LAT Assembly Sequence

L. Wai
SLAC/Group K
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 Perimeter Ring

EGSE Test Point

LAT Tilt-Over Stand
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

= GASU bay
= PDU bay
= EPU bay
= SIU bay
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

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CAL Alignment and Insertion
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.

TEM and TEM-PSU
2 TEM Boxes + Intervening Cable Tray
All TEM-PSU positions w/o an Electronic Module have EMPTY Boxes mounted to them.
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.
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

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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.

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All TEM-PSU positions w/o an Electronic Module have EMPTY Boxes mounted to them.
**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.

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Grid, Corner brackets, EMI Skirt
After all 16 Bays Have Been Loaded, Lower Grid Assy

Precision Crane Op ACD into position and Torque
Assembly Test Summary Chart

- **Blue** = TEM-level test
- **Green** = GASU-level test
- **Red** = Spacecraft Interface Simulator test
- **Circle** = Optical survey test

**Legend:**

- LAT w/ ACD
- LAT w/o ACD
- TKR+CAL+GASU+PDU+EPU+SIU
- TKR+CAL+GASU+PDU+EPU
- TKR+CAL+GASU+PDU
- TKR+CAL+GASU

**Bay:**

- Bay 0,1,4-11
- Bay 4,5,8-11
- Bay 8,9
- Bay 9, Bay 8
- Bay 4, Bay 5, Bay 10, Bay 11
- Bays 4,5,8-11
- Bays 0,1,4-11
- Bays 0-11
- Bays 0-13
- Bays 0-15

**Tests:**

- LAT w/ ACD
- LAT w/o ACD
- TKR+CAL+GASU+PDU+EPU+SIU
- TKR+CAL+GASU+PDU+EPU
- TKR+CAL+GASU+PDU
- TKR+CAL+GASU

*Larry Wai*