

FAILURE MODES AND EFFECTS ANALYSIS

ASSY NOMENCLATURE: RMS IFM DBC KIT
 ASSY PIN: SED33103306-304

SYSTEM: REMOTE MANIPULATOR SYSTEM
 SUBSYSTEM: RMS IN-FLIGHT MAINTENANCE DBC KIT

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NAME AND DRAWING	FUNCTION	FAILURE MODE AND CAUSE	MISSION PHASE	FAILURE EFFECT ON			FAILURE DETECTION	CORRECTIVE ACTION THAT AVAILABLE/ TIME REQUIRED	CRIT. H/F	HAZARDS/REMARKS
				END ITEM	MISSION	CREW/VEHICLE				
JOINT SELECT SWITCH (S6), QTY. 1, PIN SEMDD-D1-1-AJN	Provides selection of particular joint for direct drive	S000 Mode: Fails open, short to case Cause: • structural failure • contamination • mechanical shock • vibration	Orbit	Inability to select any joint in direct drive <u>Worst Case</u> Subsequent failures may result in inability to cradle arm Redundant Paths <u>Remaining</u> Backup mode RMS Jettison		Subsequent failures may result in inability to cradle or jettison arm, resulting in loss of crew/vehicle	Operator detect joints will not respond to direct drive command	Select backup mode or jettison RMS immediate/ours	3/IR	<u>Redundancy Screens:</u> A - Pass B - Pass C - Pass
		S010 Mode: Contact-to-contact short Cause: • structural failure • contamination • mechanical shock • vibration	Orbit	Two joints will drive simultaneously <u>Worst Case</u> Unexpected motion Two joints drive Unannounced Crew action required		Loss of crew or vehicle due to unexpected RMS motion	Operator must detect unexpected arm motion	Remove command Select backup mode or jettison RMS immediate/immediate	1/I	<u>Redundancy Screens:</u> A - N/A B - N/A C - N/A