Avionics

IFR 6015 Ramp Test Set

The IFR 6015 is a compact, lightweight and weatherproof unit designed for testing transponder modes 1,2,3A/C/S, TCAS I, II and Military E-TCAS as well as TACAN.

- 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
- TACAN and IFF Modes 1 & 2
- Emulates preset modes of TACAN Test Sets Generic DoD, AN/ASM-663, AN/ARM-184, Bradley 2650 & 2655

The IFR 6015 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, TACAN/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.

TACAN mode is provided with dedicated keys for frequency/channel selection and RF level control. For frequently varied parameters in TACAN 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:

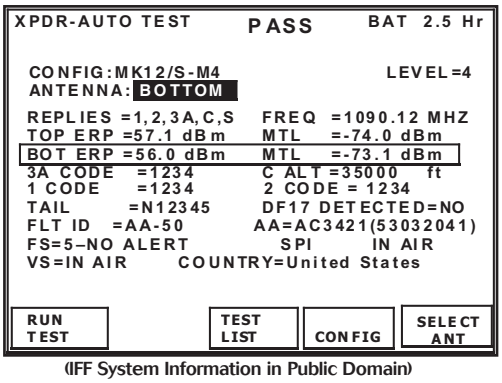
XPDR (Sub-Modes: ADS-B MON, ADS-B GEN & GICB)

TACAN (Sub-Modes: T/R Norm, Inv, Range Only; A/A Beacon, Inv, Range Only)

TCAS 1, 2 (Sub-Mode: TIS)

E-TCAS

Most tests can be completed without leaving the main user screens. This simplifies the line technician's testing task.



(IFF System Information in Public Domain)

MK12/S Transponder

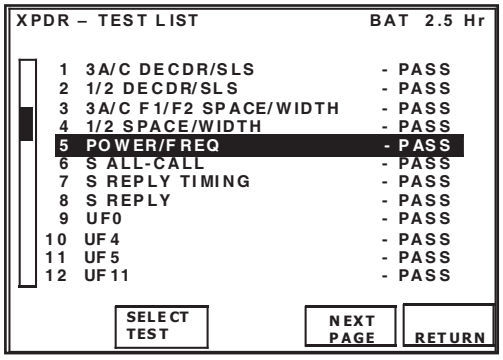
Xpdr Auto-Test:

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 specific modes tested are determined by the selected config.

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



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 UF16

14 UF20

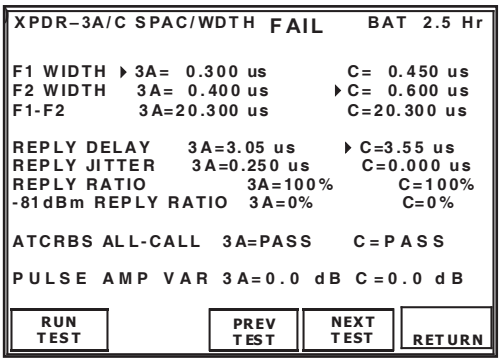
15 UF21

16 UF24

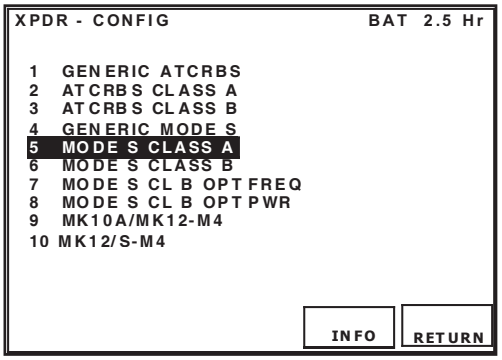
17 ELEMENTARY SURVEILLANCE 1

18 ELEMENTARY SURVEILLANCE 2

19 ENHANCED SURVEILLANCE



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



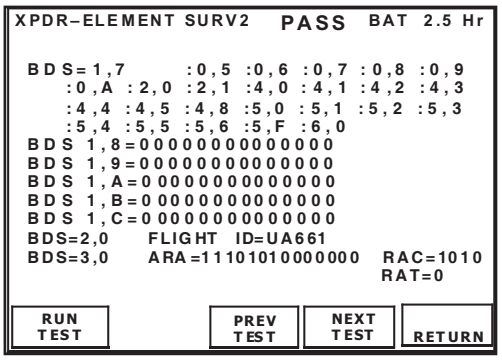
User selects config required for test.

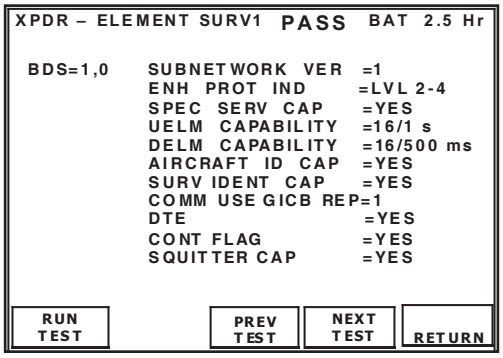
For ATCRBS and Mode S Transponders if the class of the transponder is unknown, the generic config may be selected which applies to the widest limits.

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

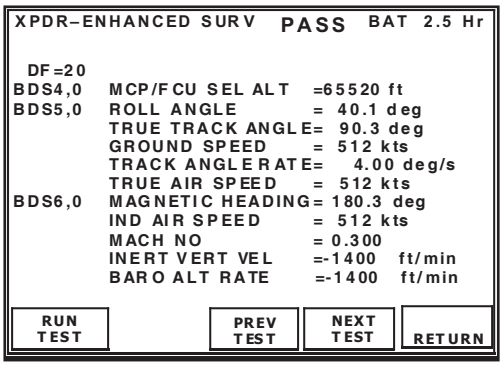
The selected config parameters may be displayed by pressing the INFO softkey.

Ten predetermined configs are provided to meet ATCRBS, Mode S, MK10, MK12, MK12/S transponder test needs.

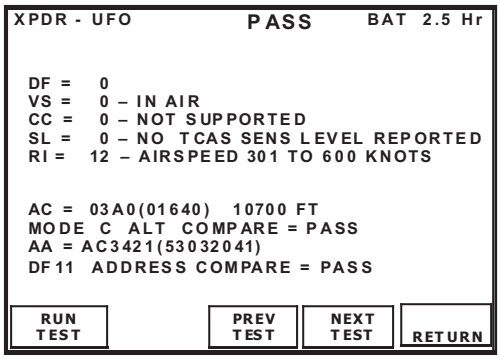




The Eurocontrol Elementary Surveillance DAP's (Downlink Aircraft Parameters) are displayed on two screens

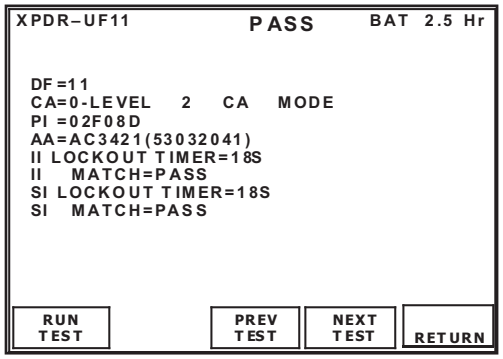


Eurocontrol Enhanced Surveillance DAP's are displayed on one screen.

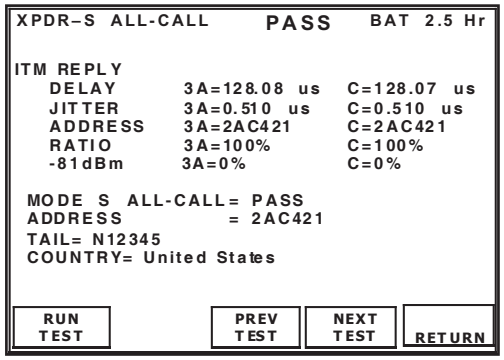


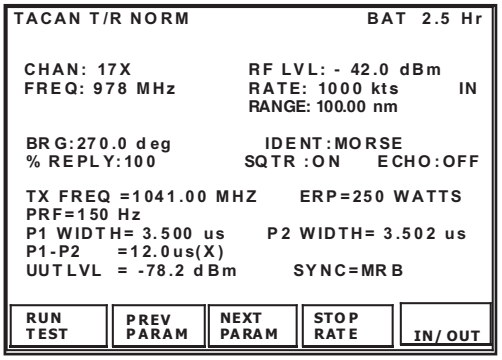
No more HEX data field interpretation!

All Mode S Format tests display parameter in engineering units.



Comprehensive II/SI code and lockout timer test

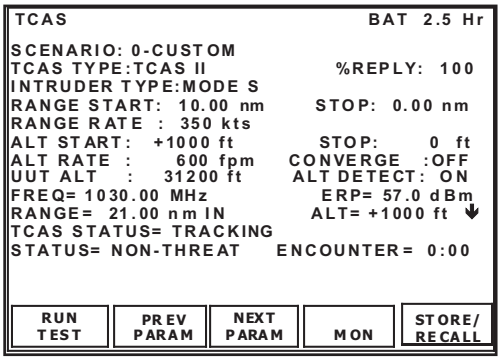




TACAN

All the user needs are on one screen.

- RF level control for track sensitivity tests
- Supports all TACAN channels
- Full UUT measured parameters are displayed
- TACAN test modes; T/R Norm, T/R Range Only, T/R Inverse, A/A Beacon, A/A Range Only and A/A Inverse



TCAS

TCAS types…

TCAS 1 MODE C

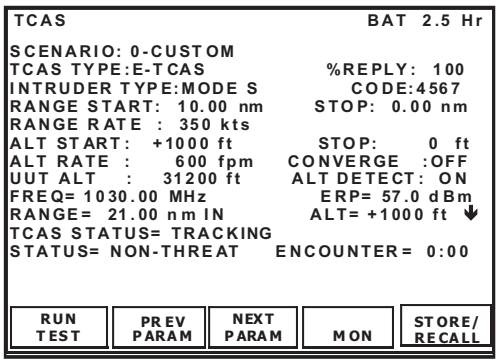
TCAS 2 ATCRBS

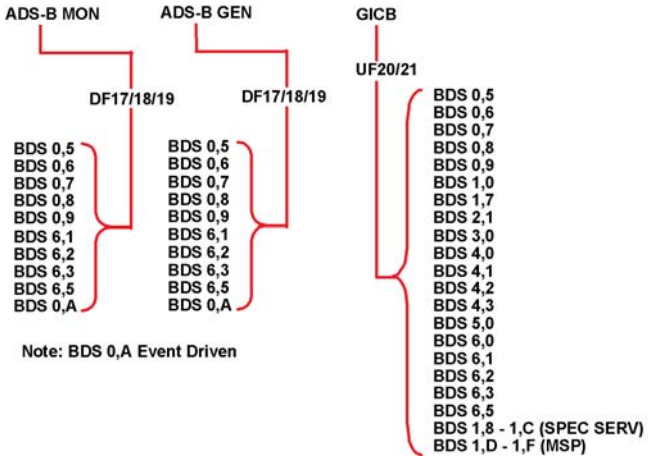
TCAS 2 MODE S

E-TCAS

The Auto-Altitude feature interrogates Mode S XPDR of aircraft under test to obtain current altitude.

Select pre-stored named scenarios directly from the auto-test screen.



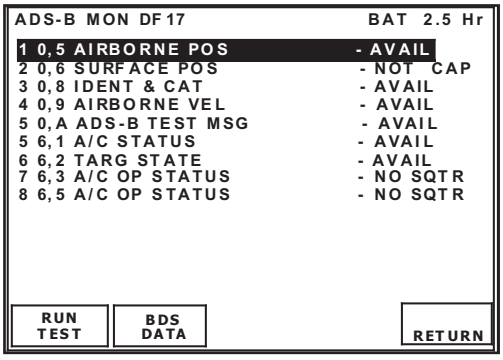


ADS-B and GICB

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).

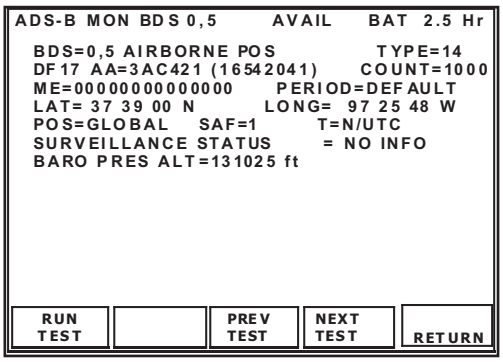


ADS-B MON:

The ADS-B MON LIST shows BDS formats supported.

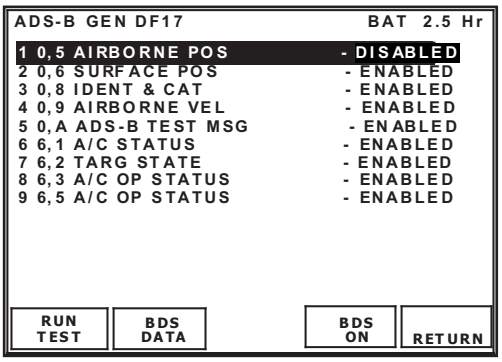
The BDS status is annunciated to indicate if the squitter has been captured, not available or not seen.

The BDS DATA key displays the BDS DATA screen for the selected BDS number.



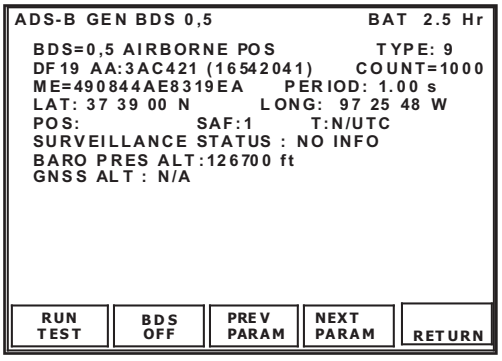
ADS-B MON:

The BDS DATA screen displays full content of selected BDS format being received via DF17, DF18 or DF19 extended squitters.



ADS-B GEN:

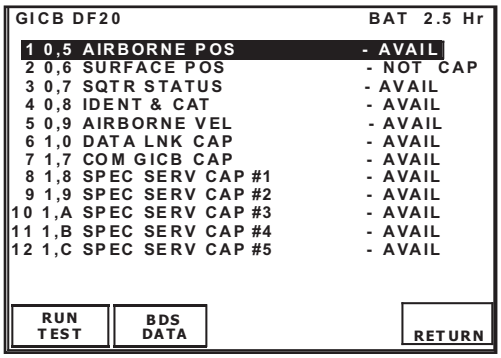
The BDS LIST shows BDS formats supported. The BDS SELECT key selects individual BDS numbers. The BDS ENABLE/DISABLE key enables or disables the selected BDS number for squittering via DF17 or DF18 extended squitter. The BDS DATA key displays the BDS DATA screen for the selected BDS number.



ADS-B GEN:

BDS DATA screens display full content of the selected BDS format in RTCA/ICAO engineering units.

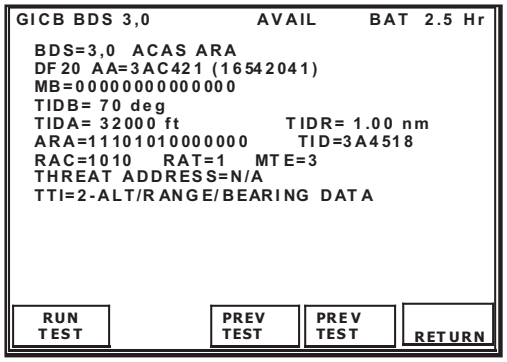
The NEXT PARAM and PREV PARAM keys select data fields for editing via the data slew keys.



GICB:

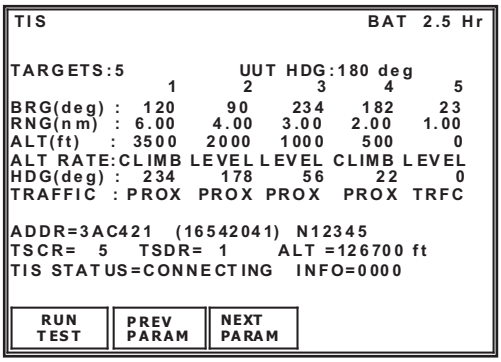
The BDS LIST shows BDS formats supported.

The BDS DATA key displays the BDS DATA screen for the selected BDS number.



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 6015 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 6015 may be directly connected to the UUT via a supplied RF coax cable via the RF I/O port.

Transit Case:

The IFR 6015 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

Notes

▲ - IFF System Information in Public Domain

% - TACAN System Information in Public Domain (Ref. MIL STD 291C)

TACAN/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

% *Variable Channel Selection 1 to 126 (X & Y)*

Preset Channel Selection

% *Preset 1 (DoD)*

T/R Mode 17X, 18X

A/A Mode 17X, 17Y

Inverse A/A Mode 80X, 80Y

% *Preset 2 (AN/ASM-663)*

5X, 5Y, 47X, 47Y, 89X, 89Y

Preset 3 (AN/ARM-184) No Preset

Preset 4 (2650/2655)

18X, 18Y, 47X, 47Y, 100X, 100Y, 123X, 123Y

OUTPUT LEVEL

ANTENNA PORT

Range

-67 to -5 dBm (T/R Norm, T/R Inv, A/A Beacon, A/A Inv)

-67 to -2 dBm (T/R Rng Only, A/A Rng Only)

Resolution

0.5 dB

Accuracy

± 2 dB

Distance to UUT antenna

6 to 250 ft with supplied antenna

RF I/O PORT

Range

-115 to -50 dBm (T/R Norm, T/R Inv, A/A Beacon, A/A Inv)

-115 to -47 dBm (T/R Rng Only, A/A Rng Only)

Resolution

0.5 dB

Accuracy

-95 dBm to –50 dBm ± 1 dB

Accuracy

-115 dBm to <-95 dBm ± 2 dB

REPLY PULSE SPACING

P1 to P2

12 μs ± 0.1 μs (T/R X Channel) @ 50% peak

P1 to P2

30 μs ± 0.1 μs (T/R Y Channel) @ 50% peak

REPLY PULSE WIDTH

P1/P2

3.5 μs ± 0.5 μs

ECHO REPLY

Control

On/Off

Position

30 nmi ± 1 nmi

Amplitude

-11 dB ± 1 dB relative to reply level

REPLY PULSE RISE AND FALL TIMES

ALL PULSES

Rise Time

2.0 μs ± 0.25 μs (10% to 90%)

Fall Time

2.5 μs ± 0.25 μs (90% to 10%)

REPLY DELAY

T/R X CHANNEL

Fixed Reply Delay

50 μs ± 100 ns

T/R Y CHANNEL

Fixed Reply Delay

56 μs ± 100 ns

% A/A X CHANNEL

Fixed Reply Delay

62 μs ± 100 ns

% A/A Y CHANNEL

Fixed Reply Delay

74 μs ± 100 ns

VARIABLE RANGE DELAY

X AND Y CHANNEL

Range

0 to 450.00 nmi

Resolution

0.01 nmi

Accuracy

± 0.01 nmi

PRESET RANGE DELAY

X AND Y CHANNEL

Preset 1 (DoD) Range

0, 3, 10, 30, 100, 200, 300, 400 nmi

Preset 2 (AN/ASM-663) Range

0, 10, 150, 297 nmi

Preset 3 (AN/ARM-184) Range

0, 50, 100, 150, 200, 250, 300, 350, 400 nmi

Preset 4 (2650/2655) Range

0, 5, 125, 283 nmi

Resolution

0.01 nmi

Accuracy

± 0.01 nmi

VARIABLE RANGE RATE

X AND Y CHANNEL

Rate

0 to 6500 kts

Resolution

1 kts

Accuracy

± 0.01% typical, tested to ± 0.5%

PRESET RANGE RATE

X AND Y CHANNEL

Preset 1 (DoD) Rate

0, 250 kts (1000 kts in A/A modes)

Preset 2 (AN/ASM-663) Rate

No Rate

Preset 3 (AN/ARM-184) Rate

0, 2400 kts

Preset 4 (2650/2655) Rate

No Rate

Resolution

1 kts

Accuracy

± 0.01% typical, tested to ± 0.5%

SQUITTER

% PRF

T/R(X) & T/R(Y) NORM, INVERSE, RNG ONLY

2700 Hz

A/A RNG ONLY, BEACON, INVERSE

1350 Hz

Accuracy

± 2%

Distribution

Per MIL STD 291C and ARINC 568

REPLY EFFICIENCY

Range

0 to 100%

Resolution

1% increments

Accuracy

± 0.5%

% IDENT TONE PULSE PAIR

T/R(X) & T/R(Y) Modes Selection

Selectable four letter code or tone

Frequency

1350 Hz

Accuracy

± 2 Hz

Equalizer pulse pair

Spacing from Ident pair 100 µs ± 10 µs

% IDENT TONE SINGLE PULSE

A/A(X) & A/A(Y) Modes Selection

Selectable four letter code or tone

Frequency

1350 Hz

Accuracy

± 2 Hz

INVERSE MODE

A/A(X), A/A(Y), T/R(X), T/R(Y)

Active Low North Reference Trigger Sync Output

% A/A MODE INTERROGATION

P1 to P2

12 µs ± 0.1 µs (A/A X Channel) @ 50% peak

P1 to P2

24 µs ± 0.1 µs (A/A Y Channel) @ 50% peak

Interrogation Rate

150 PPS, ± 5 Hz

% 15/135 HZ BEARING SIGNAL

Modulation Levels

15 Hz 21% ± 2.5%

135 Hz 21% ± 2.5%

Frequency

15/135 Hz <± 0.2%

Phase Accuracy

<± 0.3°

Distortion

<2.5%

% BEARING

Variable

0 to 359.5° in 0.5° increments

Accuracy

± 0.1°

PRESET

Preset 1 (DoD) Range

0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°

Preset 2 (AN/ASM-663) Range

0°, 45°, 180°, 225°

Preset 3 (AN/ARM-184) Range

0°, 90°, 180°, 337.5°

Preset 4 (2650/2655) Range

90°, 230°, 320°

INTERROGATION PULSE DECODING

Must Reply nominal code pair spacing

< ± 0.5 µs

Must Not Reply nominal code pair spacing

> ± 1.0 µs

% MRB T/R(X)

Group

12 pairs of pulses

Pulse Spacing

12 µs ± 0.1 µs

Pulse Pair Spacing

12 µs ± 0.1 µs

% MRB T/R(Y)

Group

13 single pulses

Pulse Spacing

30 µs ± 0.1 µs

% MRB A/A BEACON (X & Y)

Group

10 single pulses

Pulse Pair Spacing

30 µs ± 0.1 µs

% ARB T/R(X)

Group

6 pairs of pulses

Pulse Spacing

12 µs ± 0.1 µs

Pulse Pair Spacing

24 µs ± 0.1 µs

% ARB T/R(Y)

Group

13 single pulses

Pulse Spacing

15 µs ± 0.1 µs

UUT MEASUREMENTS

ERP

Range

+47 to +66.1 dBm

Resolution

0.1 dB

Accuracy

± 2 dB

DIRECT CONNECTION PEAK PULSE POWER

Range

+47 to +66.1 dBm

Resolution

0.1 dB

Accuracy

± 1 dB

FREQUENCY

Range

1025.00 to 1150.00 MHz

Resolution

10 kHz

Accuracy

± 20 kHz

INTERROGATION PULSE WIDTH

P1 AND P2 PULSE WIDTHS

Range

2.00 to 5.00 µs

Resolution

1 ns

Accuracy

± 50 ns

% INTERROGATION PULSE SPACING

P1 to P2 Spacing

10 to 14 µs (T/R X and A/A X Channel)

P1 to P2 Spacing

22 to 26 µs (A/A Y Channel)

P1 to P2 Spacing

34 to 38 µs (T/R Y Channel)

Resolution

10 ns

Accuracy

± 20 ns

INTERROGATION PRF

Range

1 to 300 Hz

Resolution

1 Hz

Accuracy

± 2 Hz

% A/A REPLY DELAY

A/A(X)

62 µs (-2 +4 µs accept)

A/A(Y)

74 µs (-2 +4 µs accept)

Resolution

10 ns

Accuracy

± 100 ns

TRANSPONDER MODE SPECIFICATIONS

SIGNAL GENERATOR

RF OUTPUT FREQUENCY

Interrogation Frequency

1030 MHz

Accuracy

± 10 kHz

RF OUTPUT LEVEL

ANTENNA PORT

MTL + 6 dB typical, automatically controlled for a MTL range of -83 to -68 dBm

Range

-67 to -2 dBm at antenna port

Resolution

0.5 dB

Accuracy

± 2 dB

Distance to UUT antenna

6 to 200 ft with supplied antenna

RF I/O PORT

MTL + 6 dB typical, automatically controlled

Range

-115 to -47 dBm

Resolution

0.5 dB

Accuracy

-95 to –47 dBm, ± 1 dB

Accuracy

-115 to <-95 dBm, ± 2 dB

ATCRBS/SIF/MODE S INTERROGATION PULSE SPACING

▲MODE 1

P1 to P2

2.00 µs ± 25 ns

P1 to P3

3.00 µs ± 25 ns

▲MODE 2

P1 to P2

2.00 µs ± 25 ns

P1 to P3

5.00 µs ± 25 ns

MODE 3A

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

MODE A

P1 to P3

8.00 µs ± 25 ns

P1 to P4

10.00 µs ± 25 ns

MODE C

P1 to P3

21.00 µs ± 25 ns

P1 to P4

23.00 µs ± 25 ns

INTERROGATION PULSE WIDTHS

MODE A,C,S,INTERMODE

P1,P2,P3

0.80 µs ± 50 ns

MODE S

P6 (Short DPSK Block)

16.25 µs ± 50 ns

P6 (Long DPSK Block)

30.25 µs ± 50 ns

P5

0.80 µs ± 50 ns

INTERMODE

P4 (Short)

0.80 µs ± 50 ns

P4 (Long)

1.60 µs ± 50 ns

INTERROGATION PULSE RISE AND FALL TIMES

ALL MODES

Rise Time

50 to 100 ns

Fall Time

50 to 200 ns

PHASE MODULATION

ALL MODES

Transition Time

≤ 80 ns

Phase Shift

180° ± 10°

SLS LEVELS

ATCRBS/SIF

SLS Level (P2)

-9 dB, -1 to +0 dB relative to P1 level

0 dB, -0 to +1 dB relative to P1 level

Off

MODE S

SLS Level (P5)

-12 dB, -1 to +0 dB relative to P6 level

+3 dB, -0 to +1 dB relative to P6 level

Off

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

INTERROGATION TEST SIGNALS

MODE S

PRF

50 Hz ± 5 Hz

ATCRBS/SIF

PRF

235 Hz ± 5 Hz

UUT MEASUREMENTS

ERP (@ 1090 MHZ)

Range

+ 45.5 to + 59 dBm (35.5 to 800 watts)

Resolution

0.1 dB

Accuracy

± 2 dB

Direct Connection Peak Pulse Power (@1090 MHz)

Range

+ 46.5 to + 59 dBm (45 to 800 watts)

Resolution

0.1 dB

Accuracy

± 1 dB

TRANSMITTER FREQUENCY

Range

1087.000 to 1093.000 MHz

Resolution

10 kHz

Accuracy

± 50 kHz

RECEIVER SENSITIVITY, RADIATED MTL

Range

-67 to -79 dBm into 0 dBi antenna

Resolution

0.1 dB

Accuracy

± 2 dB, typical

RECEIVER SENSITIVITY, DIRECT CONNECTION MTL

Range

-67 to -79 dBm

Resolution

0.1 dB

Accuracy

± 2 dB

REPLY DELAY

ATCRBS/SIF

Range

1.80 to 7.00 μs

Resolution

10 ns

Accuracy

± 50 ns

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/SIF

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

MODE S PREAMBLE

Range, P1 to P2

0.8 to 1.2 μs

Range, P1 to P3

3.3 to 3.7 μs

Range, P1 to P4

4.3 to 4.7 μs

Resolution

1 ns

Accuracy

± 20 ns

PULSE DECODER

Modes 1,2,3/A

4096 code & binary equivalent displayed, including X pulse.

Ident & Emergency Replies displayed.

Mode C

Altitude

PULSE WIDTHS

F1 AND F2

Range

0.25 to 0.75 μs

Resolution

1 ns

Accuracy

± 20 ns

MODE S PREAMBLE

Range

0.25 to 0.75 μs

Resolution

1 ns

Accuracy

± 20 ns

PULSE AMPLITUDE VARIATION

Range, Mode S (Relative to P1)

+3 to -3 dB

Range, ATCRBS/SIF (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/E-TCAS MODE SPECIFICATIONS

SIGNAL GENERATOR

OUTPUT FREQUENCY

REPLY FREQUENCY

1090 MHz

Accuracy

± 10 kHz

OUTPUT LEVEL (SIMULATED ERP)

ANTENNA PORT [Note 1]

Radiated power at 0 dBi 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

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 WIDTHS

MODE C

All Pulses

0.45 µs ± 50 ns

MODE S

P1 through P4

0.50 µs ± 50 ns

D1 through D112

0.50 µs ± 50 ns, 1 µs chip width

Reply Modes

TCAS I/II Mode C (with altitude reporting)

TCAS II Mode S formats 0, 11, 16

E-TCAS Modes formats 0, 4, 5, 11, 16, 20, 21

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%

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)

S1 to P1	*2.0 us*	
Accepts	*≤ ±200 ns*	
Rejects	*≥ ±1.0 us*	
P1 to P3	*21.0 us*	
Accepts	*≤ ±200 ns*	
Rejects (<10% Replies)	*≥ ±1.0 us*	
P1 to P4	*23.0 us*	
Accepts	*≤ ±200 ns*	
Rejects (<10% Replies)	*≥ ±1.0 us*	

Mode S

P1 to P2	*2.0 us*	
Accepts	*≤ ±200 ns*	
Rejects (<10% Replies)	*≥ ±1.0 us*	
P1 to SPR	*4.75 us*	
Accepts	*≤ ±200 ns*	
Rejects (<10% Replies)	*≥ ±1.5 us*	

SUPPRESION

ATCRBS (P2 or S1)

>0.5 dB above level of P1 <10% Replies

UUT MEASUREMENTS

ERP (@1030MHZ)

ATCRBS

Range

+43 to +58 dBm (20 to 631 watts)

Resolution

0.1 dB

Accuracy

± 2 dB

MODE S

Range

+43 to +58 dBm (20 to 631 watts)

Resolution

0.1 dB

Accuracy

± 2 dB

DIRECT CONNECTION PEAK PULSE POWER (@1030MHZ)

ATCRBS

Range

+43 to +58 dBm (20 to 631 watts)

Resolution

0.1 dB

Accuracy

± 1 dB

MODE S

Range

+43 to +58 dBm (20 to 631 watts)

Resolution

0.1 dB

Accuracy

± 1 dB

FREQUENCY

Range

1029.900 to 1030.100 MHz

Resolution

1 kHz

Accuracy

± 10 kHz

TCAS BROADCAST INTERVAL

Range

1.0 to 12.0 sec

Resolution

0.1 sec

Accuracy

± 0.2 sec

MISCELLANEOUS INPUT/OUTPUTS

RF I/O

Type

Input/Output

Impedance

50 Ω typical

Maximum Input Level

4 kW peak

10 W average

VSWR

< 1.3:1

ANTENNA

Type

Input/Output

Impedance

50 Ω typical

Maximum Input Level

10 kW peak

1/2 W average

VIDEO

Type

Output

Impedance

50 Ω typical

Generate Video Level

1.1 ± 0.4 V peak to peak into 50 Ω

Receive Video Level

Proportional to IF level

Baseline

± 0.5 V referenced to ground

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

Pollution Degree 2

Altitude

≤ 4800 meters

Operating Temperature

NOTE 3 -20°C to 55°C

Storage Temperature

NOTE 4 -30°C to 71°C

Relative Humidity

95% ±5% from 5° to 30°C

75% ±5% from 30° to 40°C

45% ±5% from 40° to 55°C

ENVIRONMENTAL (SUPPLIED EXTERNAL AC TO DC CONVERTER

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 [NOTE 5]	*MIL-PRF-28800F*	*Class 2*
Temp, not operating [NOTE 6]	*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*	

TRANSIT CASE CERTIFICATIONS

Drop Test	*FED-STD-101C*	*Method 5007.1 Paragraph 6.3, Procedure A, Level A*
Falling Dart Impact	*ATA 300*	*Category I*
Vibration, Loose Cargo	*FED-STD-101C*	*Method 5019*
Vibration, Sweep	*ATA 300*	*Category I*
Simulated Rainfall	*MIL-STD-810F*	*Method 506.4 Procedure II of 4.1.2*
	FED-STD-101C	*Method 5009.1 Sec 6.7.1*
Immersion	*MIL-STD-810F*	*Method 512.4*

Notes

[NOTE 1] Simulates a 50.5 dBm XPDR 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.

Ordering Numbers	Versions
72424	IFR 6015 Mode 1,2,3A/C/S Transponder, TACAN/DME, TCAS I,II,E-TCAS, TIS Ramp Test Set (specify 110 V or 220 V)
83411	6015OPT3 ADS-B Option

Extended Standard Warranties with Calibration for 6015

84373	Extended standard warranty 36 months with scheduled calibration
84374	Extended standard warranty 60 months with scheduled calibration

Accessories for 6015

63656	Desk Top Stand (AC0820)
67474	Tripod (AC0826)
6674	IFR 6015 Operation Manual - CD (AC0825CD)
6676	IFR 6015 Maintenance Manual - CD
82553	Tripod, Dolly, Stand (AC24006)
86931	UC-584 Universal Transponder Antenna Coupler

EXPORT CONTROL:

This product is controlled for export under the International Traffic in Arms Regulations (ITAR). A license from the U.S. Department of State is required prior to the export of this product from the United States.

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