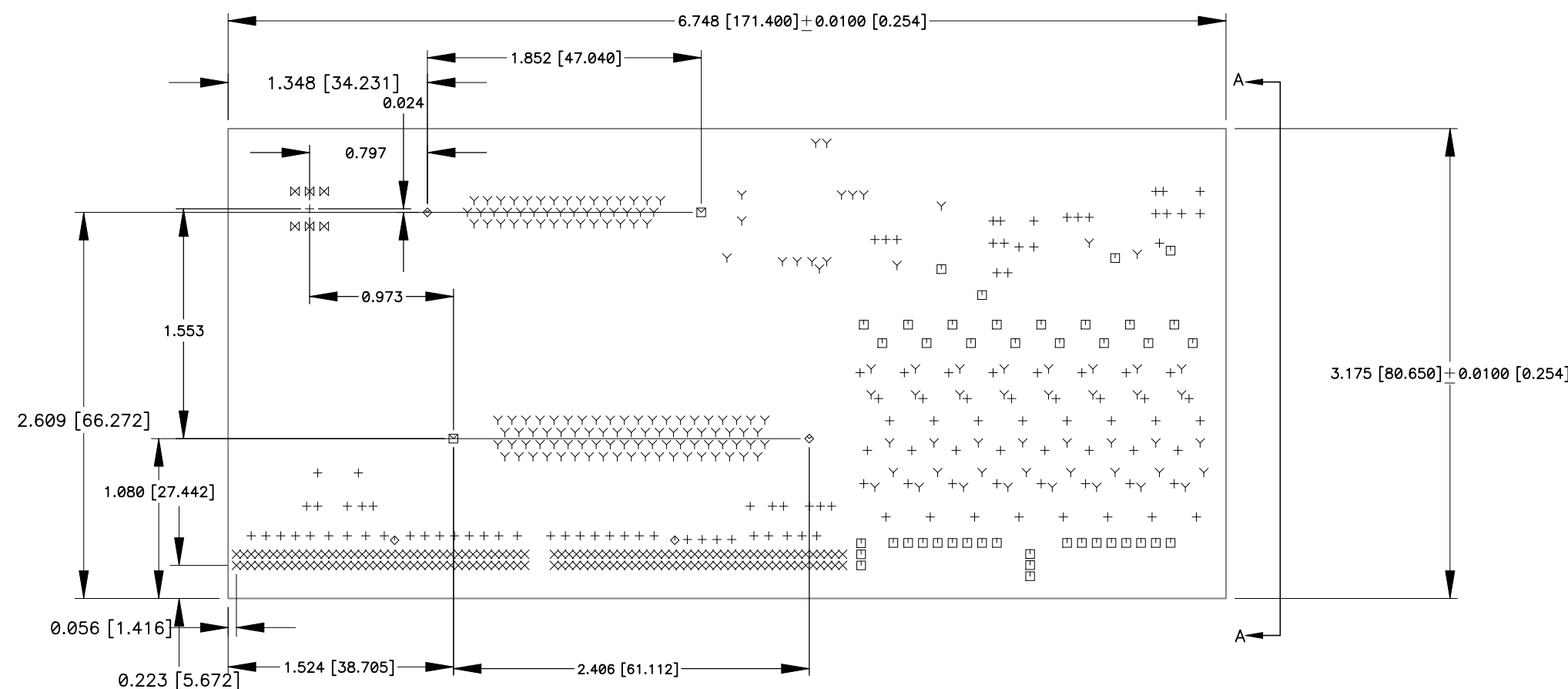


REVISIONS

ZONE	LTR	REVISIONS	ECR	DATE	BY	APRV
	OD	INITIAL RELEASE		Sep 09	dms	m.hunten
	A	reposition the connectors to correct postion to mate with DHE		DEC 09	dms	m.hunten
	B	multiple changes see ECO for detail	TRNT-016	APR 11	dms	m.hunten
	C	multiple changes see ECO for detail	TRNT-034	Nov 12	dms	p.moore



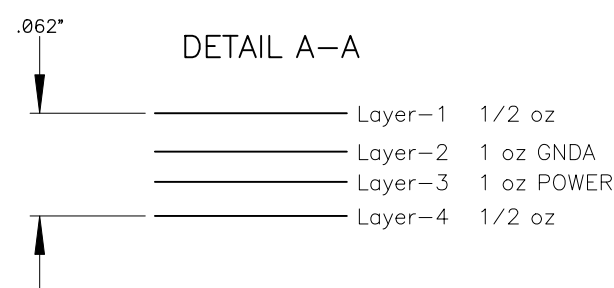
Drill Table				
Hole Dia (inch)	Symbol	Quantity	Plated	
0.020	+	119	Yes	
0.025	×	160	Yes	
0.030	Y	179	Yes	
0.037	M	6	Yes	
0.041	□	42	Yes	
0.080	◇	2	No	
0.125	◇	2	Yes	
0.125	⊠	2	No	

APPROVED FOR  
CONSTRUCTION  
12-11-12 DMS

NOTES: unless otherwise specified

- 1.0 Fabricate circuit board to conform to IPC-A-600 latest Revision  
Applicable documents  
The following items are required:  
PATTERN FILM / GERBER DATA DWG # TRNT-EL-04-3007  
DETAIL DRAWING DWG # TRNT-EL-04-1007 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 blue 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.



Modified Date: Tue Dec 11, 2012  
Print Date: Wed Dec 12, 2012

QTY REQ'D	PART OR IDENTIFYING NO	ITEM DESCRIPTION	ITEM NO
TOLERANCES UNLESS OTHERWISE NOTED .XX ± .03 ANGULAR .XXX ± .010 ±.5°		<p>THIRD ANGLE PROJECTION</p>	<p>NATIONAL OPTICAL ASTRONOMY OBSERVATORIES</p> <p>OPERATED BY THE</p> <p>ASSOCIATION OF UNIVERSITIES FOR RESEARCH IN ASTRONOMY</p> <p>UNDER COOPERATIVE AGREEMENT WITH</p> <p>NATIONAL SCIENCE FOUNDATION</p>
DO NOT SCALE DRAWING			
NEXT ASSEMBLY TRNT-EL-04-0007		NAME DETAIL CCD PREAMP TRANSITION BOARD	USED ON TORRENT
REFER TO SCHEMATIC TRNT-EL-04-2007		DWG SIZE C	REV C
SCALE: FULL	DESIGNED BY Dee Stover	DATE 15sep09	CHECKED BY DATE
DWG PRODUCED USING PCAD 2006	DRAWN BY Dee Stover	DATE 15sep09	APPROVED BY DATE
DWG NO TRNT-EL-04-1007		RELEASED	
SHEET 1 OF 1			