

SDR-OMNI/MIL Avionics Test Set



www.telinstrument.com

SDR-OMNI/MIL All-In-One-Avionics Test Set

The SDR-OMNI provides the avionics technician with a comprehensive suite of RF test capabilities in a single ruggedized, yet lightweight, package for demanding military customers.

Direct Replacement for legacy Tel-Instrument T-47 Series and the IFR 4000 and 6015 Test Sets.

The unit has a highly readable and responsive touchscreen for quick and convenient avionics testing – especially for performing FAA required ATC transponder, ADS-B, and ELT tests. Professionally formatted reports can be downloaded via USB or wirelessly printed to a local wireless printer.

Test functionality:

- Transponder and FAA Part 43
- TACAN: 126 X/Y, GA, A/A A/A BCN
- ATC Modes 1, 2, 3A, C, S & EHS
- ADS-B 1090 and 978 UAT (IN and OUT), FIS-B
- VOR and ILS (with combined LOC + GS + MB)
- HF / VHF / UHF COMM Radios (AM & FM)
- SELCAL, ELT / EPIRB
- TCAS I & II ACAS
- Aircraft Audio Systems Testing
- VSWR / Distance to Fault (DTF) / Cable Loss
- 2-Year Calibration Cycle

This is the most advanced test set ever made by TIC. The combination of hardware and software can test virtually any RF signal from 200 kHz to 1.6 GHz. As the lightest ruggedized tester on the market, the SDR-OMNI offers unmatched capability and ease of use.

Test functions are implemented using software-defined signal processes that generate, receive, and measure complex avionics signals covering narrow band analog or digital communications, complex navigation, and wide-band pulse or data protocols.



SDR-OMNI/MIL Avionics Test Set
P/N 90 000 165

- Class 1 MIL-SPEC ruggedness
- Color Display with Responsive Touchscreen
- Intuitive, Smartphone-style user interface
- GPS receiver for accurate ADS-B testing
- Self-guided Calibration Verification
- Long lasting Li-ion battery
- Transponder Antenna Coupler included
- Audio TX/RX headset included
- Complete accessory kit for all applications

“Mission Critical RF TESTING Solutions”

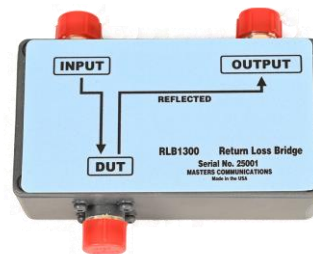
Main Features

- **TRANSPONDER 1030/1090 MHz:** Automated FAR Part 43 Appendix F transponder test for ATRCBS and Mode S Transponders; EHS, GICB BDS registers, Manual testing (power, freq., % reply, SLS, etc.)
- **1090 MHz ADS-B OUT:** Decoded BDS registers and FAR 91.227 / AC60-165B required data
- **1090 MHz ADS-B IN:** 4 simulated traffic targets for cockpit display verification
- **978 MHz UAT OUT:** Decoded display of all required data
- **978 MHz UAT IN:** 4 simulated traffic targets, FIS-B weather test
- **TCAS I & II, ACAS**
- **TACAN:** 126 Channels X/Y, Air to Air, Air to Ground, Air to Air Beacon
- **Modes 1 and 2:** Required tests for legacy military applications
- **VOR/ILS/DME:** Tests VOR receivers & ILS landing systems (simultaneous GS + LOC + MB)
- **DME**
- **COMM Radios:** HF / VHF / UHF COMM AM/FM Transceivers: Transmit and receive RF power, sensitivity, modulation, **voice test of aircraft radio using included headset**
- **ELT (406 MHz + 121.5/243 MHz) EPIRB/PLB testing**
- **SELCAL:** Test Selective Calling systems
- **RF CABLE & ANTENNA Test:** VSWR and DTF (Distance-to-Fault) for on-aircraft troubleshooting (VSWR calibration fixture included), Cable loss measurement
- **CALIBRATION VERIFICATION:** Guided calibration verification program

New Release (Q1 2024)

- **GPS SIMULATOR:** Multi-satellite L1 C/A GPS signal for position and aircraft movement simulation

SDR-OMNI CONFIGURATION AND ACCESSORIES	
Test Capability Included	SDR ALL IN ONE
ATCRBS & Mode S Transponder	■
TCAS I/II	■
TACAN	■
Military Modes 1 and 2	■
978 MHz UAT IN/OUT + FIS-B	■
1090 MHz ADS-B IN/OUT	■
VSWR & DTF/Cable Loss	■
NAV VOR/LOC/GS/MB	■
DME	■
HF / VHF / UHF COMM – AM & FM	■
ELT/EPIRB 406 MHz + 121.5 / 243 MHz	■
SELCAL	■
Accessories Included	
Hard Transit Case	■
TAP-OMNI Antenna Coupler	■
VSWR/DTF Calibration Bridge and Cables	■
Antenna L-Band Directional	■
Antenna VOR/ILS/Comm - Telescopic	■
Antenna WiFi & GPS	■
Direct Connect Cables (3 and 10 meters)	■
RF Connector Adapter Kit	■
AC/DC Charger and Power Cord	■
Kick Stand	■
Standard 2 Year Warranty	■



SDR-OMNI/MIL SPECIFICATIONS

Power Specifications

Battery	Lithium Ion
	7.4 V; 7800 mAh
Duration – fully charged	> 3 Hours Continuous
	10 hrs @ 20% Duty Cycle
AC Input voltage	100 to 240VAC 50/60/400 Hz
DC Input voltage	12...28 VDC, 3.33 A (max)
Operating Temperature	-40°C to +55°C
Storage Temperature	-40°C to +70°C

Physical Characteristics

Case Style	MIL-PRF-28800F, Class 1
Height	9.45" (24 cm)
Width	7.1" (18.03 cm)
Depth	2.25" (5.7 cm)
Weight Static	4.2Lbs. (1.9 kg)
Touch Screen	Capacitive



TAP-OMNI Transponder Antenna Coupler

The Antenna Coupler is included with the SDR-OMNI Transponder Test package. It can be hung on the top antenna or securely clamped to the bottom antenna.

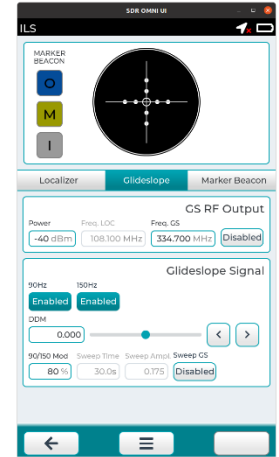
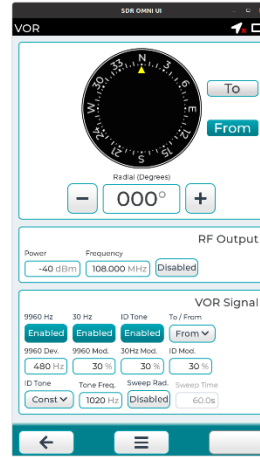
- > 20dB shielding
- Ensures FAA compliance
- Solves multi-path issues in congested hangars
- Light weight and easy to use
- Ensures repeatable results
- Fits both "L" Type and Post antennas



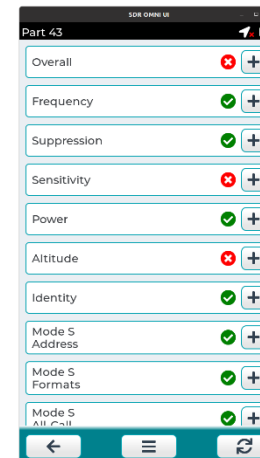
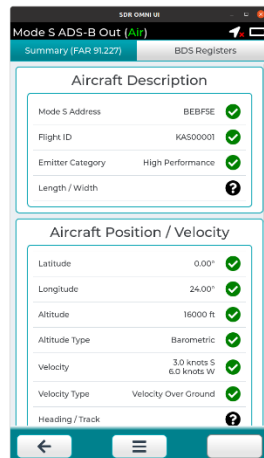
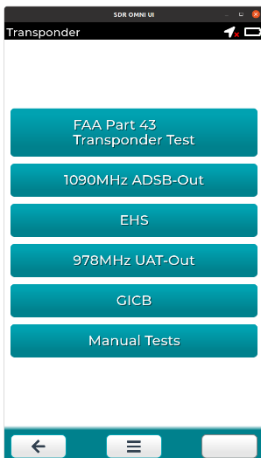
SDR-OMNI/MIL

VOR / ILS / DME Testing

Easy to use -- graphic interface simulates the anticipated aircraft displays. Quick and precise on-aircraft testing



ADS-B OUT Testing
Quick and easy verification of all 1090 MHz BDS registers and 978 MHz UAT Message elements



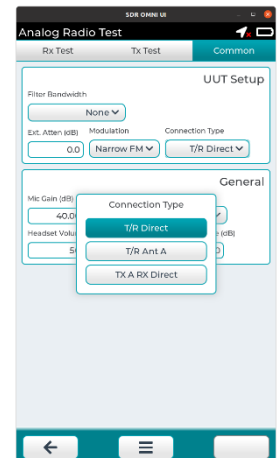
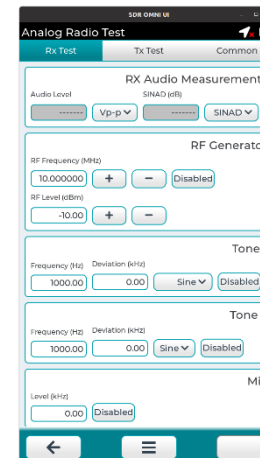
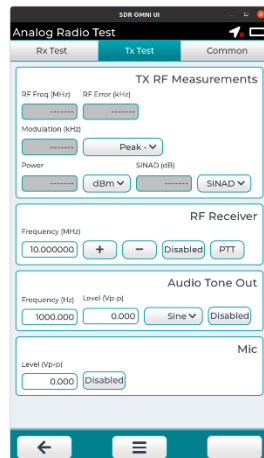
ATC Transponder Testing

Rapid, automated FAR Part 43 Appendix F required ATC testing with easy-to-read test results. Save / print PDF report for documentation.

COMMUNICATIONS

Complete control of all aspects of the audio, modulation, RF output.

Detailed results of received signal (power, frequency, modulation).



10

Mission Critical RF TEST Solutions

Tel-Instrument Electronics Corp.

1 Branca Road
East Rutherford, NJ 07073
Tel. +1(201) 933-1600
www.telinstrument.com



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