

DESCRIPTION

The T-47N 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 capabilities allow test and analysis of the following systems: Transponders (Modes 1, 2, 3A, C, S, and 4 IFF), TACAN (Tactical Air Navigation), DME (Distance Measuring Equipment), Interrogator (Modes 1, 2, 3A, C, and 4), and TCAS (Traffic Alert and Collision Avoidance Systems). Code of the Day (MODE 4) memory permits full Interrogator and Transponder tests in actual environments, ensuring compliance.

New Feature*

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



P/N: T-47NC 90000061
P/N: T-47NH 90000062
NSN T-47NH: 6625-01-482-4577

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-47N 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 Mode's 1, 2, 3A, C, and 4 (IFF)
- Built in KIV-6 bay for ease of use when testing Interrogators, no need to carry the KIT
- 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 for Channels 1 – 126, X and Y
- Ground to Air (G/A), Air to Air (A/A), and Air to Air Beacon (A/A BCN) Modes
- Numerous Heading, Bearing, and Range Selections available
- Accurate Power and Frequency measuring capability
- Adjustable Reply Rate in 25% increments

TCAS (Traffic Collision Avoidance System)

The ability to test TCAS I, II, and Traffic Alert Systems is standard. The T-47N 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 simulate an inbound or outbound course allowing the operator to observe an intruder on their TCAS display and determining correct RA (Resolution Advisory), and TA (Traffic Alert) warnings.

The following features are either preprogrammed or adjustable depending on the operator's 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
- Start/Stop feature allows flexibility in testing for correct bearing information

ADDITIONAL FEATURES

- Two Models Available, Case Mounted Antenna (NC) or Hand Held Antenna (NH)
- 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 a minimal amount of training
- Displays failed criteria
- Download and save data to a PC through the RS-232 port
- Rugged and reliable case provides exceptional protection from the elements and rough usage

PRODUCT SPECIFICATIONS

Transponder Mode Specification*

Test Set Transmitter:

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

Test Set Receiver:

Frequency

Measurement Range..... 1086.5 to 1093.5 MHz
Measurement Accuracy..... \pm 200 kHz

Power

Measurement Range..... 47 to 64 dBm
Measurement Accuracy..... \pm 2 dB Direct Connect
 \pm 3 dB Antenna-to-Antenna

Sensitivity

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

Reply Efficiency

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

TACAN Mode Specification*

Test Set Transmitter:

Frequency Range..... 962 to 1213 MHz
Frequency Accuracy..... \pm 10 kHz
Power Out..... 0 / \pm 2 dBm Antenna
 -50 / \pm 2dBm Direct Connect
Bearing Accuracy..... \pm 1° typical, \pm 2° max.
Range Accuracy..... \pm 0.5 nmi. typical, \pm 1.0 nmi. max.
Velocity Accuracy..... \pm 3%
Antenna Beam Width..... 60° \pm 10° typical

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

Freq Measurement..... \pm 500 kHz Direct Connect A/A
PWR Measurement..... \pm 3 dBm Direct Connect A/A

Interrogator/TCAS Mode Specification*

Test Set Transmitter:

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

Test Set Receiver:

Frequency

Measurement Range..... 1029.7 to 1030.3 MHz
Measurement Accuracy..... \pm 200 kHz

Power

Measurement Range..... 47 to 64 dBm
Measurement Accuracy..... \pm 2 dB Direct Connect
 \pm 3 dB Antenna-to-Antenna

Sensitivity

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

* Indicates Standard Condition Values as outlined in Maintenance Manual

DME Mode Specification*

Test Set Transmitter:

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

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

Freq Measurement..... \pm 500 kHz Direct Connect A/A
PWR Measurement..... \pm 3 dBm Direct Connect A/A

T-47N

Physical Characteristics*

Packaging/Case.....	MIL-PRF-28800F, Class 2
Size.....	14.5 x 9.4 x 8.5 inches 37 x 23.5 x 21.5 cm
Weight.....	.28 Lbs. (Accessories & Cover) 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 125 or 240 VAC, 50 to 400 Hz 12 to 40 VDC
Antenna Configuration.....	Permanently Case Mountable (T-47NC) Provisions for Case mounting on T-47NH Tripod Mounted (T-47NH) Hand-Held (T-47NH)
Colors.....	Green (T-47NH), Yellow (T-47NC)

* Indicates Standard Condition Values as outlined in Maintenance Manual

Accessories

Standard

- Standard 2-year warranty
- Built-In KIV-6 module Bay
- KIR/KIT Cable
- Operational and Maintenance Manual
- Direct Connect Cable
- Neck Strap
- AC/DC Power Cord
- Antenna Handle (NH Only)
- Calibrated Directional Antenna
- Antenna Extension Cable (NH Only)

Options

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



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