

TRACKER MULTI CHIP MODULE (FRONT END ELECTRONICS)

DESCRIPTION:

- Aramid based (G10 epoxy) printed wiring board
- 24 front end ASICs
- 2 controller ASICs
- Pitch adapter around corner
 - flat across top to 150 microns for wire bonding
- 2 Nanonics 37 pin miniature connectors
- 182 passive components

INTERFACE/ ASSEMBLY:

- Align on thermal boss (Z)
- Screws and tray align other axes
- Double sided tape (3M), thermally conductive, 10 mils thick
- 11, 1 mm screws into side of tray
 - 4 screws near connectors where force is greatest
- 2 Ground screws
- Easy removal with flat tool

ISSUES:

- Stepped wire bonds on SuperGLAST trays
 - What is the step? (0.635 converter + facesheet + adhesive)
 - K & S 8090 bonder can do a 2.5 mm step
 - Max step of Delvotek machine at SLAC?
 - Max step of K&S 1470 Machine in Pisa?
- **POSSIBLE SOLUTIONS** *if there is a problem*
 - 2 Types of Multi Chip Modules?
 - Change features on SuperGLAST closeouts (holes and alignment boss)
- Bondability of top edge of fanout
 - BTEM Wire Bond yield (to Kapton) was 99.7%
 - Therefore every MCM has 4.7 failed bonds (possibly repaired)
 - We want better!

PLAN

1. Optimize fanout design and Quality Control
2. Use handling fixture at all times
3. Store in clean environment (Dry Nitrogen)
4. Plasma clean traces before wire-bonding

- **NANONICS CONNECTORS ARE FRAGILE**
 - **PIGTAILS** for all testing
Need to design fixtures accordingly
 - **FLIGHT CONNECTORS**
 - Control total number of connections
 - Special tools to assist in mating connectors
 - Follow procedures suggested by Nanonics
 - Use torque limiting wrench (2 in. oz.)







