NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
CAUTION AND WARNING SYSTEM, EFEH 150 --- SW705970-83 (1) *GENERIC FAILURE MODE. COMMON FAILURE MODES 050F005. (4819-1) --- 2	2/1RB	150FM12: Electrical short, 5.6 or 14.2 volt power leads. CAUSE: Contamination on the electrical connector faulty leads or electronic component failure.	END ITEM: Electrical short to ground on 5.6 volt or 14.2 volt line from DCM DC/DC converter. OFE INTERFACE: Increase in battery power consumption, the current is limited in the DCM DC/DC converter 1.8+/-0.25 amps. Shutdown of the DC/DC converter. Loss of CWS, tones and DCM display. MISSION: None for single failure. Terminate EVA with loss of DCM display, CWS and ability to monitor the operational integrity of the EMU. Loss of use of one EMU. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of CCC, oxygen or low vent flow.	A. Design - Established reliability capacitors and resistors are qualified to applicable military standards and thermal shocked per Condition B Test Method 107 of MIL-STD-202. Microcircuits are qualified to the requirements of MIL-M-38510 and receive the burn-in of Class B parts per Method 5004 of MIL-STD-883. Transistors, diodes are qualified to the requirements of MIL-S-19500 and receive the burn-in of JANTXV level parts per the applicable methods, 1038, 1039, 1040 of MIL-STD-750. The electronic components are operating within the power derating requirements of SVHS7864. The printed circuit (PC) boards are fiberglass/epoxy per MIL-P-13949 type GF and manufactured in accordance with SN-P-0006. Parts mounting and soldering is per MSFC-STD-156 and NHB5300.4 (3A-1). The CWS is a mother/daughter board assembly. The daughter boards are held in place by metal card guides which also provide thermal transfer from the boards to the CWS case. The top cover of the CWS exerts a downward force on the daughter boards to keep them properly seated in the mother board connectors. Flex Tape (Kapton insulated, flexible flat conductor) instead of conventional Teflon coated wires is used to provide connections between the mother board and the external connectors. This prevents pinching of the conductor during item assembly. The PC board assemblies are conformal coated per MIL-A-46146 (Dow Corning RTV 3140) for environmental and humidity protection. Electrical connectors are environmentally sealed to prevent damage due to contamination and humidity. B. Test - Component Acceptance Test - Full functioning of the CWS is verified during Item AIP Tests include continuity, logic flow, X-state sequencing, fault simulation, verification of status and fault messages, warning and alert tones activation, and BITE activation. These tests are conducted upon completion of random vibration testing (6.8 grms). PDA Test - The above electrical tests are repeated during PLSS PDA to verify CWS operation. The CWS is also operational during

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	2/IRU	150FM12:		other PLSS PBA Electrical tests such as sensor accuracy checks, Item 123 Fan Operation, Item 174 RIDS Checkout, and Solenoid Valve Actuation. Certification Test - The item completed the 15 year structural vibration and shock certification requirement during 10/85. ECO's 42806-244 (add jumper wires, add diode CR229, change resistor R301), 42806-345-3 (eliminate interferences with PLSS), 42806-718 (overstressed resistor R305 due to an improper interface circuit in the data delta longer, software change, diode MR201 rewiring), 42806-962 and 42806-962-1 (transistor Q201 lead stress relief) have been incorporated since this configuration was tested. C. Inspection - Each circuit board, the item tape, and connectors are inspected for damage and contamination prior to being placed into finished stores. The CWS assembly is inspected internally and externally for damage and contamination during item assembly and externally during ATP. All soldering is inspected by HS QA and DCAB QA per NHB5300.4 (3A-1). D. Failure History - None. E. Ground Turnaround - Tested per FEMU-R-801, DCH display verification. F. Operational Use - Crew Response - PreEVA: Trouble shoot problem, if no success, consider third EMU if available. EMU no go for EVA. EVA: When loss of CWS tones and displays detected, terminate EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define an operational CWS as at least able to monitor a valid status list. EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data

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	2/1RB	15DTH12:		System allows ground monitoring of EMU systems.