IFR 6000 XPDR/DME TCAS/ADS-B/TIS/UAT TEST SET

Getting Started Guide

IFR 6000 XPDR/DME
TCAS/ADS-B/TIS/UAT TEST SET

Getting Started Guide 6096 Rev. 003

Part of 6093 (CD)

VIAVI Solutions
1-844-GO-VIAVI
www.viavisolutions.com

This Guide contains essential information relating to initial use of the unit. VIAVI recommends the operator become familiar with this Guide and the Operation Manual contained on the accompanying CD.

VIAVI updates Test Set software on a routine basis.
As a result, examples may show images from earlier software versions. Images are updated when appropriate.

Notice

Every effort was made to ensure that the information in this manual was accurate at the time of release. However, information is subject to change without notice, and VIAVI reserves the right to provide an addendum to this manual with information not available at the time that this manual was created.

Copyright/Trademarks

Patent Information

Patented as described at **www.viavisolutions.com/patents**

Copyright Release

DFARS Statement

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Terms and conditions

Specifications, terms, and conditions are subject to change without notice. The provision of hardware, services, and/or software are subject to VIAVI’s standard terms and conditions, available at www.viavisolutions.com/en/terms-and-conditions.

Open Source Disclaimer - IMPORTANT READ CAREFULLY

The IFR 6000 XPDR/DME TCAS/ADS-B/TIS/UAT TEST SET includes third party software licensed under the terms of separate open source software licenses. By using this software you agree to comply with the terms and conditions of the applicable open source software licenses. Software originated by VIAVI is not subject to third party licenses. Terms of the VIAVI Software License different from applicable third party licenses are offered by VIAVI alone.

Declaration of Conformity

VIAVI recommends keeping a copy of the Declaration of Conformity that shipped with the unit with the test set at all times.

Warranty Information

Warranty information for this product is available on the VIAVI website at https://www.viavisolutions.com/en-us/warranty-information.

Federal Communications Commission (FCC) Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment was tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by VIAVI.

ALERT

- To comply with FCC RF Exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
- This transmitter must not be co-located in conjunction with any other antenna or transmitter.

Industry Canada Requirements

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions: 1) This device may not cause interference; and, 2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: 1) l'appareil ne doit pas produire de brouillage; et, 2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

EU WEEE and Battery Directives

This product, and the batteries used to power the product, should not be disposed of as unsorted municipal waste and should be collected separately and disposed of according to your national regulations.

VIAVI has established a take-back processes in compliance with the EU Waste Electrical and Electronic Equipment (WEEE) Directive, 2012/19/EU, and the EU Battery Directive, 2006/66/EC.

Instructions for returning waste equipment and batteries to VIAVI can be found in the WEEE section of VIAVI's Standards and Policies web page.

If you have questions concerning disposal of your equipment or batteries, contact the VIAVI WEEE Program Management team at WEEE.EMEA@VIAVISolutions.com.

EU REACH

Article 33 of EU REACH regulation (EC) No 1907/2006 requires article suppliers to provide information if a listed Substances of Very High Concern (SVHC) is present in an article above a certain threshold.

For information on the presence of REACH SVHCs in VIAVI products, see the Hazardous Substance Control section of VIAVI's Standards and Policies web page.

EU CE Marking Directives (LV, EMC, RoHS, RE)

This product conforms with all applicable CE marking directives. Please see EU Declaration of Conformity for details.

EMC Directive Compliance

This product was tested and conforms to the EMC Directive, 2014/30/EU for electromagnetic compatibility.

California Proposition 65

California Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted in November 1986 with the aim of protecting individuals in the state of California and the state's drinking water and environment from excessive exposure to chemicals known to the state to cause cancer, birth defects or other reproductive harm.

For the VIAVI position statement on the use of Proposition 65 chemicals in VIAVI products, see the Hazardous Substance Control section of VIAVI's Standards and Policies web page.

Korea Certification

A급 기기 (업무용 방송통신기자재) Class A Equipment (Industrial Broadcasting & Communications Equipment).	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다. This equipment is **Industrial (Class A) electromagnetic wave suitability equipment** and seller or user should take notice of it, and this equipment is to be used in the places except for home.

Ordering information

This manual is a product of the VIAVI Technical Publications Department, issued for use with the IFR 6000 XPDR/DME TCAS/ADS-B/TIS/UAT TEST SET. The PDF format of this manual is available on the VIAVI product website.

Go to: https://www.viavisolutions.com/en-us/resources/literature-library

- Type IFR6000 to find the manuals associated with the IFR 6000 XPDR/DME TCAS/ADS-B/TIS/UAT TEST SET.

Contact Information

Contact the Technical Assistance Center (TAC) for technical support or with any questions regarding this or other VIAVI products.

- Phone: 1-844-GO-VIAVI
- Email: Techsupport.Avcomm@viavisolutions.com

For the latest TAC information, go to:

https://www.viavisolutions.com/en-us/support/technical-product-support/technical-assistance

SAFETY FIRST: TO ALL OPERATIONS PERSONNEL

REFER ALL SERVICING OF UNIT TO QUALIFIED TECHNICAL PERSONNEL. THIS UNIT CONTAINS NO OPERATOR SERVICEABLE PARTS.

WARNING: USING THIS EQUIPMENT IN A MANNER NOT SPECIFIED BY THE ACCOMPANYING DOCUMENTATION MAY IMPAIR THE SAFETY PROTECTION PROVIDED BY THE EQUIPMENT.

CASE, COVER OR PANEL REMOVAL

Opening the Case Assembly exposes the operator to electrical hazards that can result in electrical shock or equipment damage. Do not operate this Test Set with the Case Assembly open.

SAFETY IDENTIFICATION IN TECHNICAL MANUAL

This manual uses the following terms to draw attention to possible safety hazards that may exist when operating or servicing this equipment.

CAUTION: THIS TERM IDENTIFIES CONDITIONS OR ACTIVITIES THAT, IF IGNORED, CAN RESULT IN EQUIPMENT OR PROPERTY DAMAGE (E.G., FIRE).

WARNING: THIS TERM IDENTIFIES CONDITIONS OR ACTIVITIES THAT, IF IGNORED, CAN RESULT IN PERSONAL INJURY OR DEATH.

SAFETY SYMBOLS IN MANUALS AND ON UNITS

CAUTION: Refer to accompanying documents. (This symbol refers to specific CAUTIONS represented on the unit and clarified in the text.)

AC OR DC TERMINAL: Terminal that may supply or be supplied with AC or DC voltage.

DC TERMINAL: Terminal that may supply or be supplied with DC voltage.

AC TERMINAL: Terminal that may supply or be supplied with AC or alternating voltage.

EQUIPMENT GROUNDING PRECAUTION

Improper grounding of equipment can result in electrical shock.

USE OF PROBES

Check the specifications for the maximum voltage, current and power ratings of any connector on the Test Set before connecting it with a probe from a terminal device. Be sure the terminal device performs within these specifications before using it for measurement, to prevent electrical shock or damage to the equipment.

POWER CORDS

Power cords must not be frayed, broken nor expose bare wiring when operating this equipment.

USE RECOMMENDED FUSES ONLY

Use only fuses specifically recommended for the equipment at the specified current and voltage ratings.

INTERNAL BATTERY

This unit contains a Lithium-Ion Battery, serviceable only by a qualified technician.

CAUTION: Signal Generators can be a source of Electromagnetic Interference (EMI) to communication receivers. Some transmitted signals can cause disruption and interference to communication services out to several miles. Users of this equipment should scrutinize any operation that results in radiation of a signal (directly or indirectly) and should take necessary precautions to avoid potential communication interference problems.

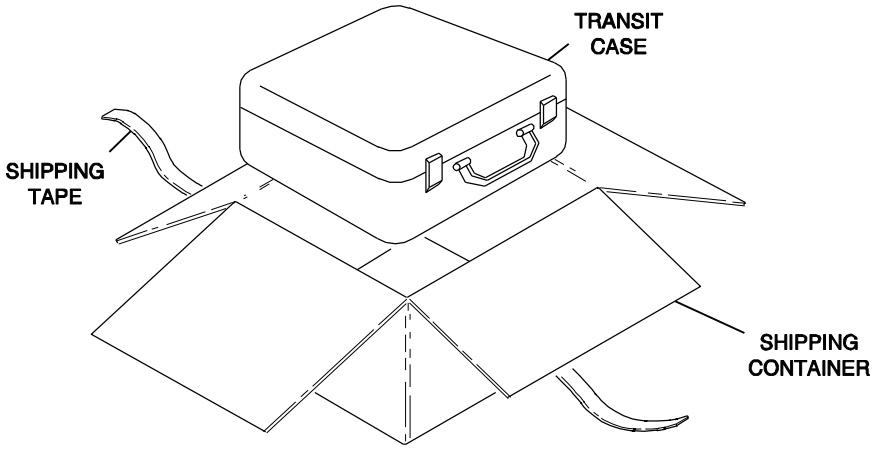
TABLE OF CONTENTS

SERVICE UPON RECEIPT OF MATERIAL

UNPACKING

Special-design packing material inside this shipping carton provides maximum protection for the IFR 6000. Avoid damaging the carton and packing material during equipment unpacking. Use the following steps for unpacking the IFR 6000.

- Cut and remove the sealing tape on the carton top and open the carton.
- Grasp the IFR 6000 transit case firmly, while restraining the shipping carton, and lift the equipment and packing material vertically.
- Place the IFR 6000 transit case and end cap packing on a suitable flat, clean and dry surface.
- Remove the protective plastic bag from the IFR 6000 transit case.
- Place protective plastic bag and end cap packing material inside shipping carton.
- Store the shipping carton for future use should the IFR 6000 need to be returned.



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SERVICE UPON RECEIPT OF MATERIAL (cont)

CHECKING UNPACKED EQUIPMENT

- Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage to VIAVI.
- Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies to VIAVI.

DESCRIPTION	PART NUMBER	QTY
IFR 6000	72422	1
Power Supply	67366	1
Antenna	112684	1
Breakout Box	64580	1
Antenna Shield	64749	1
12 IN. Coaxial Cable (Antenna)	62401	1
72 IN. Coaxial Cable (Antenna)	112830	1
5 A Fuse	56080	1
Transit Case	10241	1
Power Cord (US only)	62302	1
POWER CORD (EUROPEAN)	64020	1
Operation Manual (CD-ROM)	6093	1
Getting Started Manual (Paper)	6096	1

IFR 6000 with Standard Accessories

SERVICE UPON RECEIPT OF MATERIAL (cont)

CHECKING UNPACKED EQUIPMENT (cont)

OPTIONAL ACCESSORIES	PART NUMBER	QTY
Desk Top Stand	63656	1
Tripod	67474	1
Tripod, Dolly, Stand	82553	1
25 ft TNC/TNC COAXIAL CABLE	62462	1
50 ft TNC/TNC COAXIAL CABLE	86336	1
UC-584 Dual Antenna Coupler Kit	112349	1
UC-584 Single Antenna Coupler Kit	112350	1
12 IN. COAXIAL CABLE (GPS)	112831	1
72 IN. Coaxial CABLE (GPS)	112837	1
IFR-6000 Maintenance Manual-(CD-ROM)	6095	1

Antenna Coupler and Cable

SPECIFICATIONS

Input Power (Test Set):

Input Range:	11 to 32 Vdc
Power Consumption:	55 W Maximum 16 W Nominal at 18 Vdc with Charged Battery
Fuse Requirements:	5 A, 32 Vdc, Type F

Input Power (External AC to DC Converter):

Input Range:	100 to 250 VAC, 1.5 A Maximum, 47 to 63 Hz
Main Supply Voltage Fluctuations:	≤10% of the nominal voltage
Transient Overvoltages:	According to Installation Category II

Environmental (Test Set):

Use:	Pollution Degree 2
Altitude:	≤4800 meters
Operating Temperature:	-20°C to 55°C (Battery Charging temperature range is 5°Cto 40°C, controlled by internal charger)
Storage Temperature:	-30° to 70°C (Li Ion Battery must be removed when <-20°C and >60°C)
Relative Humidity:	
5°C to 30°C:	95%
30°C to 40°C:	75%
40°C to 55°C:	45%

Environmental (External AC to DC Converter):

Use:	Indoors
Altitude:	≤10,000 meters
Temperature:	
Operating:	0°C to 40°C
Storage:	-20°C to 71°C

INSTALLATION

GENERAL

The IFR 6000 is powered by an internal Lithium-Ion battery pack. The Test Set is supplied with an external DC Power Supply that enables the operator to recharge the battery when connected to AC power.

NOTE: The IFR 6000 can operate continuously on AC power via the DC Power Supply, for servicing and/or bench tests.

BATTERY OPERATION

The internal battery is equipped to power the IFR 6000 for more than four hours of continuous use, after which time, the IFR 6000 battery needs recharging. Battery Operation Time Remaining (in Hours) is displayed on all screens.

The IFR 6000 contains an automatic time-out to conserve power. If a key is not pressed within a 5 to 20 minute time period, the Test Set shuts Off (only when using battery power). The Power Down Time may be set in the Setup Screen.

BATTERY CHARGING

The battery charger operates whenever DC power (11 to 32 Vdc) is applied to the Test Set with the supplied DC Power Supply or a suitable DC power source. When charging, the battery reaches a 100% charge in approximately four hours. The internal battery charger allows the battery to charge between a temperature range of 5° to 40°C. The IFR 6000 can operate, connected to an external DC source, outside the battery charging temperature range (5° to 40°C).

The battery should be charged every three months (minimum) or disconnected for long term inactive storage periods of more than six months. The Battery must be removed when conditions surrounding the Test Set are <-20°C and >60°C)

SAFETY PRECAUTIONS

The following safety precautions must be observed during installation and operation. VIAVI assumes no liability for failure to comply with any safety precaution outlined in this manual.

Complying with Instructions

Installation/operating personnel should not attempt to install or operate the IFR 6000 without reading and complying with instructions contained in this manual. All procedures contained in this manual must be performed in exact sequence and manner described.

Grounding Power Cord

WARNING: DO NOT USE A THREE-PRONG TO TWO-PRONG ADAPTER PLUG. DOING SO CREATES A SHOCK HAZARD BETWEEN THE CHASSIS AND ELECTRICAL GROUND.

For AC operation, the AC Line Cable, connected to the DC Power Supply, is equipped with standard three-prong plug and must be connected to a properly grounded three-prong receptacle that is easily accessible. It is the customer's responsibility to:

- Have a qualified electrician check receptacle(s) for proper grounding.
- Replace any standard two-prong receptacle(s) with properly grounded three-prong receptacle(s).

INSTALLATION (cont)

Operating Safety

Due to potential for electrical shock within the Test Set, the Case Assembly must be closed when the Test Set is connected to an external power source.

Battery replacement, fuse replacement and internal adjustments must only be performed by qualified service technicians.

AC POWER REQUIREMENTS

The DC Power Supply, supplied with the IFR 6000, operates over a voltage range of 100 to 250 VAC at 47 to 63 Hz.

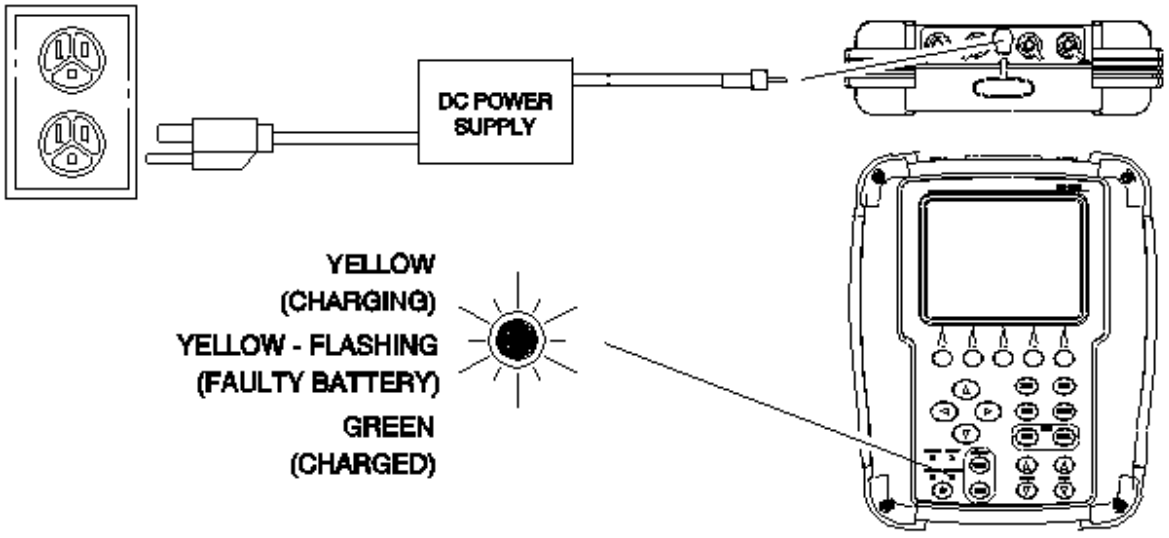
The battery charger operates whenever DC power (11 to 32 Vdc) is applied to the Test Set with the supplied DC Power Supply or a suitable DC power source. When charging, the battery reaches an 100% charge in approximately four hours. The Battery Charging temperature range is 5° to 40°C, controlled by an internal battery charger.

BATTERY RECHARGING

STEP	PROCEDURE

1. Connect AC Line Cable to either:
   - AC PWR Connector on the DC Power Supply and an appropriate AC power source
   - Suitable DC power source
2. Connect the DC Power Supply to the DC POWER Connector on the IFR 6000.
3. Verify the CHARGE Indicator illuminates yellow.
4. Allow four hours for battery charge or until the CHARGE Indicator illuminates green.

   NOTE: If the CHARGE Indicator flashes yellow and/or the battery fails to accept a charge and the IFR 6000 does not operate on battery power, the battery, serviceable only by a qualified technician, requires replacement. Refer to Battery/Voltage Instructions.



INSTALLATION (cont)

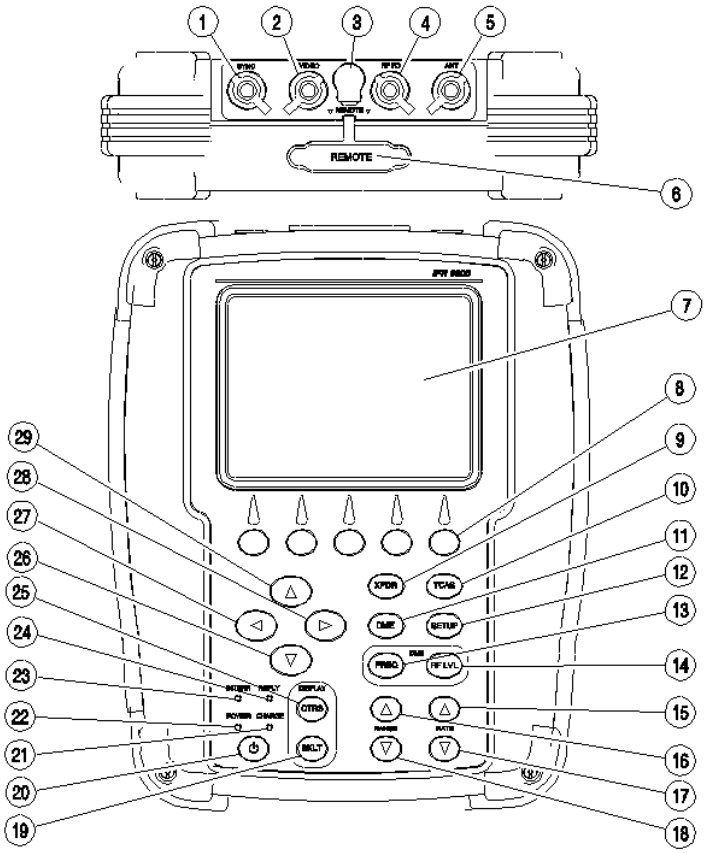
EXTERNAL CLEANING

The following procedure contains routine instructions for cleaning the outside of the Test Set.

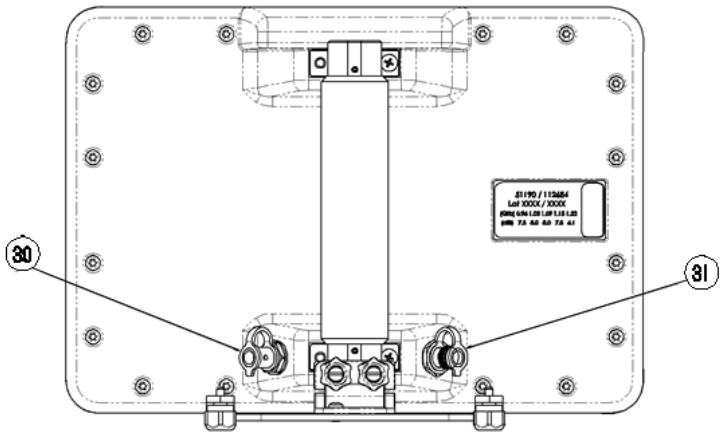
CAUTION: DISCONNECT POWER FROM TEST SET TO AVOID POSSIBLE DAMAGE TO ELECTRONIC CIRCUITS.

STEP	PROCEDURE
1.	Clean front panel buttons and display face with soft lint-free cloth. If dirt is difficult to remove, dampen cloth with water and a mild liquid detergent.
2.	Remove grease, fungus and ground-in dirt from surfaces with soft lint-free cloth dampened (not soaked) with isopropyl alcohol.
3.	Remove dust and dirt from connectors with soft-bristled brush.
4.	Cover connectors, not in use, with suitable dust cover to prevent tarnishing of connector contacts.
5.	Clean cables with soft lint-free cloth.
6.	Paint exposed metal surface to avoid corrosion.

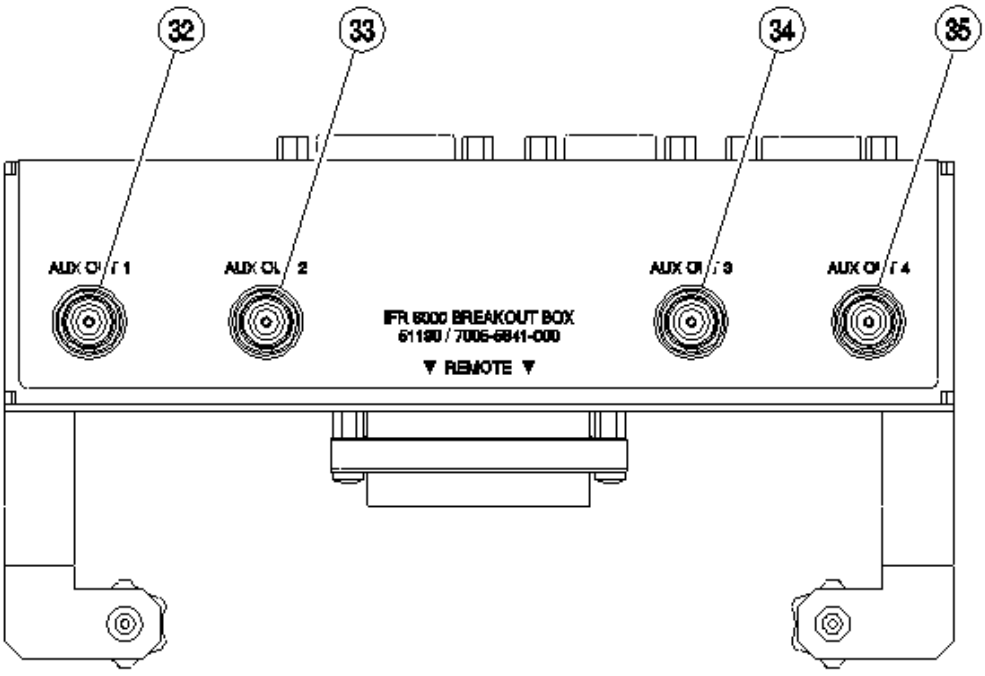
CONTROLS, CONNECTORS AND INDICATORS



1. Test Set GPS Connector
2. VIDEO Connector
3. DC POWER Connector
4. RF I/O Connector
5. Test Set ANT Connector
6. REMOTE Connector
7. Display
8. Multi-Function Soft Keys
9. XPDR Mode Select Key
10. TCAS Mode Select Key
11. DME Mode Select Key
12. SETUP Select Key
13. FREQ Select Key
14. RF LVL Key
15. RATE INCREMENT Key
16. RANGE INCREMENT Key
17. RATE DECREMENT Key
18. RANGE DECREMENT Key
19. BACKLIGHT Key
20. POWER Key
21. CHARGE Indicator
22. POWER Indicator
23. INTERR Indicator
24. REPLY Indicator
25. CONTRAST Key
26. DECREMENT/SELECT Data Key
27. SELECT DATA UNIT MSB Key
28. SELECT DATA UNIT LSB Key
29. INCREMENT/SELECT Data Key
30. GPS Connector
31. ANT Connector
32. AUX OUT Connector 1
33. AUX OUT Connector 2
34. AUX OUT Connector 3
35. AUX OUT Connector 4
36. USB HOST Connector
37. USB DEVICE Connector
38. Altitude Encoder Connector
39. AUX IN Connector
40. RS-232 Connector
41. REMOTE Connector



Directional Antenna



Breakout Box - Front View

CONTROLS, CONNECTORS AND INDICATORS (cont)

ITEM	DESCRIPTION

1. Test Set GPS Connector

If UAT Option is available, the BNC type connector provides connection to the GPS antenna.

2. VIDEO Connector

BNC type connector provides interrogation and reply pulses.

3. DC POWER Connector

Circular Type Connector (2.5 mm center, 5.5 mm outer diameter, center positive) used for battery charging or operation of Test Set.

4. RF I/O Connector

TNC Type connector used for direct connection to UUT antenna connector.

5. ANT Connector

TNC Type Connector used for connection to the IFR 6000 directional antenna for over the air testing.

6. REMOTE Connector

Type HD DB44 Connector used for remote operation and software upgrades. Contains RS-232, USB Host and USB Peripheral connections (altitude encoder inputs and SYNC outputs).

7. Display (LCD)

38 characters by 16 lines for main screen display with Soft Key boxes at the bottom of the screen.

8. Multi-Function Soft Keys

Five Application dependent keys provide test specific information and movement between test screens. The legends are displayed in boxes at the bottom of the Display.

9. XPDR MODE Select Key

Selects Transponder Auto Test Screen.

10. TCAS MODE Select Key

Selects TCAS Auto Test Screen.

11. DME MODE Select Key

Selects DME Test Screen.

12. SETUP Key

Displays the SETUP Menu.

13. FREQ Select Key

Selects DME Frequency as VOR Paired, TACAN Channel or MHz.

14. RF LVL Key

DME mode function only. Selects DME range reply and squitter RF level.

15. RATE INCREMENT Key

Increments DME or TCAS range rate.

CONTROLS, CONNECTORS AND INDICATORS (cont)

ITEM	DESCRIPTION
16.	**RANGE INCREMENT Key** Increments DME or TCAS range.
17.	**RATE DECREMENT Key** Decrements DME or TCAS range rate.
18.	**RANGE DECREMENT Key** Decrements DME or TCAS range.
19.	**BACKLIGHT Key** Displays/exits the Backlight Adjust Field.
20.	**POWER Key** Powers the IFR 6000 ON and OFF.
21.	**CHARGE Indicator** Illuminated when external DC power is applied for Bench Operation or Battery charging.
22.	**POWER Indicator** Illuminated when the IFR 6000 is operational.
23.	**INTERR Indicator** Illuminated when Test Set is generating an interrogation signal (XPDR Mode) or receives an Interrogation (TCAS Mode) signal.
24.	**REPLY Indicator** Illuminated when the Test Set receives a valid reply signal (XPDR Mode) or generates a reply (TCAS Mode) signal.
25.	**CONTRAST Key** Displays/exits the Contrast Adjust Field.
26.	**DECREMENT SELECT Data Key** Decrements data in slewable fields, such as RF LVL. This Key also selects data in fields that have fixed functions, such as ECHO and SQUITTER.
27.	**SELECT DATA UNIT MSB Key** Moves the slew cursor toward the MSB (Most Significant Bit) of the data field.
28.	**SELECT DATA UNIT LSB Key** Moves the slew cursor toward the LSB (Least Significant Bit) of the data field.
29.	**INCREMENT/SELECT Data Key** Increments data in slewable fields, such as RF LVL. This Key also selects data in fields that have fixed functions, such as ECHO and SQUITTER.
30.	**GPS Connector** BNC Type Connector used for connection to the IFR 6000 for over the air testing.
31.	**ANT Connector** TNC Type Connector used for connection to the IFR 6000 for over the air testing.

CONTROLS, CONNECTORS AND INDICATORS (cont)

ITEM	DESCRIPTION
32.	**AUX OUT Connector 1** ATCRBS interrogation trigger used for calibration.
33.	**AUX OUT Connector 2** ATCRBS interrogation trigger used for calibration.
34.	**AUX OUT Connector 3** BNC type connector serves as the SYNC connector and provides synchronization pulses for each test set transmission, e.g., interrogation, reply, squitter.
35.	**AUX OUT Connector 4** Not used
36.	**USB HOST Connector** USB Flash Drive interface for software update.
37.	**USB DEVICE Connector** Remote Control Interface.
38.	**ALTITUDE ENCODER Connector** Interface for external encoding altimeter.
39.	**AUX IN Connector** Not used.
40.	**RS-232 Connector** Used for remote control interface, software update and test data dump.
41.	**REMOTE Connector** Used to interface with the IFR 6000.

AUXILIARY EQUIPMENT

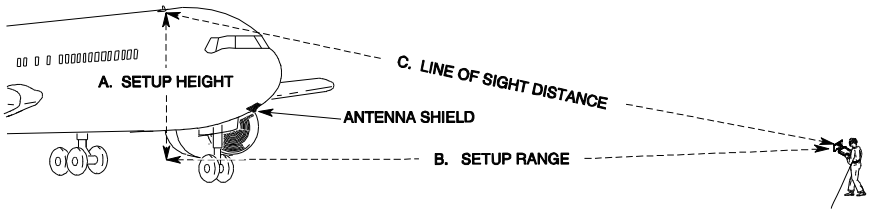
DIRECTIONAL ANTENNA

The Directional Antenna is used two ways: on the Test Set or Tripod Mounted.

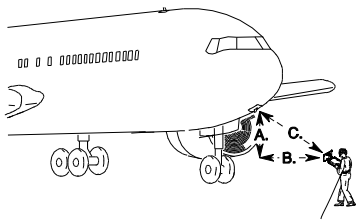
Mount Directional Antenna on friction hinge and connect Directional Antenna ANT Connector to Test Set ANT Connector via 12 in coaxial cable (PN: 62401). If UAT Option is available, connect the short RF coaxial cable (PN: 112831) between the Antenna GPS Connector and the Test Set GPS Connector.

Connect Directional Antenna ANT Connector to the Test Set ANT Connector via 72 in coaxial cable (PN: 112837). If UAT Option is available, connect the 72 in RF coaxial cable (PN: 112830) between the Antenna GPS Connector and the Test Set GPS Connector. The Directional Antenna can be held by hand or mounted on the tripod; point the Directional Antenna at the UUT antenna.

Distance for testing top UUT antenna should be sufficient so UUT antenna is visible. Distance for testing bottom UUT antenna should be close enough so that top UUT antenna is not visible. Supplied Antenna Shield should be mounted on bottom UUT antenna to avoid unwanted replies.



TESTING TOP ANTENNA



WHEN DESELECTING, TERMINATING OR SHIELDING TOP ANTENNA IS NOT POSSIBLE OR PRACTICAL, USE SETUP POSITION THAT HAS AIRCRAFT BLOCKING LINE OF SIGHT TO TOP ANTENNA.

TESTING BOTTOM ANTENNA

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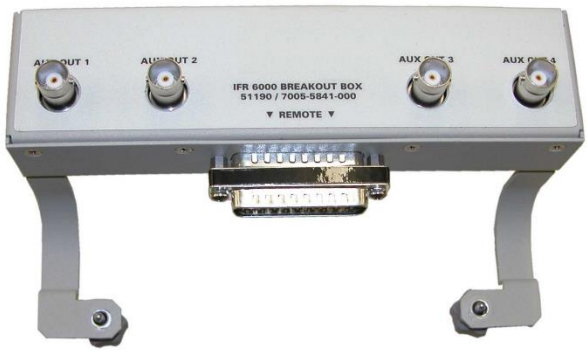
AUXILIARY EQUIPMENT (cont)

BREAKOUT BOX

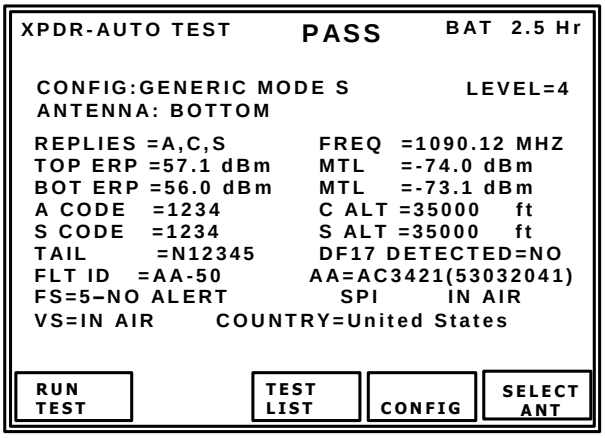
The Breakout Box accessory provides access to individual user interfaces via standard connectors). The Test Set Remote Connector provides the main user signal interface for the Breakout Box.



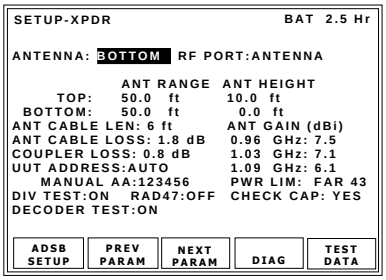
The Breakout Box attaches to the Test Set via a remote connector located on the top of the Test and thumb screws on the back.

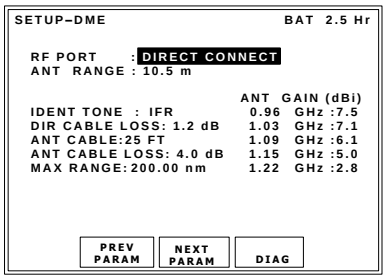
SCREEN HIERARCHY

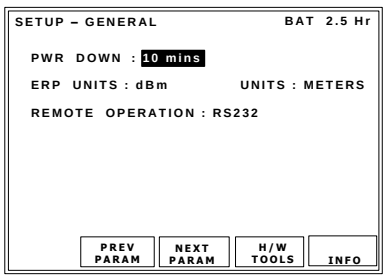
The XPDR AUTO TEST Screen always appears on Power-Up.



The SETUP Menu allows the operator to set various parameters used in testing, configuration and memory storage. Press the SETUP Key to display the XPDR Setup Screen, press again for the DME Setup Screen, again for General Setup Screen.



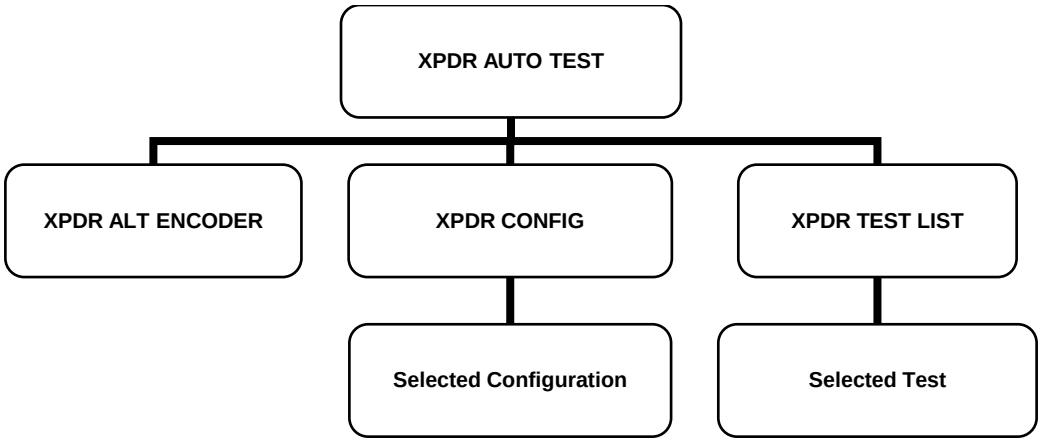




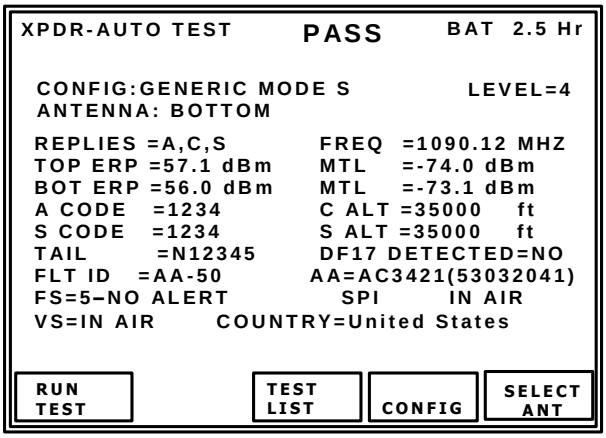
SCREEN HIERARCHY (cont)

The XPDR AUTO TEST Screen is the opening screen. The screens are changed by pressing the XPDR Mode Key or an application specific Soft Key.

Screen Organization



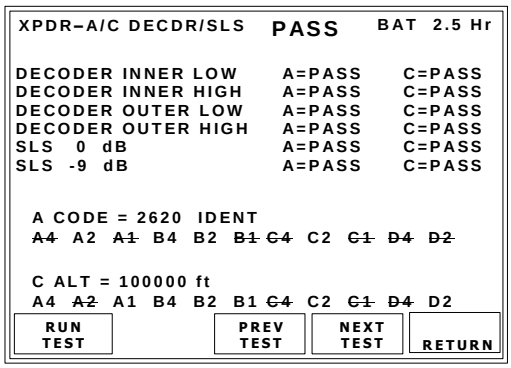
The XPDR Auto Test Screen is the primary test screen. When a Mode S configuration is selected the test list is displayed over two screens and ATCRBS configurations display the test list on one screen.



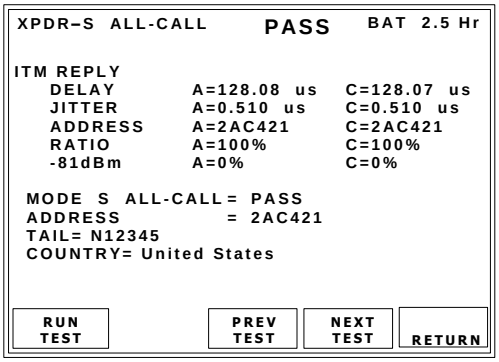
SCREEN HIERARCHY (cont)

Press the Test List Soft Key to access 17 additional XPDR Test Screens.

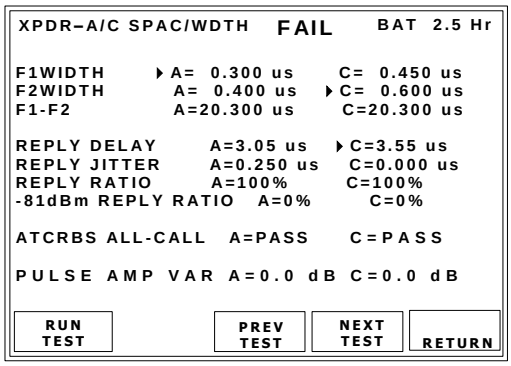
A/C Decoder/SLS Test Screen



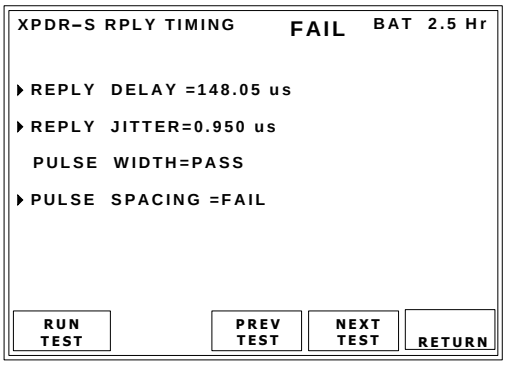
S All Call Test Screen



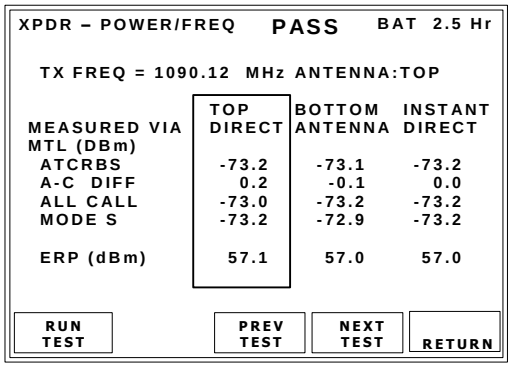
A/C Spacing Width Test Screen



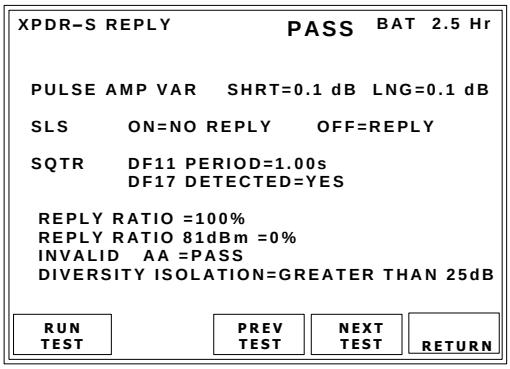
S Reply Timing Test Screen



Power and Frequency Test Screen

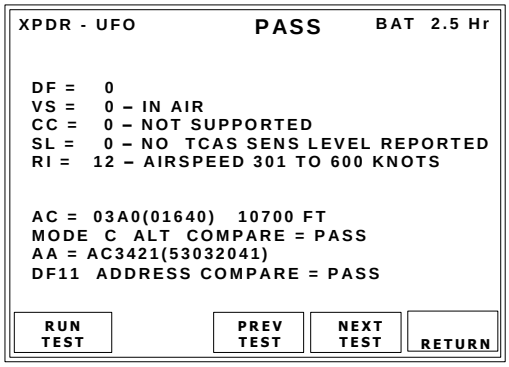


S Reply Test Screen

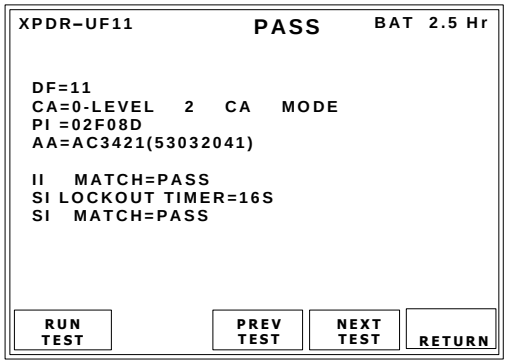


SCREEN HIERARCHY (cont)

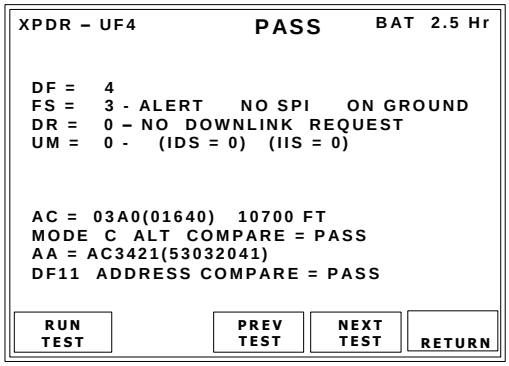
UF0 Test Screen



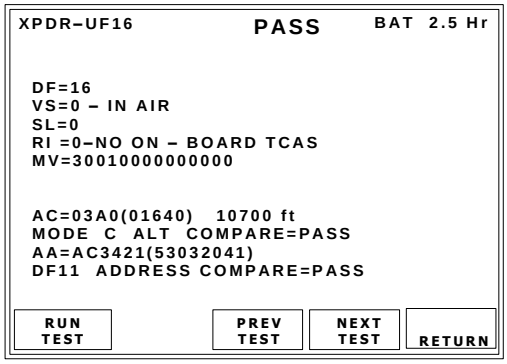
UF11 Test Screen



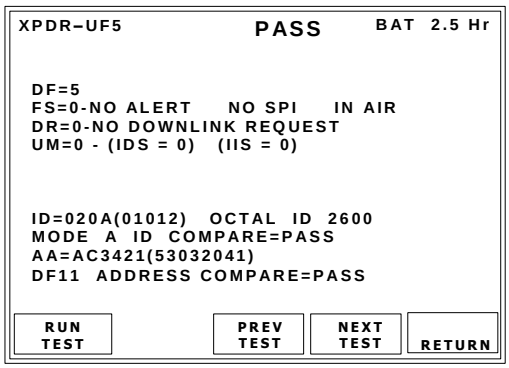
UF4 Test Screen



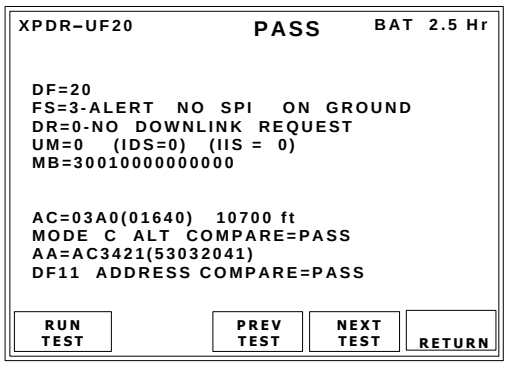
UF16 Test Screen



UF5 Test Screen

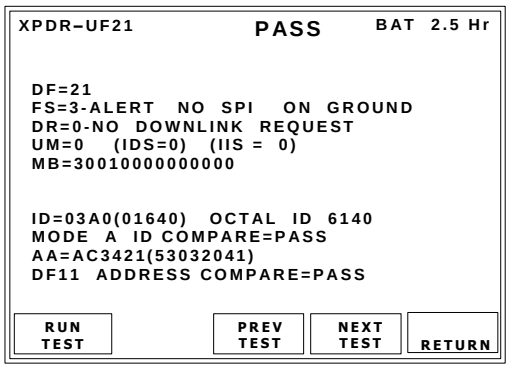


UF20 Test Screen

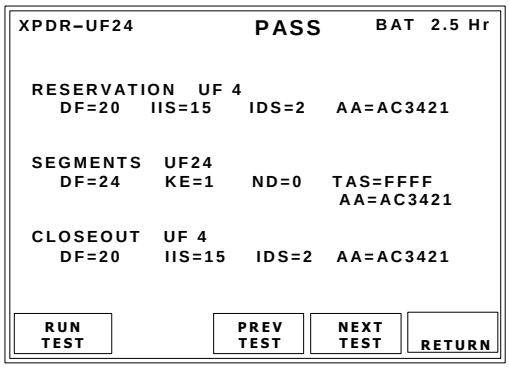


SCREEN HIERARCHY (cont)

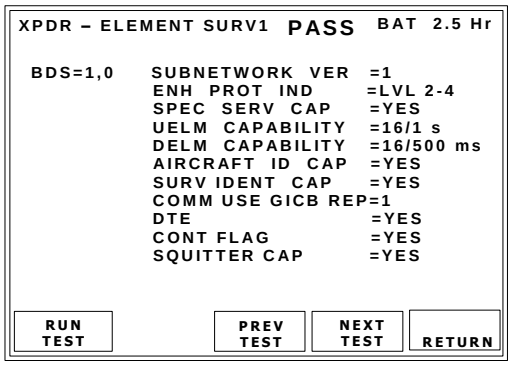
UF21 Test Screen



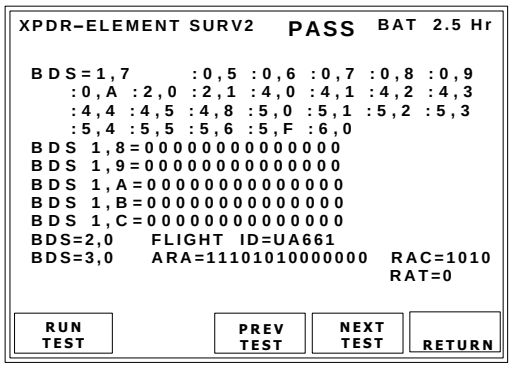
UF24 Test Screen



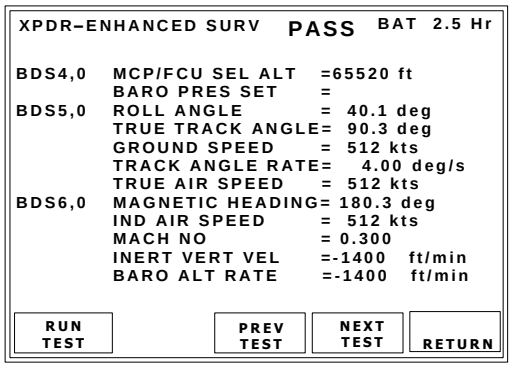
Elementary Surveillance 1 Test Screen



Elementary Surveillance 2 Test Screen



Enhanced Surveillance Test Screen

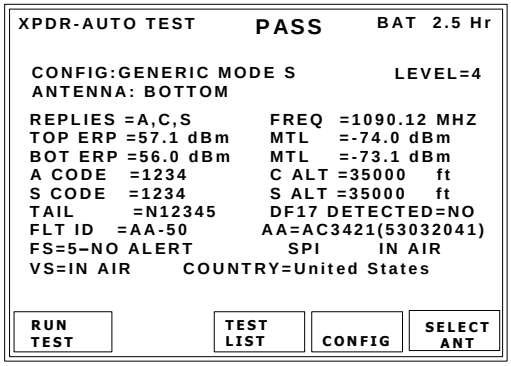


SELF TEST

The IFR 6000 is equipped with a Self Test for quick performance evaluation. An abbreviated Self Test is run at Power-Up. The full Self Test is initiated manually.

POWER-UP

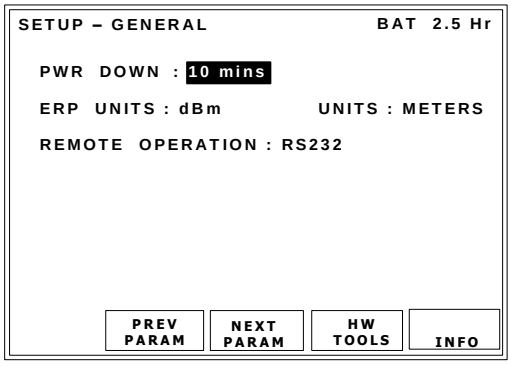
Press the POWER Key on the IFR 6000 to display the Startup Screen. After several seconds, the XPDR AUTO TEST Screen is displayed.



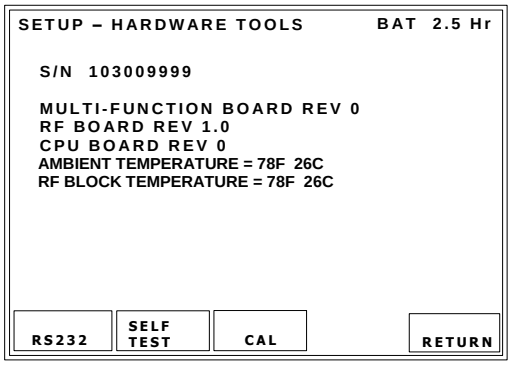
SELF TEST (cont)

RUN SELF TEST

Press SETUP Key to display the Setup Menu.



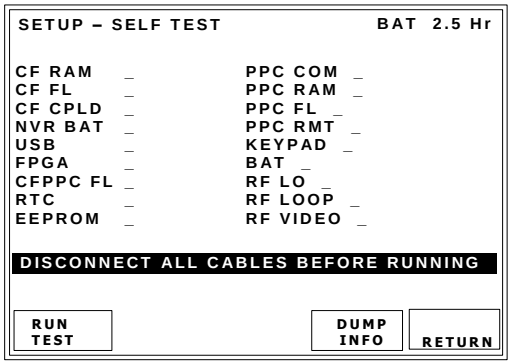
Press HW TOOLS Soft Key to display the Hardware Tools Screen.



SELF TEST (cont)

RUN SELF TEST (cont)

Press SELF TEST Soft Key to display the Self Test Screen.



Press RUN TEST Soft Key to initiate the Self Test.

Verify that all the modules/assemblies pass the Self Test. If the Self Test indicates a failure, contact VIAVI for additional information.

FOR QUALIFIED SERVICE PERSONNEL ONLY

BATTERY/VOLTAGE INSTRUCTIONS

SAFETY FIRST: TO ALL SERVICE PERSONNEL

REFER ALL SERVICING OF UNIT TO QUALIFIED TECHNICAL PERSONNEL.

WARNING: USING THIS EQUIPMENT IN A MANNER NOT SPECIFIED BY THE ACCOMPANYING DOCUMENTATION MAY IMPAIR THE SAFETY PROTECTION PROVIDED BY THE EQUIPMENT.

CASE, COVER OR PANEL REMOVAL

Opening the Case Assembly exposes the technician to electrical hazards that can result in electrical shock or equipment damage.

SAFETY IDENTIFICATION IN TECHNICAL MANUAL

This manual uses the following terms to draw attention to possible safety hazards, that may exist when operating or servicing this equipment.

CAUTION: THIS TERM IDENTIFIES CONDITIONS OR ACTIVITIES THAT, IF IGNORED, CAN RESULT IN EQUIPMENT OR PROPERTY DAMAGE (E.G., FIRE).

WARNING: THIS TERM IDENTIFIES CONDITIONS OR ACTIVITIES THAT, IF IGNORED, CAN RESULT IN PERSONAL INJURY OR DEATH.

SAFETY SYMBOLS IN MANUALS AND ON UNITS

CAUTION: Refer to accompanying documents. (This symbol refers to specific CAUTIONS represented on the unit and clarified in the text.)

AC OR DC TERMINAL: Terminal that may supply or be supplied with AC or DC voltage.

DC TERMINAL: Terminal that may supply or be supplied with DC voltage.

AC TERMINAL: Terminal that may supply or be supplied with AC or alternating voltage.

EQUIPMENT GROUNDING PRECAUTION

Improper grounding of equipment can result in electrical shock.

USE OF PROBES

Check specifications for the maximum voltage, current and power ratings of any connector on the Test Set before connecting it with a probe from a terminal device. Be sure the terminal device performs within these specifications before using it for measurement, to prevent electrical shock or damage to the equipment.

POWER CORDS

Power cords must not be frayed, broken nor expose bare wiring when operating this equipment.

USE RECOMMENDED FUSES ONLY

Use only fuses specifically recommended for the equipment at the specified current and voltage ratings.

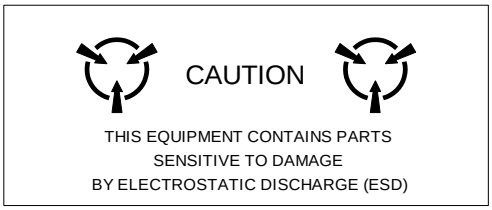
SAFETY FIRST: TO ALL SERVICE PERSONNEL (cont)

WARNING: THE IFR 6000 USES A LITHIUM ION BATTERY PACK. THE FOLLOWING WARNINGS CONCERNING LITHIUM ION BATTERIES MUST BE HEEDED:

- **DO NOT RECHARGE OUTSIDE THE IFR 6000.**
- **DO NOT CRUSH, INCINERATE OR DISPOSE OF IN NORMAL WASTE.**
- **DO NOT SHORT CIRCUIT OR FORCE DISCHARGE AS THIS MIGHT CAUSE THE BATTERY TO VENT, OVERHEAT OR EXPLODE.**

CAUTION: INTEGRATED CIRCUITS AND SOLID STATE DEVICES SUCH AS MOS FETS, ESPECIALLY CMOS TYPES, ARE SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGES RECEIVED FROM IMPROPER HANDLING, THE USE OF UNGROUNDED TOOLS AND IMPROPER STORAGE AND PACKAGING. ANY MAINTENANCE TO THIS UNIT MUST BE PERFORMED WITH THE FOLLOWING PRECAUTIONS:

- BEFORE USE IN A CIRCUIT, KEEP ALL LEADS SHORTED TOGETHER EITHER BY THE USE OF VENDOR-SUPPLIED SHORTING SPRINGS OR BY INSERTING LEADS INTO A CONDUCTIVE MATERIAL.
- WHEN REMOVING DEVICES FROM THEIR CONTAINERS, GROUND THE HAND BEING USED WITH A CONDUCTIVE WRISTBAND.
- TIPS OF SOLDERING IRONS AND/OR ANY TOOLS USED MUST BE GROUNDED.
- DEVICES MUST NEVER BE INSERTED INTO NOR REMOVED FROM CIRCUITS WITH POWER ON.
- PC BOARDS, WHEN TAKEN OUT OF THE SET, MUST BE LAID ON A GROUNDED CONDUCTIVE MAT OR STORED IN A CONDUCTIVE STORAGE BAG. REMOVE ANY BUILT-IN POWER SOURCE, SUCH AS A BATTERY, BEFORE LAYING PC BOARDS ON A CONDUCTIVE MAT OR STORING IN A CONDUCTIVE BAG.
- PC BOARDS, IF BEING SHIPPED TO THE FACTORY FOR REPAIR, MUST BE PACKAGED IN A CONDUCTIVE BAG AND PLACED IN A WELL-CUSHIONED SHIPPING CONTAINER.



CAUTION: SIGNAL GENERATORS CAN BE A SOURCE OF ELECTROMAGNETIC INTERFERENCE (EMI) TO COMMUNICATION RECEIVERS. SOME TRANSMITTED SIGNALS CAN CAUSE DISRUPTION AND INTERFERENCE TO COMMUNICATION SERVICES OUT TO A DISTANCE OF SEVERAL MILES. USERS OF THIS EQUIPMENT SHOULD SCRUTINIZE ANY OPERATION THAT RESULTS IN RADIATION OF A SIGNAL (DIRECTLY OR INDIRECTLY) AND ENSURE COMPLIANCE WITH INSTRUCTIONS IN FAA CIRCULAR AC 170-6C, DATED FEBRUARY 19, 1981.

FOR QUALIFIED SERVICE PERSONNEL ONLY

FUSE REPLACEMENT

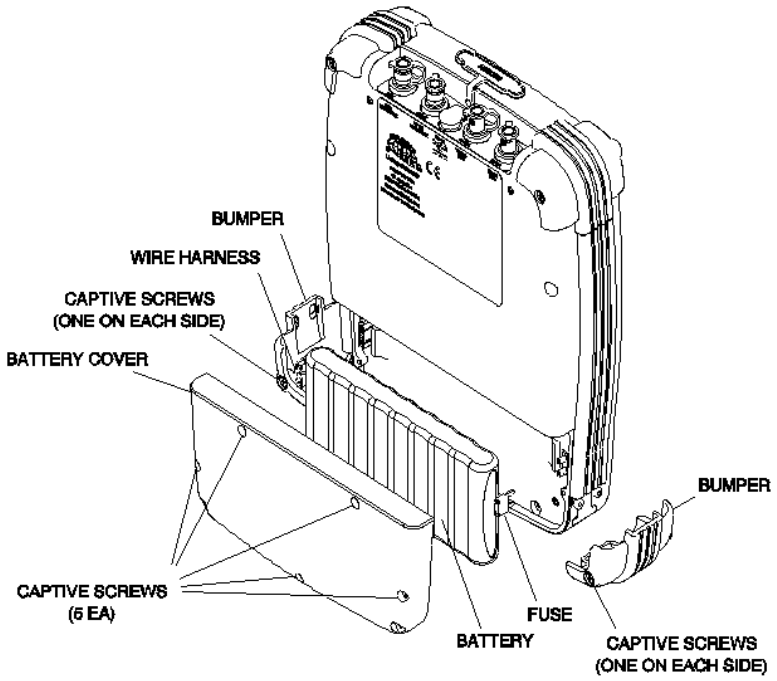
STEP PROCEDURE

1. Verify the IFR 6000 is OFF and not connected to AC power.
2. Fully loosen two captive screws in the two lower bumpers and remove the bumpers.
3. Fully loosen five captive screws and lift the Battery Cover from the Case Assembly.
4. Replace fuse:

   5 A, 32 Vdc, Type F
   (Mini Blade Fuse)
   (VIAVI PN: 56080)

   CAUTION: FOR CONTINUOUS PROTECTION AGAINST FIRE, REPLACE ONLY WITH FUSES OF THE SPECIFIED VOLTAGE AND CURRENT RATINGS.

5. Install the Battery Cover on the Case Assembly and tighten the five captive screws (8 in/lbs.).
6. Install the two lower bumpers and tighten the two captive screws in each bumper (8 in/lbs.).



FOR QUALIFIED SERVICE PERSONNEL ONLY

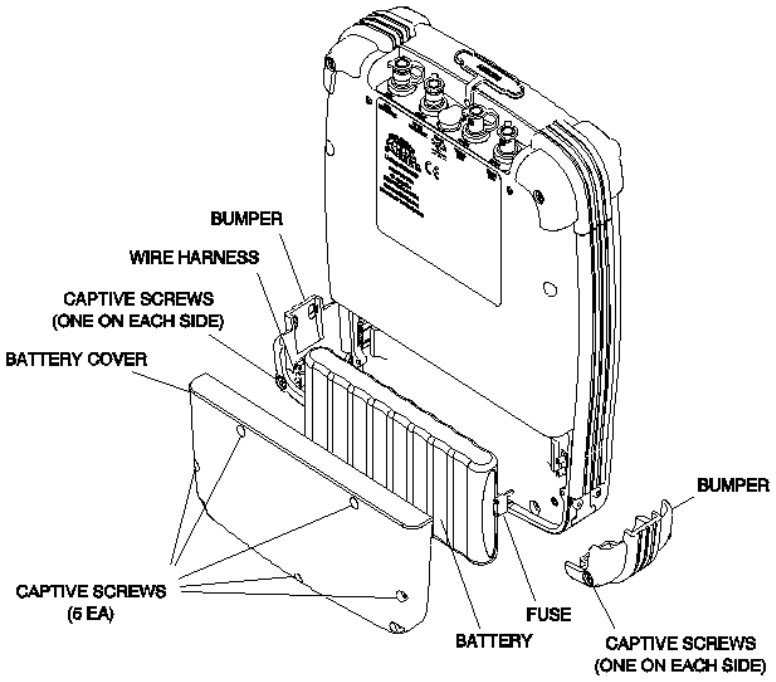
BATTERY REPLACEMENT

STEP PROCEDURE

1. Verify the IFR 6000 is OFF and not connected to AC power.
2. Fully loosen two captive screws in the two lower bumpers and remove the bumpers.
3. Fully loosen five captive screws and lift the Battery Cover from the Case Assembly.
4. Disconnect the wire harness connecting the battery to the Test Set and remove the battery.
5. Install new battery and reconnect the wire harness.
6. Install the Battery Cover on the Case Assembly and tighten the five captive screws (8 in/lbs.).
7. Install the two lower bumpers and tighten the two captive screws in each bumper (8 in/lbs.).

WARNING: DISPOSE OF OLD BATTERY ACCORDING TO LOCAL STANDARD SAFETY PROCEDURES.

⚠ **CAUTION:** REPLACE ONLY WITH THE BATTERY SPECIFIED BY VIAVI. DO NOT ATTEMPT TO INSTALL A NON-RECHARGEABLE BATTERY.



6096 Rev. 003

December 2022

Part of CD 6093

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