

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- CIL HARDWARE
NUMBER: 05-2B-22101M -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 06	V070-730389
SRU	: SWITCH, ROTARY	ME452-0093-5225

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
UHF MODE SELECT ROTARY SWITCH, 6P5P

REFERENCE DESIGNATORS: 33V73A6S6

QUANTITY OF LIKE ITEMS: 1
ONE

FUNCTION:

ACTIVATES UHF - ATC TRANSCEIVER OR SPACE-TO-SPACE ORBITER RADIO (SSOR).
SELECTS OPERATING MODE BY PROVIDING CLOSURE TO COMMON OF ONE OF FOUR
CONTROL CIRCUITS.

FAILURE MODES EFFECTS ANALYSIS FMEA -- NON-CIL FAILURE MODE

NUMBER: 05-2B-22101M-02

REVISION#: 0 07/05/95

SUBSYSTEM NAME: COMM & TRACK: UHF SPACE COMMUNICATION

LRU: PANEL 06

CRITICALITY OF THIS

ITEM NAME: SWITCH, ROTARY

FAILURE MODE: 1R3

FUNCTIONAL CRITICALITY/

REQUIRED FAULT TOLERANCE/ACHIEVED FAULT TOLERANCE:1R/2/3

FAILURE MODE:

GUARD T/R SHORT TO COMMON IN SIMPLEX

MISSION PHASE:	PL	PRE-LAUNCH
	LO	LIFT-OFF
	OO	ON-ORBIT
	DO	DE-ORBIT
	LS	LANDING/SAFING

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

1

CAUSE:

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN	A) PASS
	B) PASS
	C) PASS

PASS/FAIL RATIONALE:

A)

B)

C)

CORRECTING ACTION:

**FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL FAILURE MODE
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CORRECTING ACTION DESCRIPTION:

FOR ATC, SYSTEM DEFAULTS TO GUARD CHANNEL (243.0 MHZ). GROUND STATION WILL MONITOR 243.0 MHZ WHEN NO SIGNAL IS RECEIVED ON PRIMARY CHANNELS (296.8 OR 259.7 MHZ).

- FAILURE EFFECTS -

(A) SUBSYSTEM:

SYSTEM DEFAULTS TO GUARD (243.0 MHZ) THUS NO 296.8MHZ OR 259.7 MHZ.

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT TO THE SSOR.

(C) MISSION:

NO EFFECT - FIRST FAILURE

(D) CREW, VEHICLE, AND ELEMENT(S):

NO EFFECT - FIRST FAILURE

(E) FUNCTIONAL CRITICALITY EFFECTS:

POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF STATE VECTOR UPDATE AFTER 4 FAILURES (THIS SWITCH, LOSS OF GUARD FREQUENCY, AND LOSS OF 2 S-BAND).

- TIME FRAME -

TIME FROM FAILURE TO CRITICAL EFFECT: MINUTES

- APPROVALS -

PRODUCT ASSURANCE ENGR. : VAN D. NGUYEN
DESIGN ENGINEERING : G. J. SCHWARTZ

Van Nguyen 8-20-98
G.J. Schwartz 8-21-98