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LAT EMI/EMC Status

- LAT EMI/EMC Test Plan: LAT-MD-002276 in release cycle
- Residual open items
 - RS103 & RE102 levels still require CCB action
 - LAT operating modes and associated GSE controls and displays require further definition
 - LAT telemetry points require further definition
 - In operating procedure?
 - Test duration
- Required supporting documents
 - General test LAT operating procedure
 - Power up/down
 - Configurations EMI specific
 - Data taking
 - Harness mate/demate procedures
 - Modify for breakout harness use



RE102 - old





RE102 - new

Notch Freq dB Freq dB					
430M 36 430M 70 GPS 1.55G 70 1.55G 14 1.60G 14 1.60G 70					
S-band 1.77G 70 1.77G 25 2.30G 25 2.30G 70					



RS103 - old

-	V/m		
2.2825G - 2.2925G	38		
(30M, 20)			(40G, 20)





RS103 - new





Operating Modes and Controls

Emissions Tests

Utilize the FSW Charge Injection Calibration function to inject charge into a large number of detectors. The number of channels into which charge can be injected will be limited by: a) FSW design (which is not yet complete); and b) The number of channels which can physically be injected with charge in any given one second cycle. The one second cycle is required to provide repeatability during the emissions frequency sweeps.

Susceptibility Tests

A variation of the test described in the End-to-End (ETE) Test Plan, LAT-MD-03489, paragraph 2.2.1, item 4, "Nominal Rate Cosmic Ray Test" will be used. This test is run at ambient temperature and at nominal voltage, timing, threshold, and trigger configurations. Both Cosmics and the external trigger function are used to create on-orbit trigger rates. The external trigger rate will be set so that the total trigger rate will be at or near the nominal expected on-orbit values.

• Implied Requirements

- GSE Capability to display trigger rates, occupancies, checksum histories in a real-time graphical means to facilitate test execution.



Telemetry

- Telemetry points require for EMI/EMC testing must be identified
 - EMI/EMC specific for error reporting
 - Require charting or latching to allow test monitoring
 - LAT operations
 - Contained in LAT operating procedure



Radiated Test Configuration





MGSE/STE for EMI/EMC Testing

- LAT (on the TIP) is mounted on the Test Stand for EMI/EMC testing
 - LAT + TIP mounts to Test Stand
 - LAT is rolled into the anechoic chamber
 - Dust Tent remains over the LAT for the entire operation, including during testing
- Auxiliary cooling is needed during the test, since the LAT will be on for the entire test duration

