

# GLAST Mini Tower (MT)

## Pre Shipment Review

INFN, Pisa

August 19, 2003

# GLAST Mini Tower (MT)

## Pre Shipment Review

- MT Objectives & “as built” configuration
- MT Test results summary and compliance
- Non Conformance Report List
- MT Special Handling/Equipment reqmt.
- MT Incoming inspection reqmts.
- MT Test Scripts and Procedures
- MT Pictures – to be supplied.
- Conclusion.

# GLAST Mini Tower (MT)

## Pre Shipment Review

### OBJECTIVE

- The objective of the MT program is to get a early validation of the Final Flight Design concepts.

### “as built” Configuration

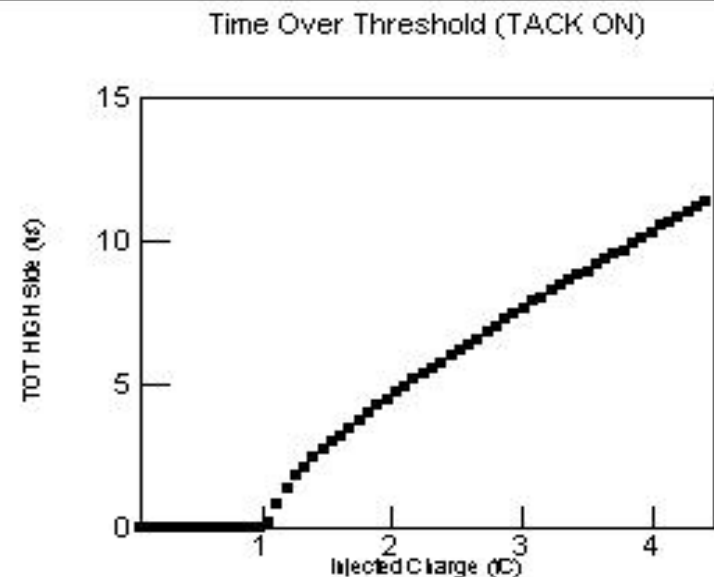
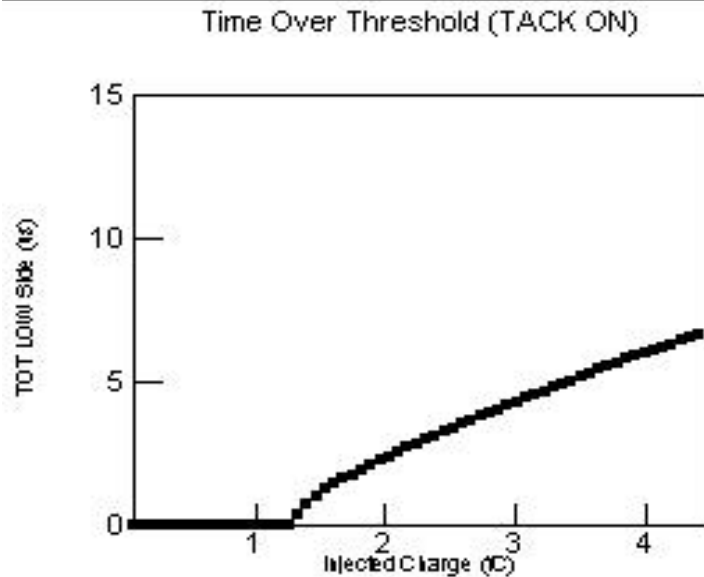
- The “as built” configuration of the MT consists of 4 trays+*bottom tray* with functional ladder networks, MCMs and Aluminum Side Walls.
- The Detailed configuration is as shown in “Minitower Tracker pre-shipment review” document at <http://glastserver.pi.infn.it/glast/> at EM/Mini-tower link.

# GLAST Mini Tower (MT)

## Pre Shipment Review

### Test Results Summary and Compliance

- MCM # 102 TOT measurement. The asymmetry between the Left and Right GTRC is due to the reading configuration (4 GTFE from Left, 19 from Right) chosen for the test

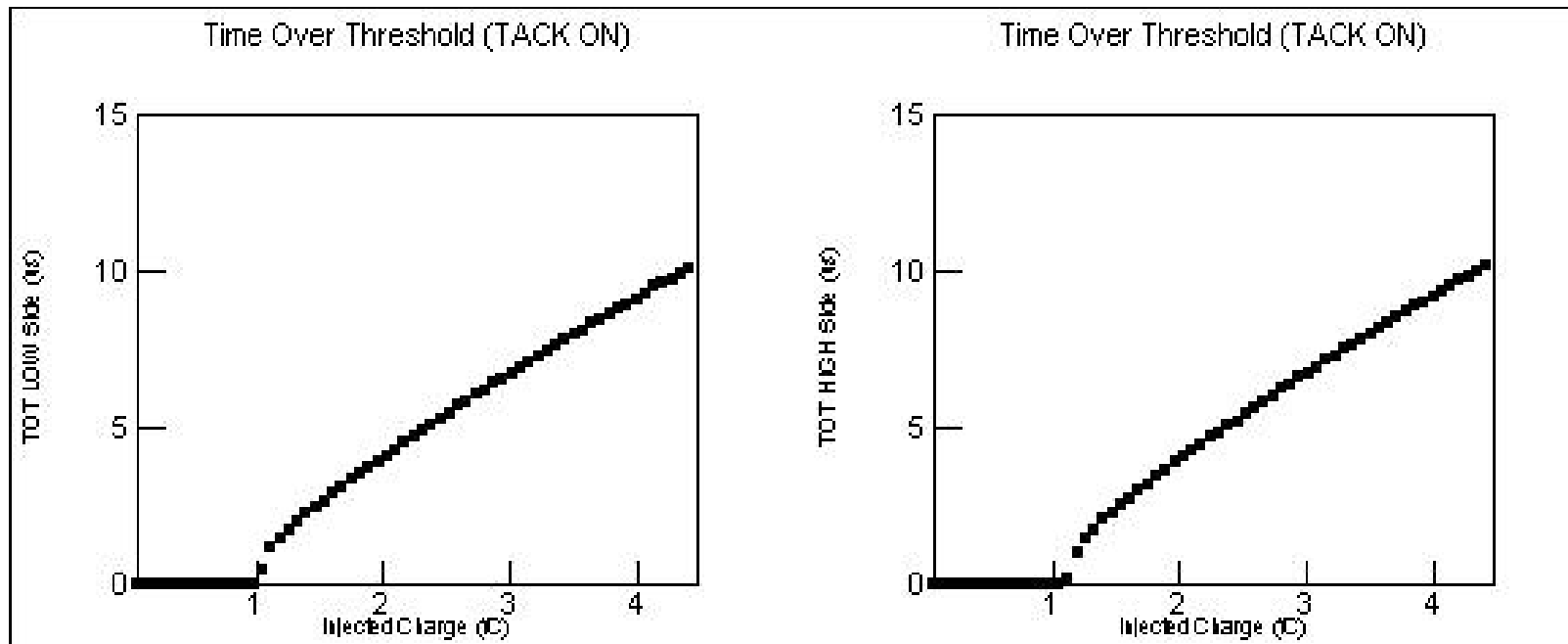


# GLAST Mini Tower (MT)

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### Test Results Summary and Compliance-cont'd

- MCM # 103 TOT measurement

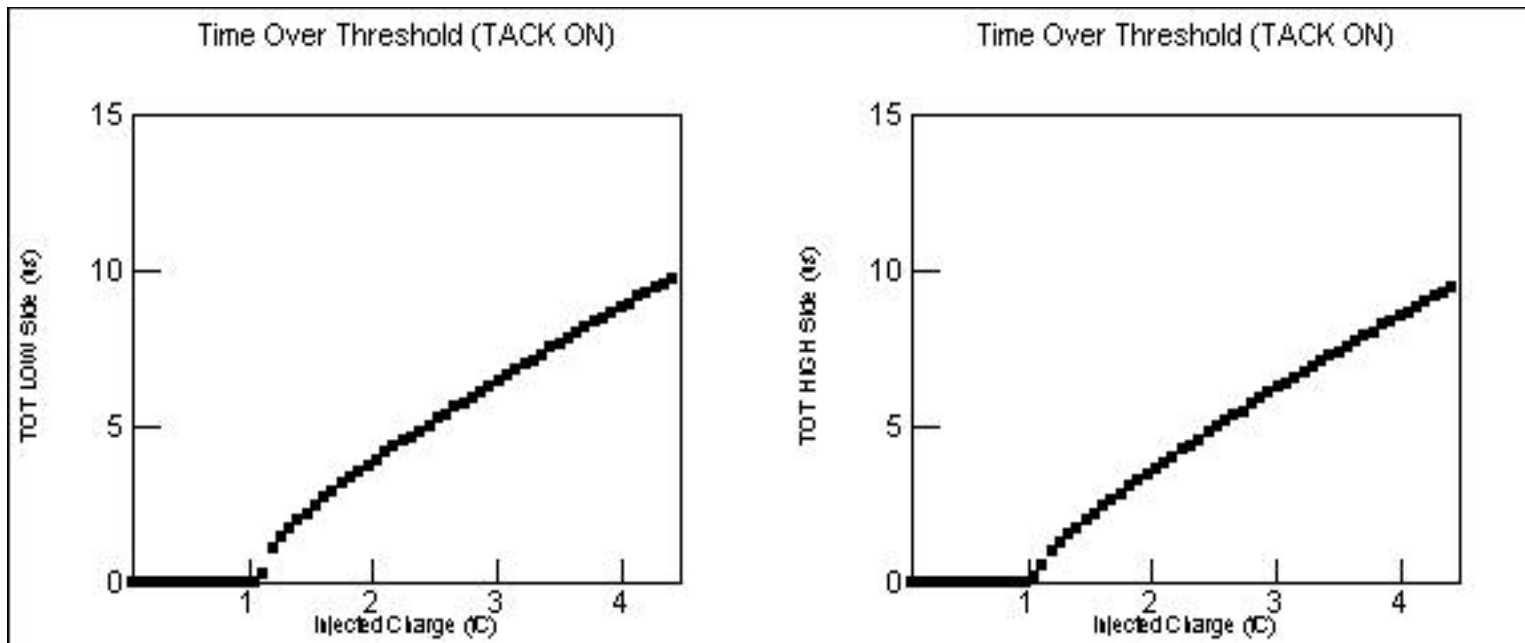


# GLAST Mini Tower (MT)

## Pre Shipment Review

### Test Results Summary and Compliance-cont'd

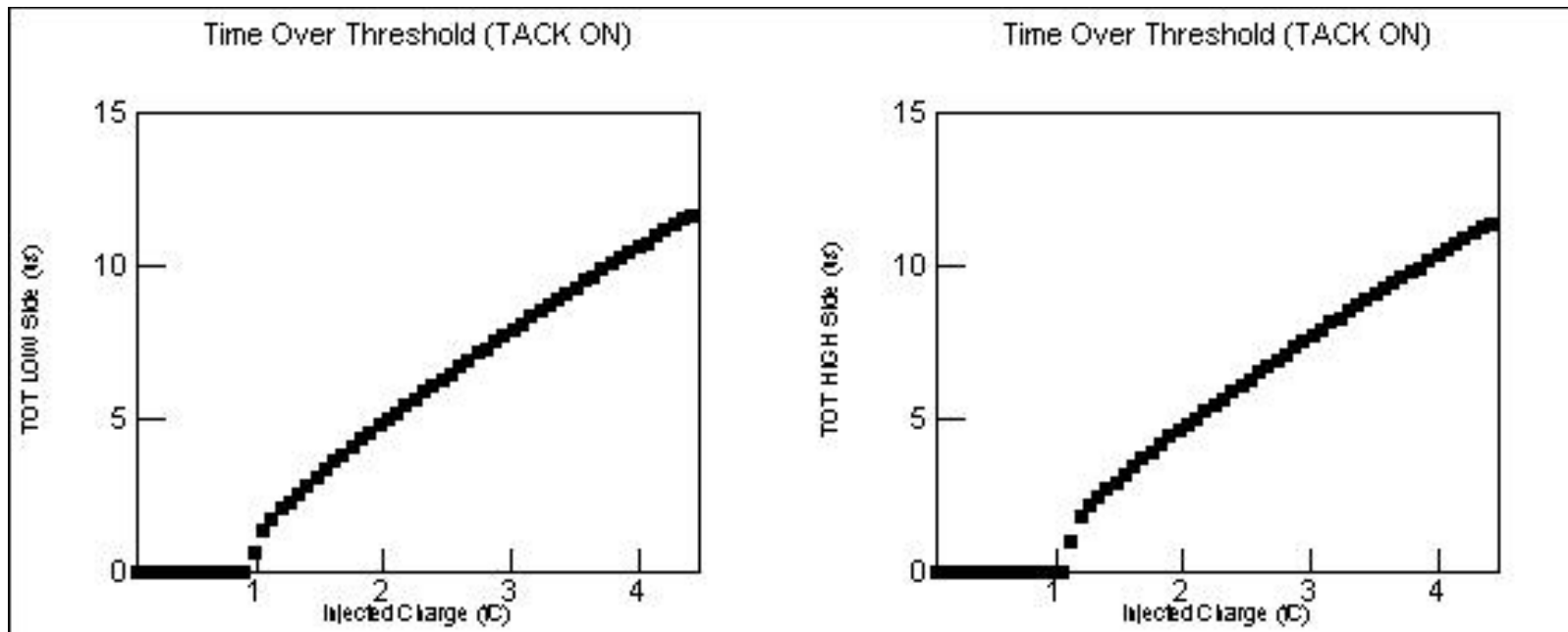
- MCM # 105 TOT measurement



# GLAST Mini Tower (MT) Pre Shipment Review

## Test Results Summary and Compliance-cont'd

- MCM # 106 TOT measurement

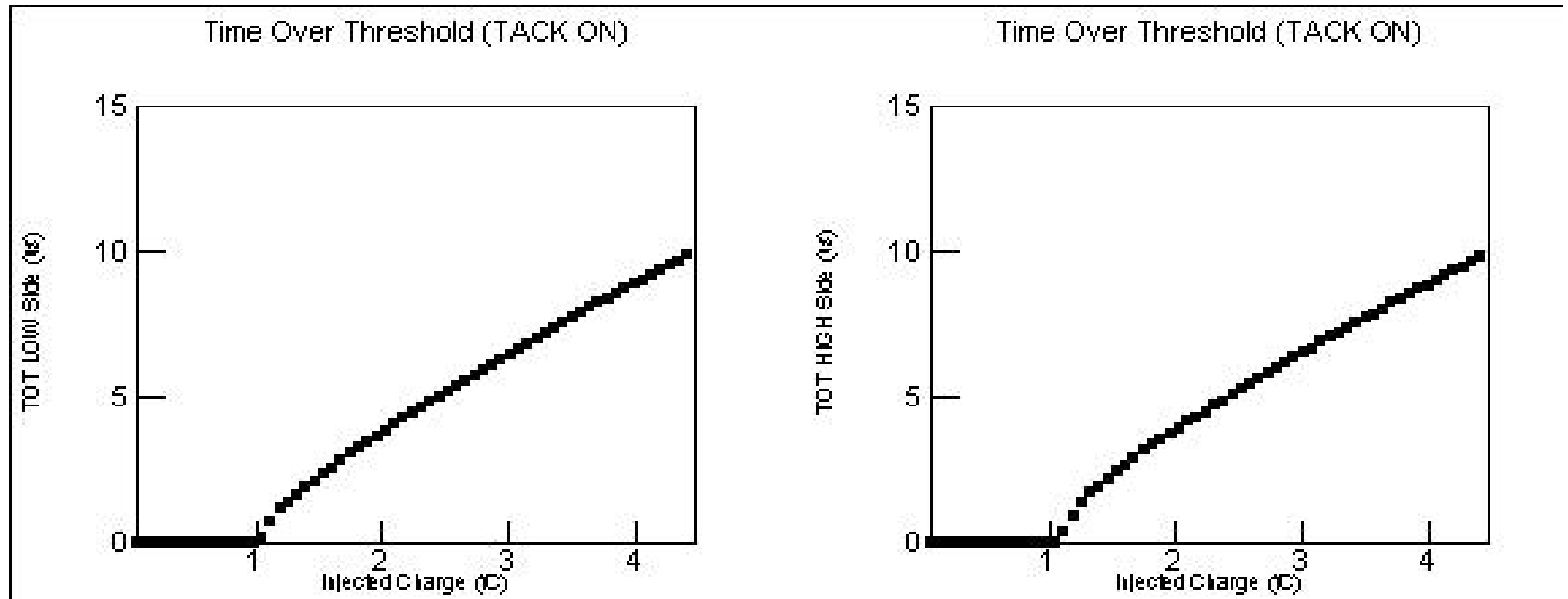


# GLAST Mini Tower (MT)

## Pre Shipment Review

### Test Results Summary and Compliance-cont'd

- MCM # 108 TOT measurement



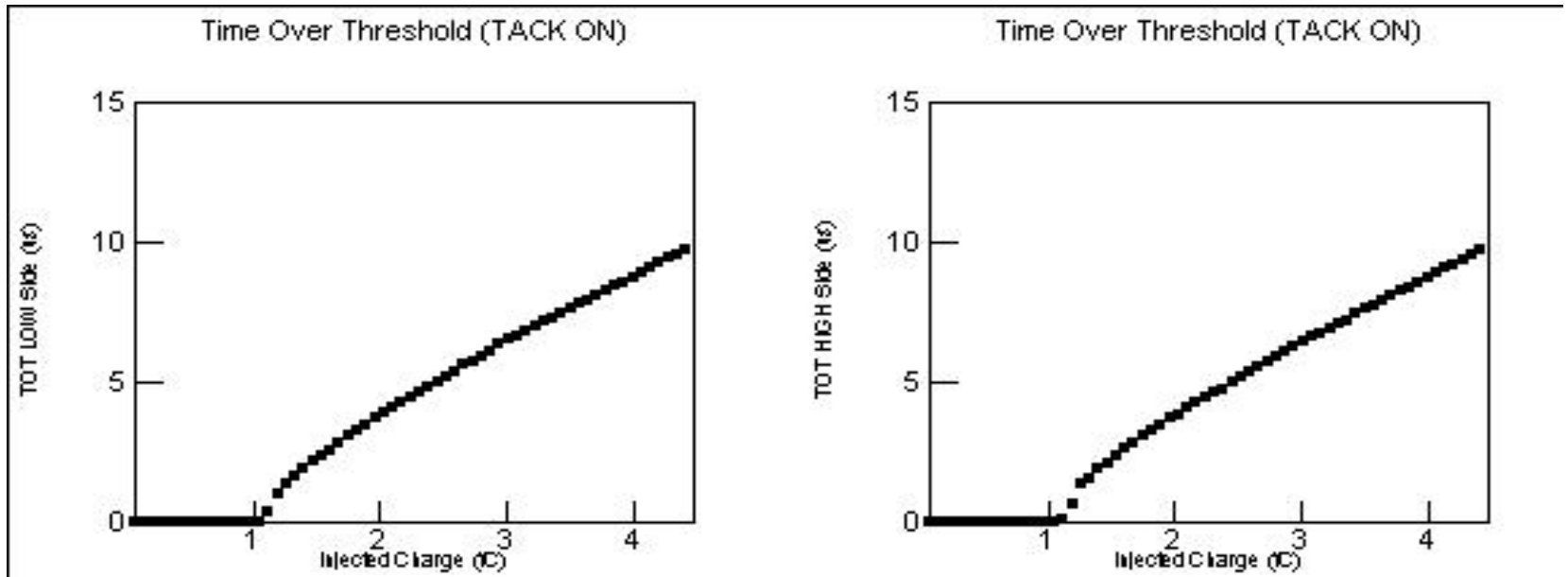


# GLAST Mini Tower (MT)

## Pre Shipment Review

### Test Results Summary and Compliance-cont'd

- MCM # 110 TOT measurement

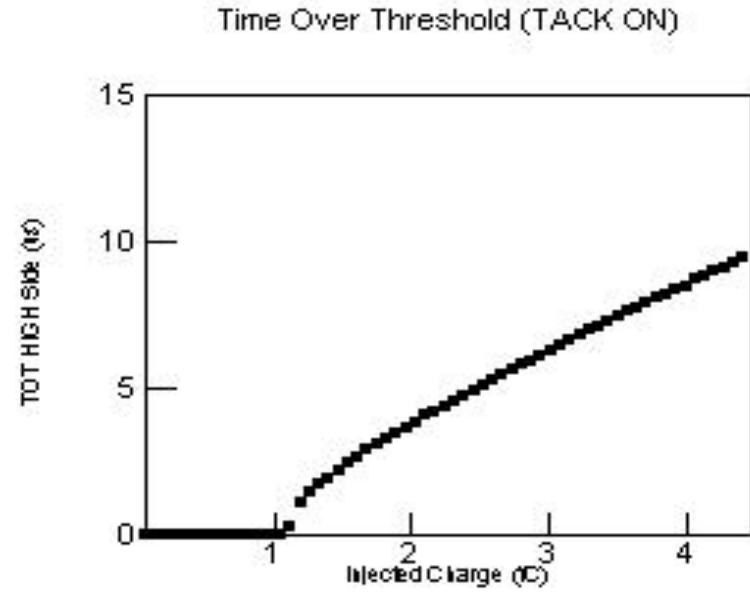
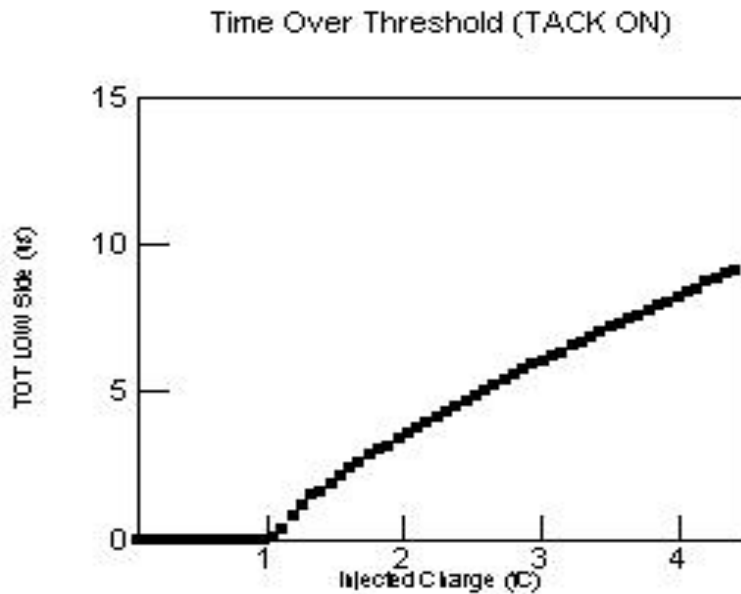


# GLAST Mini Tower (MT)

## Pre Shipment Review

### Test Results Summary and Compliance-cont'd

- MCM # 111 TOT measurement

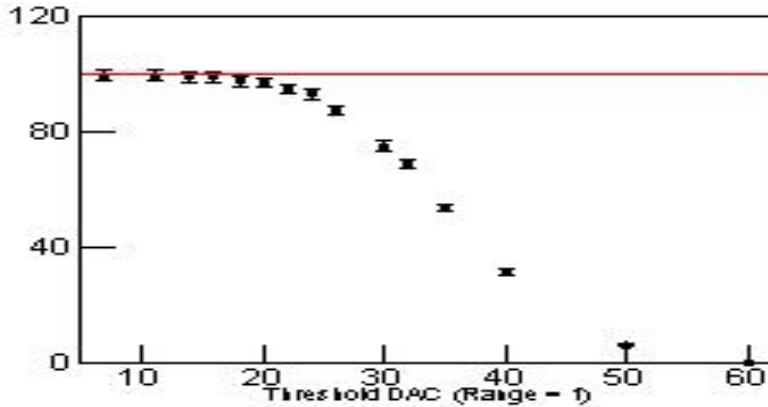


# GLAST Mini Tower (MT)

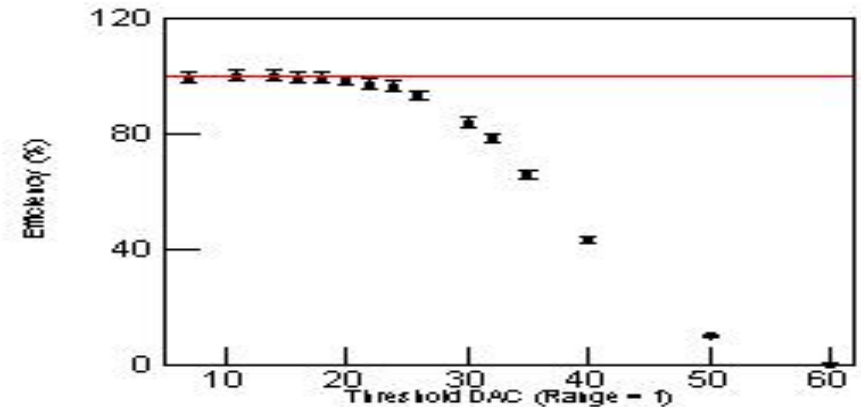
## Pre Shipment Review

### Test Results Summary and Compliance-cont'd

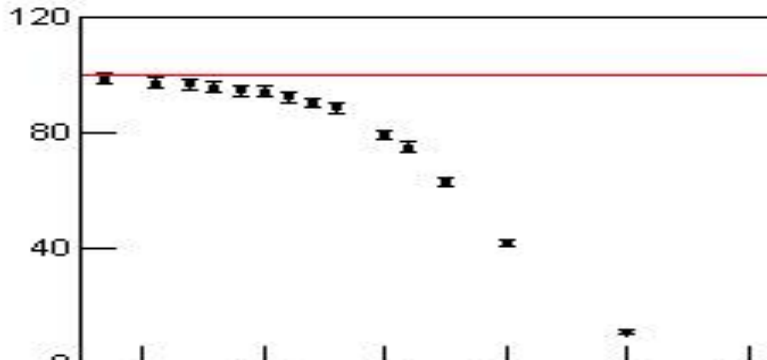
Detection efficiency for layerX1



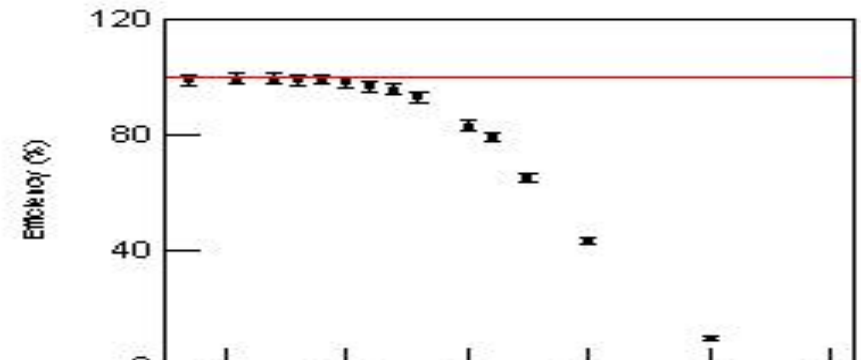
Detection efficiency for layerX2



Detection efficiency for layerX3



Detection efficiency for layerY1



# GLAST Mini Tower (MT)

## Pre Shipment Review

### Test Results Summary and Compliance-cont'd

- The detailed Test results are reported in “Minitower Tracker pre-shipment review” document at <http://glastserver.pi.infn.it/glast/> at EM/Mini-tower link
- All the Test Results show Compliant performance of the MT Tracker with respect to the Level III specification LAT-SS-00017-05 as applicable to the MT.

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### Non Conformance Report List

- There were 4 Non Conformances generated and dispositioned to “use as is” with minor modifications. They are as shown:
  - Interference of the thermistors on cables 3 & 4 with close-outs and side wall.
  - Bias voltage connection missing for Ladder#4 of Tray TG005
  - Edge of wafer (tray TG005 ladder#4) chipped
  - Wire bonds missing for Trays 017, 001 due to Pitch Adaptor alignment/planarity issue.

# GLAST Mini Tower (MT) Pre Shipment Review

## Non Conformance Report List-cont'd

- The corrective actions that were performed are summarized in “Minitower Tracker pre-shipment review” document at <http://glastserver.pi.infn.it/glast/> at EM/Mini-tower link

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### Special Handling/Equipment reqmt.

- There are no special handling, other than normal Qualified Flight Clean Room procedures, identified for the MT at this time.
- A list of special EGSE/MGSE request has been communicated to SLAC and is as shown:
  - MT, TEM & PSA
  - Data Acquisition EGSE
  - BK 1787A programmable DC power supply
  - Keithley picoammeter and voltage source
- No specific MGSE has been identified as a requirement at this time

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### Incoming Inspection reqmts

- The opening of the shipping container and physical inspection of the unit in the presence of the INFN representative (L. Baldini).
- The shock recorder is to be read out and environmental exposure of the unit is to be verified prior to power-up.



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## Pre Shipment Review

### Test Scripts and Procedures

- The test scripts and procedure used for the test of the MT at INFN Pisa facility, and to be used at SLAC, are identified in the document “User’s guide to Minitower Tracker post-shipment testing” which can be found at <http://glastserver.pi.infn.it/glast/> at the EM/Mini-tower link.

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### Conclusions

- The MT Assembly, Integration and tests were conducted successfully at INFN Pisa. All the MT applicable tests per the Level III specification were conducted with the MT showing as designed performance.