DTS-200 TACAN Beacon Simulator

Latest in the Distinguished Line of Airco Republic Electronics
Advanced Technology Testing Systems

APPLICATION

Airborne TACAN manufactures and major airframe companies recommend AircoRepublic’s test sets for shop and flight line support of their prime equipment. Airco Republic Electronics DTS-200 meets all necessary requirements for evaluating the performance and accuracy of airborne TACAN interrogators, and for testing the range function of distance measuring equipment (DME).

The DTS-200 generates signals that accurately simulate TACAN beacon signals in both the normal X, and Y surface-to-air modes, as well as signals of an interrogating or complementary aircraft in X or Y air-to-air modes, including inverse mode. The DTS-200 measures fixed or varying range and bearing performance, including search/track ability, transmitter power output, receiver sensitivity, coding and decoding parameters on all TACAN channels and air-to-air range and bearing performance.

The DTS-200 is a new microprocessor controlled equipment, designed for depot and intermediate level support, and can be operated either via its integrated keyboard or IEEE-488 bus.

Key to this new design is the comprehensive integrated BIT that is initialized on power-on and reported to the display. This BIT mode can be activated at any time.

Any failure of the unit can be easily isolated down to the replaceable module thus dramatically reducing maintenance costs.

FEATURES

Fully Microprocessor Control
• Integrated User-Friendly Keyboard and Display
• External Control Via IEEE-488 Bus
• Continuous Display of all Parameters Including UUT Measurements
• Built-IN Test-Isolates Failure to Module Level
• Accuracies Maintained to End of RF Interface Cable
• Meets or Exceeds
  -MIL-STD-291B
  -MIL-STD-287
  -ICAO ANNEX 10
• Meets EMI Requirements of MIL-STD-461B
• Operates From 115/230 VRMS ±10%
• 45 To 440Hz 1f
• Operating Temperature –0° to 50° C
• Dimensions: 17”H X 18”W X 26”D (Including Hardware & Handles)
• Weight: 70Lbs
• Optional Rack Mount
SPECIFICATIONS

- **Frequency Range**
  TACAN Channels 0 through 127 (T/R and A/A)
  X and Y modes 961 to 1214 MHz
  **Accuracy:** ±0.001%

- **Power Output**
  Automatically leveled output variable from
  0 to -127 dBm into 50 ohms. Adjustable in 1 dB increments.
  **Accuracy:**
  - 0 to -100 dBm: ±0.7 dB, ±0.13 dB/dB
  - -101 to -110 dBm: ±2.5 dB

- **Bearing Signal**
  0 to 359.9 degrees adjustable in 0.1 degree increments
  **Accuracy:** ±0.05 degrees
  **Track Rate:** 0, ±1, ±5, ±10, ±15, ±20, ±25, ±30 degrees/second selectable.
  **Modulation:**
  - 15 and 135 Hz amplitude both individually adjustable from 0 to 39% in 1% increments ±1.5%
  - 15 Hz **Phase Shift:** 0 to ±39° adjustable in 1 degree increments.

- **Air-To-Air Bearing**
  **Modulation:** 15 Hz amplitude adjustable from
  0 to 39% in 1% increments.

- **Inverse Mode**
  **Modulation:** 15 Hz amplitude adjustable from
  0 to 39% in 1% increments. Front panel supplied North Reference Trigger.

- **Range Signal**
  0 to 3999.9nm adjustable in 0.1 nm increments
  **Accuracy:** ±0.01%nm, ±0.005% of distance
  **Track Rate:** 0 to ±6500nm/hr.
  **Reply Efficiency:** 0 to Max adjustable in 1% increments.
  **Minimum Power Required to Meet Accuracy Requirements:** 100 Watts

- **A/A Interrogation PRF**
  0 or 20 to 1350 Pulse Pairs/Sec.
  Programmable in 1 PP/S steps.

- **A/A Reply Efficiency**
  Measures and Displays UUT efficiency when UUT delay falls within ±0.5 µsec of Pass/Fail criteria.

- **Pulse Pair Spacing**
  0 to 39.9 µsec in 0.1 µsec steps.

- **DTS-200 OPTIONS**

  - **Flight Inspection Option**
    With this feature, the DTS-200 can be used to evaluate the performance of airborne TACAN and DME flight inspection systems.

  - **Features:**
    - Variable antenna rotation speed
    - Precise control of number of pulses in Main and Auxiliary Reference Burst (can add or subtract 1 or 2 pulses.)
    - Auxiliary Burst Count can be decremented by 1
      - Auxiliary Reference Burst per Main Burst cycle.

  - **Antenna Speed:**
    900±19.9 RPM Programmable in 0.1 RPM Steps
    **Accuracy:** ±1%

  - **Main Reference Burst:**
    X MODE: 12 Pulse Pairs
    Y MODE: 13 Pulses
    **MRB** Adjustable ±1 or ±2
    Pulse Pairs (X MODE), Pulses (Y MODE)
    MRB Duration Adjustable at least ± 20 microseconds from nominal value.

  - **Auxiliary Ref Burst:**
    X MODE: 6 Pairs
    Y MODE: 13 Pairs
    **ARB** Adjustable ±1 or ±2
    Pulse Pairs (X MODE) or Pulses (Y MODE)
    Can subtract 1 ARB between MRB groups.

  - **External Trigger Option**
    The External Trigger Option allows the user to provide a digital External Trigger and associated Enable gate to the input BNC jacks of the DTS-200. The DTS-200 then outputs a Gaussian-shaped RF pulse pair at the RF IN/OUT port for every trigger input.