Avionics

IFR 6000 Ramp Test Set

The IFR 6000 is a compact, lightweight and weatherproof unit designed for testing transponder modes A/C/S, TCAS I and II as well as DME.

- One main user screen for each test mode
- Detachable antenna
- Large display
- Simple user interface
- Lightweight and compact <8 lbs. (3.6 kg)
- Battery 6 hours plus duration
- Fully FAR part 43 appendix F compliant
- European Elementary and Enhanced Surveillance

The IFR 6000 features an extremely easy to use interface where every parameter the user commonly needs to view is displayed on screen.

Controls

Dedicated Mode keys for XPDR, DME and TCAS allow quick selection of the operational mode.

The application dependant softkeys and data select/slew keys provide an intuitive man machine interface.

DME mode is provided with dedicated keys for frequency/channel selection and RF level control. For frequently varied parameters in DME and TCAS modes, such as Range and Rate, dedicated keys are provided.

Operational Modes

Each operational mode has one main user screen. The operational modes are:

XPDR (Sub-Modes: ADS-B MON, ADS-B GEN & GICB)

DME

TCAS 1, 2 (Sub-Modes: TIS)

Most tests can be completed without leaving the main user screens. This simplifies the line technician’s testing task.
Mode S and ATCRBS Transponder

Xpdr Auto-Test:

Every parameter the user commonly needs to view is displayed on one screen.

The auto-test performs all tests defined by FAR Part 43 Appendix F, including the proposed Eurocontrol additional tests.

The tests are tailored automatically according to reported transponder level to avoid erroneous failures.

User selects config required for test.

If the class of the transponder is unknown, the generic config may be selected which applies to the widest limits.

The test set will automatically determine the Mode S transponder level.

The selected config parameters may be displayed by pressing the INFO softkey.

Eight predetermined configs are provided to meet the currently fielded transponder test needs.

The test list is selected from the auto-test screen. This provides an easy means of selecting any of the individual tests that comprise the auto-test.

Tests on the 2nd screen (not shown) include:

13 UF21

14 UF24

15 ELEMENTARY SURVEILLANCE 1

16 ELEMENTARY SURVEILLANCE 2

15 ENHANCED SURVEILLANCE

Individual tests may be reviewed for failures which are identified by an arrow symbol.

The Eurocontrol Elementary Surveillance DAP's (Downlink Aircraft Parameters) are displayed on two screens.

The Eurocontrol Enhanced Surveillance DAP's are displayed on one screen.
No more HEX data field interpretation!
All Mode S Format tests display parameter in engineering units.

Comprehensive II / SI code and lockout timer test

TCAS
TCAS types...
TCAS 1 MODE C
TCAS 2 ATCRBS
TCAS 2 MODE S
The Auto-Altitude feature interrogates Mode S XPDR of A/C under test to obtain current altitude.
Select pre-stored named scenarios directly from the auto-test screen.

ADS-B and GICB
ADS-B MON: Used to monitor DF17 extended squitter from transponders and DF18 extended squitter from 1090 MHz ADS-B emitters.
ADS-B GEN: Used to generate DF17/DF18 extended squitter, simulating transponders and 1090 MHz ADS-B emitters.
GICB: Used to monitor DAP’s (all fields).

DME
All the user needs are on one screen.
• RF level control for track sensitivity tests
• Supports all DME/TACAN channels selectable in VOR paired channels
• Full UUT measured parameters are displayed.

ADS-B MON:
The ADS-B MON LIST shows BDS formats supported.
The BDS status is annunciated to indicate if the squitter has been captured, not available or not seen.
The BDS DATA key displays the BDS DATA screen for the selected BDS number.
ADS-B MON:
The BDS DATA screen displays full content of selected BDS format being received via DF17 or DF18 extended squitters.

The BDS ENABLE/DISABLE key enables or disables the selected BDS number for squittering via DF17 or DF18 extended squitters. The BDS DATA key displays the BDS DATA screen for the selected BDS number.

GICB:
BDS DATA screens display full content of the selected BDS format being received via GICB DF20 or DF21 in RTCA/ICAO engineering units.

TIS
Up to 5 static intruders may be simulated relative to the A/C (UUT).

General
Radiated Testing:
The IFR 6000 is supplied with a lightweight fully sealed directional antenna that may be test set mounted, hand held or tripod mounted.

Direct Connect Testing:
The IFR 6000 may be directly connected to the UUT via a supplied RF coax cable via the RF I/O port.

ADS-B GEN:
BDS DATA screens display full content of the selected BDS format in RTCA/ICAO engineering units.

The NEXT & PREV PARAM keys select data fields for editing via the data slew keys.

GICB:
The BDS LIST shows BDS formats supported.
The BDS DATA key displays the BDS DATA screen for the selected BDS number.
Transit Case:
The IFR-6000 is supplied in a rugged plastic transit case which provides stowage for the test set, directional antenna, RF coax cable, antenna shield, breakout box, and power supply/charger.

### SPECIFICATION

#### DME MODE SPECIFICATIONS

**SIGNAL GENERATOR**
A 5-minute warm-up period is required for all specifications.

#### OUTPUT FREQUENCY

**REPLY FREQUENCY**

- **Range**: 962 to 1213 MHz
- **Accuracy**: ± 10 kHz

#### ANTENNA LEVEL

**ANTENNA PORT**

- **Range**: -67 to -2 dBm at Antenna port
- **Resolution**: 1 dB
- **Accuracy**: ± 2 dB
- **Distance to UUT antenna**: 6 to 300 ft with supplied antenna

**RF I/O PORT**

- **Range**: -115 to -47 dBm
- **Resolution**: 1 dB
- **Accuracy**: ± 2 dB

#### ECHO REPLY

- **Control**: On/Off
- **Position**: 30 nmi ± 1 nmi
- **Amplitude**: -11 dB ± 1 dB relative to reply level

#### REPLY PULSE SPACING

- **P1 to P2**: 12 µs ± 100 ns (X Channel) @ 50% peak
- **P1 to P2**: 30 µs ± 100 ns (Y Channel) @ 50% peak

#### REPLY PULSE WIDTH

- **P1/P2**: 3.5 µs ± 0.5 µs

#### REPLY PULSE RISE AND FALL TIMES

- **ALL PULSES**
  - **Rise Time**: 2.5 µs ± 0.25 µs (10% to 90%)
  - **Fall Time**: 2.5 µs ± 0.25 µs (90% to 10%)

#### REPLY DELAY

**X CHANNEL**

- **Fixed Reply Delay**: 50 µs ± 100 ns

**Y CHANNEL**

- **Fixed Reply Delay**: 56 µs ± 100 ns

#### RANGE DELAY

**X AND Y CHANNEL**

- **Range**: 0 to 450.00 nmi
- **Resolution**: 0.01 nmi
- **Accuracy**: ± 0.01 nmi

#### RANGE RATE

**X AND Y CHANNEL**

- **Range**: 10 to 6500 kts
- **Resolution**: 1 kts
- **Accuracy**: ± 0.01% typical, tested to ± 0.5%

#### SQUITTER

- **PRF**: 2700 Hz
- **Accuracy**: ± 2%
- **Distribution**: Per ARINC 568
**REPLY EFFICIENCY**

<table>
<thead>
<tr>
<th>Range</th>
<th>0 to 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>1% increments</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 0.5%</td>
</tr>
</tbody>
</table>

**IDENT TONE**

<table>
<thead>
<tr>
<th>Selection</th>
<th>Selectable three letter code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>1350 Hz</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 2 Hz</td>
</tr>
</tbody>
</table>

**UIT MEASUREMENTS**

**ERP**

<table>
<thead>
<tr>
<th>Range</th>
<th>+47 to +64 dBm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 2 dB</td>
</tr>
</tbody>
</table>

**DIRECT CONNECTION PEAK PULSE POWER**

<table>
<thead>
<tr>
<th>Range</th>
<th>+47 to +64 dBm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 1 dB</td>
</tr>
</tbody>
</table>

**FREQUENCY**

<table>
<thead>
<tr>
<th>Range</th>
<th>1025.00 to 1150.00 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>10 kHz</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 20 kHz</td>
</tr>
</tbody>
</table>

**INTERROGATION PULSE WIDTH**

**P1 AND P2 PULSE WIDTHS**

<table>
<thead>
<tr>
<th>Range</th>
<th>2.00 to 5.00 µs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>1 ns</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 50 ns</td>
</tr>
</tbody>
</table>

**INTERROGATION PULSE SPACING**

**P1 to P2 Spacing**

<table>
<thead>
<tr>
<th>Range</th>
<th>10 to 14 µs (X Channel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>10 ns</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 20 ns</td>
</tr>
</tbody>
</table>

**P1 to P2 Spacing**

<table>
<thead>
<tr>
<th>Range</th>
<th>34 to 38 µs (Y Channel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>10 ns</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 20 ns</td>
</tr>
</tbody>
</table>

**INTERROGATION PRF**

<table>
<thead>
<tr>
<th>Range</th>
<th>1 to 300 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>1 Hz</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 2 Hz</td>
</tr>
</tbody>
</table>

**TRANSPONDER MODE SPECIFICATIONS**

**SIGNAL GENERATOR**

**RF OUTPUT FREQUENCY**

<table>
<thead>
<tr>
<th>Interrogation Frequency</th>
<th>1030 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>± 10 kHz</td>
</tr>
</tbody>
</table>

**RF OUTPUT LEVEL**

**ANTENNA PORT**

<table>
<thead>
<tr>
<th>Range</th>
<th>MTL + 6 dB typical, automatically controlled for a MTL range of -83 to -68 dBm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>-67 to -2 dBm at antenna port</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 2 dB</td>
</tr>
</tbody>
</table>

**RF I/O PORT**

<table>
<thead>
<tr>
<th>Range</th>
<th>MTL + 6 dB typical, automatically controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>-115 to -47 dBm, ± 1 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>-95 to -47 dBm, ± 2 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>-115 to &lt;-95 dBm, ± 2 dB</td>
</tr>
</tbody>
</table>

**ATCRBS/MODE S INTERROGATION PULSE SPACING**

**MODE A**

| P1 to P2   | 2.00 µs ± 25 ns               |
| P1 to P3   | 8.00 µs ± 25 ns               |

**MODE C**

| P1 to P2   | 2.00 µs ± 25 ns               |
| P1 to P3   | 21.00 µs ± 25 ns              |

**MODE S**

| P1 to P2   | 2.00 µs ± 25 ns               |
| P1 to P6   | 3.50 µs ± 25 ns               |
| P1 to SPR  | 4.75 µs ± 25 ns               |
| P5 to SPR  | 0.40 µs ± 50 ns               |
**INTERMODE INTERROGATION PULSE SPACING**

<table>
<thead>
<tr>
<th>MODE</th>
<th>P1 to P3</th>
<th>P1 to P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8.00 µs ± 25 ns</td>
<td>10.00 µs ± 25 ns</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODE</th>
<th>P1 to P3</th>
<th>P1 to P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>21.00 µs ± 25 ns</td>
<td>23.00 µs ± 25 ns</td>
</tr>
</tbody>
</table>

**INTERROGATION PULSE WIDTHS**

<table>
<thead>
<tr>
<th>MODE</th>
<th>P1,P2,P3</th>
<th>P6 (Short DPSK Block)</th>
<th>P6 (Long DPSK Block)</th>
<th>P5</th>
<th>P4 (Short)</th>
<th>P4 (Long)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A,C,S,INTERMODE</td>
<td>0.80 µs ± 50 ns</td>
<td>16.25 µs ± 50 ns</td>
<td>30.25 µs ± 50 ns</td>
<td>0.80 µs ± 50 ns</td>
<td>0.80 µs ± 50 ns</td>
<td>1.60 µs ± 50 ns</td>
</tr>
</tbody>
</table>

**INTERROGATION PULSE RISE AND FALL TIMES**

**ALL MODES**

<table>
<thead>
<tr>
<th>Rise Time</th>
<th>Fall Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 to 100 ns</td>
<td>50 to 200 ns</td>
</tr>
</tbody>
</table>

**PHASE MODULATION**

**ALL MODES**

<table>
<thead>
<tr>
<th>Transition Time</th>
<th>Phase Shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 80 ns</td>
<td>180° ± 10°</td>
</tr>
</tbody>
</table>

**SLS LEVELS**

**ATCRBS**

<table>
<thead>
<tr>
<th>SLS Level (P2)</th>
<th>SLS Level (P5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-9 dB, -1 to +0 dB relative to P1 level</td>
<td>-12 dB, -1 to +0 dB relative to P6 level</td>
</tr>
<tr>
<td>0 dB, -1 to +1 dB relative to P1 level</td>
<td>+3 dB, -1 to +1 dB relative to P6 level</td>
</tr>
</tbody>
</table>

**MODE S**

<table>
<thead>
<tr>
<th>SLS Level (P5)</th>
<th>-12 dB, -1 to +0 dB relative to P6 level</th>
</tr>
</thead>
</table>

*Note: SLS level is automatically controlled in the SLS LEVEL test.*

**INTERROGATION TEST SIGNALS**

<table>
<thead>
<tr>
<th>MODE</th>
<th>PRF</th>
<th>ATCRBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>50 Hz ± 5 Hz</td>
<td>235 Hz ± 5 Hz</td>
</tr>
</tbody>
</table>

**UIT MEASUREMENTS**

**ERP @ 1090 MHZ**

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 45.5 to + 59 dBm (35.5 to 800 watts)</td>
<td>0.1 dB</td>
<td>± 2 dB</td>
</tr>
</tbody>
</table>

**TRANSMITTER FREQUENCY**

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1087.000 to 1093.000 MHz</td>
<td>10 kHz</td>
<td>± 50 kHz</td>
</tr>
</tbody>
</table>

**RECEIVER SENSITIVITY, RADIATED MTL**

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>-67 to -79 dBm into 0 dBi antenna</td>
<td>0.1 dB</td>
<td>± 2 dB, typical</td>
</tr>
</tbody>
</table>

**RECEIVER SENSITIVITY, DIRECT CONNECTION MTL**

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>-67 to -79 dBm</td>
<td>0.1 dB</td>
<td>± 2 dB</td>
</tr>
</tbody>
</table>

**REPLY DELAY**

<table>
<thead>
<tr>
<th>ATCRBS</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.80 to 7.00 µs</td>
<td>10 ns</td>
<td>± 50 ns</td>
</tr>
</tbody>
</table>
### Reply Delay, Mode S and ATCRBS Mode S All-Call

**Range**
- 125.00 to 131.00 µs

**Resolution**
- 10 ns

**Accuracy**
- ± 50 ns

### Reply Delay Jitter

**ATCRBS**

- **Range**: 0.00 to 2.30 µs
- **Resolution**: 1 ns
- **Accuracy**: ± 20 ns

**Mode S and ATCRBS Mode S All-Call**

- **Range**: 0.00 to 6.00 µs
- **Resolution**: 1 ns
- **Accuracy**: ± 20 ns

### Pulse Spacing

**F1 to F2**

- **Range**: 19.70 to 21.60 µs
- **Resolution**: 1 ns
- **Accuracy**: ± 20 ns

### Pulse Amplitude Variation

**Range, Mode S (Relative to P1)**
- +3 to -3 dB

**Range, ATCRBS (Relative to F1)**
- +3 to -3 dB

**Resolution**
- 0.1 dB (0.01 dB via RCI)

**Accuracy**
- ± 0.5 dB

### DF 11 Squitter Period

**Range**
- 0.10 to 4.88 sec

**Resolution**
- 10 ms

**Accuracy**
- ± 10 ms

### Diversity Isolation

**Range**
- 0 to >20 dB (Depending on Test Distance)

**Test Distance**
- 1.83m (6ft) to 28.96m (95ft)

**Resolution**
- 0.1 dB

**Accuracy**
- ± 3 dB

### TCAS Mode Specifications

### SIGNAL GENERATOR

### Output Frequency

**Replay Frequency**
- 1090 MHz

**Accuracy**
- ± 10 kHz

### Output Level (Simulated ERP)

**Antenna Port**
- Radiated power at 0dBi UUT antenna
  -68 dBm typical @ 10 Nmi Range, automatically controlled

**Range**
- -67 to -2 dBm at Antenna port

**Resolution**
- 0.5 dB

**Accuracy**
- ± 2 dB

**Distance to UUT antenna**
- 6 to 300 ft with supplied antenna

**RF I/O Port**
- Automatic mode
  - -68 dBm @ 10 Nmi Range, automatically controlled

**Manual mode Range**
- -115 to -47 dBm

**Resolution**
- 0.5 dB

**Accuracy**
- -95 to -47 dBm, ± 1 dB

**Accuracy**
- -115 to <-95 dBm, ± 2 dB

**Note 1**
- Radiated power at 0dBi UUT antenna
- -68 dBm typical @ 10 Nmi Range, automatically controlled
**REPLY PULSE SPACING**

**MODE C**
- **F1 to F2**: 20.30 µs ± 25 ns
- **F1 to C1**: 1.45 µs ± 25 ns
- **F1 to A1**: 2.90 µs ± 25 ns
- **F1 to C2**: 4.35 µs ± 25 ns
- **F1 to A2**: 5.80 µs ± 25 ns
- **F1 to C4**: 7.25 µs ± 25 ns
- **F1 to A4**: 8.70 µs ± 25 ns
- **F1 to B1**: 11.60 µs ± 25 ns
- **F1 to D1**: 13.05 µs ± 25 ns
- **F1 to B2**: 14.50 µs ± 25 ns
- **F1 to D2**: 15.95 µs ± 25 ns
- **F1 to B4**: 17.40 µs ± 25 ns
- **F1 to D4**: 18.85 µs ± 25 ns

**MODE S**
- **P1 to P2**: 1.00 µs ± 25 ns
- **P1 to P3**: 3.50 µs ± 25 ns
- **P1 to P4**: 4.50 µs ± 25 ns
- **P1 to D1**: 8.00 µs ± 25 ns
- **D1 to Dn (n=2 to 112)**: 1.00 µs times (n-1) ± 25 ns

**REPLY PULSE AMPLITUDES**

**ATCRBS**
- ± 1 dB relative to F1
**Mode S**
- ± 1 dB relative to P1

**REPLY PULSE RISE AND FALL TIMES**

**ALL MODES**
- **Rise Time**: 50 to 100 ns
- **Fall Time**: 50 to 200 ns

**PERCENT REPLY**

- **Range**: 0 to 100%
- **Resolution**: 10%
- **Accuracy**: ± 1%

**REPLY DELAY**

**ATCRBS**
- 3.0 µs ± 50 ns
**Mode S**
- 128 µs ± 50 ns

**RANGE DELAY**

- **Range**: 0 to 260 nmi
- **Resolution**: 0.1 nmi
- **Accuracy**: ± 0.02 nmi

**RANGE RATE**

- **Range**: -1200 to +1200 kts
- **Resolution**: 10 kts
- **Accuracy**: 10%

**ALTITUDE RANGE**

- **Range**: -1000 to 126,000 ft
- **Resolution, Mode C**: 100 ft
- **Resolution, Mode S**: 25 ft

**ALTITUDE RATE**

- **Range**: -10,000 to +10,000 fpm
- **Resolution**: 100 fpm
- **Accuracy**: 10%
**SQUITTER**

Control
On/Off

Rate
0.8 to 1.2 seconds, randomly distributed

**RECEIVER**

**PULSE SPACING**

**ATCRBS (Mode C All Call)**

<table>
<thead>
<tr>
<th>Pulse Spacing</th>
<th>Accepts</th>
<th>Rejects</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 to P1</td>
<td>≤ ±200 ns</td>
<td>≥ ±1.0 us</td>
</tr>
<tr>
<td>P1 to P3</td>
<td>≤ ±200 ns</td>
<td>≥ ±1.0 us</td>
</tr>
<tr>
<td>P1 to P4</td>
<td>≤ ±200 ns</td>
<td>≥ ±1.0 us</td>
</tr>
</tbody>
</table>

**Mode S**

<table>
<thead>
<tr>
<th>Pulse Spacing</th>
<th>Accepts</th>
<th>Rejects</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 to P2</td>
<td>≤ ±200 ns</td>
<td>≥ ±1.0 us</td>
</tr>
<tr>
<td>P1 to SPR</td>
<td>≤ ±200 ns</td>
<td>≥ ±1.5 us</td>
</tr>
</tbody>
</table>

**SUPPRESSION**

**ATCRBS (P2 or S1)**

>0.5dB above level of P1 <10% Replies

**UIT MEASUREMENTS**

**ERP (@1030MHZ)**

**ATCRBS**

<table>
<thead>
<tr>
<th>Range</th>
<th>+43 to +58 dBm (20 to 631 watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 2 dB</td>
</tr>
</tbody>
</table>

**MODE S**

<table>
<thead>
<tr>
<th>Range</th>
<th>+43 to +58 dBm (20 to 631 watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 1 dB</td>
</tr>
</tbody>
</table>

**FREQUENCY**

**ATCRBS (P2 or S1)**

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>1029.900 to 1030.100 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>1 kHz</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 10 kHz</td>
</tr>
</tbody>
</table>

**TCAS BROADCAST INTERVAL**

<table>
<thead>
<tr>
<th>Range</th>
<th>1.0 to 12.0 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 sec</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 0.2 sec</td>
</tr>
</tbody>
</table>

**MISCELLANEOUS INPUT/OUTPUTS**

**RF I/O**

<table>
<thead>
<tr>
<th>Type</th>
<th>Input/Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>50 Ω typical</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum Input Level</th>
<th>4 kW peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 W average</td>
<td></td>
</tr>
</tbody>
</table>

**ANTENNA**

<table>
<thead>
<tr>
<th>Type</th>
<th>Input/Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>50 Ω typical</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum Input Level</th>
<th>10 W peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 W average</td>
<td></td>
</tr>
</tbody>
</table>

**VIDEO**

<table>
<thead>
<tr>
<th>Type</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>50 Ω typical</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Generate Video Level</th>
<th>1.1 ± 0.4V peak to peak into 50 Ω</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Receive Video Level</th>
<th>Proportional to IF level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>± 0.5V referenced to ground</td>
</tr>
</tbody>
</table>
**TEST ANTENNA**

VSWR  
< 1.5:1  

Gain  
6 dB, Typical  

**TIME BASE (TCXO)**

Temperature Stability  
± 1 ppm  

Aging  
± 1 ppm per year  

Accuracy  
± 1 ppm  

Test Limit  
± 0.3 ppm  

**BATTERY**

Type  
Li ion  

Duration  
> 4 hrs continuous operation  
> 6 hrs, Typical  

**INPUT POWER (TEST SET)**

Input Range  
11 VDC 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 (SUPPLIED EXTERNAL AC TO DC CONVERTER)**

Input Range  
100 to 250 VAC, 1.5 A Max, 47-63 Hz  

Mains Supply Voltage Fluctuations  
≤ 10% of the nominal voltage  

Transient Overvoltages  
According to Installation Category II  

**ENVIRONMENTAL (TEST SET)**

Use  
Indoors  

Altitude  
≤ 10,000 meters  

Operating Temperature  
0° to 40°C  

Storage Temperature  
-20°C to 71°C  

**PHYSICAL CHARACTERISTICS**

**DIMENSIONS**

Height  
11.2 inches (28.5 cm)  

Width  
9.1 inches (23.1 cm)  

Depth  
2.7 inches (6.9 cm)  

Weight (Test set only)  
< 8 lbs. (3.6 kg)  

**SUPPLEMENTAL INFORMATION**

**Test Set Certifications**

Altitude, operating  
MIL-PRF-28800F Class 2  

Altitude, not operating  
MIL-PRF-28800F Class 2  

Bench Handling  
MIL-PRF-28800F Class 2  

Blowing Dust  
MIL-STD-810F Method 510.4, Procedure I  

Drip-proof  
MIL-PRF-28800F Class 2  

Explosive Atmosphere  
MIL-STD-810F Method 511.4, Procedure 1  

Relative Humidity  
MIL-PRF-28800F Class 2  

Shock, Functional  
MIL-PRF-28800F Class 2  

Vibration Limits  
MIL-PRF-28800F Class 2  

Temp, operating  
MIL-PRF-28800F Class 2  

Temp, not operating  
MIL-PRF-28800F Class 2  

Transit Drop  
MIL-PRF-28800F Class 2  

Safety Compliance  
UL-61010B-1  
EN 61010-1  
CSA 22.2 No 61010-1  

EMC  
EN 61326  

**EXTERNAL AC-DC CONVERTER CERTIFICATIONS**

Safety Compliance  
UL 1950 DS  
CSA 22.2 No. 234  
VDE EN 60 950  

EMI/RFI Compliance  
FCC Docket 20780 Curve “B”  

EMC  
EN 61326
**TRANSLATE CASE CERTIFICATIONS**

<table>
<thead>
<tr>
<th>Test</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop Test</td>
<td>FED-STD-101C</td>
</tr>
<tr>
<td>Falling Dart Impact</td>
<td>ATA 300</td>
</tr>
<tr>
<td>Vibration, Loose Cargo</td>
<td>FED-STD-101C</td>
</tr>
<tr>
<td>Vibration, Sweep</td>
<td>MIL-STD-810F</td>
</tr>
<tr>
<td>Simulated Rainfall</td>
<td>FED-STD-101C</td>
</tr>
<tr>
<td>Immersion</td>
<td>MIL-STD-810F</td>
</tr>
</tbody>
</table>

**Notes**

- **NOTE 1:** Simulates a 50.5 dBm XDR ERP at 10 nMi range.
- **NOTE 2:** Level automatically controlled based on actual distance to UUT antenna.
- **NOTE 3:** Battery charging temperature range: 5°C to 40°C (controlled by internal charger).
- **NOTE 4:** Li Ion Battery must be removed below -20°C and above 60°C.
- **NOTE 5:** Temperature range extended to -20°C to 55°C.
- **NOTE 6:** Temperature range reduced to -30°C to 71°C.

**VERSIONS AND ACCESSORIES**

When ordering please quote the full ordering number information.

<table>
<thead>
<tr>
<th>Ordering Numbers</th>
<th>Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000-110</td>
<td>IFR 6000 Mode A/C/S Transponder and DME Ramp Test Set, with US Mains Leads</td>
</tr>
<tr>
<td>6000-220</td>
<td>IFR 6000 Mode A/C/S Transponder and DME Ramp Test Set, with European Mains Leads</td>
</tr>
<tr>
<td>6000OPT2</td>
<td>TCAS (TIS)</td>
</tr>
<tr>
<td>6000OPT3</td>
<td>ADS-B</td>
</tr>
</tbody>
</table>

**Extended Standard Warranties with Calibration for 6000**

- W6000/203C: Extended standard warranty 36 months with scheduled calibration
- W6000/205C: Extended standard warranty 60 months with scheduled calibration

**Accessories for 6000**

- AC0820: Desk Top Stand
- AC0826: Tripod
- AC0825CD: IFR 6000 Operation Manual - CD
- AC24006: Tripod, Dolly, Stand