

CRITICAL ITEMS LIST

SYSTEM: COMMUNICATIONS AND TRACKING SUBSYSTEM: SPACE TO SPACE COMMUNICATIONS SYSTEM
 ASSEMBLY: SPACE TO SPACE ORBITER RADIO (SSOR) ASSY P/N: SED16102581

APPROVAL DATE:
 SUPERCEDES REV: N/A DATE: N/A
 SHEET 1 OF 4

END ITEM EFFECTIVITY: OV102, OV103, OV104, OV105, AND SUBS.

PREPARED BY: Nanci A. Olson

DATE: 12/17/96

APPROVAL:

SR&MA:

DATE:

DESIGN:

DATE: 5-2-97

SSCS PROJECT MANAGER:

Wally Chang Mark Chang
Matt Rende Matt Lenka

DATE: 5-3-97

CRITICALITY(H/F): 2/2

INTACT ABORT MODE CRIT: N/A

REDUNDANCY SCREENS: A-N/A B-N/A C-N/A

FMEA REFERENCE: SSOR-02

NAME: SSOR

DRAWING REFERENCE: SED16102581

QUANTITY: 1

CIL #	REV	FUNCTION	FAILURE MODE AND CAUSE	FAILURE EFFECT	RATIONALE FOR ACCEPTABILITY
SSOR-02	BASIC	<p>(1) Provides RF duplex voice comm between Orbiter and EMU's.</p> <p>(2) Receives biomed and telemetry from EMU</p> <p>(3) Provides RF duplex voice comm between Orbiter and Station</p> <p>(4) Provides RF command to Space Station and telemetry from Space Station</p>	<p>FAILURE MODE: Open of RF Input or Output at Payload Bay Antenna Port</p> <p>CAUSE: Contamination, vibration, shock, EEE parts failure, or temperature cycle</p> <p>MISSION PHASES: Pre EVA EVA Post EVA Station Rendezvous</p>	<p>SUBSYSTEM: Loss of Transmit and Receive Voice Communications between Orbiter and Station or EMUs. Loss of commands to Station. Loss of data from EMU and Station.</p> <p>INTERFACING SUBSYSTEMS: None</p> <p>MISSION: Terminate EVA. Terminate Station rendezvous.</p> <p>CREW/VEHICLE: No effect.</p> <p>SUCCESS PATHS REMAINING AFTER FIRST FAILURE: 0</p> <p>TIME TO EFFECT: minutes</p>	<p>DESIGN: The electrical design of the SSOR is based upon JSC in-house engineering model hardware. Litton is manufacturing the hardware in accordance with the appropriate NHB 5300.4 standards.</p> <p>Passive EEE parts are selected from the guidelines of MIL-STD-975. Active EEE are approved by the JSC Engineering Directorate Certified Parts Approval Process.</p> <p>The RF connector is a hermetically sealed TNC bulkhead feedthrough adapter, Amphenol Part Number 79100. The RF connector is connected to the SSOR directional coupler through a coaxial cable (RG142) with an SMA connector on the coupler end, and a TNC connector on the RF adapter end.</p> <p>TEST: CERTIFICATION: One time test on Qual SSOR. Power output measured before, during, and after exposure to environments.</p> <p>QUALIFICATION THERMAL TEST - 7 cycles from 25F to 135F operating and 1 cycle to -65F non-operating. RF output measured before, during, and after thermal test.</p> <p>PRESSURE TEST - 8 to 15.23 psia at 2psi/minute repress/depress rate. Non-operating excursion to 30 psia. RF output measure before, during and after pressure test.</p>

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SHEET 2 OF 4

PREPARED BY: Nanci A. Olson

DATE: 12/17/96

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