

09/01/89 SUPERSEDES / /

ANALYST:

NAME P/N OFF	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
EMU SEPARATOR/ PUMP/MOTOR (ITEM 125) ----- 19787994-8 (1)	2/2	ITEM 125: P/P/P radiated emissions exceed specified limits. CAUSE: High resistance in bonding strap.	EMI ITEM: Radiated emissions exceed specified limits. OFF INTERFERENCE: Possible interference with EVC (static, noise in headset) when operating on EVC. MISSION: Possible difficulty in hearing received messages or making clear transmissions. Mission termination for loss of Mode A and Mode B radio communications. CREW/VEHICLE: None. Possible crew discomfort from hearing static.	A. Design - An open circuit probability in the Item 125 bonding strap is minimized by the following: The bonding strap assembly is designed to support a terminal load greater than 25 pounds. During operation the only environmental loads on the part are inertia loads which result in negligible stresses. M22759/11-14-5 electric wire was chosen for its conductive ability. The wire is such that if all but one of its component strands failed completely, the resistance measured between the terminals would still not exceed the required 2.5 milliohms. B. Test - Component Acceptance Test - The bonding strap resistance is measured by the vendor (per MIL-STD-202 Method 3033) and shall not exceed 2.5 milliohms between the terminals. Certification Test - This item has completed the 15 year structural vibration and shock certification requirements during 10/83. C. Inspection - During the manufacture of the component ground strap, the wire to terminal (up solder joint) is inspected to MIL-S-8872. Visual inspection of the completed strap is also performed. PLSS PDA 85MU-88-D10 performs an examination of product which insures the integrity of the PLSS hardware. D. Failure History - M-100-100-0006 - P/P/P Bonding Strap (ground) internal wires were loose and able to rotate 360 degrees relative to the terminal. Failure is an isolated case attributed to improper handling. E. Ground Turnaround - V1103.2, Sect. IV 16-000 Audio/Comm. Activation and EVC checkout. F. Operational Use - Crew Response - PreEVA: troubleshoot problem, if no success, consider third EMU if available. Otherwise, EMU go

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NAME P/N REV	CONF	FAILURE MODE & CAUSE	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
	2/2	123PH03:		for SCU standby. EVA: Terminate EVA. Training - Standard training covers this failure mode. Operational Consideration - EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Flight rules require that EVA be terminated if two-way communication between each EV crewmember and orbiter, either direct or through relay, is unavailable.

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