

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

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

PREPARED BY: Nancy A. Olson

DATE: 12/06/96

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

APPROVAL:

SR&MA  
DESIGN  
SSCS PROJECT MANAGER

*Nancy A. Olson*

DATE: \_\_\_\_\_  
DATE: 6-30-97  
DATE: 6/30/97

CRITICALITY(1)/FF 2/2

INTACT ABORT MODE CRIT. N/A

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

FMEA REFERENCE: SSER-09

NAME: SSER

DRAWING REFERENCE: SED16102580, SID16102523(Schematic Diagram)

QUANTITY: 1

CD.#	REV	FUNCTION	FAILURE MODE AND CAUSE	FAILURE EFFECT	RATIONALE FOR ACCEPTABILITY
SSER-09	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 Airluck</p> <p>MISSION PHASE: Pre-EVA, EVA, Post-EVA</p>	<p>FAILURE MODE: RF Power divider combined port fails open or short</p> <p>CAUSE: Contamination, vibration, shock, EEE parts failure, or temperature cycle</p> <p>MISSION PHASES: Pre-EVA, EVA, Post-EVA</p>	<p>SUBSYSTEM: Loss of transmit voice to/from Orbiter, Station, and other EMUs in ALT and PRI modes</p> <p>INTERFACING SUBSYSTEMS: None</p> <p>MISSION: Terminate EVA.</p> <p>CREW/VEHICLE: Loss of transmit and receive audio for EVA Crewman.</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. Lutron 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 parts are approved by the JSC Engineering Directorate Certified Parts Approval Process.</p> <p>The SSER RF power divider is a passive component located in the duplexer module. The device is a surface mounted 2-way, 0° power divider from Sonergy Microwave Corporation (SPD-1). It is mounted on a printed circuit board which is screwed into the duplexer aluminum housing. The SPD-1's performance is specified over the temperature range from -55°C to 100°C. The SPD-1 is designed to meet the environmental exposure requirements of MIL-STD-202F. The SPD-1 is rated for 1 Watt RF power which is the maximum output power of the SSER. The nominal output power of the SSER is less than 4 Watt. The SSER is environmentally sealed to avoid contamination.</p> <p>TEST:</p> <p>CERTIFICATION: One time test on Qual SSER. Audio and RF verified before, during, and after exposure to environments.</p>

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PREPARED BY: Nanci A. Olson		DATE: 12/06/96			
APPROVAL: _____					
SR&MA: _____		DATE: _____			
DESIGN: _____		DATE: _____			
SSCS PROJECT MANAGER: _____		DATE: _____			
CRITICALITY(H/F): 2/2		INTACT ABORT MODE CRIT: N/A			
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