

| REVISIONS | | |
|-----------|-------------|------|
| REV # | DESCRIPTION | DATE |
| | | |
| | | |
| | | |

FABRICATION NOTES:

- FABRICATE PCB IN ACCORDANCE WITH IPC-6012C, CLASS 2; PER IPC-6011. PCB SHALL BE MANUFACTURED USING 1-SPEED OR EQUIVALENT.
- MATERIALS:**
 - LAMINATE AND PREPREG (B-STAGE) TO BE IN ACCORDANCE WITH IPC-4101/126. (ENR 16 170)
 - COPPER FOIL TO BE IN ACCORDANCE WITH IPC-MF-150, UNLESS OTHERWISE SPECIFIED. ALL COPPER WEIGHT FOR INNER SIGNAL LAYERS AND INNER PLANE LAYERS TO BE 35UM (1.0Z.). FOR OUTER LAYERS 48UM (1.3 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 0.10MM (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. INCREASE 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 0.04-0.04 MICRONS OF SOLDERABLE IMMERSION GOLD SURFACE.
 - APPLY LIQUID PHOTO IMAGEABLE SOLDER MASK PER IPC-DM-84K, CLASS H, TO BOTH SIDES OF THE BOARD OVER BARE COPPER. 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. VIA HOLES THAT HAVE MASK OPEN SHALL BE FILLED WITH NON CONDUCTIVE EPOXY MATERIAL AND CAP PLATED.
 - 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"] INCREASE OF SOLDER MASK NOT BE LESS THAN 15UM [0.0006"]. VIAS, 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 0.10 ± 0.010 SHALL BE COMPLAIN TO IPC612, CLASS 2.
- MARKING:**
 - BOARD SHALL MEET THE REQUIREMENTS OF UL-796 WITH FLAMMABILITY RATING OF MINIMUM 94V-0. UL LOGO, 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.
- THEIVING 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 VIAS AND THROUGH HOLE PADS.
- FINISHED PCB THICKNESS SHALL BE 0.0759" +/-10%.
- MIN TRACE WIDTH/SPACING ON BOARD IS 0.003"/0.004".
- ALL THE IMPEDANCE SHALL BE MATCHED AS PER IMPEDANCE TABLE WITH +/-10% TOLERANCE.
- DIA WITH 40MIL DRILL HAS A DUPLICATE HOLE AT ONE OF THE LOCATION. THIS SHALL BE IGNORED DURING FABRICATION. AND QUANTITY CAN BE CONSIDERED AS 1% HOLES.
- REMOVE ALL NON FUNCTIONAL VIA PAD ONLY ON ALL INTERNAL LAYERS.
- FOR STACKUP DETAILS PROC062_STACKUP.pdf SHALL BE REFERRED.

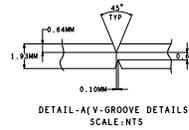
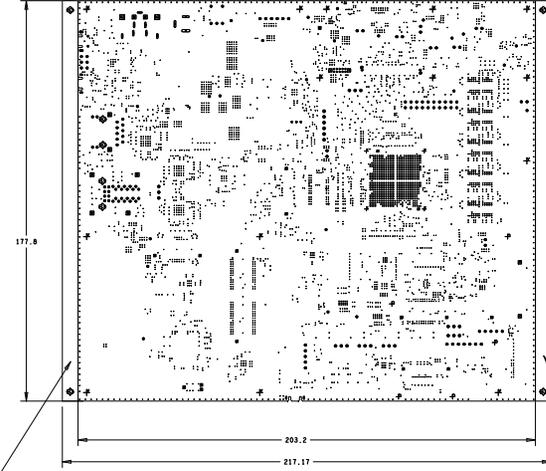
| DRILL CHART, TOP + BOTTOM | | | | |
|---------------------------|------------|-----------|------------|------|
| ALL UNITS ARE IN MILS | | | | |
| FIGURE | SIZE | TOLERANCE | PLATED | QTY |
| * | 8.0 | +3.0/-4.0 | PLATED | 4000 |
| * | 24.0 | +3.0/-3.0 | PLATED | 10 |
| * | 32.0 | +2.0/-2.0 | PLATED | 2 |
| * | 32.0 | +3.0/-3.0 | PLATED | 5 |
| * | 38.0 | +3.0/-3.0 | PLATED | 38 |
| * | 40.0 | +2.0/-2.0 | PLATED | 38 |
| * | 40.0 | +3.0/-3.0 | PLATED | 63 |
| * | 44.0 | +2.0/-2.0 | PLATED | 21 |
| * | 46.0 | +3.0/-3.0 | PLATED | 6 |
| # | 46.0 | +3.0/-3.0 | PLATED | 8 |
| # | 88.0 | +3.0/-3.0 | PLATED | 2 |
| * | 34.0 | +2.0/-2.0 | NON-PLATED | 12 |
| * | 34.0 | +3.0/-3.0 | NON-PLATED | 2 |
| * | 40.0 | +3.0/-3.0 | NON-PLATED | 4 |
| * | 42.0 | +3.0/-3.0 | NON-PLATED | 3 |
| # | 56.0 | +3.0/-3.0 | NON-PLATED | 4 |
| * | 68.0 | +3.0/-3.0 | NON-PLATED | 4 |
| # | 88.0 | +3.0/-3.0 | NON-PLATED | 5 |
| # | 108.0 | +3.0/-3.0 | NON-PLATED | 14 |
| # | 128.0 | +3.0/-3.0 | NON-PLATED | 8 |
| * | 52.0x24.0 | +3.0/-3.0 | PLATED | 2 |
| * | 52.0x24.0 | +3.0/-3.0 | PLATED | 2 |
| * | 64.0x32.0 | +3.0/-3.0 | PLATED | 2 |
| * | 88.0x24.0 | +3.0/-3.0 | PLATED | 1 |
| # | 88.0x24.0 | +3.0/-3.0 | PLATED | 2 |
| # | 98.0x24.0 | +3.0/-3.0 | PLATED | 4 |
| # | 120.0x30.0 | +3.0/-3.0 | PLATED | 1 |
| # | 120.0x30.0 | +3.0/-3.0 | PLATED | 1 |
| # | 140.0x40.0 | +3.0/-3.0 | PLATED | 1 |

IMPEDANCE SPECIFICATIONS

| SL# | TYPE | LAYER | TRACEDWIDTH(Mils) | SPACING(Mils) | IMPEDANCE(Ohms) | REF LAYER |
|-----|-------------------------|----------|-------------------|---------------|-----------------|-----------------|
| 01 | EDGE COUPLED STRIPLINE | L12 | 3.0 | 7.9 | 100 | L11/L13 |
| 02 | EDGE COUPLED STRIPLINE | L5 | 3.5 | 5.0 | 90 | L4/L6 |
| 03 | EDGE COUPLED STRIPLINE | L3 | 4.3 | 4.4 | 80 | L2/L4 |
| 04 | STRIPLINE | L10, L12 | 3.3 | NA | 50 | L9/L11, L11/L13 |
| 05 | STRIPLINE | L3, L5 | 5.0 | NA | 40 | L2/L4, L4/L6 |
| 06 | EDGE COUPLED MICROSTRIP | L10, L12 | 4.2 | 7.4 | 100 | L9/L11, L11/L13 |
| 07 | EDGE COUPLED MICROSTRIP | L1, L14 | 4.1 | 4.4 | 90 | L2, L13 |
| 08 | EDGE COUPLED MICROSTRIP | L1, L14 | 6.2 | 5.3 | 80 | L2, L13 |
| 10 | EDGE COUPLED MICROSTRIP | L1 | 10.5 | 5.0 | 85 | L4 |
| 11 | MICROSTRIP | L1, L14 | 5.2 | NA | 50 | L2, L13 |
| 12 | MICROSTRIP | L1, L14 | 8.2 | NA | 40 | L2, L13 |

LAYER STACKUP

| LAYER NAME | FINISHED Cu | X-SECTION | DIELECTRIC THICKNESS [INCHES] |
|---------------------------|----------------|-----------|-------------------------------|
| PRIMARY SIDE SILKSCREEN | | | |
| PRIMARY SIDE SOLDERMASK | | | |
| L01 PRIMARY SIDE | -0.5oz+PLATING | | 0.00320 |
| L02 GROUND-PLANE-1 | 1oz. | | 0.00400 |
| L03 INNER-SIGNAL-1 | 1oz. | | 0.00350 |
| L04 GROUND-PLANE-2 | 1oz. | | 0.00400 |
| L05 INNER-SIGNAL-2 | 1oz. | | 0.00350 |
| L06 POWER-PLANE-1 | 1oz. | | 0.00500 |
| L07 POWER-PLANE-2 | 1oz. | | 0.00500 |
| L08 POWER-PLANE-3 | 1oz. | | 0.00500 |
| L09 GROUND-PLANE-3 | 1oz. | | 0.00350 |
| L10 INNER-SIGNAL-3 | 1oz. | | 0.00400 |
| L11 GROUND-PLANE-4 | 1oz. | | 0.00350 |
| L12 INNER-SIGNAL-4 | 1oz. | | 0.00400 |
| L13 GROUND-PLANE-5 | 1oz. | | 0.00400 |
| L14 SECONDARY SIDE | -0.5oz+PLATING | | 0.00320 |
| SECONDARY SIDE SOLDERMASK | | | |
| SECONDARY SIDE SILKSCREEN | | | |



DETAIL-A (GROOVE DETAILS) SCALE: NTS

| SIGNATURES | | DATE | TEXAS INSTRUMENTS | PROC062 |
|----------------------------|-----|--------|-------------------|---------------|
| LAYOUT BY | VU | 270220 | | |
| REVIEWED BY | ZA | 270220 | | |
| APPROVED BY | AMB | 270220 | | |
| AM654x EVM PROCESSOR BOARD | | | | |
| | | SIZE D | | Rev A |
| SCALE: NONE | | | | SHEET 1 OF 21 |