

Description

The T-47/M5 – Tel-instrument Electronics Corp. newest IFF Test Set. The T-47/M5 capabilities allow full testing, simulation and analysis of the following systems: Interrogator/Transponder Test set for Modes 1, 2, 3A, C, S, EHS, ADS-B TX and RX (compliant) with 4 and Mode 5, TCAS I, II and E-TCAS. Comprehensive testing of TACAN Receiver Transmitters in A/A, G/A, and A/A BCN. Direct Connect and over the Air options. Utilizing either the KIV-77 or the KIV-78 Crypto appliqué (not included) for Mode 4 & Mode 5 testing and built in USB connection available for remote diagnostic testing and download of test results to a PC.



Full color display and easy to use front panel navigation utilizing a simple Joy-stick – The user friendly interface allows for fast and simple verification of aircraft installed avionic systems.

Main Features

- Comprehensive Interrogator and Transponder tests Modes 1, 2, 3A, C, S, EHS, Mode 4 and Mode 5 (L1 & L2)
- Dual Crypto – Utilize Either the KIV-77 or the KIV-78 for Mode 4 and Mode 5 Testing
- Full TACAN testing of A/A, G/A and A/A BCN on all 252 TACAN channels X and Y
- TCAS I, TCAS II and E-TCAS airborne systems intruder simulations
- Modes 4 and 5 testing with a built in powered bay for the KIV-77 Crypto Appliqué
- Full Testing of ADS-B in compliance with RTCA DO-260 A and B requirements
- Light Weight compact package in a MILSPEC Class 1 Container
- Long Lasting Battery
- Supports Remote Client testing utilizing USB connection to any laptop or desktop computer

Transponder

- Mode A - 4096 code, IDENT, percent reply, pulse spacing, pulse width
- Mode C - Altitude (feet and grey code), percent reply, pulse spacing, pulse width
- Side-lobe suppression (SLS)
- Mode A/S and C/S All Call - Mode S address, percent reply
- Mode A Only and Mode C Only
- Mode S Surveillance I.D. (DF5) – Mode S address, percent reply, flight status (Air, Ground, Alert, SPI), Mode S/Mode A 4096 code compare (automatic mode)
- Mode S Surveillance Altitude (DF4) – Mode S altitude, percent reply, Mode S/Mode C altitude compare (automatic mode)
- Mode S Surveillance Short (DF0) – Mode S address, vertical status (Air, ground), percent reply, decoded country code, decoded tail number (if applicable)
- Mode S Comm. I.D. (UF5/DF21) – Mode S ID code, percent reply
- Mode S Comm. Altitude (UF4DF20) – Mode S altitude, percent reply
- Undesired replies (UF11) – Checks for reply to incorrect Mode S interrogation
- Acquisition squitter – Pass/Fail indication of squitter duration, decoded Mode S address, interrogator code
- Extended squitter – Pass/Fail indication of squitter duration, decoded Mode S address
- Max Airspeed – Decodes and displays maximum airspeed
- Diversity – Displays Pass/Fail indication and measured value of RF leakage through Mode S transponder antenna ports
- Sensitivity (MTL) – Measures and displays MTL for Modes A, C, and S
- Measures and displays transponder power (dBm or watts), frequency, and receiver sensitivity (dBm)
- Decodes and displays Flight I.D.

Transponder

DO-260A/B General Tests Performed but not limited too:

- Decodes and displays Mode S address in Octal and Hex
- 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 identification/category, and airborne velocity), latitude/longitude, N/S velocity, E/W velocity, Flight I.D., Mode S address, altitude (GNSS or barometric), and airspeed
- Transmits 1090 MHz ADS-B data for four intruder aircraft (airborne or surface position)

DO-260A/DO240(2) specific parameters tested but not limited too:

- BDS 0,5
- BDS 0,8
- BDC 0,9 Subnet 1, 2, 3, 4
- Velocity Hex
- DF 17 MS Address
- Interrogator Identifier
- Latitude, Longitude
- Airborne Squitter Status Bits – No Info, SPI, Alerts, Mode A 4096 Code
- Squitter Period, Squitter Type (Ext Squitter Airborne Position Report)
- TYPE 28 Report
- BDS 6,1
- TYPE 29 Report
- BDS 6,2 Target State and Status
- Type 31 Report (BDS 6,3)
- Horizontal Position Integrity Information

DO-260B specific parameters tested but not limited too:

- Status Type 28, Type 1 Emergency Report & Type 2, Active RA
- Type 29 – 6,2 Squitter TCAS/ACAS Operational Status, TCAS/ACAS RA, FMC/MPC/FCU Altitude, Pressure and Heading
- Type 29 6,2 ME Field, Squitter type, Target State and Status
- Type 31 6,3 Aircraft Operational Status
- Horizontal Position Status (Nap) Navigation Integrity Category (NIC) for DO-260B
- Navigation Accuracy Category, Velocity and Position NACv and NACp, Special Design Assurance SDA.
- Latitude/Longitude Compare for position, velocity and system accuracy
- ADS-B IN – Decode and display aircraft ADS-B RX capability in Type 31 Subtype 0
- GPS Antenna Offset

Modes 4 and 5:

- Complete Comprehensive testing of Mode 4 and Mode 5
- 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
- Level 1 and Level 2 testing formats
- Figure of Merit (FOM)
- Lat/Lon
- National Org
- Pulse Spacing and Width verification
- Altitude
- Emergency, X Pulse and IP

Interrogator

- Fully tests Mode's 1, 2, 3A, C, and 4 (IFF) and Mode 5 Targets
- Built in Powered KIF-77 bay for ease of use when testing Interrogators
- 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
- Full Level 1 and Level 2 simulation

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
- Complete control over Heading, Bearing, and Range selections
- Accurate Power and Frequency measuring capability
- Adjustable Reply Rate
- Direct Connect and Antenna to Antenna testing
- IDENT tone
- Pulse Spacing & Width, power and frequency measurements
- Delete 135 Hz and 15 Hz components

TCAS

- Fully Automated built in TCAS Intruder simulations for TCAS I, TCAS II, and E-TCAS
- Simulates both ATRBS 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

STANDARD ACCESSORIES

- Standard 2-year Warranty
- Direct Connect Cable
- Antenna Handle
- Neck Strap
- Directional Antenna Assembly
- Antenna Extender Cable
- Operational Manual

NOTE: KIV-77 Crypto Appliqué is NOT INCLUDED

Additional Features

- Rugged and durable MIL-PRF-28800, Class 1 package
- Extensive built-in diagnostics
- Long Lasting Lithium-Ion battery for extended tests
- Reduced unit weight
- Remote download capability
- Bench Utility capability
- Multiple stored user presets
- Simple easy to use intuitive operator interface.

PHYSICAL CHARACTERISTICS

- MIL-PRF-28800 Class 1
- Size 14.5 x 9.4 x 6.5 inches
- Weight – 10 Lbs. (operating)
- Operating -40° to +55°C
- Power – 115 to 240 VAC/50 to 400 Hz
- Rechargeable batteries included
- Battery Life – 8 Hrs @ 20% Duty Cycle

