NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		362FM02		
EVC MODE SELECTOR SWITCH, ITEM 362 ---------- SV767786-2 (1)	3/2RAB	Electrical open, (hardline) primary power contacts. Severed contact spring or plunger.	END ITEM: Loss of primary DCM power connection to hardline communications DC/DC power supply for IV communication. GFE INTERFACE: None for single failure. Loss of one of two redundant power supplies to H/L DC/DC power supply. MISSION: None for single failure. Terminate EVA if additional secondary power contact failure occurs which incapacitates the H/L DC/DC power supply. CREW/VEHICLE: None. TIME TO EFFECT /ACTIONS: Hours. If IV on SCU, switch to one of the other transmit modes. TIME AVAILABLE: Hours. TIME REQUIRED: Minutes.	A. Design - The lead wires (M22759/12) for the switch are soldered to the external switch terminals per NHB5300. 4 (3A-1). This area is then potted with stycast to provide strain relief for the leads. The wire bundle is designed to withstand a pull force of 8 lbs. without damage or degradation. The switching mechanism, ball bearing, and contacts are encased in a hermetically sealed housing backfilled with dry nitrogen to prevent failure due contamination or corrosion. B. Test - Component Acceptance: Continuity test through switch and leads and a contact resistance test are performed as part of the vendor acceptance tests for the Item. DCM In-Process: Switch continuity and output voltage are checked during In-process tests performed during DCM assembly. PDA: Switch continuity and ouput voltage are checked after completion of Vibration Acceptance Testing (VAT) (6.1 grms) and again upon completion of Thermal Vacuum Acceptance testing (70 to 130 F). These tests verify the integrity of the switch wiring and connections. PDA is per SEMU-60-015. Certification: Certified for a useful life of 15 years. C. Inspection - Switches are 100% leak checked as part of vendor in process testing. The lead wires are inspected during source inspection for the part and again during DCM assembly for damage and wear to the insulation. An open circuit is also precluded via inspection of soldering at the switch (prior to potting per NHB5300. 4) (3A-1). All switch lead wires are pull tested after insertion into connectors during DCM Assembly to insure proper locking of their crimp contacts. D. Failure History - None. E. Ground Turnaround - None. Invasive test. DCM PDA will detect this failure. F. Operational Use - Crew Response Pre-EVA/EVA : No response, single failure undetectable by crew or ground. Special Training - No training specifically covers this failure mode. Operational Considerations - For single failure, no constraints.

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			REDUNDANCY SCREENS: A-FAIL B-FAIL C-PASS	

EXTRAVEHICULAR MOBILITY UNIT

SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-362 EVC MODE SELECTOR SWITCH

CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: _____ 3/27/02
HS - Project Engineering

Approved by: _____ 6/25/02
NASA – [redacted]/SSM
ESS

_____
HS - Reliability

_____
NASA – EMU/SSM

_____
HS - Engineering Manager

_____ 6/26/02
NASA - S & MA

_____ 6/27/02
NASA - MOD

_____ 7/1/02
NASA - Crew

_____ 7.2.02
NASA - Program Manager