EADS CASA	**FUNCTIONAL TEST**	**PFBFA-24-50-02-00/1**	**Issue**	**A**	**Pages**	**13**
	SPF, Aircraft System Engineering Department					
Aircraft	**A330 MRTT**					

Title:

Power outlets tests

Summary:

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REVISIONS RECORD

Issue	Revision Reason	Approved
Date	**Chapters, Sections, Affected pages**	**Signature**
A	New Issue	Casildo Calderón
09-10-08	All pages	

1 INTRODUCTION

1.1 Object

The purpose of this test is to check the functionality of the newly installed power outlets in the Business Class seating area and the Medivac Outlets and the operation of the existing power outlets due to the modification of their behaviour during abnormal power conditions.

1.2 List of acronyms and abbreviations

AMM	Aircraft Maintenance Manual
MRTT	Multi-Role Tanker Transport
MFCD	Multi-Function and Control Display
GPU	Ground Power Unit
EEN	Electrical Extensión Network
AWM	Aircraft Wiring Manual
RAAF	Royal Australian Air Force
CBMU	Circuit Breaker Monitoring Unit
EIS	Electronic Instrument System
ECAM	Electronic Centralized Aircraft Monitoring

2 APPLICABLE DOCUMENTATION

NT-FA-SGU-07025	A330 MRTT. ATA24 Electrical System Functional Test
AMM - RAAF	A330 Aircraft Maintenance Manual (AMM) – Royal Australian Air Force
AWM - RAAF	A330 Aircraft Wiring Manual (AWM) – Royal Australian Air Force
Task 24-41-00-861-801	Energize the Aircraft Electrical Circuits from the External Power A.
Task 31-60-00-860-801	EIS start procedure (EWD DU, SD DU only)
Task 31-60-00-860-802	EIS stop procedure
Task 24-41-00-862-801	De-energize the Aircraft Electrical Circuits from the External Power A.

3 REQUIRED EQUIPMENT

- External GPU of 115/200 VAC, 3-phase, 400 Hz
- Digital multimeter model Fluke 8060 A or equivalent.
- CBMU floppy disk for military configuration
- In order to monitoring the measures an oscilloscope can be used.

4 DEFINITIONS

Axxx Panel whose name is TBD.

5 PRELIMINARY INSTRUCTIONS

5.1 Test Preparation

The systems to be operative for the test performance are the EIS, ECAM part and MFCD system for the electrical system monitoring.

On the other hand PFBFA-24-00-01-00/1 and PFBFA-24-00-02-00/1 must have been executed.

5.2 Safety Instructions

Prior to performing any test, the following requirements must be met:

• Adequate electrical fire, extinguishing equipment shall be available within the aircraft and shall be within calibration / maintenance.

• No other testing shall be executed simultaneously on the aircraft which might interfere with the correct execution of these tests.

• All Operator Safety hazards shall be identified and appropriate clothing, and or precautions shall be taken.

• Check that all control switches, and selectors of the electrical installation are in the OFF position.

5.3 Preliminary Actions

- All the engines and the APU shall be shut down.
- Batteries will be checked for correct connectivity. They shall also be checked to ensure they are fully charged.
- The wiring continuity tests of the system-under-test shall have been concluded successfully.
- The equipment and components of the system-under-test shall have been properly installed, in accordance with the applicable documentation. They shall be verified as fully operative.

- Make sure that C.B. listed below are closed:

FIN	PANEL	LOCATION	DESIGNATION
A1ME	5001VE	E10	MEDEVAC & BUSINESS 230VAC OUTLETS L SUPPLY
A7ME	5001VE	E12	MEDEVAC & BUSINESS 230VAC OUTLETS L CTL
A5MF	5001VE	E13	MEDEVAC & BUSINESS 230VAC OUTLETS R CTL
A1MF	5001VE	E15	MEDEVAC & BUSINESS 230VAC OUTLETS R SUPPLY
A18XN	715VU	C54	A7XP
1XC	715VU	E54	ESS BUS NORM SPLY
A54XN	715VU	F55	A3XP
A48XN	715VU	H54	A5XP
3XN1	715VU	H55	105XP
A6PU	715VU	J54	MIL TR3 SPLY
3PU1	715VU	J55	TR 1
A24XN	715VU	Q56	A8XP
2XC	715VU	S57	ESS BUS ALTN SPLY
A13XN	715VU	T56	A4XP
3XN2	715VU	V56	206XP
A5XN	715VU	V57	A6XP
3PU2	715VU	W56	TR 2 NORM
A2PU	715VU	W57	MIL TR4 SPLY
A16XN	717VU	B52	BOOM ECU 3 SPLY
A17XN	717VU	C52	BOOM ECU 1 SPLY
A22XN	718VU	A59	BOOM ECU 4 SPLY
A23XN	718VU	B59	BOOM ECU 2 SPLY
A49XN	721VU	C16	ARO/MCO CSL MSTR 1
A1PU	721VU	C19	MIL BUS TIE CTL 1
A3PN	721VU	G13	A5PP
A4PN	721VU	G14	A15PP
A5PN	721VU	G15	A3PP
A6PN	721VU	G16	A11PP
A7PN	721VU	G17	A13PP
A37XN	721VU	J19	GEN FAIL LOGIC CTL 1
A11PU	721VU	J20	MIL TR4 MONG
A8PN	721VU	K20	5001VE A3PP
5XC	721VU	M14	ESS BUS NORM SWTG
A1PN	721VU	Q17	A7PP
A2PN	721VU	Q18	A9PP
A7XN	721VU	X16	PODS MSTR 1
A15XN	721VU	X17	BOOM MSTR 1
A2XA	721VU	X18	GALLEY FWD MID SHED
A19PN	722VU	A45	A12PP
A20PN	722VU	A46	A14PP

FIN	PANEL	LOCATION	DESIGNATION
A21PN	722VU	A47	A6PP
A25PN	722VU	A48	A8PP
A26PN	722VU	A49	A10PP
A10PU	722VU	C41	MIL BUS TIE CTL2
A50XN	722VU	C44	ARO/MCO CSL MSTR 2
A18PN	722VU	F45	A4PP
A21XN	722VU	H34	BOOM MSTR 2
A33XN	722VU	H35	PODS MSTR 2
6XG	722VU	M44	EXT A AVAIL
A9PU	722VU	V32	MIL TR3 MONG
A9PN	722VU	V33	5001VE A4PP
A53XN	722VU	V34	GEN FAIL LOGIC CTL 2
4PE	742VU	R76	TR ESS

6 TEST EXECUTION

WARNING: **BEFORE POWER IS SUPPLIED TO THE AIRCRAFT, MAKE CERTAIN THAT ELECTRICAL CIRCUITS UPON WHICH WORK IS IN PROGRESS ARE ISOLATED.**

NOTE: **All results are to be recorded in the Result Table below. Where no steps result required mark STEP RESULT box with N/A**

6.1 Power outlet Functioning.

6.1.1 Do the EIS start procedure (EWD DU, SD DU only) (Ref. TASK 31-60-00-860-801)

6.1.2 On the ECAM control panel, push the EL/DC key.

6.1.3 On panel Axxx (230VAC PWR Outlets CTL Panel), press both LEFT & RIGHT PWR OUTLETS p/bs.

- Legend “OFF” goes off.
- Ensure that all the outlets in business class seating area (four outlets Australian type) supply a voltage of 220V 50Hz.
- Ensure that all the outlets in MEDEVAC area (two outlets Australian type) supply a voltage of 220V 50Hz.

6.1.4 Open the C.B. A53XN (on 722VU) and A37XN (on 721VU).

- Ensure that all the outlets in business class seating area (four outlets Australian type) are not supplied.
- Ensure that all the outlets (two outlets Australian type in MEDEVAC area) supply a voltage of 220V 50Hz.

6.1.5 Close the C.B. A53XN (on 722VU) and A37XN (on 721VU).

- Ensure that all the outlets in business class seating area (four outlets Australian type) supply a voltage of 220V 50Hz.
- Ensure that all the outlets (two outlets Australian type in MEDEVAC area) supply a voltage of 220V 50Hz.

6.1.6 On panel Axxx (230VAC PWR Outlets CTL Panel), press both LEFT & RIGHT PWR OUTLES p/bs.

- Legend "OFF" is lighted.
- Ensure that all the MEDEVAC outlets (two outlets Australian type) are not supplied.
- Ensure that all the outlets in business class seating area (four outlets Australian type) are not supplied.

6.1.7 On A945VU (CONSOLE CONTROLS Panel) press MSTR PWR 1 & 2 p/b to energize RARO Console.

6.1.8 On the left side console 535VU, Measure the voltage output of the Captain outlet (5NA)(*Figure 1*). The voltage shall be 115V 60Hz

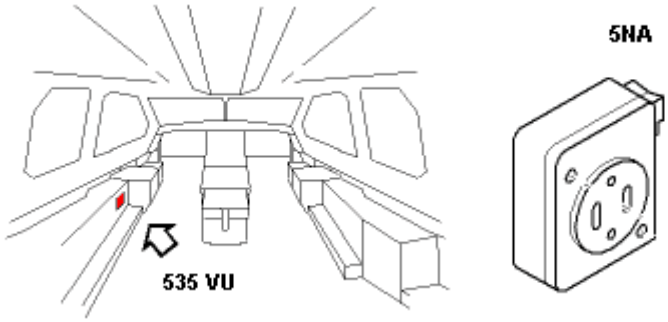


Figure 1. Cockpit Panel Location.

6.1.9 On the right side console 536VU, Measure the voltage output of the First Officer outlet (4NA). (*Figure 2*). The voltage shall be 115V 60Hz

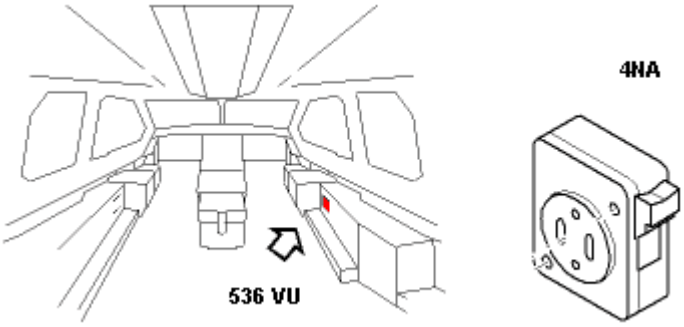


Figure 2. Cockpit Panel Location.

6.1.10 On the Third Occupant console 538VU, Measure the voltage output of the Third Occupant outlet (8NA). (*Figure 3*). The voltage shall be 115V 60Hz

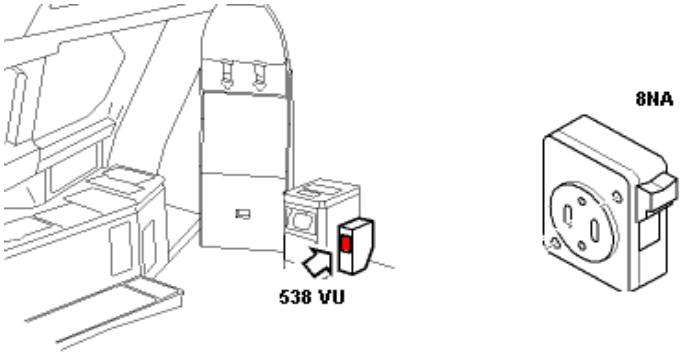


Figure 3. Cockpit Panel Location.

6.1.11 On the panel 715VU, open the circuit breaker 3XN1.

- On the SD, on the ELEC DC page, loss of the TR1 indications

6.1.12 On the left side console 535VU, Measure the voltage output of the Captain outlet (5NA).

- The outlet is not energized.

6.1.13 On the right side console 536VU, Measure the voltage output of the First Officer outlet (4NA).

- The outlet is not energized.

6.1.14 On the Third Occupant console 538VU, Measure the voltage output of the Third Occupant outlet (8NA).

- The outlet is not energized.

6.1.15 On the panel 715VU, close the circuit breaker 3XN1. Check that the Captain, F/O and Third Occupant are energized.

6.1.16 On the MCDU push the line key adjacent to the TR1 RESET indication.

6.1.17 On the panel 715VU, open the C.B. A2PU.

6.1.18 On the left side console 535VU, Measure the voltage output of the Captain outlet (5NA).

- The outlet is not energized.

6.1.19 On the right side console 536VU, Measure the voltage output of the First Officer outlet (4NA).

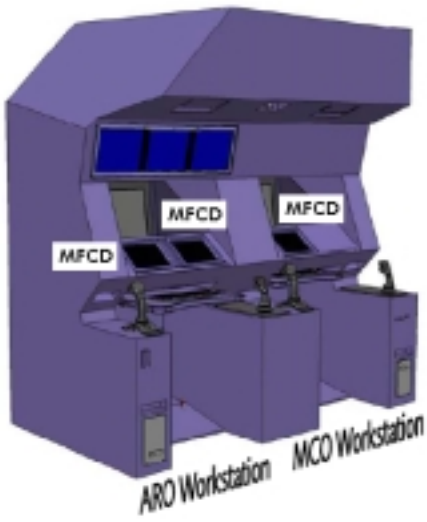
- The outlet is not energized.

6.1.20 On the Third Occupant console 538VU, Measure the voltage output of the Third Occupant outlet (8NA).

- The outlet is not energized.

6.1.21 On the panel 715VU, close the C.B. A2PU. Check that the Captain, F/O and Third Occupant are energized.

6.1.22 At the top of the MFCD, press the WCAS bezel key.



- On the MFCD, the WCAS page is displayed

6.1.23 At the bottom of the MFCD, press the AMS key.

- On the MFCD, the AMS Sub-page is displayed.

6.1.24 On the MFCD, press the SYSTEM REPORT/ TEST button.

- On the MFCD, the SYSTEM REPORT/TEST Sub-page is displayed.

6.1.25 On the MFCD, press the TR button.

- On the MFCD, the TR Sub-page is displayed

6.1.26 On the MFCD press the control TR3 RESET.

- Ensure that the cockpit outlets 115V/60HZ (NA circuit) are energized.

6.1.27 On A945VU (CONSOLE CONTROLS Panel) release MSTR PWR 1 & 2 p/b to de-energize RARO Console.

6.1.28 Do the EIS stop procedure (Ref. TASK 31-60-00-860-802).

6.1.29 De-energize the aircraft electrical circuits (Ref. TASK 24-41-00-862-801).

7 TEST RESULTS

Type on the following tables the results of the tests:

7.1 Power Outlet Functioning Test Results:

STEP	STEP RESULT (TICK BOX)				COMMENT (IF FAIL)
6.1.1	N/A				
6.1.2	N/A				
6.1.3	The 4 outlets in business area supply 230Vac				
	PASS		FAIL		
	The 2 outlets in MEDEVAC area supply 230Vac				
	PASS		FAIL		
6.1.4	The 4 outlets in business area are not supply.				
	PASS		FAIL		
	The 2 outlets in MEDEVAC area are not supply.				
	PASS		FAIL		
6.1.5	The 4 outlets in business area supply 230Vac				
	PASS		FAIL		
	The 2 outlets in MEDEVAC area supply 230Vac				
	PASS		FAIL		
6.1.6	The 4 outlets in business area are not supply.				
	PASS		FAIL		
	The 2 outlets in MEDEVAC area are not supply.				
	PASS		FAIL		
6.1.7	RARO console energization				
	PASS		FAIL		
6.1.8	Correct voltage in Captain outlet. 115Vac 60hz				
	PASS		FAIL		
6.1.9	Correct voltage in First Officer outlet. 115Vac 60hz				
	PASS		FAIL		
6.1.10	Correct voltage in Third occupant outlet. 115Vac 60hz				
	PASS		FAIL		
6.1.11	Loss of the TR1 indications				
	PASS		FAIL		
6.1.12	Captain outlet is not energized				
	PASS		FAIL		
6.1.13	First Officer outlet is not energized				
	PASS		FAIL		
6.1.14	Third Occupant outlet is not energized				
	PASS		FAIL		

6.1.15	**The Captain, F/O and Third Occupant are energized. 115Vac 60hz**				
	PASS		**FAIL**		
6.1.16	**N/A**				
6.1.17	**N/A**				
6.1.18	**Captain outlet is not energized**				
	PASS		**FAIL**		
6.1.19	**First Officer outlet is not energized**				
	PASS		**FAIL**		
6.1.20	**Third Occupant outlet is not energized**				
	PASS		**FAIL**		
6.1.21	**The Captain, F/O and Third Occupant are energized. 115Vac 60hz**				
	PASS		**FAIL**		
6.1.22	**WCAS page is displayed**				
	PASS		**FAIL**		
6.1.23	**AMS sub-page is displayed**				
	PASS		**FAIL**		
6.1.24	**SYSTEM REPORT/TEST Sub-page is displayed**				
	PASS		**FAIL**		
6.1.25	**TR Sub-page is displayed**				
	PASS		**FAIL**		
6.1.26	**The Captain, F/O and Third Occupant are energized. 115Vac 60hz**				
	PASS		**FAIL**		
6.1.27	**RARO console de-energization**				
	PASS		**FAIL**		
6.1.28	**N/A**				
6.1.29	**N/A**				
OVERALL TEST RESULT (TICK BOX)			**COMENTS:**		
PASS					
FAIL					

Table 1. Power Outlet Functioning Test Results

NOTE: In Case of NCS, write down its number on table 2

N.C.S. Number	Date

Table 2

NOTE: After this functional test execution, stamp the correspondent operation on the Production Order**.**

NOTE: Every result sheet must be stamped and attached to Production Order**.**

STAMP:	
DATE:	