Test Project

Module E - Aircraft Avionic System Inspection Rectification

Aircraft Maintenance

Submitted by:

Zhikuan Luo – Zhengzhou Jiean Hi-tech Co., Ltd., Independent Test Project Designer
Fang Fen – China Eastern Airlines, Independent Test Project Designer
Poh Ghee Lim, Independent Test Project Designer

Ng Chung Hwee Edmund – Bombardier, Independent Test Project Validator
Bai Quanwei – Jiean Hitech, Independent Test Project Validator
Fredrik Glanrup – Repaircraft Sweden AB, Independent Test Project Validator
Yann Roux – Airbus, Independent Test Project Validator

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Marking Scheme

AIRCRAFT AVIONIC SYSTEM INSPECTION RECTIFICATION	MARK
E1 Board preparation, Wiring and looming.	20
E2: Installation, connection and termination.	
E3: Circuitry Continuity and Function Check	
E4: Safety, Housekeeping, Sustainability and Documentation	

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Introduction to Test Project Module E

INTRODUCTION TO TEST PROJECT MODULE E		
NAME	**(First)**	**(Last)**
COUNTRY		
START TIME		**END TIME**

Introduction

Aircraft are operated by complex electrical systems. Many systems such as lighting, landing gear, instrumentation, and ignition systems require electrical interface. Aircraft engineers are specially trained to install and maintain these systems.

Objectives	To assess the competitors' competency to fabricate, install and terminate wire loom in accordance with the wiring diagrams and OEM's manuals provided.
Time allotted	3.5 hours

Description of tasks

1	Complete the wiring connection in the electronic bay
2	Perform system function check.

References

- CASA AC21-99
- Aircraft Integrated Troubleshooting Trainer Maintenance Manual.

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Process

Preparations

1. Check tools in accordance with the tool list.
2. Prepare tools and consumables in accordance with the Wiring Diagram and Electrical Board Diagram, correctly select the components.
3. Use appropriate PPE and safety precautions during fabrication, installation and termination of wire loom.

Board preparation Wiring and Looming

Refer to Figure 1, Figure 2 and Figure 3.

1. Complete the wiring connection in the electronic bay in accordance with the Electrical Board Diagram, VHF Wiring Diagram, and CASA Advisory Circular AC 21-99 v2.1.
2. Conduct a visual inspection of the completed electrical board to ensure correct wiring connections.
3. Perform continuity check for the completed circuit.
4. Connect the wiring harness connectors to the sockets on the circuit board according to the name labels of the wiring harnesses and connectors around the circuit board.
5. Confirm that the switch S1 on the circuit board is set to the "OFF" position.
6. Confirm that the CB on the circuit board is set to the "OPEN" position.

Aircraft Power – On

Refer to Figure 4 and Figure 5.

1. Open the access panel, connect the external power supply to the external power socket, and press the "ON/OFF" button.
2. Set MAIN BATT and APU BATT switches to the pressed-in position.
3. Press EXT PWR switch and confirm that the "ON" light on the EXT PWR switch is on.
4. Turn ON the switch S1 and Close the CB on the circuit board.
5. Perform a functional test on the circuit via the Electrical Test Box. *Refer to Figure 2 and Figure 6.*

   (a) Turn ON the Master Power switch, and Battery light is ON.
   (b) Turn ON the Ground Power switch, Ground Power light is ON, and Battery light is OFF.
   (c) Set the LG UP/DOWN switch to the "UP" position, NLG UP, LLG UP, RLG UP and LG UP lights are ON.
   (d) Set the LG UP/DOWN switch to the "INTMD" position, NLG UP, LLG UP, RLG UP and LG UP lights are OFF.
   (e) Set the LG UP/DOWN switch to the "DOWN" position, NLG DOWN, LLG DOWN, RLG DOWN and LG DOWN lights are ON.
   (f) Set the LG UP/DOWN switch to the "INTMD" position, NLG DOWN, LLG DOWN, RLG DOWN and LG DOWN lights are OFF.
   (g) Do the audio function check for VHF2 system, as per para 5 and para 6.

Note: The VHF2 Channel in the cockpit has been set up, and all parameters have been adjusted.

6. Perform the VHF2 system **self-test** using the Communication System Test Box as follows. *Refer to Figure 5 and Figure 7.*

   (a) Wear pilot's boom microphone headset.
   (b) Open the circuit breaker, then close circuit breaker "VHF-2 R/T".
   (c) Confirm that a short tone is heard in the headset.

Note: If five short tones are heard, the VHF2 transceiver has an internal fault, report to the Expert immediately.

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7. Perform the VHF2 system **operation test** using the Communication System Test Box as follows. *Refer to Figure 5 and Figure 7.*

   (a) Wear pilot's boom microphone headset.
   (b) Set the "PTT" switch on the Communication System Test Box to the "R/T" position and hold it. Speak into the microphone: "*Audio Communications Test*".
   (c) A voice message "*Audio Communications Test ok* " should be heard in the headset. If not, request assistance from the Expert.
   (d) Confirm that the VHF2 transmission light (TX) on the RTU remains visible throughout the duration the "PTT" switch is pressed.
   (e) Release the PTT button to return the switch from "R/T" to the "OFF" position.

Aircraft Power-Off

Refer to Figure 4 and Figure 5.

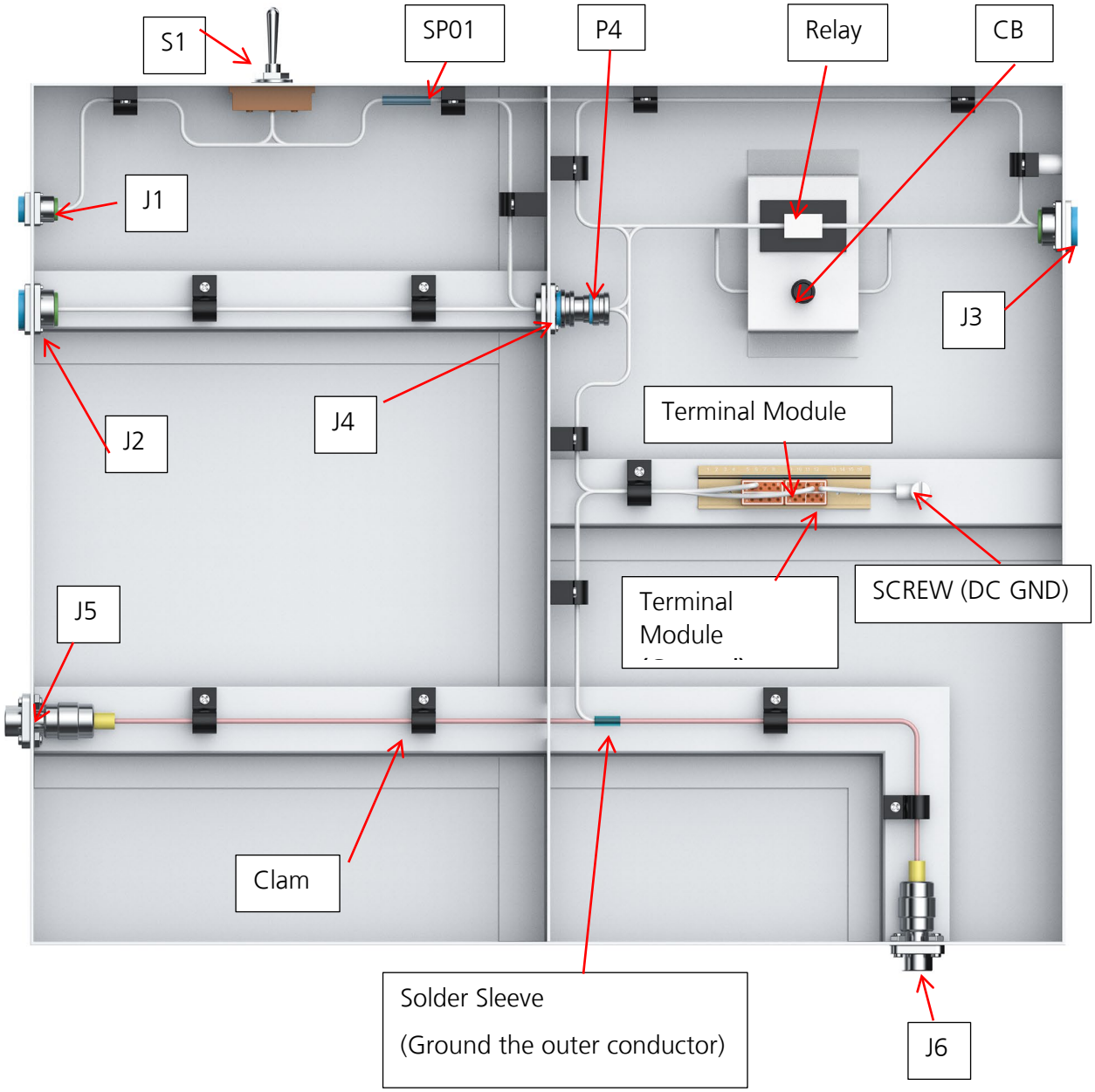
1. Press the EXT PWR switch and press the external power supply "ON/OFF" button.
2. Set the MAIN BATT switch and APU BATT switch to the pressed-out position.
3. Disconnect the external power supply cable and close the access panel.

Housekeeping and Documentation

Perform housekeeping, restore workplace and submit all documentation to the Experts.

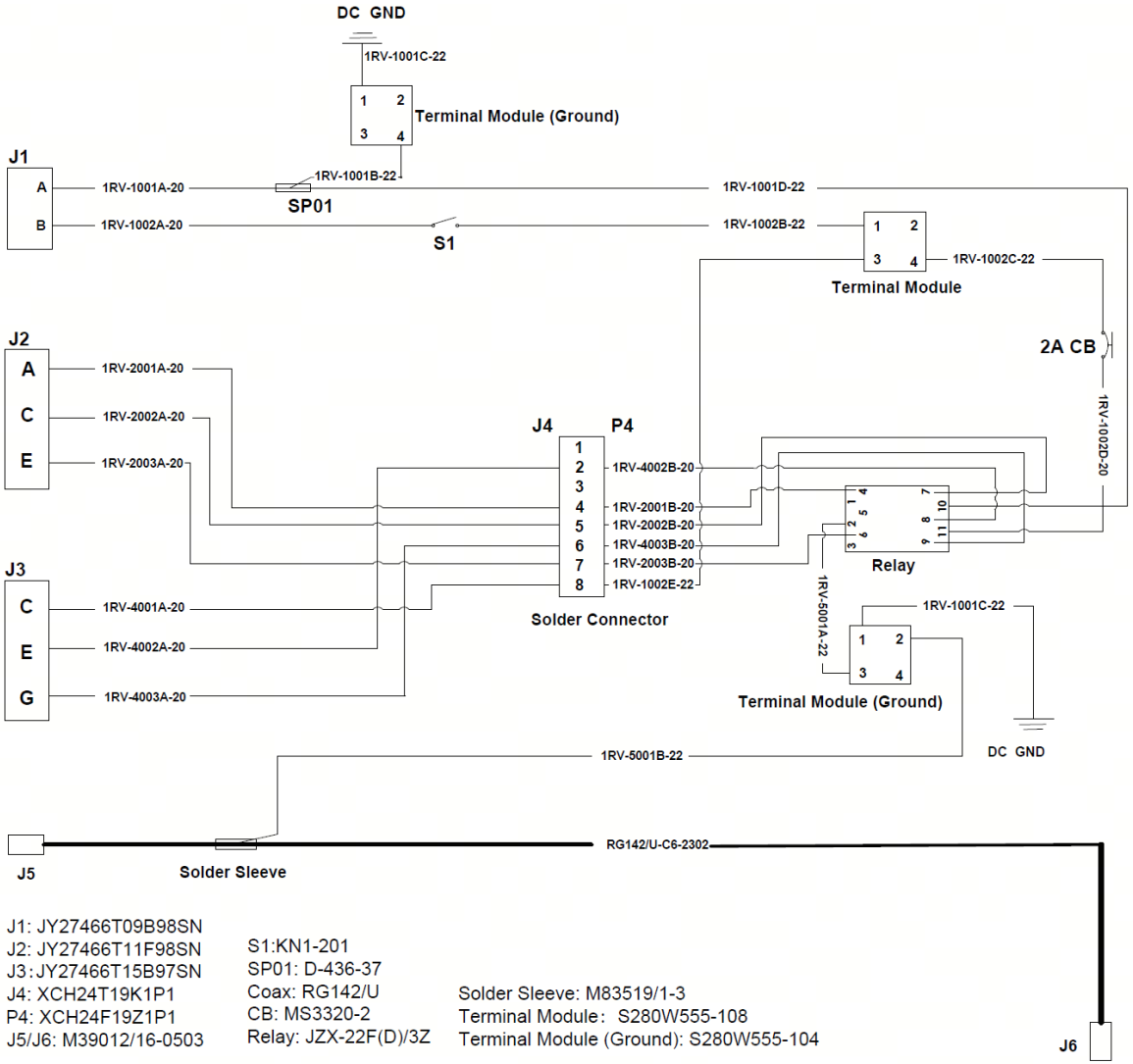
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Figure 1: Electrical Board Diagram



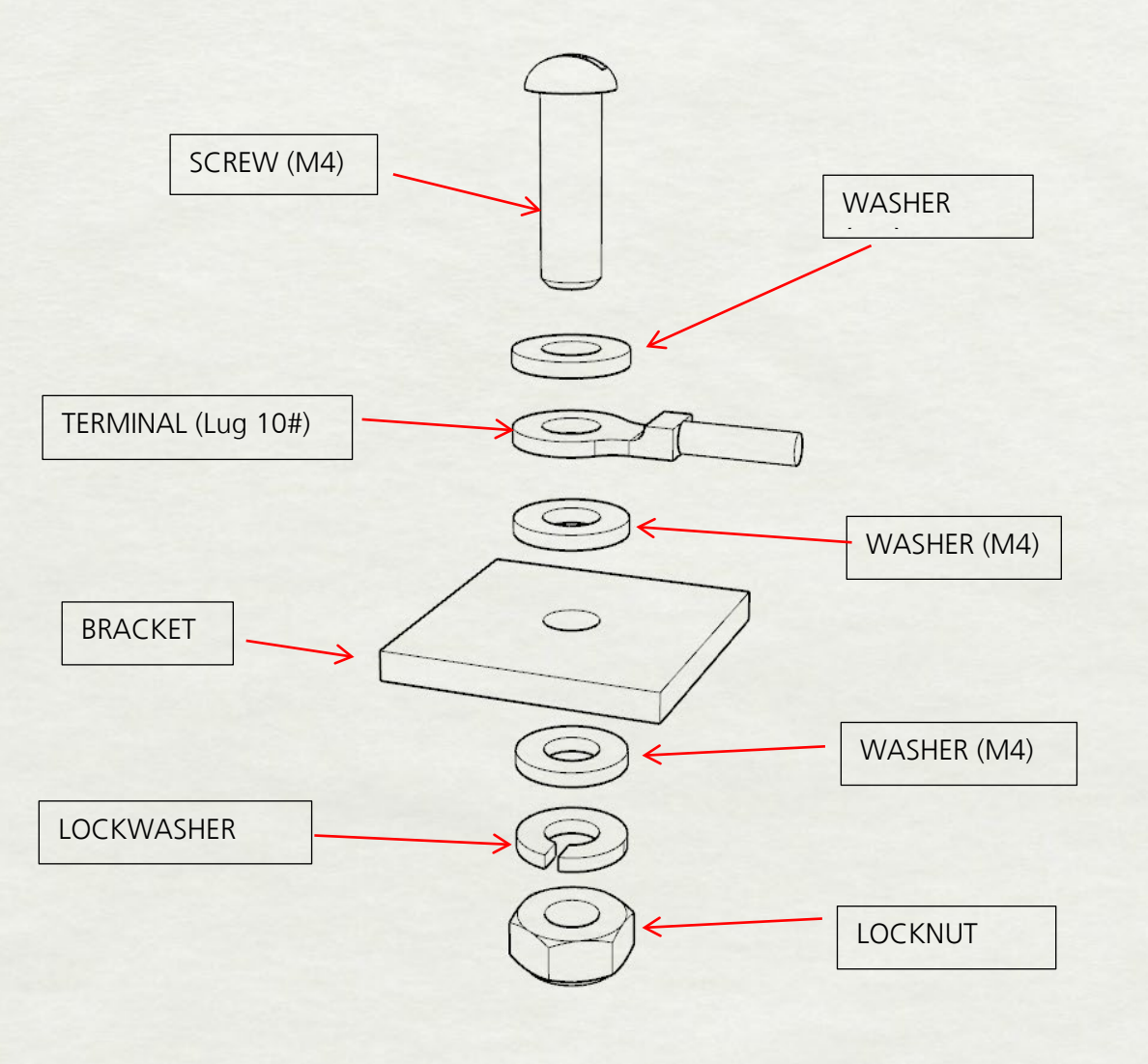
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Figure 2: VHF Wiring Diagram



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Figure 3: Ground Stud Assembly- DC GND



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Figure 4: Ground Power Unit

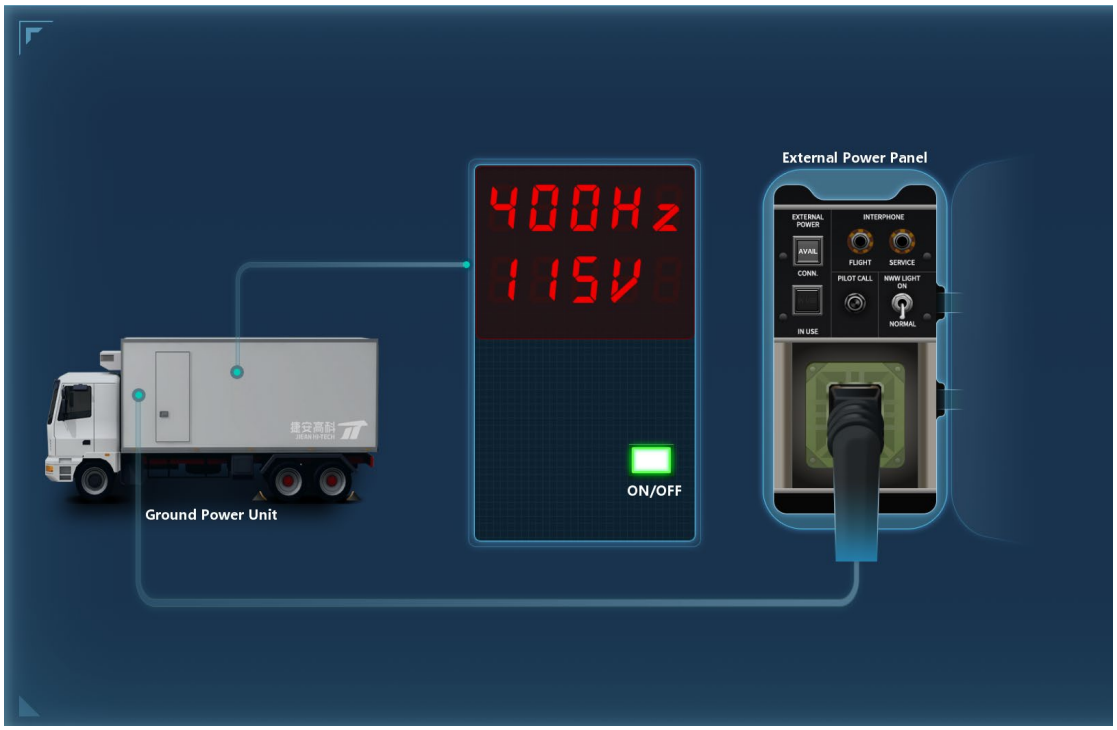
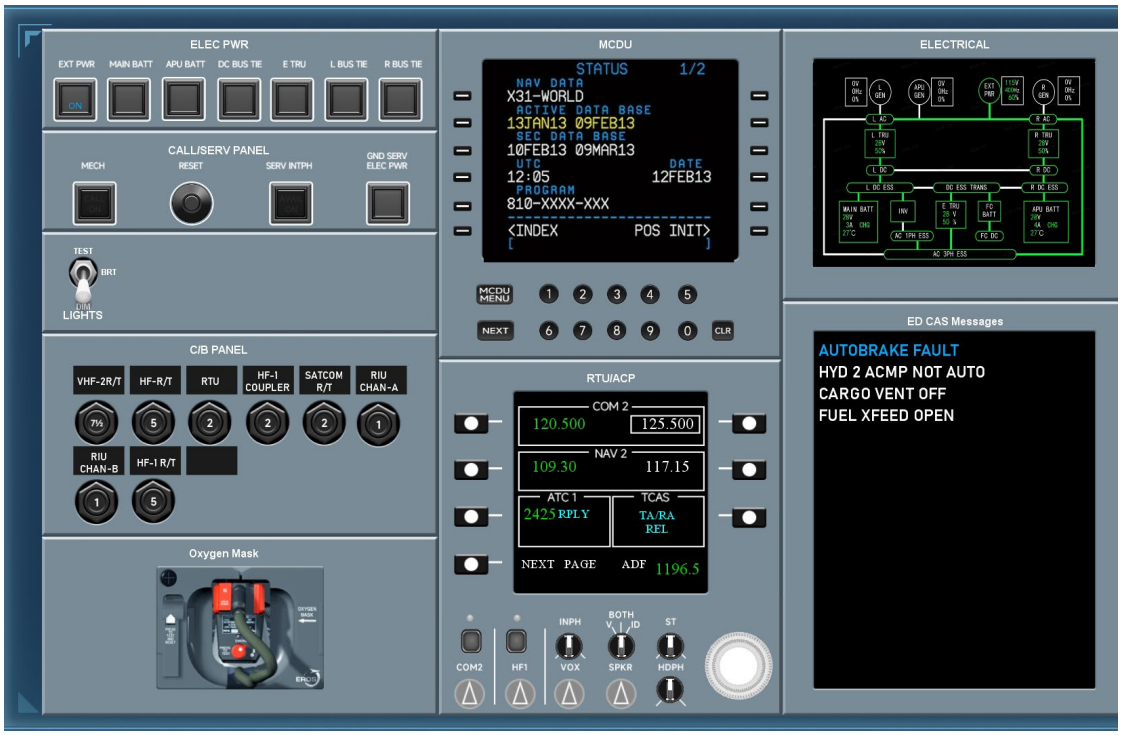


Figure 5: Cockpit Panel



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Figure 6: Electrical Test Box



Figure 7: Communication System Test Box



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TASK CARD 1	Technical Instruction	As per WSC2026_TP14_electrical_en	Page:
VHF Control Circuit and Functional Test	Aircraft Regn	NA	Reported by
	Date	dd/mmm/yyyy	Name of Competitor

S/N	MAINTENANCE REQUIRED/DEFECT DESCRIPTION	RESOLUTION	RESOLVED BY/DATE
Certifies that the work specified except as otherwise specified was carried out in accordance with the requirement of the Air Navigation Act and in respect to that work the aircraft/engine/aircraft component is considered ready for release to service.		Certified by Date dd/mmm/yyyy	

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Appendix 1: Aviation material requisition form

Fill in the aviation material requisition form and collect them with this form.

#	DESCRIPTION	PART NUMBER	QTY
1			
2			
3			
4			
5			
6			
7			
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9			
10			
11			
12			
13			
14			
15			

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#	DESCRIPTION	PART NUMBER	QTY
16			
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27			
28			
29			
30			
31			

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#	DESCRIPTION	PART NUMBER	QTY
32			
33			
34			
35			
Task Card Number			
Collected by			
Date	dd/mmm/yyyy		

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