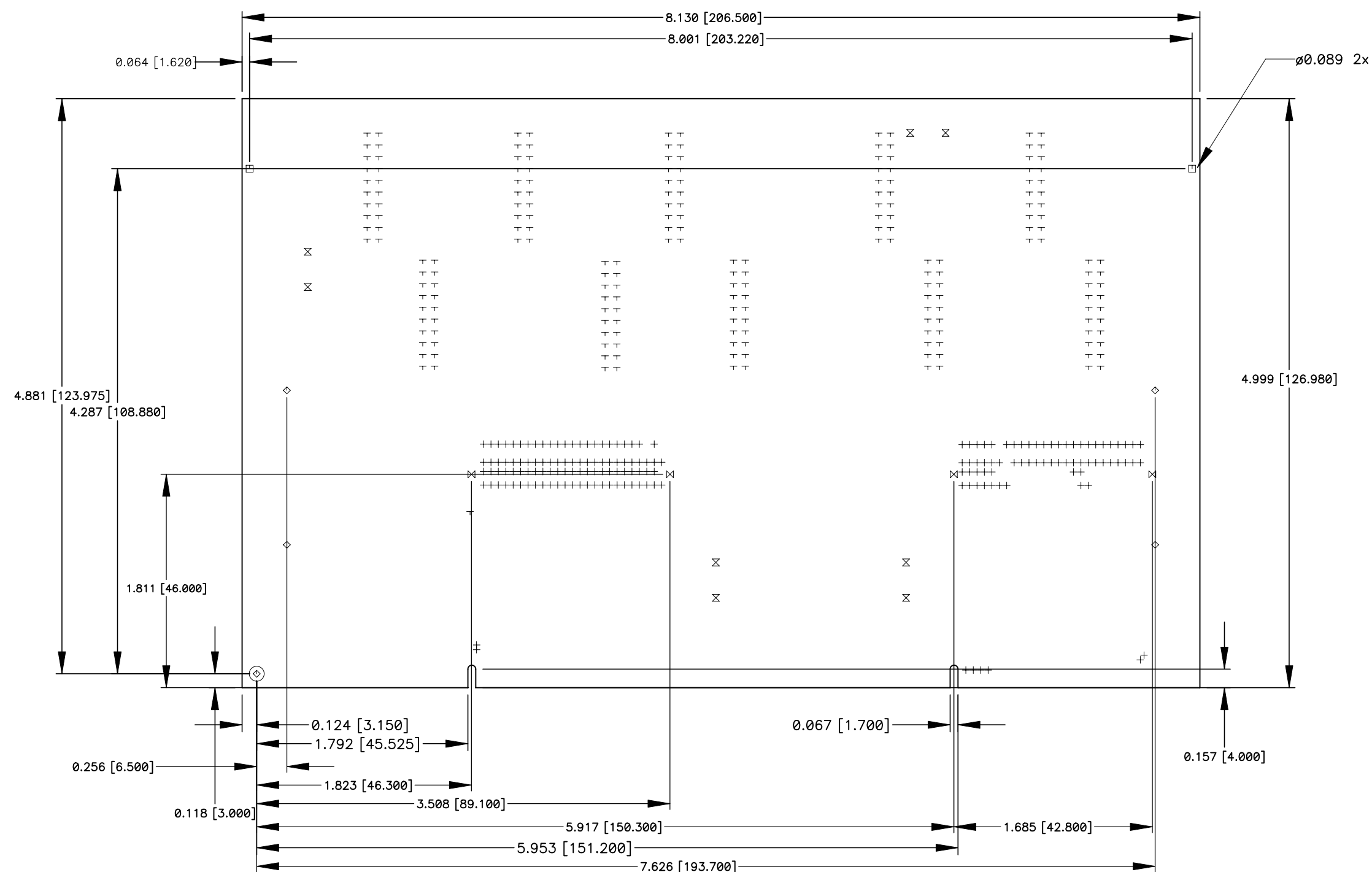


REVISIONS

| ZONE | LTR | REVISIONS | ECR | DATE | BY | APRV |
|------|-----|-----------------|-----|---------|-----|------|
| | OD | initial release | | 04nov09 | dms | |



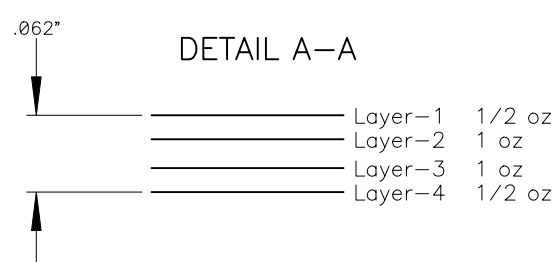
| Hole Dia (inch) | Symbol | Quantity | Plated |
|-----------------|--------|----------|--------|
| 0.012 | + | 169 | Yes |
| 0.042 | - | 201 | Yes |
| 0.047 | X | 8 | Yes |
| 0.057 | M | 4 | No |
| 0.089 | □ | 2 | No |
| 0.125 | ◇ | 5 | No |

NOTES: unless otherwise specified

- 1.0 Fabricate circuit board to conform to IPC-6010.
Applicable documents
The following items are required:
PATTERN FILM / GERBER DATA DWG # TRNT-EL-04-3008
DETAIL DRAWING DWG # TRNT-EL-04-1008 THIS DOCUMENT
- 1.1 Artwork may not be modified except for process control.
- 2.0 BASE MATERIAL
 - 2.1 Laminate base material shall be natural color, FR370 or equivalent. See Detail A-A for layer to layer specification and overall thickness.
 - 2.2 B-Stage shall be selected at vendors discretion to meet over all board thickness and end item requirements.
- 3.0 COPPER PLATING
 - 3.1 Copper plating shall have a minimum purity of 99.5 percent and a minimum thickness of .001 inch. This also applies to the plating in the holes.
- 4.0 SOLDERMASK
 - 4.1 Apply LPI black soldermask over bare copper according to the soldermask pattern file per IPC-SM-840.
- 5.0 FINISH
 - 5.1 EXPOSED COPPER SHALL BE Ni/Au -- IMMERSION GOLD 3-5u INCH (0.00003-0.00005) OVER ELECTROLESS NICKEL 100-200u INCH (0.00001-0.00002) THICK IAW IPC-2221 AND IPC-4552 (ENIG).
- 6.0 SILK SCREEN
 - 6.1 Silk screen top (-1) and bottom (-4) side of board using white epoxy ink according to the -1S pattern film and the -4S pattern film. Ink shall not cover any exposed metal.
- 7.0 DIMENSIONS
 - 7.1 All dimensions are in inches [mm]
 - 7.2 Unless otherwise specified all hole sizes apply after plating. Hole sizes are shown in the drill schedule.
- 8.0 TOLERANCES
 - 8.1 Hole size tolerance +- .003 after plating unless otherwise specified.
 - 8.2 Conductor widths and spacing shall be within 20% of the artwork originals.
 - 8.3 Layer to layer registration shall be .007 inches of true position
 - 8.4 Board dimensions shall meet the requirements of the board drawing.
 - 8.5 Warp and twist shall not exceed that defined in IPC-A-600.
- 9.0 APPEARANCE
 - 9.1 All inside and outside corners shall have a maximum radius of .065
 - 9.2 Remove all burrs and smooth sharp edges to .010 max.

VENDOR NOTE: NOTIFY US OF ANY CONFLICTING REQUIREMENTS OR IF BOARDS CANNOT BE MANUFACTURED TO MEET THE ABOVE REQUIREMENTS, DUE TO VENDORS PROCESS AND/OR TECHNIQUES OR BECAUSE PHOTO TOOLS AND/OR SPECIFICATIONS ARE INADEQUATE.

APPROVED FOR
CONSTRUCTION
11-04-09 DMS



Modified Date: Thu Nov 05, 2009
Print Date: Thu Nov 05, 2009

| QTY REQ'D | PART OR IDENTIFYING NO | ITEM DESCRIPTION | ITEM NO |
|--|---------------------------|----------------------------|--|
| TOLERANCES UNLESS OTHERWISE NOTED .XX ± .03 ANGULAR .XXX ± .010 ± 5° | | THIRD ANGLE PROJECTION | NATIONAL OPTICAL ASTRONOMY OBSERVATORIES OPERATED BY THE ASSOCIATION OF UNIVERSITIES FOR RESEARCH IN ASTRONOMY UNDER COOPERATIVE AGREEMENT WITH NATIONAL SCIENCE FOUNDATION |
| DO NOT SCALE DRAWING | | | |
| NEXT ASSEMBLY TRNT-EL-04-0008 | | NAME DETAIL | USED ON TORRENT |
| REFER TO SCHEMATIC TRNT-EL-04-2008 | | AFE EXTENDER BOARD | REF NA |
| SCALE: FULL | DESIGNED BY Dee Stover | DATE 05oct09 | REV OD |
| DWG PRODUCED USING PCAD 2006 | DRAWN BY Dee Stover | DATE 05oct09 | APPROVED BY |
| DWG NO TRNT-EL-04-1008 | | RELEASED | SHEET 1 OF 1 |