

## CRITICAL ITEMS LIST

SYSTEM: EXTRAVEHICULAR MOBILITY UNIT

SUBSYSTEM: SPACE TO SPACE COMMUNICATIONS SYSTEM

ASSEMBLY: SPACE TO SPACE EMU RADIO (SSER) ASS'Y P/N: SED16102580

APPROVAL DATE:

SUPERCEDES REV: N/A DATE: N/A

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

SHEET 1 OF 4

PREPARED BY: Nancy A. Olson

DATE: 12/06/96

APPROVAL:

SR&amp;MA:

DESIGN:

SSCS PROJECT MANAGER:

*David C. [Signature]*

DATE:

DATE: 6/30/00

DATE: 6/30/00

CRITICALITY(H/F): 2/2

INTACT ABORT MODE CRIT: N/A

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

FMEA REFERENCE: SSER-02

NAME: SSER

DRAWING REFERENCE: SED16102580

QUANTITY: 1

CI #	REV	FUNCTION	FAILURE MODE AND CAUSE	FAILURE EFFECT	RATIONALE FOR ACCEPTABILITY
SSER-02	BASIC	<p>1. Provides RF Duplex voice communications between the EMU and Orbiter, other EMUs, and the Space Station</p> <p>2. Provides telemetry from EMU to Orbiter or Station</p> <p>3. Provides caution and status tone to CCA on command from EMU caution and warning system.</p> <p>4. Provides Hardline voice communication between EMU and Orbiter or Station in Airlock</p> <p>MISSION PHASE Pre-EVA, EVA, Post-EVA</p>	<p>FAILURE MODE: Short to case of RF Input or Output lead</p> <p>CAUSE: Contamination, vibration, shock, EEL parts failure, or temperature cycle</p> <p>MISSION PHASES  Pre EVA EVA Post EVA</p>	<p>SUBSYSTEM: Loss of Transmit Telemetry and Voice and Receive Voice Communications between Orbiter or Station and EMUs. Hardline EVA communications not affected. Caution and Warning Tone not affected.</p> <p>INTERFACING SUBSYSTEMS: None</p> <p>MISSION: Terminate EVA</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 SSER 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 an SMA bulkhead feedthrough, hermetically sealed with an O-ring adaptor. Inside the SSER, the RF connector is connected to the SSER duplexer through a coaxial cable with SMA connectors on both ends.</p> <p>TEST:</p> <p>CERTIFICATION: One time test on Qual SSER. Power output measure before, during, and after exposure to environments.</p> <p>QUALIFICATION THERMAL VACUUM TEST - 7 cycles from 15F to 140F operating and 1 cycle to -65F non operating. Chamber evacuated to 1X10<sup>-6</sup> torr throughout test. Power output measured at temperature extremes.</p> <p>SHOCK - Bench handling 4 inch drop test on each corner.</p>

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PREPARED BY: Nanci A. Olson			DATE: 12/06/96		
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SHEET 3 OF 4

PREPARED BY: Nancy A. Olson

DATE: 12/06/96

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