

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL HARDWARE  
 NUMBER:05-6PP-300100 -X

SUBSYSTEM NAME: GPS THREE STRING

REVISION: 0

04/09/97

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 PART DATA
 

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	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	:PANEL 07	VO70-730390
SRU	:RESISTOR. ISOLATION	RWR80S1211FR

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EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
 RESISTOR ISOLATION, 1.21 K-OHMS, WIRE WOUND, 2 WATTS, 1 PERCENT.

REFERENCE DESIGNATORS: 36V73A7R1  
 36V73A8R1  
 36V73A9R1

QUANTITY OF LIKE ITEMS: 3  
 THREE

FUNCTION:  
 PROVIDES CONTROL BUS ISOLATION IN THE EVENT OF A SHORT CIRCUIT OCCURRING IN  
 THE GPS RECEIVER POWER SWITCH, CONNECTED WIRING, OR RPC.

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

**NUMBER: 05-6PP-300100-01**

**REVISION#: A 10/14/99**

**SUBSYSTEM NAME: GPS THREE STRING**

**LRU: PANEL O7**

**ITEM NAME: RESISTOR, ISOLATION**

**CRITICALITY OF THIS FAILURE MODE: 1R3**

**FAILURE MODE:**

OPEN

**MISSION PHASE: DO DE-ORBIT**

<b>VEHICLE/PAYLOAD/KIT EFFECTIVITY:</b>	102	COLUMBIA
	103	DISCOVERY
	104	ATLANTIS
	105	ENDEAVOUR

**CAUSE:**

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

**CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO**

**REDUNDANCY SCREEN**

- A) PASS
- B) PASS
- C) PASS

**PASS/FAIL RATIONALE:**

A)

B)

C)

**- FAILURE EFFECTS -**

**(A) SUBSYSTEM:**

LOSS OF CONTROL BUS VOLTAGE TO TURN ON THE RPC RESULTING IN LOSS OF POWER TO ONE GPS RECEIVER.

**(B) INTERFACING SUBSYSTEM(S):**

FAILURE MODES EFFECTS ANALYSIS (FMEA) -- NON-CIL FAILURE MODE  
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LOSS OF ONE OF THREE GPS RECEIVER STRINGS. FAILED GPS OUTPUTS ARE IGNORED AND THE OUTPUTS OF THE REMAINING GPS' ARE USED.

(C) MISSION:  
NO EFFECT

(D) CREW, VEHICLE, AND ELEMENT(S):  
NO EFFECT - FIRST FAILURE. OPERATIONS CONTINUE WITH TWO REMAINING GPS RECEIVERS. NO EFFECT - SECOND FAILURE. OPERATIONS CONTINUE WITH ONE REMAINING GPS RECEIVER. POSSIBLE LOSS OF CREW/VEHICLE DUE TO INABILITY TO MAKE LANDING SITE DUE TO THIRD FAILURE RESULTING IN LOSS OF THE REMAINING GPS RECEIVER.

(E) FUNCTIONAL CRITICALITY EFFECTS:  
NO EFFECT

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- TIME FRAME -

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TIME FROM FAILURE TO CRITICAL EFFECT: N/A

TIME FROM FAILURE OCCURRENCE TO DETECTION: SECONDS

TIME FROM DETECTION TO COMPLETED CORRECTING ACTION: N/A

IS TIME REQUIRED TO IMPLEMENT CORRECTING ACTION LESS THAN TIME TO EFFECT?  
N/A

RATIONALE FOR TIME TO CORRECTING ACTION VS TIME TO EFFECT:  
N/A

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- APPROVALS -

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PRODUCT ASSURANCE ENGR : M. HOLTHAUS  
DESIGN ENGR : G.J. SCHWARTZ

*Mark Holthaus 10/19/99*  
*G.J. Schwartz 10-19-99*