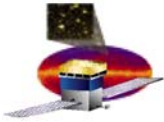


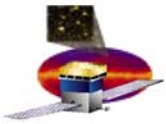
LAT Assembly Sequence

L. Wai
SLAC/Group K



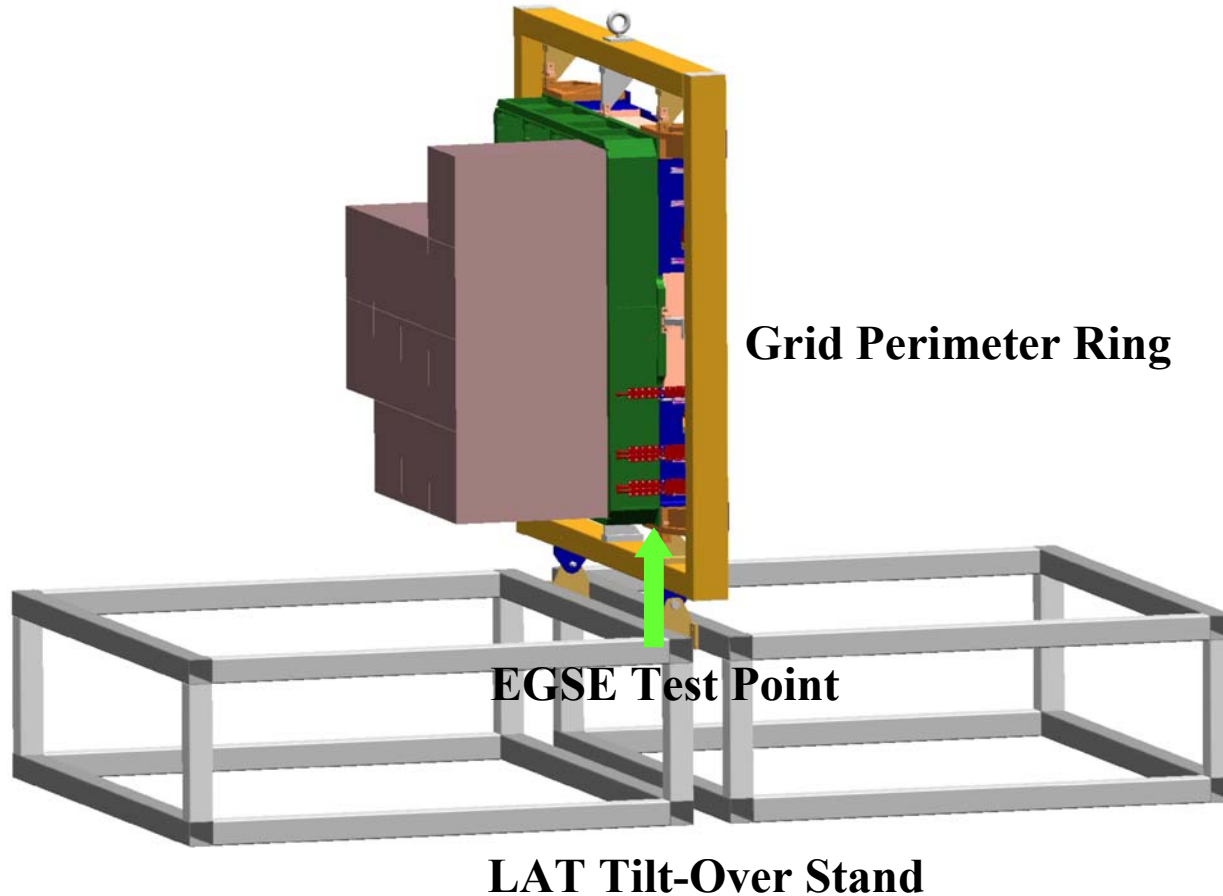
Documentation

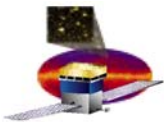
- **LAT Assembly Sequence (LAT-MD-00676)**
- **MGSE Development Plan (LAT-MD-01462)**
- **LAT Mock-Up, Building 33 SLAC**
- **LAT I&T Survey and Alignment (LAT-MD-01586)**
- **LAT I&T Acceptance Data Packages (LAT-MD-01555)**



LAT Assembly MGSE

5-ton Overhead Traveling Crane (Room 104, Building 33 SLAC)





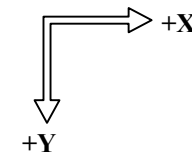
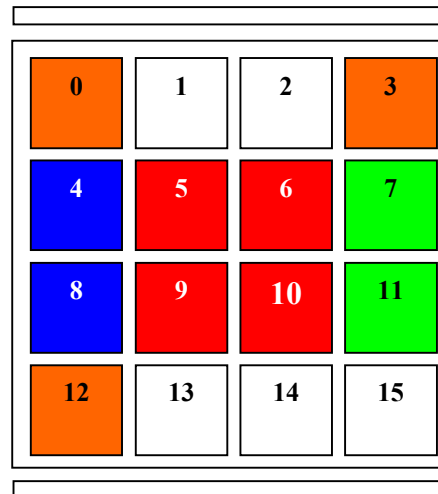
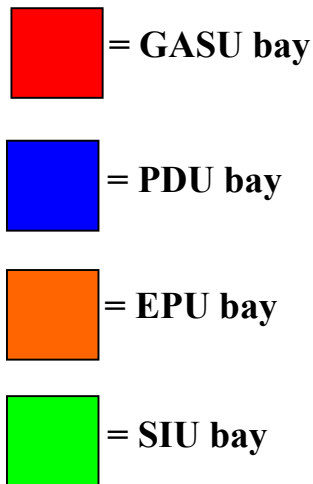
Grid Bays Numbering and Topology

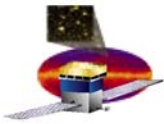
GASU = Global trigger, ACD electronics, Signal distribution Unit

PDU = Power Distribution Unit

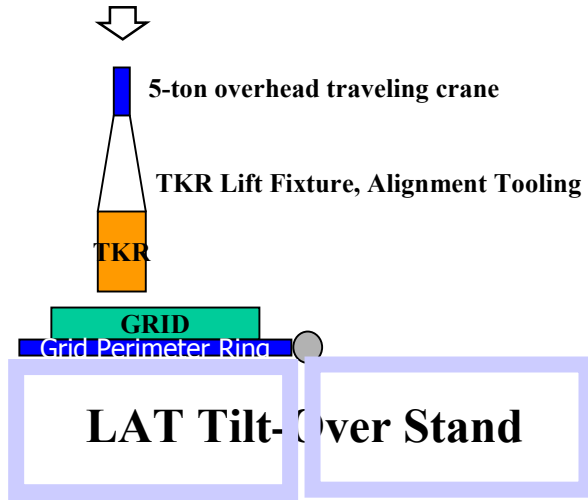
EPU = Event Processor Unit

SIU = Spacecraft Interface Unit

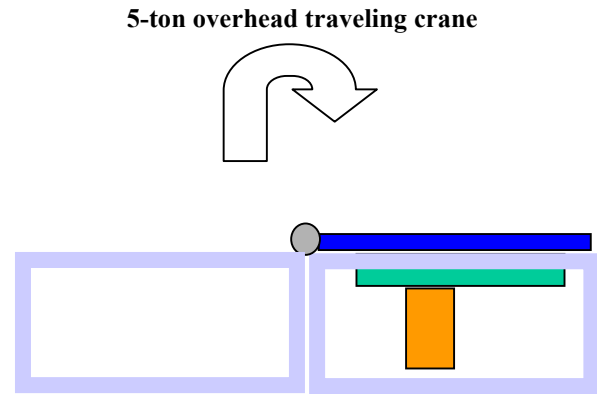
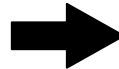




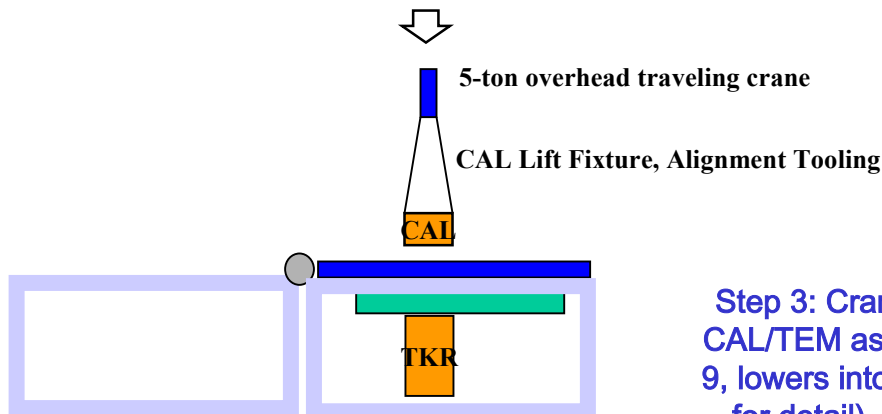
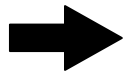
Bay 9 Installation



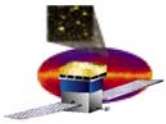
Step 1: Crane lifts and positions TKR tower over grid bay 9, lowers into position (see slide 6 for detail). TKR fasteners are torqued.



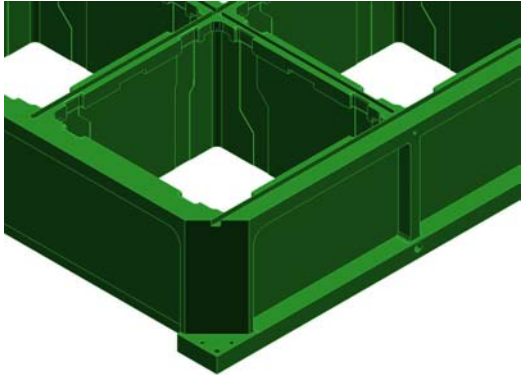
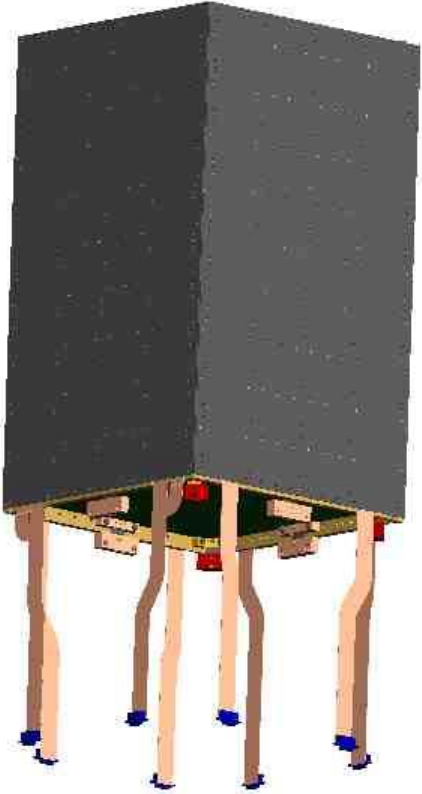
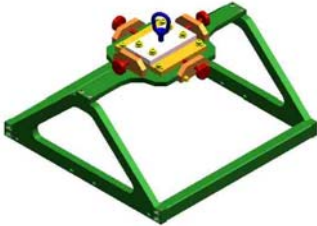
Step 2: Crane connects to GPR, lifts, moves, and lowers LAT into inverted orientation (see slide 7 for detail).

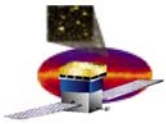


Step 3: Crane lifts and positions CAL/TEM assembly over grid bay 9, lowers into position (see slide 8 for detail). CAL fasteners are torqued.

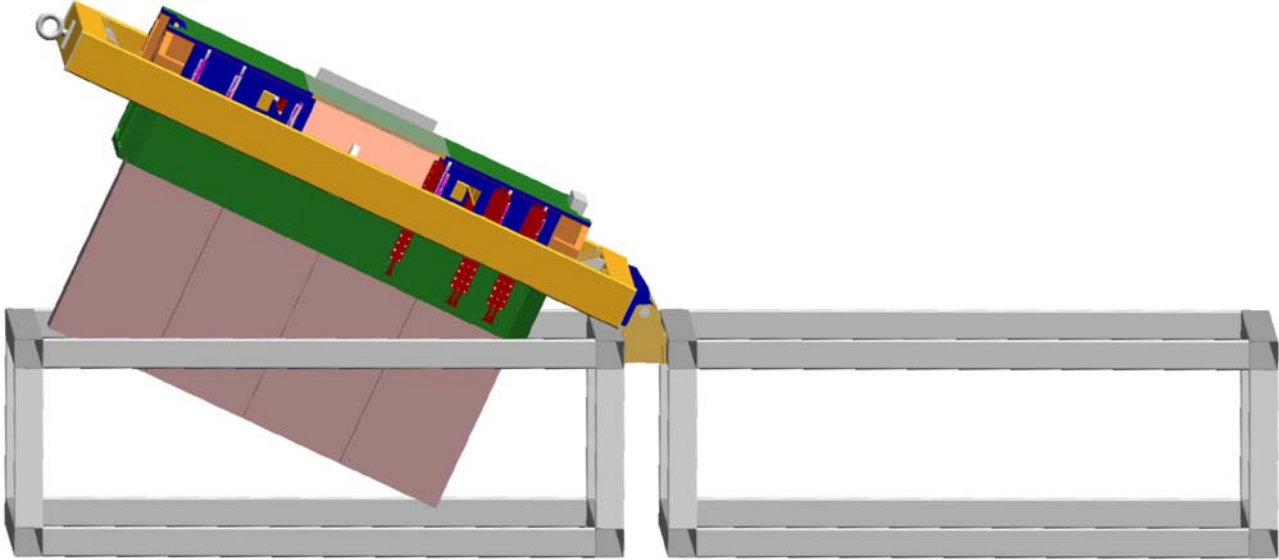


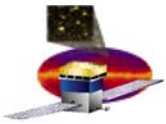
Tracker Installation



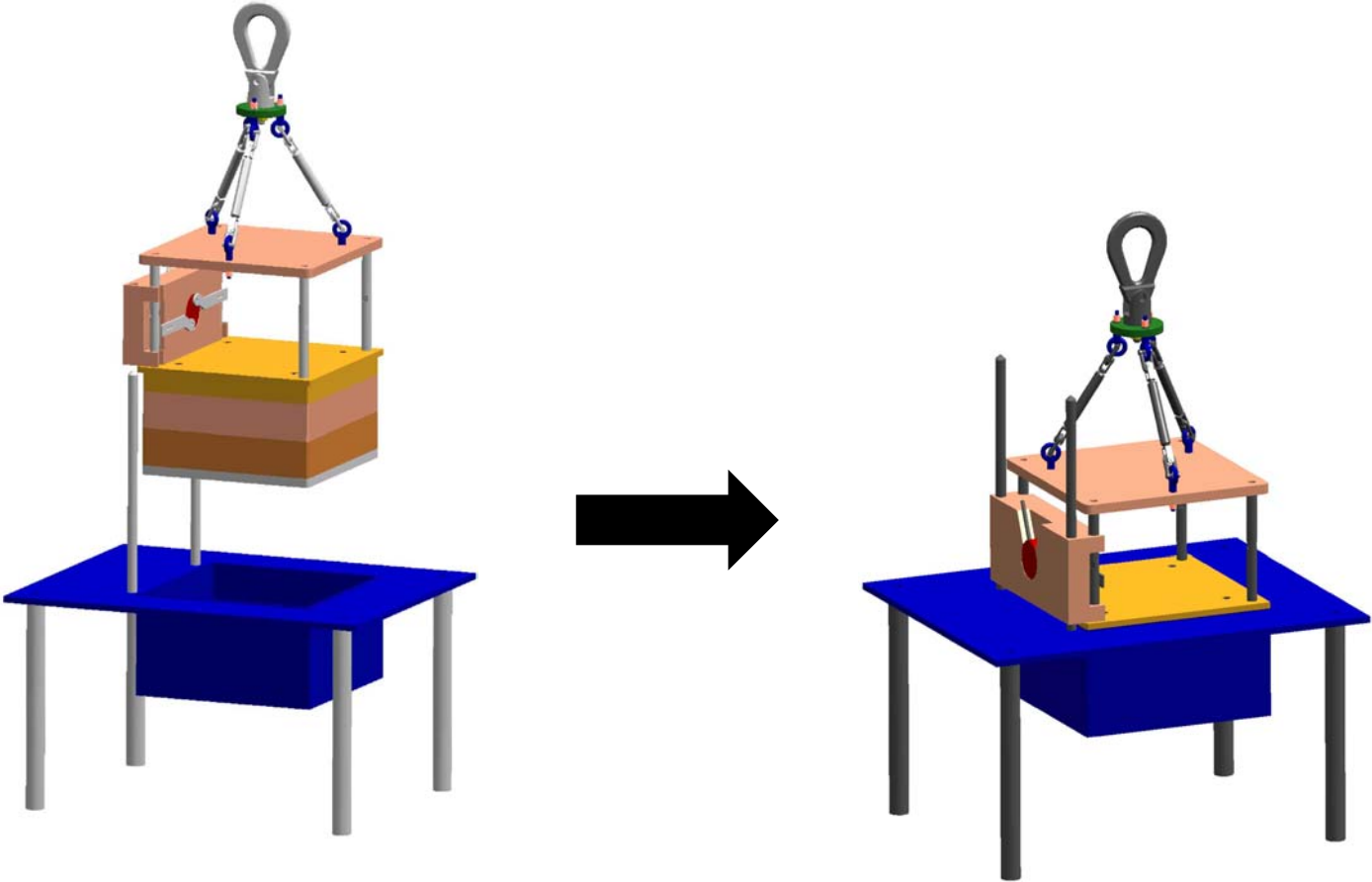


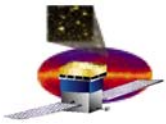
LAT Inversion



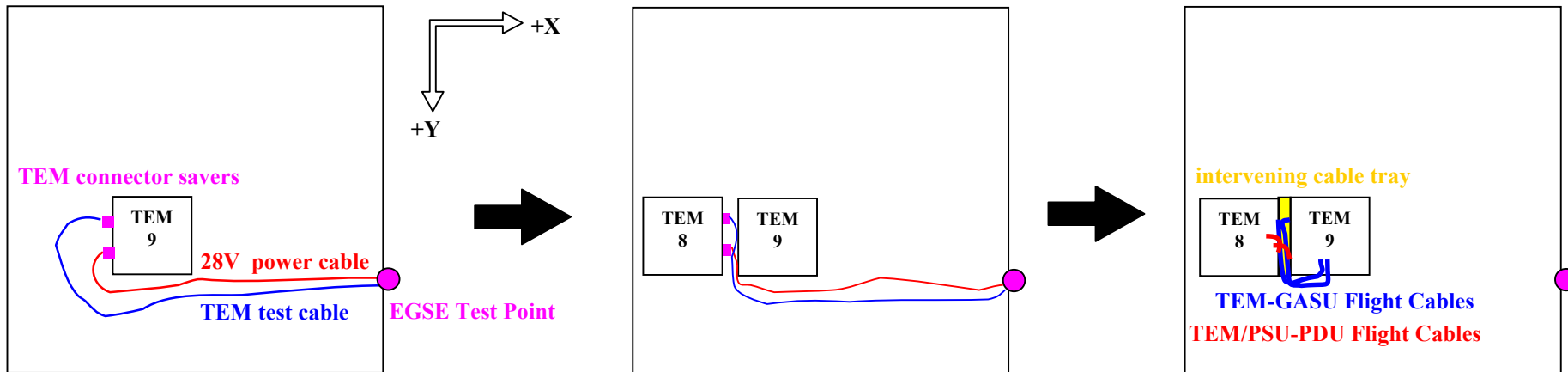


CAL Alignment and Insertion





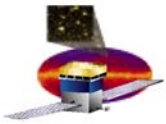
Bays 8, 9 Installation/TEM-Level test Sequence



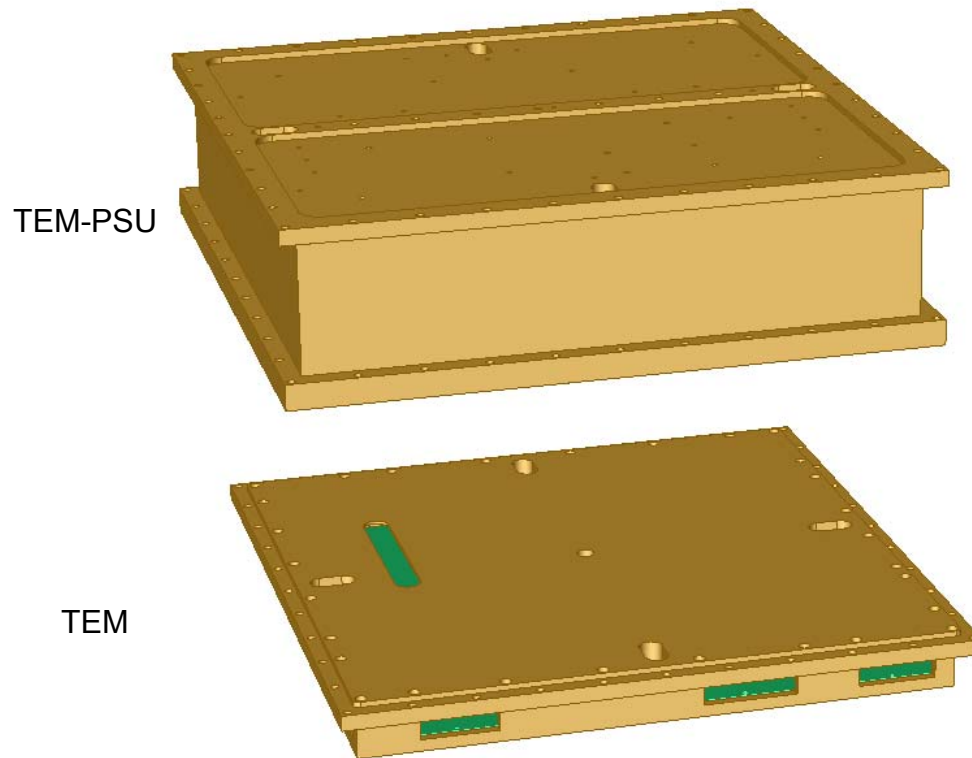
Step 1: Install Bay 9 TKR, CAL+TEM/PSU. TEM connector savers already on at delivery. Install TEM-level test cables and perform Bay 9 TEM-level test

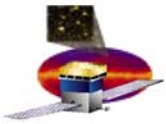
Step 2: Remove Bay 9 connector savers, remove TEM-level test cables. Install Bay 8 TKR, CAL+TEM/PSU. Bay 8 TEM connectors savers already on at delivery. Install TEM-level test cables and perform Bay 8 TEM-level test

Step 3: Remove Bay 8 connector savers and TEM-level test cables. Install Bay 8-9 TEM-GASU Flight cables, intervening cable tray, and TEM-PDU Flight Cables. See slides 10, 11, 12 for detail.

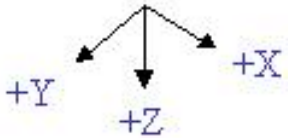
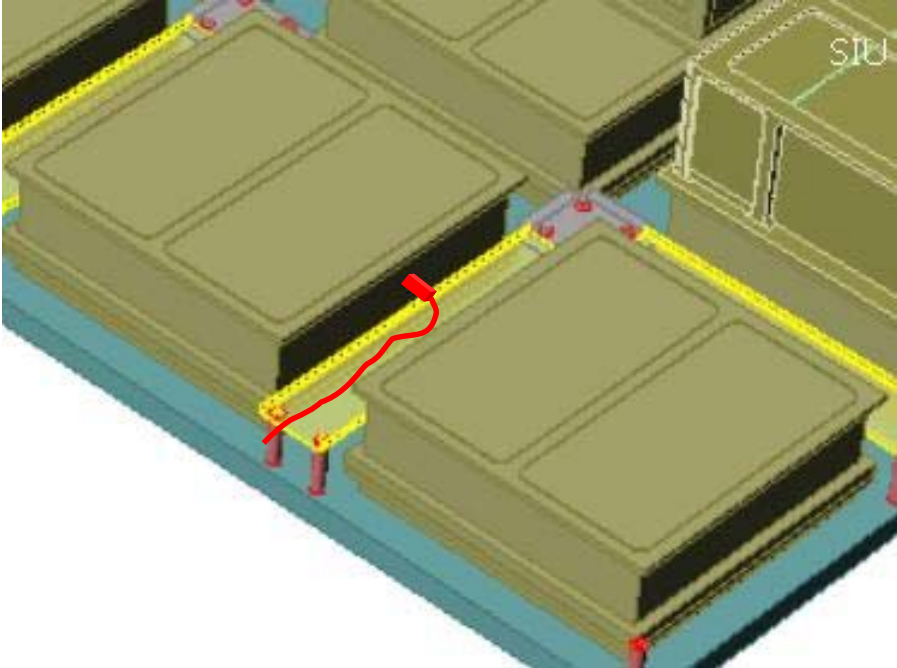


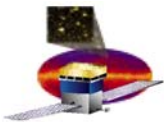
TEM and TEM-PSU



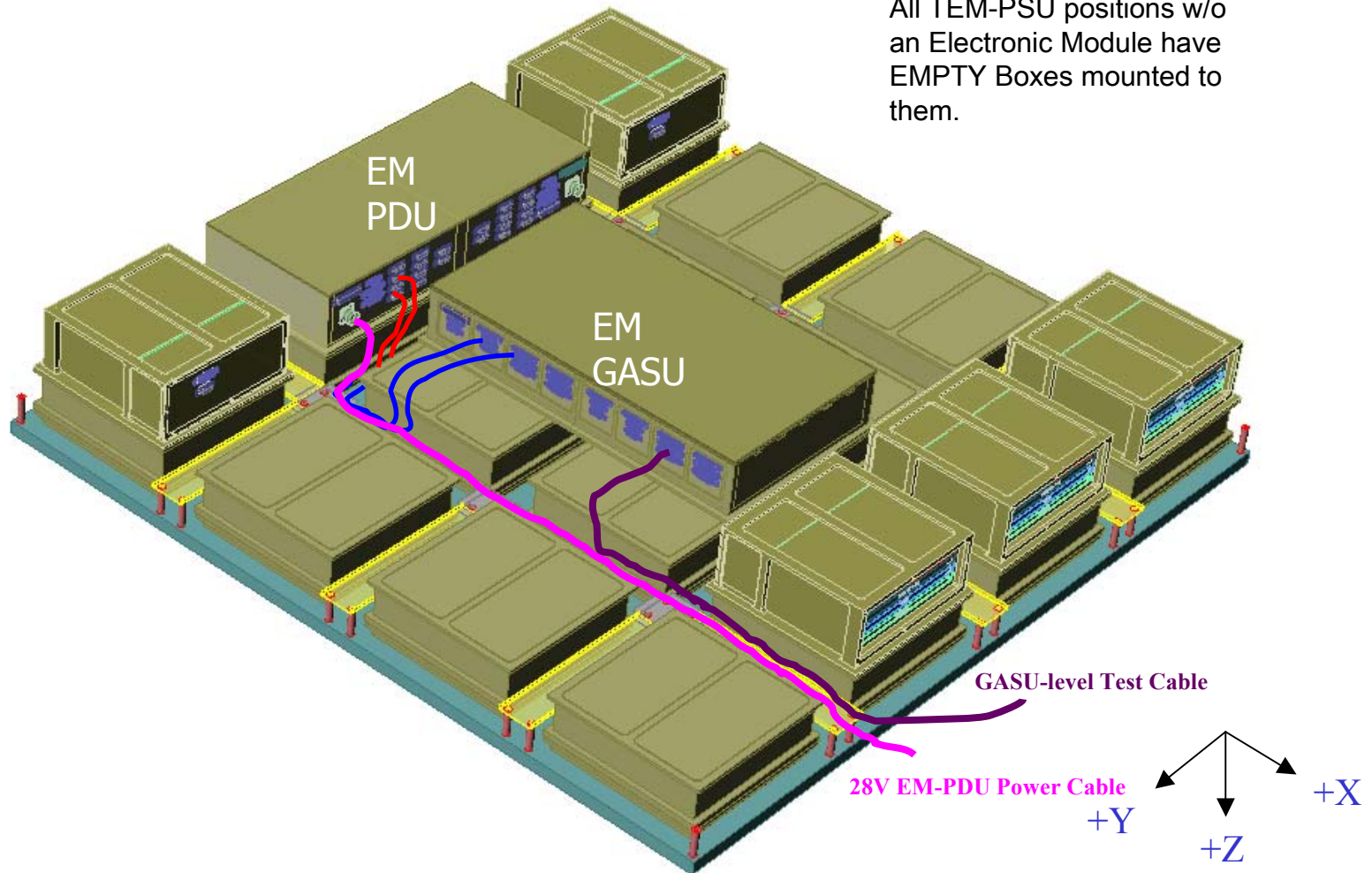


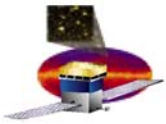
2 TEM Boxes + Intervening Cable Tray



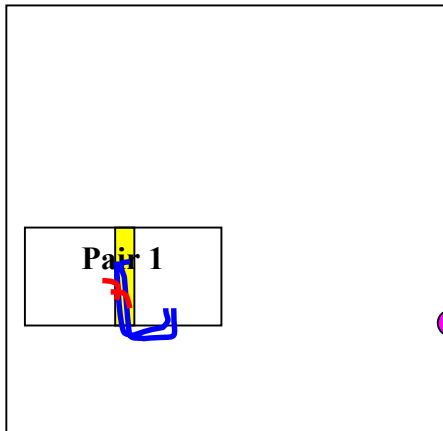


Bays 8+9 System Level Test Cabling

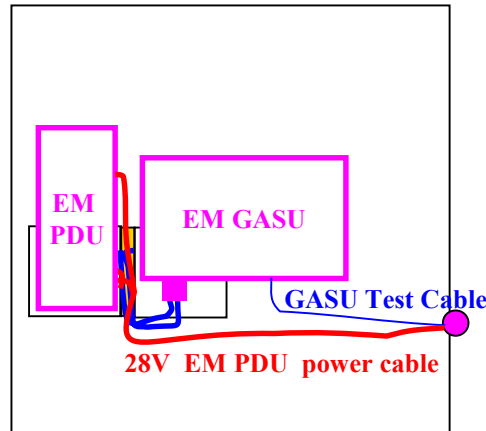
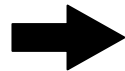




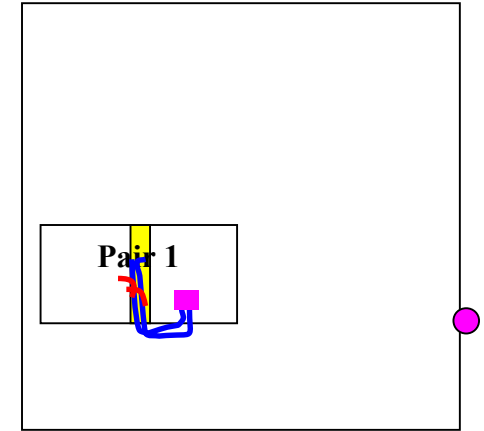
Bays 8+9 System Level Test



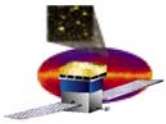
Step 1: Complete installation of Bays 8, 9, intervening cable tray, and TEM flight cables



Step 2: Temporarily fasten EM PDU+ EM GASU+power/test cables and perform Bays 8,9 Multi-Tower test. See slide 12 for detail.

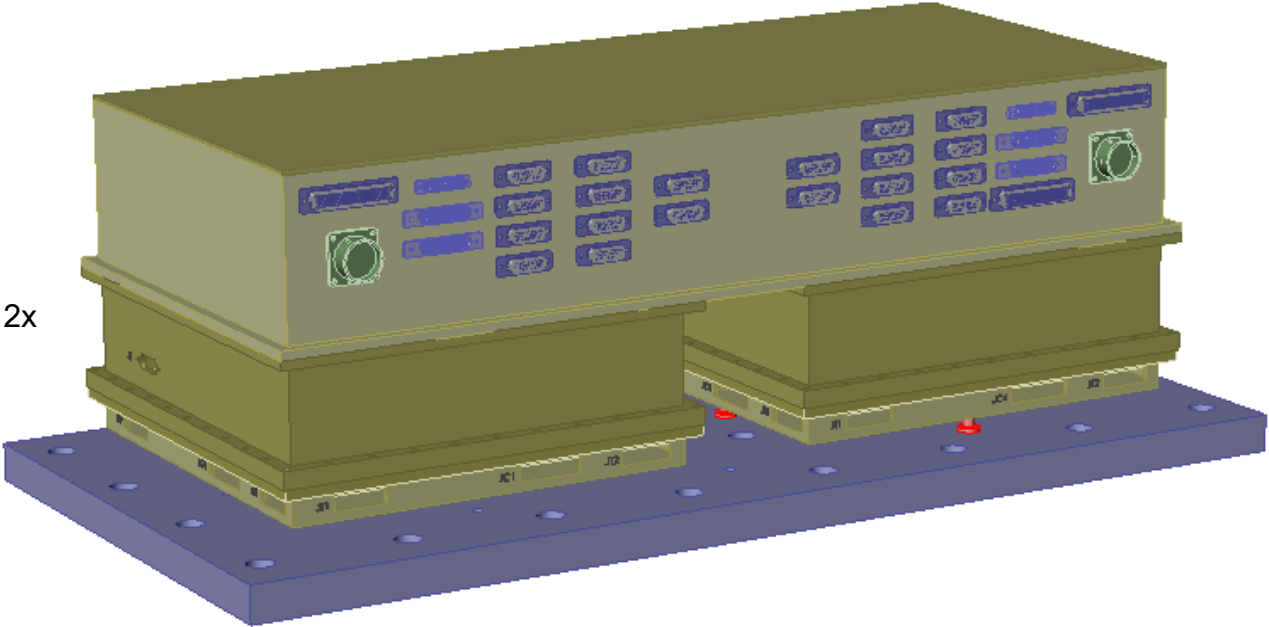


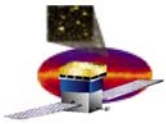
Step 3: Remove EM PDU, EM GASU, power/test cables



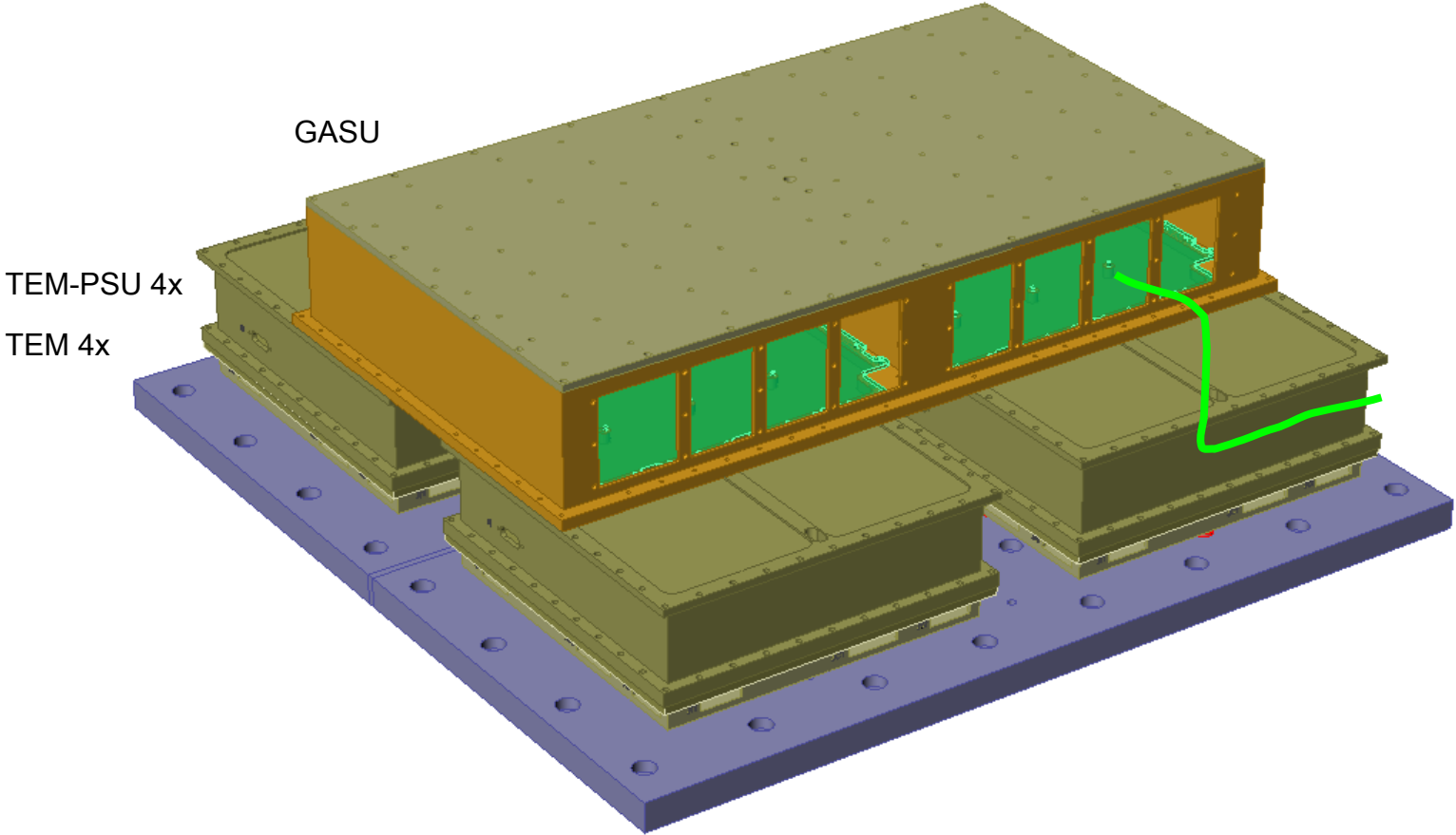
PDU

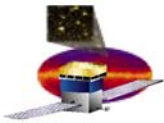
PDU
TEM-PSU 2x
TEM 2x



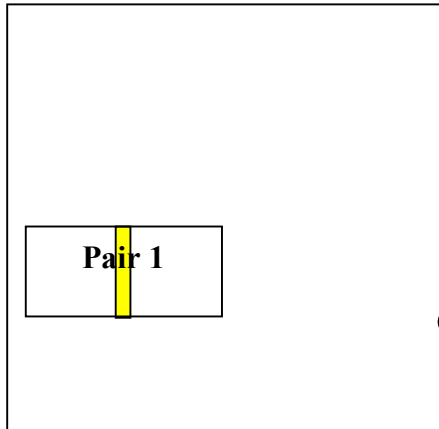


GASU

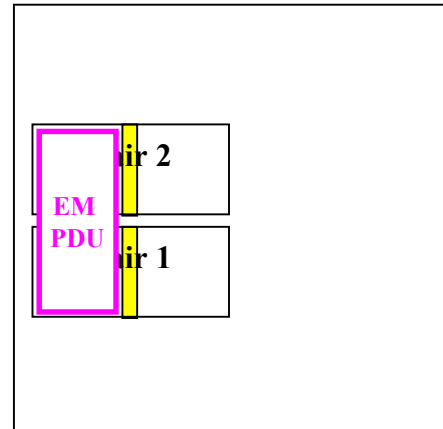
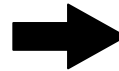




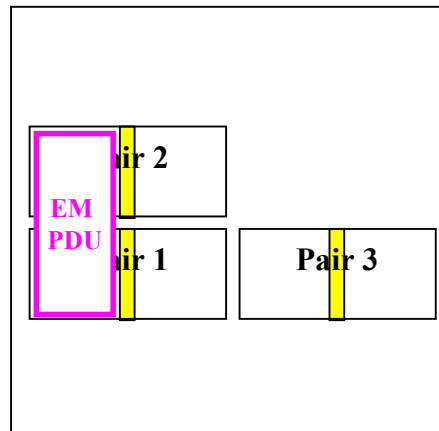
First 8 Bays Installation/Test Sequence



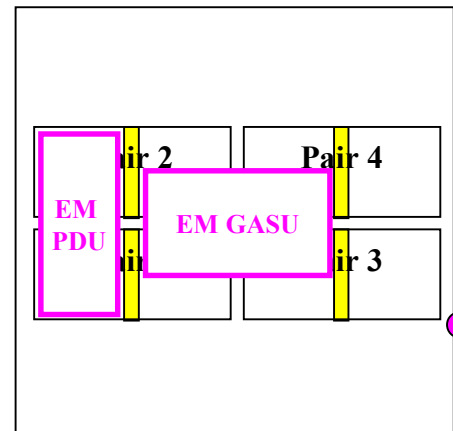
Step 1: Complete installation and test of Pair 1 (Bays 8, 9, intervening cable tray, and TEM flight cables)



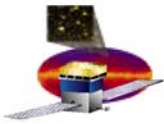
Step 2: Complete installation and test of Pair 2. EM PDU now remains in place until installation of flight PDU



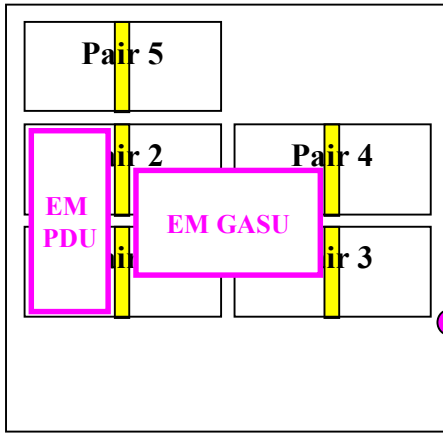
Step 3: Complete installation and test of Pair 3



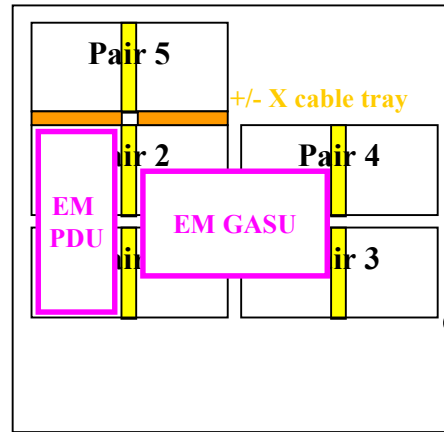
Step 4: Complete installation and test of Pair 4. EM GASU now remains in place until installation of flight GASU



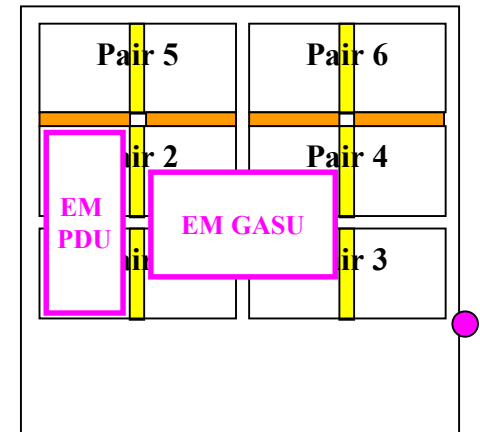
Last 8 Bays Installation/Test Sequence



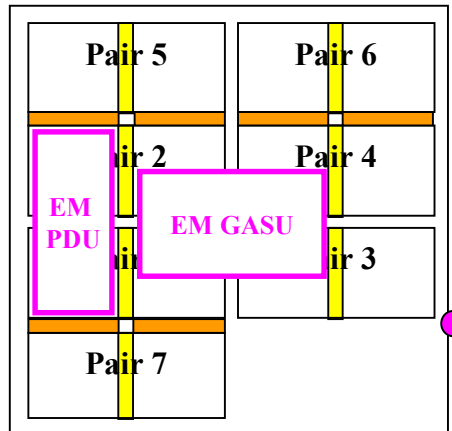
Step 1: Complete installation and test of Pair 5



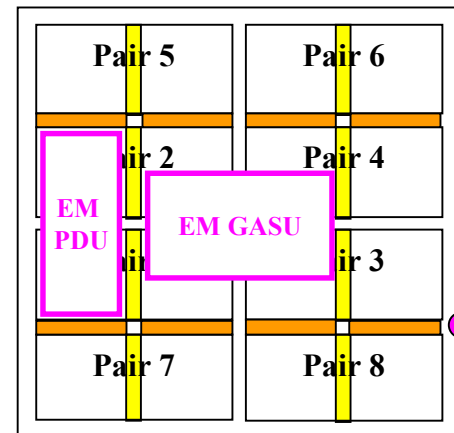
Step 2: Installation of +/-X cable trays, fasten flight cables. System level test.



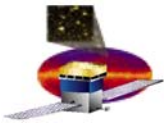
Step 3: Installation/test of Pair 6, install +/- X cable trays, fasten flight cables. System level test.



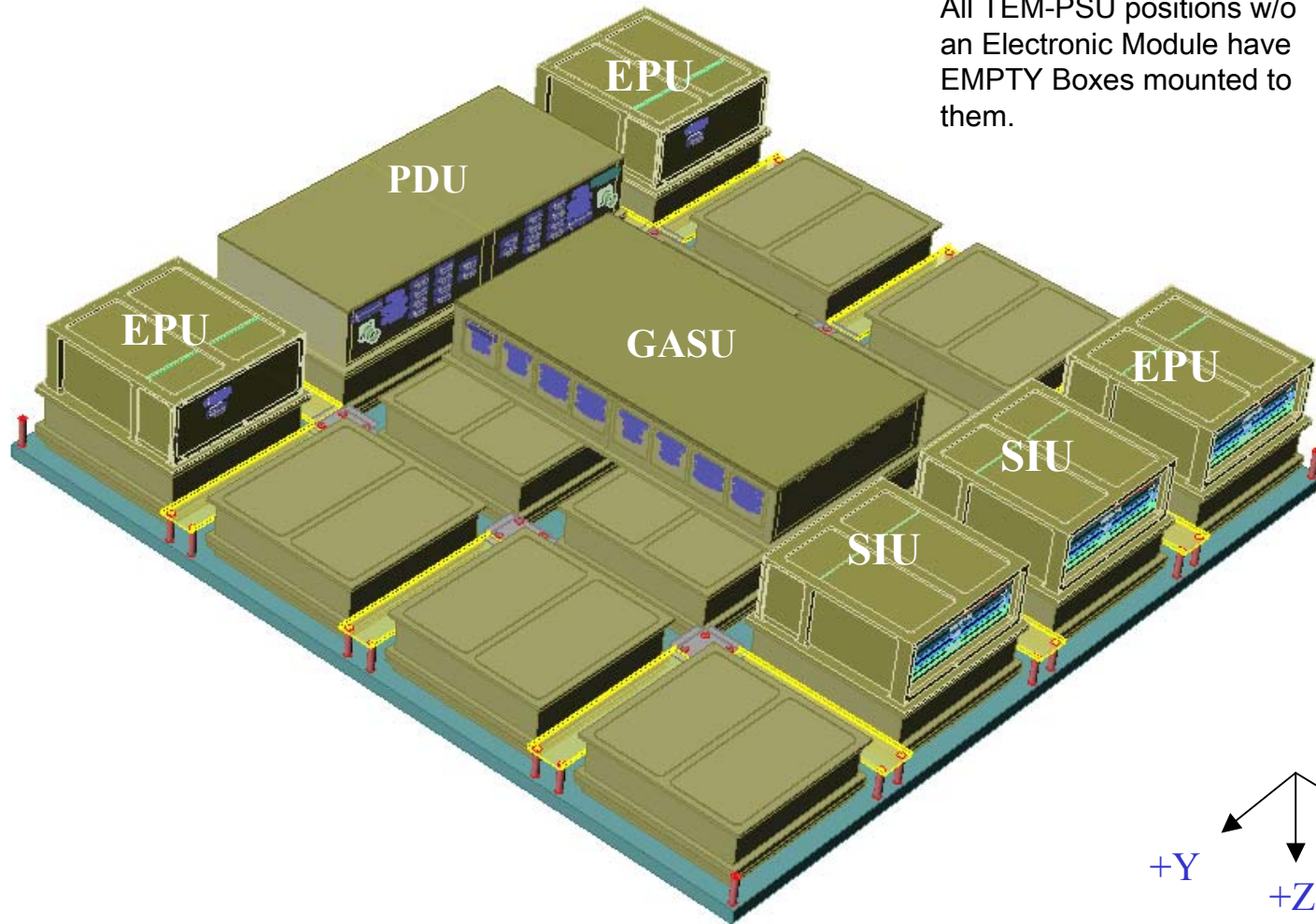
Step 4: Installation/test of Pair 7, install +/-X cable trays, fasten flight cables. System level test.

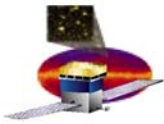


Step 5: Installation/test of Pair 8, install +/-X cable trays, fasten flight cables. System level test.

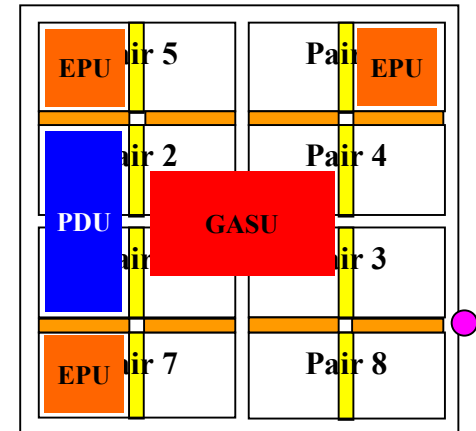
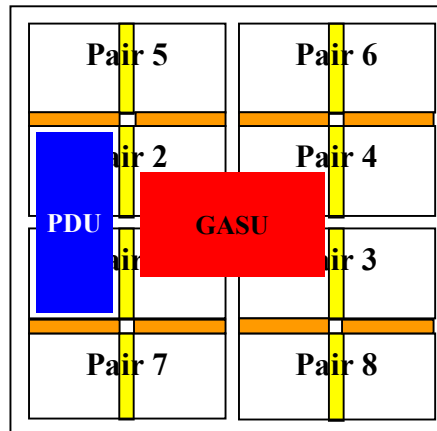
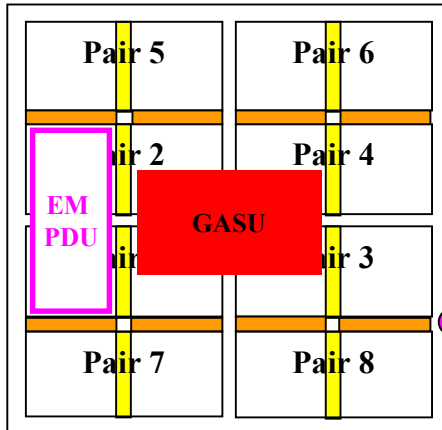


System Level Electronics Boxes





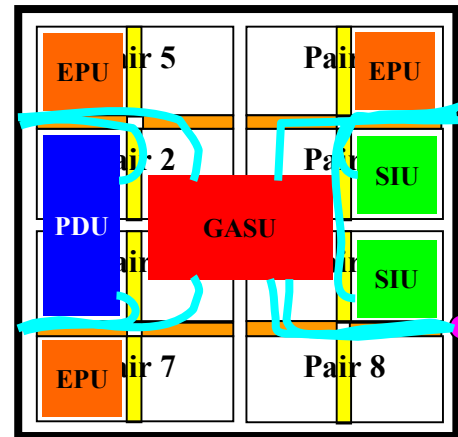
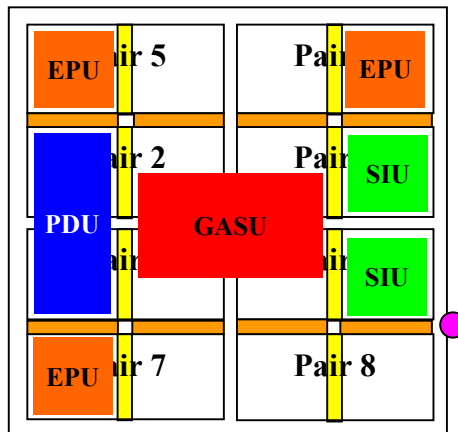
System Level Electronics Installation Sequence



Step 1: Remove EM GASU, install test instrumentation on grid, install flight GASU, remove connector savers and perform flight mates. System level test.

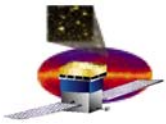
Step 2: Remove EM PDU, install flight PDU, PDU-GASU cable, and perform flight mates. System level test.

Step 3: Install EPU, EPU-PDU cable, and EPU-GASU cable. System level test. Repeat for all 3 units.

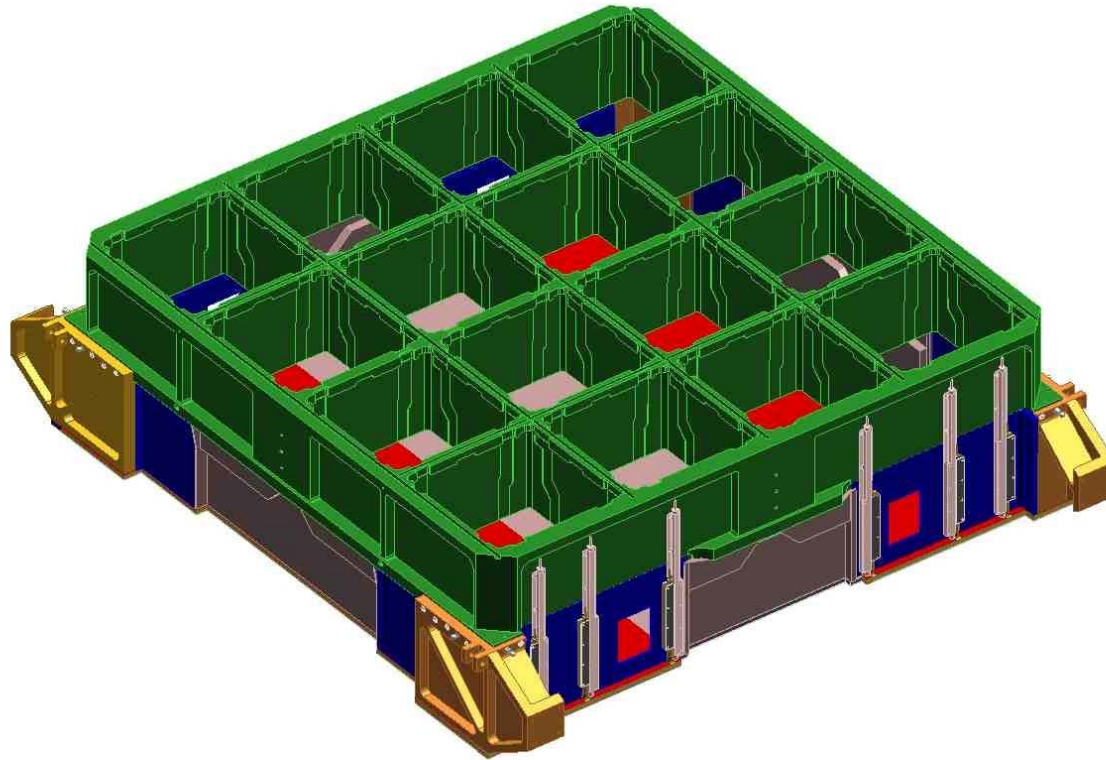


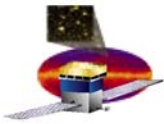
Step 4: Install SIU, SIU-PDU cable, SIU-GASU cable. System level test. Repeat for both units.

Step 5: Install EMI skirt, Bulkhead feed through panels/cables (see slide 20 for detail). System level test. ACD FREE simulator test.

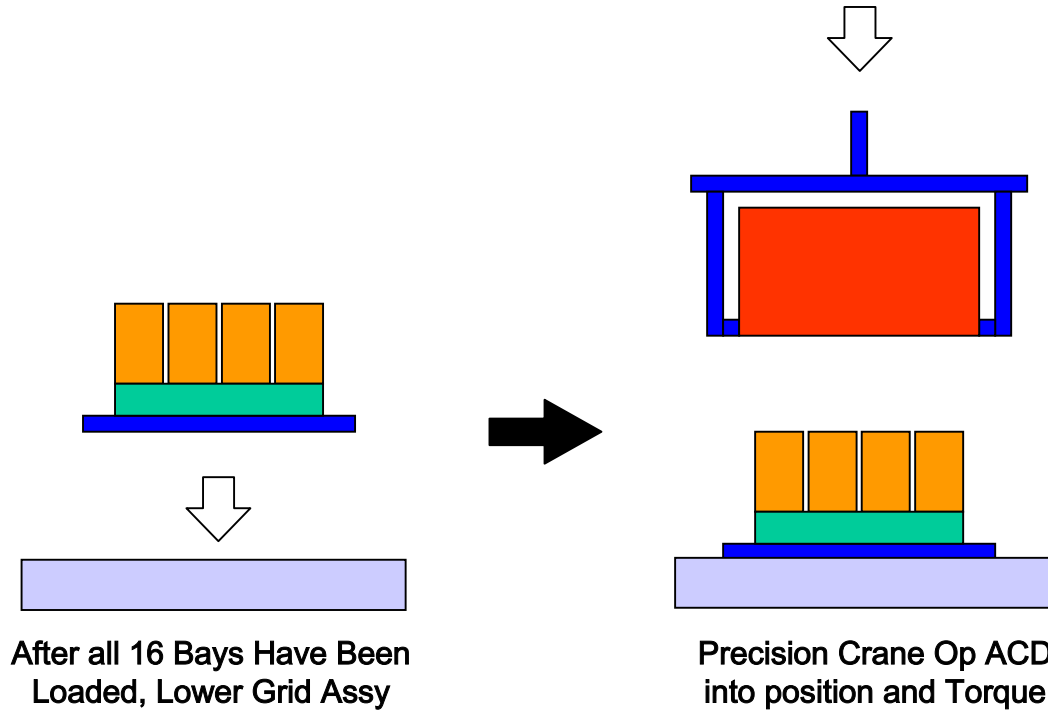


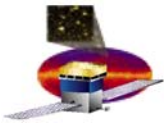
Grid, Corner brackets, EMI Skirt





ACD Installation





Assembly Test Summary Chart

- = TEM-level test
- = GASU-level test
- = Spacecraft Interface Simulator test
- = Optical survey test

