

## FAILURE MODES EFFECTS ANALYSIS (FMEA) -- GIL HARDWARE

NUMBER:05-2B-22112M -X

SUBSYSTEM NAME: COMM &amp; TRACK: UHF SPACE COMMUNICATION

REVISION: 0 10/03/96

## PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	: PANEL 06	VO70-730389
SRU	: RESISTOR	RWR80S1211FR

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
RES:STOR, CURRENT LIMITING - 5.1K, 2W

REFERENCE DESIGNATORS: 33V73A6A30R1  
33V73A6A30R2

QUANTITY OF LIKE ITEMS: 2  
TWO

FUNCTION:  
PROVIDES CIRCUIT PROTECTION FOR MISSION STATION AND RIGHT AUDIO TERMINAL  
UNITS.

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

NUMBER: 05-2B-22112M-01

REVISION#: 0 11/14/95

SUBSYSTEM NAME: COMM &amp; TRACK: UHF SPACE COMMUNICATION

LRU: PANEL 06

CRITICALITY OF THIS

ITEM NAME: RESISTOR

FAILURE MODE: 1R3

FUNCTIONAL CRITICALITY/

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

FAILURE MODE:

OPEN

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

CAUSE:

STRUCTURAL FAILURE (MECHANICAL STRESS, VIBRATION), ELECTRICAL STRESS,  
 THERMAL STRESS, PROCESSING ANOMALY

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

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

REDUNDANCY SCREEN

A) PASS  
 B) PASS  
 C) PASS

PASS/FAIL RATIONALE:

A)

B)

C)

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CORRECTING ACTION: NONE

CORRECTING ACTION DESCRIPTION:

REMARKS/RECOMMENDATIONS:

UHF AND AUDIO ARE SECONDARY MORE FOR ACQUIRING STATE VECTOR UPDATE.

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- FAILURE EFFECTS -

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(A) SUBSYSTEM:

LOSS OF ABILITY TO CONDUCT POWER TO AFFECTED ATU. LOSS OF ALL UHF AUDIO COMMUNICATIONS CAPABILITY AT THE AFFECTED STATION.

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

(B) INTERFACING SUBSYSTEM(S):

LOSS OF ABILITY TO CONDUCT POWER TO AFFECTED ATU. LOSS OF ALL UHF AUDIO COMMUNICATIONS CAPABILITY AT THE AFFECTED STATION.

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

(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 AFTER THREE FAILURES (LOSS OF REDUNDANT ATU, AND 2 S-BAND) DUE TO LOSS OF STATE VECTOR UPDATE.

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

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-ADDITIONAL DATA-

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FOR ON-ORBIT: 2R3, PPP

(A) SUBSYSTEM:

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NON-CIL FAILURE MODE  
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LOSS OF ABILITY TO CONDUCT POWER TO AFFECTED ATU. LOSS OF ALL UHF AUDIO COMMUNICATIONS CAPABILITY AT THE AFFECTED STATION.

(B) INTERFACING SUBSYSTEM(S):  
NO EFFECT FIRST FAILURE

(C) MISSION:  
NO EFFECT FIRST FAILURE

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

(E) FUNCTIONAL CRITICALITY EFFECTS:  
POSSIBLE LOSS OF MISSION AFTER 2 FAILURES DUE TO LOSS OF ALL UHF AUDIO COMM CAPABILITY.

- 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*