



T-4530i

IFF Ramp Test Set

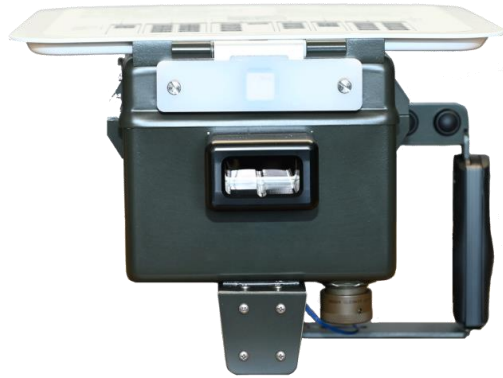
Description

The T-4530i is the next evolution of the highly successful TS-4530A Test Set with Option B Crypto Interface (KIV-77 and SIT-2010). The T-4530i will fully test, simulate and analyze the following systems: Interrogator/Transponder for Modes 1, 2, 3/A, C, S, EHS, ADS-B TX and RX (compliant) with Mode 4 (optional) and Mode 5 Level 1 & 2 and TCAS I & II. Comprehensive testing of TACAN Receiver Transmitters in A/A, G/A, and A/A BCN.

Our new NiMH Battery can provide over 4 hours of continuous operation on one battery with one charge.

Lightest Ramp Test Set available.

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



P/N: 90 000 128
NSN: 6625-01-681-0678

Main Features

- Interrogator and Transponder Tests Modes 1, 2, 3/A, C, S, (ELS/EHS), Mode 4 (Optional) and Mode 5 (L1 & L2).
- RoHs Compliant for international use.
- Specific tests designed to complete transponder integration tests IAW DoD AIMS 1102.
- Utilize either the Option B KIV-77 or SIT-2010 CCI Applique out of the box.
- Full TACAN testing of A/A, G/A and A/A BCN on all 256 TACAN channels X and Y.
- TCAS I, TCAS II and E-TCAS airborne systems intruder simulations.
- Full testing of ADS-B in compliance with RTCA DO-260B requirements.
- Long lasting NiMH battery, 2 batteries included providing up to 8 hours of continuous use.

Transponder

- Mode A - 4096 code, IDENT, percent reply, pulse spacing, pulse width
- Mode C - Altitude (feet), percent reply, pulse spacing, pulse width
- Side-lobe suppression (SLS)
- Mode A/S and C/S All Call - Mode S address, percent reply
- 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, percent reply, decoded country code
- Mode S Address (DF11) 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
- Sensitivity (MTL) – Measures and displays MTL for Modes A, C, and S
- Measures and displays transponder power, frequency, and receiver sensitivity (dBm)
- ADS-B IN Testing (4 Targets)
- Mode S BDS Register Raw Data (Optional Remote Client can display and decode all ADS-B data)

Transponder

DO-260B 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-260B specific parameters

- 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 6,5)
- Horizontal Position Integrity Information

DO-260B specific parameters continued

- 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
- DoD AIMS 1102 Transponder Integration tests
- Level 1 and Level 2 testing formats
- PIN Code
- Figure of Merit (FOM)
- Latitude and Longitude
- National Origin
- Pulse Spacing and Width verification
- Altitude
- Emergency, X Pulse and I/P

Interrogator

- Fully tests Mode's 1, 2, 3A, C, S, Modes 4 and 5 targets
- Built in Powered Option B Crypto Appliqué bay for ease of use
- Easy to use menus and setup features
- Direct Connect and Over the Air capabilities
- Manual and Automatic test modes
- Measures the received pulses and displays pulse width and separation
- Adjustable range and preset velocity settings
- 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/or 15 Hz components, North Reference Trigger

TCAS

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

Additional Features

- Rugged and durable MIL-PRF-28800, Class 1 package
- Extensive built-in diagnostics
- Long Lasting NiMH battery for extended testing
- Reduced unit weight
- Download results with Tel-Instrument Bench included
- Multiple stored user presets
- Simple easy to use intuitive operator interface.

T-4530i

SIGNAL GENERATOR

Generator Frequency	1030 or 1090 MHz
Generator Power	+4 to -44 dBm with 1 dB resolution, 1.5 dB accuracy at antenna connector (2 dB accuracy for radiated field strength)
Antenna	
Direct	-40 to -95 dBm with 1 dB resolution, 1.5 dB accuracy
Waveforms	Modes 1, 2, 3/A, C, 4, S & 5 comply DoD AIMS 17-1000. Mode S / TCAS / EHS complies with RTCA/DO-181C
ISLS Amplitude	Equal to P1 on difference or sum ports when ISLS suppression enabled. Provides ISLS pulse on difference antenna during Mode S P6
Interrogation Rate	Mode 1, 2, 3/A, C, 4 A/A mode – 235 Hz \pm 5 Hz Direct Connect 450 Hz \pm 5 Hz
Short	45 – 50 Hz
Long	13-16 Hz
Mode 5	200 – 225 Hz
Harmonics & Spurious	Complies with MIL-STD-461E (see EMC/RFI section)
Spectral Mask	Complies with DoD AIMS 17-1000.

COMSEC INTERFACE

KIV-77	Appliqué plugs directly into Test Set
SIT2010	Appliqué plugs directly into Test Set

NOTE: Crypto Appliques are not included

MEASUREMENT RECEIVER

Frequency Range	1030 or 1090 MHz
Amplitude Range	+68 to +20 dBm at direct port, +24 to -24 dBm at antenna port
Input Protection	Antenna Ports: +40 dBm peak 30 μ s max @ 1% DC, +27 dBm average Direct Port: + 68 dBm peak 30 μ s max, 1% DC, +43 dBm average

Receiver Measurements

Power	0.1 dB resolution 1.5 dB accuracy direct, 2 dB over the air
Frequency	10 kHz resolution Accuracy for Modes 1, 2, 3/A, C, 4, & S 0.1 MHz Transponder 0.05 MHz Interrogator
Pulse Spacing	Accuracy within 25 ns for pulses with rise times <100ns
Pulse Width	Accuracy within 25 ns for pulses with rise time <100ns and fall time <200ns
Receiver Bandwidth	>10 MHz at -3dB response

STANDARD ACCESSORIES

- Standard 2-year Warranty
- External Battery Charger
- USB Cable
- Download Utility
- Operational Manual/CD-ROM
- Direct Connect Cable
- AC Adapter, Power Cord
- Transit Case
- Optional DAGR Cable
- Integrated Antenna and GPS

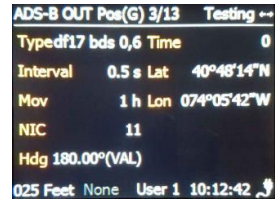
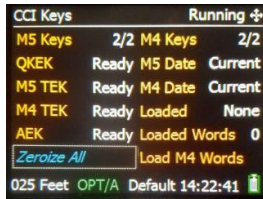
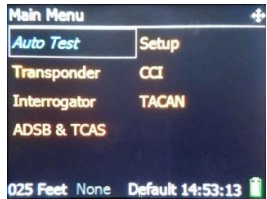
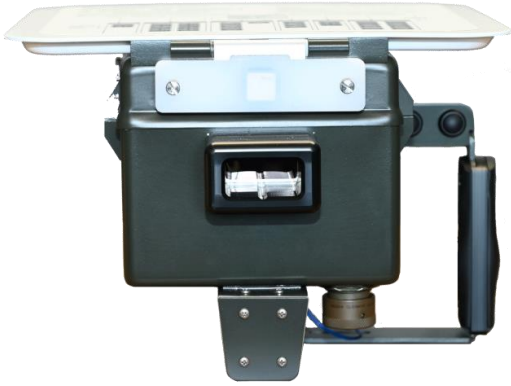
NOTE: Crypto Appliques are NOT INCLUDED

PHYSICAL CHARACTERISTICS

- MIL-PRF-28800 Class 1
- Size 14.1 x 11.5 x 7.5" inches
- Weight < 9.lbs. (Operational)
- NiMH Battery (2 Included)
- Battery Life – 4 Hours continuous / 8 hours total with 2 batteries
- Battery Charger
- Power – 100 to 240 VAC/50 to 400 Hz
- Size 16.4 x 10.5 x 8.4 inches
- Operating Temperature -40° to +55°C

**“Mission Critical RF
TESTING Solutions”**

T-4530i



NOTICE

This commodity it is intended for is subject to the International Traffic in Arms Regulations and may not be exported or transferred to a foreign party, either in their original form or after being incorporated into other end-items, without the prior written consent of the U.S. Department of State