

# EPI-Hi Bias Supply Status

Peer Review – 10/29/2014

Board	Schematic	Fit Check	Outline/ Keep Outs	Layout	Parts Stress Analysis	Thermal Analysis
Prototype	Yes	N/A	N/A	Yes	N/A	N/A
EM	Yes	Yes	Yes	Yes	Yes	In progress
Flight	Yes	Yes	Yes	Yes	Yes	In progress

Changes between EM and Flight designs are defined in the top right corner of the schematic (sheet 1). Revisions are B, C and C2. The changes have been incorporated on EM board via haywires. Flight PCB layout modified to remove the haywires. Component changes are included on EM board, so there are no differences.

# Bias Supply - Main Features

- Provides adjustable HV bias to 3 telescopes
- Dual proportional outputs (40-80V and 160-250V) for thick Si detectors
- Single 25V output to LET1 & LET2 boards for local LV bias generation (2-20V and 4-20V) for thin Si detectors
- Dedicated HV supply for each telescope end (5 total)
- Control and input power come from DPU board
- Double-sided rigid-flex design
- Blind vias with a middle ground plane

# Bias Supply – Resources

- Mass
  - EM board measured 172 g
  - Add staking and conformal coating for Flight
  - Currently carrying 224 g for Flight board
- Power
  - Beginning of life (Min, no load): 121 mW
  - End of life (Nominal): 596 mW
  - End of life (Max): 943 mW