DESCRIPTION

The T-47G Test Set provides unsurpassed reliability and ruggedness from over 45 years of experience and proven results with U.S. and foreign militaries. The Test Set allows testing and analysis of the following systems: Transponders (Modes 1, 2, 3A, C, and S), MODE 4 (IFF), TACAN (Tactical Air Navigation), DME (Distance Measuring Equipment), Interrogator (Modes 1, 2, 3A, C, and 4), and TCAS (Traffic and Collision Avoidance Systems). Code of the Day (MODE 4) memory permits full Interrogator and Transponders tests in actual environments ensuring compliance.

New Features*

The T-47G provides test capability for Mode S Elementary and Enhanced Surveillance. The T-47G can receive and display information contained in Mode S DF 17 Extended Squitter (ADS-B).

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TRANSPONDER

- Fully Tests MODES 1, 2, 3A, C, and 4 (IFF), and MODE S transponders
- Direct Connect or Over the Air measurements providing unequaled versatility
- "Code of The Day" loaded by KIR and stored in Test Set memory
- Accurate displayed results provide meaningful troubleshooting information

The T-47G Test Set performs the following transponder tests based on the capabilities of the Unit-Under-Test:

- Mode 4A/4B - Verifies valid Mode 4A/4B bit and tests to verify valid and invalid properties
- Mode 1 and 2 - Verifies Modes 1 (4 digits) and 2 code and reply efficiency
- MC - Mode C decoded altitude and reply efficiency
- M3A - Verifies 3A reply code, IDENT/EMERG capabilities and reply efficiency
- MA and MC ALL CALL - Mode S Address and reply efficiency
- MA and MC Only
- Mode S Surveillance ID (DF5) – Mode S Address, flight status (Air, Ground, Alert, SPI) and reply efficiency
- Mode S Surveillance Altitude (DF4) – Mode S altitude, flight status, reply efficiency, and Mode S/Mode C altitude compare
- Mode S Surveillance Short (DF0) – Mode S address in octal and hex, decoded tail number, flight status, and reply efficiency
- Mode S Comm Identification (UF5/DF21) – Flight ID Number, flight status and reply efficiency
- Mode S Comm Altitude (UF4/DF20) – Mode S altitude, flight status, altitude compare, and reply efficiency
- Mode S Comm C – decoded tail number, flight status, and reply efficiency
- Undesired replies (UF11) – Checks for no reply to incorrect Mode S interrogation address
- Squitter – Pass/Fail indication of correct squitter period
- Max True Airspeed – Decodes transponder programmable maximum airspeed setting
- Power, Receiver, Sensitivity and Frequency – Displays measured power in dB and watts, frequency, and sensitivity. Pass/Fail indication
- Data and framing pulse measurements are monitored and displayed if out of tolerance.
- SLS (Side Lobe Suppression Test)
- Mode S Enhanced Surveillance parameters including Selected Altitude (BDS4); Roll Angle, True Track Angle, Ground Speed, Track Angle Rate, and True Airspeed (BDS5); Magnetic Heading, Indicated Airspeed, Mach #, Barometric Altitude Rate, and Inertial Vertical Velocity (BDS6)
- Receives and decodes 1090 MHz ADS-B data including squitter type (airborne position, surface position, aircraft ident/category, and airborne velocity), lat/long, N/S velocity, E/W velocity, Flight I.D., Mode S address, altitude (GNSS or barometric), and air speed

INTERROGATOR

- Fully tests 1, 2, 3A, C, and 4 (IFF) Mode's

- "Code of the Day" stored in Test Set memory

- Easy to use menus and setup features

- Direct Connect and Antenna-to-Antenna capabilities

- Manual and Automatic test modes

- Measures the received pulses and displays pulse width and separation

- Adjustable range and preset velocity

DME/TACAN

- Covers entire frequency range from Channels 1 – 126 X and Y

- Ground to Air (G/A), Air to Air (A/A), and Air to Beacon (A/A BCN) Modes

- Numerous Heading and Range Selections available

- Accurate Power and Frequency measuring capability (Direct Connect A/A)

- Adjustable Reply Rates in 25% increments

TCAS (Traffic Collision Avoidance System)

The ability to test TCAS I, II, and Traffic Alert Systems is standard. The T-47G can simulate both ATCRBS and MODE S intruders utilizing an easy to navigate menu and setup procedures. With preset parameters, the Test Set will automatically acquire and track an inbound and outbound course allowing the operator to observe an intruder on their TCAS display initiating RA (Resolution Advisory), and TA (Traffic Alert) warnings.

The following features are either preprogrammed or adjustable depending on the operators needs:

- Fully Automated built in TCAS Intruder effectively tests TCAS I, TCAS II, and Traffic Alert Systems

- Simulates both ATCRBS and MODE S Intruder types

- Automatic MODE C altitude acquired (with transponder on and operating)

- Antenna-to-Antenna Operation permitting complete system verification tests

- Manually adjustable offset allowing ascending or descending intercept scenarios

- Simple On-Screen prompts for easy setup

ADDITIONAL FEATURES

- Diagnostic Self-Test

- Large easy to read LCD Display

- Pass and Fail Criteria based on stored parameters

- Microprocessor control results in easy-to-use operation that requires minimum amounts of training.

- Download and save data to a PC through the RS-232 port

PRODUCT SPECIFICATIONS

Transponder Mode Specification*

Test Set Transmitter:

Output Frequency…………... 1030MHz / ± 10 kHz
Output Power………………...7 + 2 dBm Antenna
        -42 + 2 dBm Direct Connect
Modes………………………... 1, 2, 3A, C, 4 (IFF), S
Antenna Beam Width………. 15° to 60° + 10° (variable by
        distance from UUT)

Test Set Receiver:

Frequency

Measurement Range………...1086.5 to 1093.5 MHz
Measurement Accuracy……. ± 200 kHz

Power

Measurement Range………..47 – 64 dBm
Measurement Accuracy……. ± 2 dB Direct Connect
        ± 3 dB Antenna-to-Antenna

Sensitivity

Measurement Range………..-45 to -87 dBm Direct Connect
        -49 to -81 dBm Antenna
Measurement Accuracy……. ± 2 dB Direct Connect
        ± 3 dB Antenna-to-Antenna

Reply Efficiency

Measurement Range………..0 to 100%
Measurement Accuracy……. ±2%

Interrogator/TCAS Mode Specification*

Test Set Transmitter:

Output Frequency…………... 1090 MHz / ± 10 kHz
Output Power………………...7 + 2 dBm Antenna (TCAS)
        -42 + 2 dBm Direct Connect (TCAS)
Modes………………………... 1, 2, 3A, C, 4 (IFF), S
Antenna Beam Width………. 60° + 10° typical

Test Set Receiver:

Frequency

Measurement Range………..... 1029.7 to 1030.3 MHz
Measurement Accuracy………. ± 200 kHz

Power

Measurement Range…………..47 – 64 dBm
Measurement Accuracy………. ± 2 dB Direct Connect
        ± 3 dB Antenna-to-Antenna

Sensitivity

Measurement Range………..... -45 to -87 dBm Direct Connect
        -55 to -87 dBm Antenna
Measurement Accuracy………. ± 2 dB Direct Connect
        ± 3 dB Antenna-to-Antenna

    * Indicates Standard Condition Values as outlined
     in Maintenance Manual

TACAN Specification*

Test Set Transmitter:

Frequency Range……………962 to 1213 MHz
Frequency Accuracy………... ± 10 kHz
Power Out……………………. 0 + 2 dBm Antenna
        -50 + 2 dBm Direct Connect
Bearing Accuracy……………. ± 1° typical, ± 2° max.
Range Accuracy……………...± 0.5 nmi. Typical, ± 1.0 nmi. max.
Velocity Accuracy…………… ± 3%
Antenna Beam width………... 60° + 10°

Reply Rate……………………Adjustable to 25%, 50%, 75%, and
        100% Rates

Freq Measurement…………. + 500 kHz Direct Connect A/A
PWR Measurement …………+ 3 dBm Direct Connect A/A

DME Specification*

Test Set Transmitter:

Frequency Range……………962 to 1213 MHz
Frequency Accuracy………... ± 10 kHz
Power Out……………………. 0 + 2 dBm Antenna
        -50 + 2 dBm Direct Connect
Range Accuracy……………...± 0.5 nmi. Typical, ± 1.0 nmi. max.
Velocity Accuracy…………… ± 3%
Antenna Beam Width………. 60 + 10°

Reply Rate……………………Adjustable to 25%, 50%, 75%, and
        100% Rates
Freq Measurement…………..+ 500 kHz Direct Connect A/A
PWR Measurement…………..+ 3 dBm Direct Connect A/A

PHYSICAL CHARACTERISTICS*

Packaging……………………………………………………….MIL-PRF-28800F, Class 2
Size……………………………………………………………….16.5 x 9.4 x 8.5 inches
42 x 23.5 x 21.5 cm
Weight……………………………………………………………24 Lbs.
10.9 kg
Operating Temperature…………………………………….…..-28° to +55° C
Battery Type…………………………………………………….Lead-Acid
Battery Life……………………………………………………..8 Hours at 20% Duty Cycle
Battery Charger………………………………………………..Included and Built-in
Power requirements…………………………………………….100 to 240 VAC, 50 to 400 Hz
12 to 40 VDC
Antenna Configuration………………………………………….Case Mountable
Tripod Mounted
Hand-Held
Color……………………………………………………………..Green

* Indicates Standard Condition Values as outlined
in Maintenance Manual

ACCESSORIES

Standard

- Standard 2-year Warranty
- KIR/KIT Cable Assembly
- Operator and Maintenance Manual
- Direct Connect Cable
- Neck Strap
- AC/DC Power Cord
- Antenna Handle
- Calibrated Directional Antenna
- Antenna Extension Cable

Options

- 5 and 10 Year Warranty Options
- Maintenance and Calibration Plans

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