE WITH IPC-6012C, CLASS 2; PER IPC-6011.  
PCB SHALL BE MANUFACTURED USING 370HR OR EQUIVALENT.
- MATERIALS:
  - LAMINATE AND PREPREG (B-STAGE) TO BE IN ACCORDANCE WITH IPC-4101/126.  
(MIN.TG 180)
  - COPPER FOIL TO BE IN ACCORDANCE WITH IPC-MF-150. UNLESS OTHERWISE SPECIFIED,  
FOR OUTER LAYERS 1.45 OZ. COPPER WEIGHT IS TO BE CONSIDERED "FINISHED".  
THE COPPER FOIL THICKNESS TOLERANCES SHALL BE AS PER IPC 6012B TABLE NO.3-7 AND 3-8.
- ALL HOLES SHALL BE LOCATED WITHIN 0.15MM DIAMETER OF TRUE POSITION.  
LAYER TO LAYER REGISTRATION SHALL BE WITHIN 0.125MM.
- BOW AND TWIST SHALL NOT EXCEED MORE THAN 0.75% OF THE DESIGN LENGTH.
- CONDUCTOR WIDTH SHALL NOT BE LESS THAN 20% FROM ITS ORIGINAL DATA. INCASE FOR MATCHING  
IMPEDANCE MISTRAL SHALL APPROVE THE MODIFIED WIDTHS AND SPACING.  
TRACE WIDTH SHALL BE MEASURED ON THE SURFACE IN CONTACT WITH THE LAMINATE.
- AUTOMATED OPTICAL INSPECTION OF ALL THE LAYERS IS REQUIRED.
- FINISH:
  - ALL EXPOSED CONDUCTIVE PATTERN AREAS NOT COVERED WITH SOLDER MASK OR OTHER PLATING SHALL BE ENIG,  
ELECTROLESS NICKEL/IMMERSION GOLD, ELECTROLESS NICKEL SHALL BE 3-6 MICRONS, TYPICAL IMMERSION GOLD  
THICKNESS SHALL BE 0.04-0.06 MICRONS OF SOLDERABLE IMMERSION GOLD SURFACE.
  - APPLY LIQUID PHOTO IMAGEABLE SOLDER MASK PER IPC-SM-840, CLASS H, TO BOTH SIDES OF THE BOARD OVER BARE COPPER.  
VIA HOLES THAT HAVE MASK OPEN SHALL BE FILLED WITH NON CONDUCTIVE INK AND CAP PLATED,  
ALL OTHER VIA HOLES SHALL BE FILLED WITH NON CONDUCTIVE INK AND COVERED WITH SOLDER MASK,  
ONLY SOLDERMASK IMAGES THAT ARE 0.08(0.003") PER SIDE SHALL BE REDUCED IF REQUIRED.  
ALL OTHER SOLDER MASK IMAGES SHALL NOT BE ENLARGED. DEFAULT COLOUR OF SOLDER MASK SHALL BE GREEN.
- SILKSCREEN SHALL BE WHITE, PERMANENT, ORGANIC, NON-CONDUCTIVE INK. THERE SHALL BE  
NO SILKSCREEN ON ANY SOLDERABLE COMPONENT PAD. CLIPPING OF SILK SCREEN SHALL BE ALLOWED  
IF THE SILK SCREEN FALLS ON SOLDERABLE AREAS.
- SURFACE AND VIA HOLES FINISH SHALL NOT BE LESS THAN 20UM [0.00079"], INCASE OF LASER  
VIA'S, BLIND VIA'S SHALL NOT BE LESS THAN 12UM [0.00047"] AND BURIED VIA'S SHALL NOT BE LESS THAN 15UM [0.0006"].
- ALL HOLES SURROUNDED BY LAND <=0.010" SHALL BE COMPLAINT TO IPC6012, CLASS 2.
- MARKING:
  - BOARD SHALL MEET THE REQUIREMENTS OF UL-796E WITH FLAMMABILITY RATING OF MINIMUM 94V-0. UL LOGO,UL FILE NUMBER,  
MANUFACTURER'S IDENTIFICATION AND DATE CODE LETTER SHALL BE RENDERED IN SILKSCREEN.
- TEST REQUIREMENTS:
  - 100% NET LIST ELECTRICAL VERIFICATION USING MISTRAL SUPPLIED IPC-D-356 NET LIST FOR OPENS AND SHORTS.
- THIEVING IS ALLOWED ONLY IN THE PANEL FRAME, NOT IN THE CIRCUIT AREA.
- TEAR DROPS SHALL BE ADDED ON INTERNAL AND EXTERNAL LAYER FOR ALL THE VIA'S AND THROUGH HOLE PADS.
- FINISHED PCB THICKNESS SHALL BE 0.0850" +/-10%.
- MIN TRACE WIDTH/SPACING ON BOARD IS 0.0031"/0.0033".
- ALL THE IMPEDANCE SHALL BE MATCHED AS PER IMPEDANCE TABLE WITH +/-10% TOLERANCE.
- ALL UNCONNECTED VIA'S SHALL BE SUPPRESSED IN INTERNAL LAYERS.
- V-SCORE TO BE DONE AS PER DETAIL'A'.
- FOR STACKUP DETAILS 'PROC141\_STACKUP.PDF' SHALL BE REFERRED.



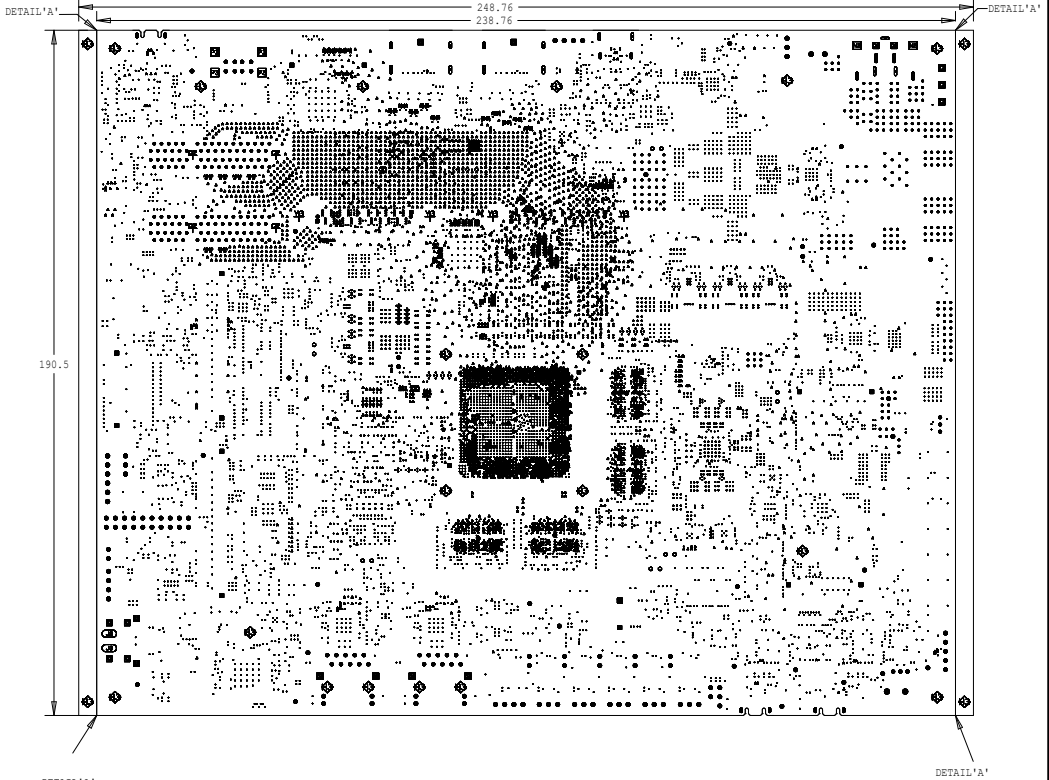
LAYER STACKUP

LAYER NAME	FINISHED Cu	X-SECTION	DIELECTRIC THICKNESS
[INCHES]			
PRIMARY SIDE SILKSCREEN			
PRIMARY SIDE SOLDERMASK			
L01 PRIMARY SIDE	1.67oz		0.0034
L02 GROUND-PLANE-1	0.5oz		0.0038
L03 INNER-SIGNAL-1	0.5oz		0.0038
L04 GROUND-PLANE-2	0.5oz		0.0038
L05 INNER-SIGNAL-2	0.5oz		0.005
L06 GROUND-PLANE-3	1oz		0.0046
L07 INNER-SIGNAL-3	1oz		0.005
L08 POWER-PLANE-1	1oz		0.0052
L09 POWER-PLANE-2	1oz		0.005
L10 INNER-SIGNAL-4	1oz		0.0046
L11 GROUND-PLANE-4	1oz		0.005
L12 INNER-SIGNAL-5	0.5oz		0.0038
L13 GROUND-PLANE-5	0.5oz		0.0038
L14 INNER-SIGNAL-6	0.5oz		0.0038
L15 GROUND-PLANE-6	0.5oz		0.0038
L16 SECONDARY SIDE	1.67oz		0.0034
SECONDARY SIDE SOLDERMASK			
SECONDARY SIDE SILKSCREEN			

IMPEDANCE SPECIFICATIONS

SL#	TYPE	LAYER	TRACEWIDTH (Mils)	SPACING (Mils)	IMPEDANCE (Ohms)	REF LAYER
01	EDGE COUPLED MICROSTRIP	L1/L16	3.7	7.3	100	L2/L15
02	EDGE COUPLED MICROSTRIP	L1	5.2	8	120	L3
03	EDGE COUPLED MICROSTRIP	L1/L16	4.5	6	90	L2/L15
04	EDGE COUPLED MICROSTRIP	L1/L16	5.2	5.8	85	L2/L15
05	MICROSTRIP	L1/L16	5		50	L2/L13
06	EDGE COUPLED STRIPLINE	L3,L14	3.1	6.5	100	L2/L4,L13/L15
07	EDGE COUPLED STRIPLINE	L5,L12	3.3	5	100	L4/L6,L11/L13
08	EDGE COUPLED STRIPLINE	L10	3.5	8.3	100	L9/L11
09	EDGE COUPLED STRIPLINE	L3,L14	3.6	5	90	L2/L4,L13/L15
10	EDGE COUPLED STRIPLINE	L5,L12	4.25	5	90	L4/L6,L11/L13
11	EDGE COUPLED STRIPLINE	L7	5	7	90	L6/L8
12	EDGE COUPLED STRIPLINE	L3,L14	4.1	5	85	L2/L4,L13/L15
13	EDGE COUPLED STRIPLINE	L5,L12	4.75	5	85	L4/L6,L11/L13
14	EDGE COUPLED STRIPLINE	L3	5.1	6.9	80	L2/L4
15	EDGE COUPLED STRIPLINE	L5	5.5	5.5	80	L4/L6
16	EDGE COUPLED STRIPLINE	L14	7	6	66	L13/L15
17	STRIPLINE	L3,L14	3.5	-	50	L2/L4,L13/L15
18	STRIPLINE	L5,L12	4	-	50	L4/L6,L11/L13
19	STRIPLINE	L7,L10	4.3	-	50	L6/L8,L9/L11
20	STRIPLINE	L3	5.5	-	40	L2/L4
21	STRIPLINE	L5	6	-	40	L4/L6
22	STRIPLINE	L3	7.5	-	33	L2/L4
23	EDGE COUPLED MICROSTRIP	L1/L16	5	15.5	100 DSI	L2/L15
24	EDGE COUPLED STRIPLINE	L3,L14	3.3	9.7	100 DSI	L2/L4,L13/L15
25	EDGE COUPLED STRIPLINE	L5,L12	4	10	100 DSI	L4/L6,L11/L13
26	EDGE COUPLED STRIPLINE	L3	3	8	132	L2/L4
27	STRIPLINE	L3	7	-	66	L2/L4
28	EDGE COUPLED STRIPLINE	L14	7	6	66	L13/L15
29	STRIPLINE	L14	7.5	-	33	L13/L15

REVISIONS		
REV #	DESCRIPTION	DATE
REV #	CCN #	DDMMYY



DRILL CHART: L2-GND1 to L3-SIGNAL1				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	1265

DRILL CHART: L3-SIGNAL1 to L4-GND2				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	592

DRILL CHART: L4-GND2 to L5-SIGNAL2				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	336

DRILL CHART: L4-GND2 to L13-GND5				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	8.0	+3.0/-3.0	PLATED	315

DRILL CHART: L12-SIGNAL5 to L13-GND5				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	670

DRILL CHART: L13-GND5 to L14-SIGNAL6				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	1115

DRILL CHART: L14-SIGNAL6 to L15-GND6				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	1140

DRILL CHART: L15-GND6 to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	5.0	+2.0/-2.0	PLATED	629

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
*	8.0	+3.0/-3.0	PLATED	6035
*	8.0	+3.0/-3.0	PLATED	1
*	10.0	+3.0/-3.0	PLATED	879
*	20.0	+3.0/-3.0	PLATED	276
*	28.0	+3.0/-3.0	PLATED	128
*	32.0	+2.0/-2.0	PLATED	4
*	32.0	+3.0/-3.0	PLATED	3
*	36.0	+3.0/-3.0	PLATED	31
*	40.0	+2.0/-2.0	PLATED	12
*	40.0	+3.0/-3.0	PLATED	79
*	44.0	+2.0/-2.0	PLATED	33
*	46.0	+3.0/-3.0	PLATED	6
*	48.0	+3.0/-3.0	PLATED	2
*	56.0	+3.0/-3.0	PLATED	2
*	60.0	+3.0/-3.0	PLATED	6
*	66.0	+3.0/-3.0	PLATED	6
*	68.0	+3.0/-3.0	PLATED	3
*	86.0	+3.0/-3.0	PLATED	2
*	90.0	+3.0/-3.0	PLATED	4
*	34.0	+1.0/-1.0	NON-PLATED	2
*	34.0	+2.0/-2.0	NON-PLATED	4
*	40.0	+1.97/-1.97	NON-PLATED	2
*	40.0	+3.0/-3.0	NON-PLATED	11
*	52.0	+3.0/-3.0	NON-PLATED	1
*	58.0	+3.0/-3.0	NON-PLATED	2
*	92.0	+2.0/-2.0	NON-PLATED	4
*	108.0	+3.0/-3.0	NON-PLATED	4
*	126.0	+3.0/-3.0	NON-PLATED	22
*	52.0x24.0	+3.0/-3.0	PLATED	6
*	62.0x24.0	+2.0/-2.0	PLATED	2
*	70.0x26.0	+2.0/-2.0	PLATED	4
*	82.0x24.0	+2.0/-2.0	PLATED	2
*	86.0x24.0	+3.0/-3.0	PLATED	1
*	86.0x24.0	+3.0/-3.0	PLATED	2
*	90.0x26.0	+2.0/-2.0	PLATED	4
*	98.0x24.0	+3.0/-3.0	PLATED	4
*	158.0x78.0	+3.0/-3.0	NON-PLATED	2

SIGNATURES		DATE	TEXAS INSTRUMENTS		PROC141E5
LAYOUT BY	PN	090824	DRAWING NO: FY24-25/00946000105 J784S4/TDA4VH/TDA4AH/TDA4VP/TDA4AP EVALUATION BOARD		
REVIEWED BY	ZA	090824			
APPROVED BY	AMB	090824			
			SIZE		Rev
			D		E5
			SCALE: NONE		SHEET 1 OF 23