



Description

- Test DME and Transponder
- Receives ADS-B (1090 MHz squitter)
- Transmits Traffic Information System (TIS) intruder flight data for 4 intruders
- Performs test requirements per FAR Part 43, Appendix F
- Compliant with European CE requirements
- 2 year limited warranty

The TR-210 provides test capability for Distance Measuring Equipment (DME) and Transponders (Modes A, C, and S). The TR-210 features state-of-the-art design and technology. Microprocessor control results in easy-to-use operation that requires minimum amounts of training. Setup menu allows storage of various test parameters to facilitate quick recall of test conditions.

In addition, the TR-210 provides Test Capability for the newest generation in transponder technology by testing ADS-B (Automatic Dependent Surveillance Broadcast) and TIS (Traffic Information System) systems.



Features

Transponder

- Test set automatically determines capability of transponder being tested (ATCRBS or Mode S) and selects appropriate tests
- Testing can be done over-the-air using directional antenna or directly connected to transponder
- Test set can be selected for automatic sequencing providing a quick check of the system
- Manual sequence of test provides detailed test results of each parameter selected

DME

- Allows testing on all channels (108.00 to 117.95 MHz)
- Measures DME power, frequency, and PRF
- Transmits DME Morse Code I.D.
- User selection of DME distance and velocity

TIS and ADS-B

- Tests the newest Generation in Transponder Technology
- Transmit 4 Intruder aircraft to verify TIS Systems and Display operation
- Receives and decodes 1090 MHz ADS-B data including squitter type (airborne position, surface position, aircraft Ident/category, and airborne velocity), latitude/longitude, N/S velocity, E/W velocity, Flight I.D., Mode S address, altitude (GNSS or barometric), and airspeed

Additional Features

- RS-232 connection to download results to a Personal Computer
- Automatic Shut-Off to preserve battery
- Large Backlit LCD display
- Diagnostic Self-Test

Transponder Specifications

The TR-210 performs the following tests based on the Transponder capabilities:

- Mode A - ID 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) – Tests at P1/P2=0 and P1>P2=-9 dB
- Mode A/S and C/S All Call - Mode S address, per-cent 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 I.D. 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, and 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 in-correct Mode S interrogation
- Acquisition squitter – Pass/Fail indication of squitter period, decoded Mode S address, interrogator code
- Acquisition squitter – Pass/Fail indication of squitter period, decoded Mode S address, interrogator code
- Extended squitter – Pass/Fail indication of squitter period, 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
- Measures and displays transponder power (dBm or watts), frequency, and receiver sensitivity
- Decodes and displays Flight I.D.
- Decodes and displays Mode S address in Octal and Hex
- Mode S Enhanced Surv. 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), latitude/longitude, N/S velocity, E/W velocity, Flight I.D., Mode S address, altitude (GNSS or barometric), and air speed
- Transmits TIS data for 4 intruder aircraft

Receiver

Frequency	Measurement Range	1086.5 to 1093.5 MHz
	Measurement Accuracy	± 200 kHz
Power	Measurement Range	47 to 64 dBm
	Measurement Accuracy	± 1 dB (direct connect) ± 3 dB (radiated)
Sensitivity	Measurement Range	-50 to -87 dBm
	Measurement Accuracy	± 2 dB (direct connect) ± 2 dB (radiated)
Reply %	Measurement Range	0 to 100%
	Measurement Accuracy	± 1%

Transmitter

Generator	Output Frequency	1030 MHz / ±10 kHz
	Output Power	≥4 dB
	Transmitter Modes	1, 2, 3/A, C, S
	Antenna Beam width	15° using Sum & Diff ports 30° using Sum only

DME Specifications

The TR-210 provides test capability for testing DME by allowing the test set operator to select a variety of test parameters and make parametric measurements:

- Selection of all DME channels
- Selection of velocity (ground speed)
- Displays DME PRF (scan rate)
- Displays DME power
- Displays DME frequency
- Transmits Morse Code I.D.

Physical Characteristics

Packaging – MIL-PRF-28800, Style C
 Size: 14.5 x 9.4 x 6.5 inches
 Weight: 20 pounds
 Operating Temperature: -28° to +55° C
 Battery Operation: 8 hours at 20% Duty Cycle
 AC Operation/Charging: 100-240 VAC, 50-400 Hz

Antenna

- Directional antenna can be hand-held or mounted on side of case
- Antenna gains marked on attached decal
- Range – 10 to 170 feet

TR-210 Receiver

Frequency	Measurement Range	Channel Freq. ± 3.5 MHz
	Measurement Accuracy	± 200 KHz
Sensitivity	Measurement Range	≤ -35 dB

TR-210 Transmitter

Generator	Frequency Range	962 to 1213 MHz
	Frequency Accuracy	± 10 KHz
	Output Power	≥4 dB

Accessories

- AC Power Cord
- Direct Connect Cable Assembly
- Directional Antenna Cable Assembly
- Directional Antenna Assembly
- Directional Antenna Handle Assembly
- Operators Manual

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