

NSTS 08171

SPACE SHUTTLE

OPERATIONS AND MAINTENANCE
REQUIREMENTS AND SPECIFICATIONS
DOCUMENT

FILE X
VOL. 4
A3000

MEIT3 - Multi-Element Integrated Test-3

January 28, 2003

TABLE OF CONTENTS

<u>REQUIREMENT</u>	<u>TITLE</u>
A3000MC.100	JEM / USOS VIDEO SYNCHRONIZATION
A3000MC.200	JEM VIDEO TO USOS RWS
A3000MC.300	JEM / USOS SPLIT SCREEN VIDEO
A3000MC.400	JEM/NODE-2/USOS AUDIO FUNCTIONALITY
A3000MC.500	IAA FUNCTIONALITY DEMONSTRATION
A3000MC.600	JEM MRDL/HRDL DEMONSTRATION
A3000MD.100	C&DH BUS REDUNDANCY
A3000MD.200	C&DH CAUTION AND WARNING
A3000ME.100	ELECTROMAGNETIC ENVIRONMENT TESTING
A3000ME.200	POWER QUALITY JEM/NODE 2 CONFIGURATION
A3000MG.100	GN&C MASS PROPERTIES
APPENDIX A	RATIONALE/JUSTIFICATION

LIST OF TABLES

TABLE NO

TABLE TITLE

RCN NO

None

LIST OF FIGURES

FIGURE NO

FIGURE TITLE

RCN NO

None

HISTORICAL RCN INCORPORATION LOG

<u>RCN NUMBER</u>	<u>INCorp DATE</u>	<u>OMRS AFFECTED</u>
-------------------	--------------------	----------------------

RCN INCORPORATION LOG

<u>RCN NUMBER</u>	<u>INCorp DATE</u>	<u>OMRS AFFECTED</u>
KA16055	11/15/2002	A3000MC.100 (ADDED L01), A3000MC.200 (ADDED L01), A3000MC.300 (ADDED L01), A3000MC.400 (ADDED L01), A3000MC.500 (ADDED L01), A3000MD.100 (ADDED L01), A3000MD.200 (ADDED L01), A3000MG.100 (ADDED L01)
KA16099R1	01/28/2003	A3000MC.600 (ADDED L01)
KA16098	01/28/2003	A3000ME.100 (ADDED L01), A3000ME.200 (ADDED L01)

EXCEPTION/WAIVER LOG

EXC/WVR NO.	STA	STS	SUBMIT DATE	OMRS REQUIREMENT NO.	Title	EFFECTIVITY	BEG U/DT END U/DT	SUSPENSE DATE	PRCB DISP NO.	DISP DATE
----------------	-----	-----	----------------	-------------------------	-------	-------------	----------------------	------------------	------------------	--------------

EXCEPTION/WAIVER LOG

WAIVER LOG

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
A3000MC.100**	JEM / USOS VIDEO SYNCHRONIZATION		SSPF	A:PMEIT3
	CRIT: NONE			B:
	VERIFY JEM CAMERA COMMANDING		VIDEO IMAGE CHANGES AS COMMANDED	C:C-1: MINIMUM OF TWO COMMANDS SHALL BE SENT FOR EACH COMMAND PATH
A3000MC.100-A	CONTROL JEM CAMERA VIA CCP			R-1: JEM VIDEO CAN BE DISPLAYED ON USOS RWS MONITOR, RMS CONSOLE MONITOR, JEM WS RACK MONITOR, OR C&T LAB
	PERFORM JEM CAMERA COMMANDING SENT FROM THE CCP			
A3000MC.100-B	CONTROL JEM CAMERA VIA SIM GROUND-KSC			R-2: CES MATE CAN BE USED FOR SIM GROUND TEST.
	PERFORM JEM CAMERA COMMANDING BY SIMULATING THE S-BAND COMMAND THROUGH THE C&C AND JCP (REF. R-2)			D:REF: ICD SSP 42000; MEIT3 DTO C&T-001
A3000MC.200**	JEM VIDEO TO USOS RWS		SSPF	A:PMEIT3
	CRIT: NONE			B:
A3000MC.200-A	JEM VIDEO TO RWS VIA PCS MANUALLY			C:R-1: IF THE JEM MAIN ARM END EFFECTOR CAMERA IS NOT AVAILABLE THEN THE GSE JEM CAMERA CABLE WILL SIMULATE THE SIGNAL PATH LENGTH.
	VERIFY JEM VIDEO ROUTING TO USOS RWS		ACCEPTABLE VIDEO AT USOS RWS MONITOR	
A3000MC.200-B	JEM VIDEO TO RWS VIA PCS AUTOROUTE			R-2: JEM VIDEO WILL BE DISPLAYED ON USOS RWS MONITOR
	VERIFY JEM VIDEO ROUTING TO USOS RWS		ACCEPTABLE VIDEO AT USOS RWS MONITOR	D:REF: ICD SSP 42000; MEIT3 DTO C&T-002
	VERIFY JEM VIDEO DEROUTE		JEM VIDEO NO LONGER DISPLAYED AT USOS RWS MONITOR	
A3000MC.200-C	JEM VIDEO TO RWS VIA DCP AUTOROUTE			
	VERIFY JEM VIDEO ROUTING TO USOS RWS		ACCEPTABLE VIDEO AT USOS RWS MONITOR	
	VERIFY JEM VIDEO DEROUTE		JEM VIDEO NO LONGER DISPLAYED AT USOS RWS MONITOR	
A3000MC.300**	JEM / USOS SPLIT SCREEN VIDEO		SSPF	A:PMEIT3

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
CRIT: NONE				B: C:R-1: IF THE JEM MAIN ARM END EFFECTOR CAMERA IS NOT AVAILABLE THEN THE GSE JEM CAMERA CABLE WILL SIMULATE THE SIGNAL PATH LENGTH. R-2: SPLITSCREEN COMPOSITION CAN BE VERIFIED AT SCU, RMS CONSOLE MONITOR, JEM WS RACK MONITOR, USOS RWS MONITOR, OR C&T LAB
A3000MC.300-A	COMPOSE JEM VIDEO S/SCRN VERIFY REQUEST IS SENT THROUGH JEM RMS MDP TO USOS SCU TO TURN ON THE SPLITSCREEN IMAGE (REF. R-2)		ACCEPTABLE SPLIT SCREEN VIDEO IS COMPOSED	
A3000MC.300-B	JEM VIDEO S/SCRN TO USOS RWS PERFORM ROUTING OF THE SPLITSCREEN JEM VIDEO AND DISPLAY ON THE RWS MONITOR		ACCEPTABLE SPLIT SCREEN VIDEO AT USOS RWS MONITOR	D:REF: ICD SSP 42000; MEIT3 DTO C&T-003
A3000MC.300-C	JEM VIDEO S/SCRN TO JEM RMS PERFORM AUTOMATIC SPLITSCREEN FUNCTION AND VIDEO ROUTING BY C&C MDM AND JEM RMS MDP.		ACCEPTABLE SPLIT SCREEN VIDEO AT JEM RMS CONSOLE	
A3000MC.300-D	JEM REQUEST S/SCREEN OFF VERIFY REQUEST IS SENT THROUGH JEM RMS MDP TO USOS SCU TO TURN OFF THE SPLITSCREEN IMAGE (REF. R-2)		VIDEO IMAGE CHANGES AS REQUESTED	
A3000MC.300-E	US/JEM VID S/SCRN TO USOS RWS VIA PCS PERFORM ROUTING AND DISPLAY OF THE USOS/JEM VIDEO SPLITSCREEN TO THE USOS RWS USING PCS COMMANDING		ACCEPTABLE SPLIT SCREEN VIDEO AT USOS RWS MONITOR	
A3000MC.300-F	US/JEM VID S/SCRN TO JEM RMS VIA PCS PERFORM ROUTING AND DISPLAY OF THE USOS/JEM VIDEO SPLITSCREEN TO THE JEM RMS CONSOLE USING PCS COMMANDING		ACCEPTABLE SPLIT SCREEN VIDEO AT JEM RMS CONSOLE	
A3000MC.300-G	US/JEM VID S/SCRN TO USOS RWS VIA DCP PERFORM ROUTING AND DISPLAY OF THE USOS/JEM VIDEO SPLITSCREEN TO THE USOS		ACCEPTABLE SPLIT SCREEN VIDEO AT USOS	

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
	RWS USING THE DCP		RWS MONITOR	
A3000MC.400**	JEM/NODE-2/USOS AUDIO FUNCTIONALITY		SSPF	A:PMEIT3
	CRIT: NONE			B:
	VERIFY AUDIO SYSTEM FUNCTIONALITY			C:
	BETWEEN JEM/NODE-2/USOS			D:REF: MEIT 3 DTO C&T-004
A3000MC.400-A	JEM ATU 8&9 VOICE CHK NODE2 ABC 3&4			
	PERFORM JEM ATU8 AND JEM ATU9 VOICE		ACCEPTABLE VOICE AT	
	CHECKS WITH NODE-2 AND USL ATU'S, USING		ATU'S	
	NODE-2 ABC3 AND ABC4. BOTH NODE-2 ABC'S			
	POWERED ON.			
A3000MC.400-B	JEM ATU 8&9 VOICE CHK NODE2 ABC 3			
	PERFORM JEM ATU8 AND JEM ATU9 VOICE		ACCEPTABLE VOICE AT	
	CHECKS WITH NODE-2 AND USL ATU'S, USING		ATU'S	
	NODE-2 ABC3. NODE-2 ABC4 POWERED OFF.			
A3000MC.400-C	JEM ATU 8&9 VOICE CHK NODE2 ABC 4			
	PERFORM JEM ATU8 AND JEM ATU9 VOICE		ACCEPTABLE VOICE AT	
	CHECKS WITH NODE-2 AND USL ATU'S USING		ATU'S	
	NODE-2 ABC4. NODE-2 ABC3 POWERED OFF.			
A3000MC.400-D	NODE2 ATU 7&15 VOICE CHK NODE2 ABC 3&4			
	PERFORM NODE-2 ATU 7 AND ATU 15 VOICE		ACCEPTABLE VOICE AT	
	CHECKS WITH JEM AND USL ATU'S USING		ATU'S	
	NODE-2 ABC3 AND ABC4. BOTH NODE-2 ABC'S			
	POWERED ON.			
A3000MC.400-E	NODE2 ATU 7&15 VOICE CHK NODE2 ABC 3			
	PERFORM NODE-2 ATU7 AND ATU15 VOICE		ACCEPTABLE VOICE AT	
	CHECKS WITH JEM AND USL ATU'S USING		ATU'S	
	NODE-2 ABC3. NODE-2 ABC4 POWERED OFF.			
A3000MC.400-F	NODE2 ATU 7&15 VOICE CHK NODE2 ABC 4			
	PERFORM NODE-2 ATU7 AND ATU15 VOICE		ACCEPTABLE VOICE AT	
	CHECKS WITH JEM AND USL ATU'S USING		ATU'S	
	NODE-2 ABC4. NODE-2 ABC3 POWERED OFF.			

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
A3000MC.400-G	ATUS ANNUNCIATE C&W TONES VERIFY ATU'S ANNUNCIATE THE C&W TONES: JEM ATU8 JEM ATU9 NODE2 ATU7 NODE2 ATU15		ACCEPTABLE TONE AT ATU'S	
A3000MC.500	IAA FUNCTIONALITY DEMONSTRATION CRIT: NONE VERIFY INTRA-VEHICULAR ANTENNA ASSEMBLY INTER-ELEMENT INTERFACES ON US LAB, NODE 2 AND JEM		SSPF SIGNAL PRESENT	A:PMEIT3 B: C:C-1: ALL UNUSED OUTPUTS FROM THE UHF COUPLER SHALL BE TERMINATED AT ELEMENT INTERFACES R-1: TEST MAY BE PERFORMED ON UNPOWERED ELEMENTS. D:REF: MEIT3 DTO C&T-005
A3000MC.600**	JEM MRDL/HRDL DEMONSTRATION CRIT: NONE DEMONSTRATE FUNCTIONALITY AND CONTINUITY OF JEM-USOS INTERELEMENT HIGH AND MEDIUM RATE DATA LINKS ON US LAB, NODE 2, AND JEM.		SSPF NO DROPPED PACKETS OR HEADER ERRORS	A:PMEIT3 B: C:R-1: PDG OR NASDA TAXI SIMULATOR WILL BE USED AS HR SIGNAL SOURCE R-2: PDA WILL BE USED TO VERIFY PACKET DATA R-3: ISPR JUMPERS WILL BE UTILIZED IN LIEU OF INSTALLED ISPR'S. R-4: HRFM DOWNLINK DATA WILL BE RECORDED IN C&T LAB ON HDGR
A3000MC.600-A	JEM-USOS HIGH RATE (TAXI) VERIFY INTERELEMENT JEM-USOS HIGH RATE (TAXI) DATA TRANSFER (REF R-1, R-2, R-3, R-4)			R-5: ETHERNET ANALYZER WILL BE USED AS MR DATA SOURCE AND TO VERIFY MR DATA CONTENT
A3000MC.600-B	JEM-USOS MEDIUM RATE (ETHERNET) VERIFY INTERELEMENT JEM-USOS MEDIUM RATE (ETHERNET) DATA TRANSFER (REF R-4, R-5)			D:REF: ICD SSP 42000; MEIT3 DTO CDH-010
A3000MD.100**	C&DH BUS REDUNDANCY CRIT: NONE		SSPF	A:PMEIT3 B:

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

NUMBER	REQUIREMENT ----- DESCRIPTION	MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
A3000MD.100-A	<p>CB-EXT-1 BUS REDUNDANCY</p> <p>VERIFY 1553 A/B INTER-ELEMENT BUS REDUNDANCY AND BUS COMMUNICATION BETWEEN THE C&C BC AND EACH OF THE FOLLOWING RT'S:</p> <p>JCP-A, DIU-EPS-A, COMMON BERTHING MECHANISM - JEM PRIMARY (CBM-JP), USOS SYSTEM PCS (REF. R-2, R-3)</p>		<p>BUS SWITCHOVERS OCCUR WITHOUT BUS DROPOUTS OR LOSS OF COMM</p> <p>GOOD POLLING RESPONSE FROM RTS ON CHANNEL A</p> <p>GOOD POLLING RESPONSE FROM RTS ON CHANNEL B</p>	<p>C:C-1: ONE ACTIVE RT SHALL BE REQUIRED ON EACH BUS.</p> <p>R-1: PASS-1000 OR EQUIVALENT CAN BE USED AS A 'DUMMY RT' ON ALL LOCAL BUSES TO SIMULATE THE SPECIFIED RT.</p> <p>R-2: THE RT'S LISTED CAN BE TESTED INDIVIDUALLY ON THE BUS.</p> <p>R-3: THE USOS SYSTEM/PAYLOAD PCS WILL BE CONNECTED AT A UTILITY OUTLET PANEL (UOP) IN THE JEM MODULE.</p>
A3000MD.100-B	<p>CB-EXT-2 BUS REDUNDANCY</p> <p>VERIFY 1553 A/B INTER-ELEMENT CB-EXT-2 BUS REDUNDANCY AND BUS COMMUNICATION BETWEEN THE C&C BC AND EACH OF THE FOLLOWING RT'S:</p> <p>JCP-B, DIU-EPS-B, COMMON BERTHING MECHANISM - JEM SECONDARY (CBM-JS), MANAGEMENT DATA PROCESSOR (MDP), USOS SYSTEM PCS (REF. R-2, R-3)</p>			<p>D:REF: MEIT3 DTO CDH-001; ICD 42000</p>
A3000MD.100-C	<p>LB-CHECS-JEM BUS REDUNDANCY</p> <p>VERIFY 1553 A/B INTER-ELEMENT LB-CHECS-JEM BUS REDUNDANCY AND BUS COMMUNICATION BETWEEN THE PL MDM BC AND THE CHECS RT.</p>			

REQUIREMENT ----- NUMBER	DESCRIPTION	MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
	(REF. R-1)			
A3000MD.100-D	NASDA-PL-BUS E REDUNDANCY VERIFY 1553 A/B INTER-ELEMENT NASDA-PL-BUS E BUS REDUNDANCY AND BUS COMMUNICATION BETWEEN THE PAYLOAD DATA HANDLING UNIT (PDH) BC AND NASDA PAYLOAD SIM RT. (REF. R-1)			
A3000MD.100-E	LB-PL-JEM BUS REDUNDANCY VERIFY 1553 A/B INTER-ELEMENT LB-PL-JEM BUS REDUNDANCY AND BUS COMMUNICATION BETWEEN THE PL MDM BC AND THE PAYLOAD PCS RT. (REF. R-1, R-3)			
A3000MD.200** CRIT: NONE	C&DH CAUTION AND WARNING		SSPF	A:PMEIT3 B: C:C-1: FDIR SHALL BE INHIBITED FOR EACH OF THE CAUTION AND WARNING EVENTS.
A3000MD.200-A	C&W EMERGENCY (FIRE) INITIATE C&W FIRE EVENT (REF. R-1, R-2, C-1) PRESS JEM CWP "FIRE" PUSHBUTTON RESET FIRE EVENT TO NORMAL		FIRE C&W LAMP ILLUMINATED IN BOTH JEM AND NODE2. AUDIBLE AUDIO ALARM EMERGENCY TONE ON AND ACCEPTABLE AUDIO LIMIT. EXPECTED C&W MESSAGES ON PCS. AUDIO ALARM EMERGENCY TONE OFF FIRE LAMP EXTINGUISHED IN BOTH JEM AND NODE2.	C-2: THE PCS SHALL BE CONNECTED ON THE CB-INT BUS FOR RAPID DEPRESSURIZATION C&W TEST. R-1: NPRV'S ARE PLANNED TO BE INSTALLED IN 4 IMV LOCATIONS (2 AFT USL, 2 PORT JEM) IN LAUNCH CONFIGURATION. THE TEST CAN BE PERFORMED EVEN IF THEY ARE NOT INSTALLED. R-2: PREFERRED CONFIGURATION FOR FIRE, TOXIC ATMOSPHERE AND RAPID DEPRESS EVENTS ARE WITH ABC 3 & 4 ACTIVE. R-3: GENERIC CAUTION IS A COMMANDED CLASS 3 EVENT.

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
A3000MD.200-B	C&W EMERGENCY (TOXIC ATMOSPHERE)			R-4: PREFERRED CONFIGURATION FOR GENERAL CAUTION EVENT IS WITH ABC 3 ACTIVE.
	PRESS NODE2 CWP "ATM" PUSHBUTTON (REF. C-1, R-2)		ATM LAMPS ARE ILLUMINATED IN BOTH NODE 2 AND JEM C&W PANELS.	R-5: PREFERRED CONFIGURATION FOR GENERAL WARNING EVENT IS WITH ABC 4 ACTIVE.
			AUDIBLE ALARM EMERGENCY TONE IS ON AND ACCEPTABLE AUDIO LIMIT.	R-6: GENERIC WARNING IS A COMMANDED CLASS 2 EVENT
			EXPECTED C&W MESSAGES ON PCS.	D:REF: MEIT3 DTO-C&DH-002
	PRESS JEM CWP "ATM" PUSHBUTTON		AUDIBLE ALARM EMERGENCY TONE IS OFF	
	RESET TOXIC ATMOSPHERE WARNING		ATM LAMP EXTINGUISHED ON BOTH NODE 2 AND JEM C&W PANELS.	
A3000MD.200-C	C&W EMERGENCY (RAPID DEPRESSURIZATION)			
	PRESS JEM RMS CWP RAPID DEPRESSURIZATION PUSHBUTTON (REF. C-1, C-2, R-2)		RAPID CABIN DECOMPRESSION LAMP ILLUMINATES ON BOTH JEM AND NODE 2 C&W PANELS.	
			EXPECTED C&W MESSAGES ON PCS.	
			AUDIO ALARM EMERGENCY TONE ON AND ACCEPTABLE AUDIO LEVEL.	
	SILENCE EMERGENCY TONE BY USOS PCS LOCATED IN THE JEM FLIGHT MODULE ON CB-EXT-BUS		AUDIO ALARM EMERGENCY TONE OFF	

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

----- NUMBER	REQUIREMENT DESCRIPTION	MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
	RESET DEPRESS EVENT TO NORMAL		RAPID CABIN DECOMPRESSION LAMP EXTINGUISHED ON BOTH JEM AND NODE2 C&W PANELS.	
A3000MD.200-D	C&W GENERIC CAUTION ACTIVATE AUTOMATIC GENERIC CAUTION (REF. R-3, R-4, C-1) PRESS JEM CWP "CAUTION" PUSHBUTTON RESET GENERIC CAUTIONS TO NORMAL		CAUTION LAMP ILLUMINATES ON BOTH NODE 2 AND JEM C&W PANELS AUDIO ALARM CAUTION TONE ON AND ACCEPTABLE AUDIO LEVEL. EXPECTED C&W MESSAGES ON PCS. AUDIO ALARM CAUTION TONE OFF CAUTION LAMP EXTINGUISHED ON BOTH NODE 2 AND JEM C&W PANELS.	
A3000MD.200-E	C&W GENERIC WARNING INITIATE WARNING EVENT AUTOMATICALLY. (REF. C-1, R-5, R-6)		WARNING LAMP ILLUMINATES ON BOTH NODE2 AND JEM C&W PANELS AUDIO ALARM WARNING TONE ON AND ACCEPTABLE AUDIO LEVEL. EXPECTED C&W MESSAGES ON PCS.	

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

NUMBER	REQUIREMENT ----- DESCRIPTION	MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
	PRESS JEM CWP "WARNING" PUSHBUTTON		AUDIO ALARM WARNING TONE OFF	
	RESET WARNING EVENT		WARNING LAMP EXTINGUISHED ON BOTH NODE 2 AND JEM C&W PANELS.	
A3000MD.200-F	C&W TEST			
	PRESS AND HOLD "TEST" BUTTON ON JEM C&W PANEL (REF. C-1)		ALL BUTTONS ILLUMINATED ON BOTH JEM C&W PANELS.	
			NO ILLUMINATION ON NODE 2 C&W PANEL	
			AUDIO TONES OFF	
			NO NEW MESSAGES GENERATED ON PCS.	
	RELEASE "TEST" BUTTON ON JEM C&W PANEL		ALL BUTTONS NOT ILLUMINATED ON BOTH JEM C&W PANELS	
A3000ME.100**	ELECTROMAGNETIC ENVIRONMENT TESTING		SSPF	A:PMEIT3
	CRIT: NONE			B:
A3000ME.100-A	JEM PMB V RIPPLE CONFIG 1			C:C-1: QUIESCENT VEHICLE SHALL BE REQUIRED (NO FLIGHT OR GSE POWER SYSTEM SWITCHING) DURING EME MEASUREMENTS
	RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-B POWER FEED (REF C-2, C-3)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	
A3000ME.100-B	JEM PMB V RIPPLE CONFIG 2			C-2: NODE 2 REQUIRED LOADS ARE AT LEAST 5 OF THE FOLLOWING: N2-2 MDM, LTL PUMP, NIA LTL VENT VALVE, NIA LTL ISO VALVE, SFCA LTL FLOW CONTROL VALVE, LTL CTB 3 WAY MIX VALVE, LTL REG 3 WAY MIX VALVE.
	RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-B POWER FEED (REF C-2, C-3, C-4)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	
A3000ME.100-C	JEM PMB NOISE CONFIG 3			C-3: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 3 OF THE FOLLOWING: PDB EPS 2, PIB b1, DIU b1, DIU EPS 2
	RECORD NOISE CURRENT MEASUREMENT AT JEM		MEASUREMENT TAKEN	

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
A3000ME.100-D	PM-B POWER FEED (REF C-2, C-3, C-4, C-5) JEM PMB V RIPPLE CONFIG 3 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-B POWER FEED (REF C-2, C-3, C-4, C-5)		PER CUSTOMER DIRECTION MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-4: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 8 OF THE FOLLOWING: PDB DMS 2, JCP b, EDSU, PDB TCS 2, TCA M TAC, TCA M pump, PDB b1, PIB (B2), DIU b2, DIU b3, PDB b2. C-5: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 11 OF THE FOLLOWING: IMV FAN (B), GLAS (1B - 8B), ATU (RMS RACK), PDB RMS, THC b THCU, THC b Cabin Fan, UOP (B). C-6: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 4 OF THE FOLLOWING: VCU b, CPB b, CVIU (B), TV MONITOR 1&2 (RMS RACK), CCP (RMS RACK)
A3000ME.100-E	JEM PMB NOISE CONFIG 4 RECORD NOISE CURRENT MEASUREMENT AT JEM PM-B POWER FEED (REF C-2, C-6)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-7: NODE 2 REQUIRED LOADS ARE AT LEAST 4 OF THE FOLLOWING: N2-1 MDM, MTL PUMP, MTL 3 WAY MIX VALVE, MTL SFCA, NIA MTL VENT VLV, NIA MTL ISO VALVE.
A3000ME.100-F	JEM PMB V RIPPLE CONFIG 4 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-B POWER FEED (REF C-2, C-6)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-8: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 3 OF THE FOLLOWING: PDB EPS 1, PIB a1, DIU a1, DIU EPS1
A3000ME.100-G	JEM PMA V RIPPLE CONFIG 5 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-8)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-9: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 6 OF THE FOLLOWING: PDB DMS 1, JCP a, EDSU, PDB a2, DIU a3, PDB a1, PIB (A2), DIU a2
A3000ME.100-H	JEM PMA V RIPPLE CONFIG 6 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-8, C-9)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-10: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 5 OF THE FOLLOWING: PDB TCS 1, THC a Cabin Fan, TCA L TAC, TCA L Pump, THC a THCU, PDB WS, ATU (WS RACK)
A3000ME.100-I	JEM PMA V RIPPLE CONFIG 7 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-11: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 12 OF THE FOLLOWING: GLAS (1A - 8A), IMV FAN (A), VCU a, TV MONITOR 1&2 (WS Rack), CPB a, CVIU a, CCP (WS Rack)
A3000ME.100-J	JEM PMA NOISE CONFIG 8 RECORD NOISE CURRENT MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10, C11)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
A3000ME.100-K	JEM PMA V RIPPLE CONFIG 8 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10, C-11)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-12: JEM PWR CH A REQUIRED LOADS ARE AT LEAST ONE OF THE FOLLOWING: HRMS, PEHG D:REF: SSP 30237; SSP 30243; MEIT3 DTO EME-001A
A3000ME.100-L	JEM PMA NOISE CONFIG 9 RECORD NOISE CURRENT MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-12)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	
A3000ME.100-M	JEM PMA V RIPPLE CONFIG 9 RECORD VOLTAGE RIPPLE MEASUREMENT AT JEM PM-A POWER FEED (REF C-7, C-12)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	
A3000ME.200**	POWER QUALITY JEM/NODE 2 CONFIGURATION CRIT: NONE			A:PMEIT3 B: C:C-1: QUIESCENT VEHICLE SHALL BE REQUIRED (NO FLIGHT OR GSE POWER SYSTEM SWITCHING) DURING SOURCE/LOAD IMPEDANCE MEASUREMENTS
A3000ME.200-A	JEM PMB S-S V CONFIG 1 RECORD STEADY-STATE VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-3)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION	C-2: NODE 2 REQUIRED LOADS ARE AT LEAST 5 OF THE FOLLOWING: N2-2 MDM, LTL PUMP, NIA LTL VENT VALVE, NIA LTL ISO VALVE, SFCA LTL FLOW CONTROL VALVE, LTL CTB 3 WAY MIX VALVE, LTL REG 3 WAY MIX VALVE
A3000ME.200-B	JEM PMB TRANS V CONFIG 1 RECORD TRANSIENT VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-3)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-3: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 3 OF THE FOLLOWING: PDB EPS 2, PIB b1, DIU b1, DIU EPS 2
A3000ME.200-C	JEM PMB S-S V CONFIG 2 RECORD STEADY-STATE VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-3, C-4)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-4: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 8 OF THE FOLLOWING: PDB DMS 2, JCP b, EDSU, PDB TCS 2, TCA M TAC, TCA M pump, PDB b1, PIB (B2), DIU b2, DIU b3, PDB b2
A3000ME.200-D	JEM PMB TRANS V CONFIG 2 RECORD TRANSIENT VOLTAGE ON JEM PM-B POWER FEED		MEASUREMENT TAKEN PER CUSTOMER	

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
	(REF C-2, C-3, C-4)		DIRECTION.	
A3000ME.200-E	JEM PMB S-S V CONFIG 3 RECORD STEADY-STATE VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-3, C-4, C-5)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-5: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 11 OF THE FOLLOWING: IMV FAN (B), GLAS (1B - 8B), ATU (RMS RACK), PDB RMS, THC b THCU, THC b Cabin Fan, UOP (B).
A3000ME.200-F	JEM PMB TRANS V CONFIG 3 RECORD TRANSIENT VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-3, C-4, C-5)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-6: JEM PWR CH B REQUIRED LOADS ARE AT LEAST 4 OF THE FOLLOWING: VCU b, CPB b, CVIU (B), TV MONITOR 1&2 (RMS RACK), CCP (RMS RACK)
A3000ME.200-G	JEM PMB S/L Z CONFIG 3 RECORD SOURCE/LOAD IMPEDANCE ON JEM PM-B POWER FEED (REF C-1, C-2, C-3, C-4, C-5)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-7: NODE 2 REQUIRED LOADS ARE AT LEAST 4 OF THE FOLLOWING: N2-1 MDM, MTL PUMP, MTL 3 WAY MIX VALVE, MTL SFCA, NIA MTL VENT VLV, NIA MTL ISO VALVE
A3000ME.200-H	JEM UOP S-S VOLT CONFIG 3 RECORD STEADY-STATE VOLTAGE ON JEM B-STRING UOP (REF C-2, C-3, C-4, C-5)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-8: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 3 OF THE FOLLOWING: PDB EPS 1, PIB a1, DIU a1, DIU EPS1
A3000ME.200-I	JEM UOP S/L Z CONFIG 3 RECORD SOURCE/LOAD IMPEDANCE ON JEM B-STRING UOP (REF C-1, C-2, C-3, C-4, C-5)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-9: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 6 OF THE FOLLOWING: PDB DMS 1, JCP a, EDSU, PDB a2, DIU a3, PDB a1, PIB (A2), DIU a2
A3000ME.200-J	JEM PMB S-S V CONFIG 4 RECORD STEADY-STATE VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-6)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-10: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 5 OF THE FOLLOWING: PDB TCS 1, THC a Cabin Fan, TCA L TAC, TCA L Pump, THC a THCU, PDB WS, ATU (WS RACK)
A3000ME.200-K	JEM PMB TRANS V CONFIG 4 RECORD TRANSIENT VOLTAGE ON JEM PM-B POWER FEED (REF C-2, C-6)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	C-11: JEM PWR CH A REQUIRED LOADS ARE AT LEAST 12 OF THE FOLLOWING: GLAS (1A - 8A), IMV FAN (A), VCU a, TV MONITOR 1&2 (WS Rack), CPB a, CVIU a, CCP (WS Rack)
				C-12: JEM PWR CH A REQUIRED LOADS ARE AT LEAST ONE OF THE FOLLOWING: HRMS, PEHG
				D:REF: SSP 30482 VOLUME 1; MEIT3 DTO EPS-002A

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
A3000ME.200-L	JEM PMB S/L Z CONFIG 4			
	RECORD SOURCE/LOAD IMPEDANCE ON JEM PM-B POWER FEED (REF C-1, C-2, C-6)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-M	JEM PMA S-S V CONFIG 5			
	RECORD STEADY-STATE VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-N	JEM PMA TRANS V CONFIG 5			
	RECORD TRANSIENT VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-O	JEM PMA S-S V CONFIG 6			
	RECORD STEADY-STATE VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8, C-9)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-P	JEM PMA TRANS V CONFIG 6			
	RECORD TRANSIENT VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8, C-9)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-Q	JEM PMA S-S V CONFIG 7			
	RECORD STEADY-STATE VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-R	JEM PMA TRANS V CONFIG 7			
	RECORD TRANSIENT VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-S	JEM PMA S-S V CONFIG 8			

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
	RECORD STEADY-STATE VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10, C-11)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-T	JEM PMA TRANS V CONFIG 8			
	RECORD TRANSIENT VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-8, C-9, C-10, C-11)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-U	JEM PMA S/L Z CONFIG 8			
	RECORD SOURCE/LOAD IMPEDANCE ON JEM PM-A POWER FEED (REF C-1, C-7, C-8, C-9, C-10, C-11)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-V	JEM PMA S-S V CONFIG 9			
	RECORD STEADY-STATE VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-12)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-W	JEM PMA TRANS V CONFIG 9			
	RECORD TRANSIENT VOLTAGE ON JEM PM-A POWER FEED (REF C-7, C-12)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000ME.200-X	JEM PMA S/L Z CONFIG 9			
	RECORD SOURCE/LOAD IMPEDANCE ON JEM PM-A POWER FEED (REF C-1, C-7, C-12)		MEASUREMENT TAKEN PER CUSTOMER DIRECTION.	
A3000MG.100**	GN&C MASS PROPERTIES	SSPF		A:PMEIT3
	CRIT: NONE			B:
	VERIFY GNC MASS PROPERTIES AND PAYLOAD ID UPDATE RESULTING FROM JEM ROBOTIC ARM GRAPPLE AND MOTION.			C:R-1: THIS TEST WILL VERIFY THE CORRECT TRANSFER OF JEM MASS PROPERTIES TELEMETRY FROM THE JEM RMS MDP TO THE C&C MDM, FROM THE C&C MDM TO THE GNC MDM, THE CORRECT RESPONSE OF THE GNC MDM, AND TELEMETRY UPDATE TO C&C MDM. IT WILL ALSO VERFIY PROPER TRANSFER OF
A3000MG.100-A	GNC MASS PROPERTIES WITH P/L > 2000 KG			
	PERFORM SIMULATED GRAPPLE OF PAYLOAD AND UPDATE P/L NAME ON RLT. FROM THE GNC MDM			

FILE X, VOL. 4, A3000 - MEIT3 - Multi-Element Integrated Test-3 - January 28, 2003

REQUIREMENT		MEAS/ STIMU	SPECIFICATION	INTERVALS/CONSTRAINTS/REMARKS
NUMBER	DESCRIPTION			
	VERIFY: P/L ID ISS CENTER OF MASS		10,127 +/-1% OF THE CALCULATED VALUES	TELEMETRY IN S-BAND AND BROADCAST ANCILLARY DATA (BAD).
	JEM RMS HANDLING OBJECT STATUS JEM RMS DQI		1 VALID	R-2: BOEING ENGINEERING WILL PROVIDE ISS CENTER OF MASS CALCULATED VALUES OF PAYLOAD TRANSLATION TEST. P/L 1 (*ID:10,127 MASS 7000 KG); P/L 2 (*ID:0 MASS 600 KG) *[PAYLOAD ID AS DENOTED BY THE GNC MDM]
	PERFORM SIMULATED TRANSLATION OF PAYLOAD FOR A MINIMUM OF 180 SECONDS. FROM THE GNC MDM VERIFY: ISS CENTER OF MASS WHEN P/L TRANSLATION IS COMPLETED		+/-1% OF THE CALCULATED VALUE	R-3: THE TEST TEAM WILL EVALUATE POST TEST DATA AND VERIFY PROPER OPERATION
	PERFORM SIMULATED UNGRAPPLE OF PAYLOAD. FROM THE GNC MDM VERIFY: JEM RMS HANDLING OBJECT STATUS ISS CENTER OF MASS		0 NO CHANGE	R-4: THIS TEST CAN BE PERFORMED WITH THE NASDA ARM SIMULATOR
	UPDATE P/L NAME ON RLT AND FROM THE GNC MDM VERIFY: JEM RMS DQI		INVALID	R-5: JEM STRING B POWER WILL NEED TO BE ACTIVE
A3000MG.100-B	GNC MASS PROPERTIES WITH P/L < 2000 KG			D:REF: MEIT3 DTO GNC-001
	PERFORM SIMULATED GRAPPLE OF PAYLOAD AND UPDATE P/L NAME ON RLT. FROM THE GNC MDM, VERIFY:		NO UPDATE OF JEM RMS DQI, GNC PAYLOAD ID OR ISS CENTER OF MASS VALUES	
	PERFORM SIMULATED UNGRAPPLE OF PAYLOAD AND UPDATE P/L NAME ON RLT. FROM THE GNC MDM, VERIFY:		NO UPDATE OF JEM RMS DQI, GNC PAYLOAD ID OR ISS CENTER OF MASS VALUES	

WORK UNIT CODE

RATIONALE/JUSTIFICATION