FAILURE MODES EFFECTS ANALYSIS (FMEA) – CIL HARDWARE
NUMBER:05-2B-22105M -X

SUBSYSTEM NAME: COMM & TRACK: UHF SPACE COMMUNICATION
REVISION: 0 11/14/95

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: PANEL O6	VO70-730359
SRU	: SWITCH, TOGGLE	ME452-0102-6201

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
TOGGLE SWITCH, UHF SSOR ENCRYPT, 2P2P, S54

REFERENCE DESIGNATORS: 33V73A6S54

QUANTITY OF LIKE ITEMS: 1
ONE

FUNCTION:
SELECTS ENCRYPTION OR CLEAR MODE FOR SPACE-TO-SPACE COMMUNICATIONS.

FAILURE MODES EFFECTS ANALYSIS FMEA – CIL FAILURE MODE
NUMBER: 05-2B-22105M-02

REVISION#: 0 10/03/96
SUBSYSTEM NAME: COMM & TRACK: UHF SPACE COMMUNICATION
LRU: PANEL O6 **CRITICALITY OF THIS**
ITEM NAME: SWITCH, TOGGLE **FAILURE MODE:** 2/2

FAILURE MODE:
FAILS OPEN, FAILS TO TRANSFER

MISSION PHASE: OO ON-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:
102 COLUMBIA
103 DISCOVERY
104 ATLANTIS
105 ENDEAVOUR
AFTER SPACE COMM MODIFICATION

CAUSE:
PIECE PART STRUCTURAL FAILURE, CONTAMINATION, VIBRATION, MECHANICAL SHOCK, PROCESSING ANOMALY, THERMAL STRESS

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

CRITICALITY 1R2 DURING INTACT ABORT ONLY (AVIONICS ONLY)? NO

REDUNDANCY SCREEN
A) N/A
B) N/A
C) N/A

PASS/FAIL RATIONALE:
A)

B)

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:
LOSS OF MISSION WHERE ENCRYPTION IS REQUIRED.

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(REFER TO "ADDITIONAL DATA" FOR LESS CRITICAL EFFECTS SCENARIOS).

(B) INTERFACING SUBSYSTEM(S):
LOSS OF ENCRYPTION CAPABILITY ON COMMANDS TO STATION. NO EFFECT ON EVA COMM, VOICE COMM OR RECEIVE TELEMETRY.

(REFER TO "ADDITIONAL DATA" FOR LESS CRITICAL EFFECTS SCENARIOS).

(C) MISSION:
LOSS OF MISSION WHERE ENCRYPTION IS REQUIRED.

(REFER TO "ADDITIONAL DATA" FOR LESS CRITICAL EFFECTS SCENARIOS).

(D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT

(REFER TO "ADDITIONAL DATA" FOR LESS CRITICAL EFFECTS SCENARIOS).

-ADDITIONAL DATA-

LOSS OF SWITCH SCAN MEASUREMENTS: 3/3 NNN

(A) SUBSYSTEM:
NO EFFECT

(B) INTERFACING SUBSYSTEM(S):
NO EFFECT

(C) MISSION:
NO EFFECT

(D) CREW, VEHICLE, AND ELEMENT(S):
NO EFFECT

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

-DISPOSITION RATIONALE-

(A) DESIGN:
REFER TO APPENDIX A, ITEM NO. 5 - TOGGLE SWITCH

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(B) TEST:
REFER TO APPENDIX A, ITEM NO. 5 - TOGGLE SWITCH

GROUND TURNAROUND TEST
ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH OMRSD.

(C) INSPECTION:
REFER TO APPENDIX A, ITEM NO. 5 - TOGGLE SWITCH

(D) FAILURE HISTORY:
CURRENT DATA ON TEST FAILURES, FLIGHT FAILURES, UNEXPLAINED ANOMALIES, AND OTHER FAILURES EXPERIENCED DURING GROUND PROCESSING ACTIVITY CAN BE FOUND IN THE PRACA DATABASE.

(E) OPERATIONAL USE:
THE CREW CAN NOTIFY THE STATION THROUGH THE SSCS AUDIO LINK (NOT AFFECTED BY ENCRYPTION) TO OPERATE IN CLEAR MODE. ALSO THE GROUND CAN NOTIFY/COMMAND THE STATION TO OPERATE IN CLEAR MODE.

- APPROVALS -

PAE MANAGER	POLLY STENGER-NGUYEN	3/11/98
PRODUCT ASSURANCE ENGR	VAN D. NGUYEN	9-20-98
DESIGN ENGINEERING	G. J. SCHWARTZ	8-21-98
NASA SSMA	mike Penney	8-26-98
NASA EPD&C SSMA		NA to EPDC
NASA SUBSYSTEM MANAGER	mark A. Chavez	8-26-98
NASA EPD&C SUBSYS MGR		NA to EPDC
NASA MOD		9-26-98
USA/SAM	Karen Blumenthal	8/26/98