The TACAN Ramp Test Set MTS-100M3 (AN/ARM-188) provides complete end-to-end TACAN interrogator testing. The MTS-100M3 is a hand-held unit a fraction of the size and weight of similar test sets.

Identification, range, and bearing signals are generated to test the R/T, cabling, control head, antenna and antenna switch. Three controls allow the selection of TACAN channel, mode, range and bearing.

An integral meter displays TACAN search/track status, A/A reply delay GO/NO-GO, "LOCK-ON" condition, and Peak power, as well as MTS-100M3 battery status.

A built-in L-band antenna is provided for testing of the TACAN system in the normal ramp radiate mode. Capability for direct connection to the TACAN R/T is provided, allowing isolation of TACAN system problems to the R/T or aircraft installation.

The MTS-100M3 was developed by Airco Republic Products and is used by the U.S. Air Force, U.S. Navy, US Army and Aerospace Companies, TACAN manufacturers, and military forces in over 20 countries.

APPLICATIONS

- Routine pre-flight check of TACAN operation as MTS-100M3 radiates into aircraft antenna.
- Verification of pilot-reported TACAN problems prior to maintenance actions.
- Utilization from cockpit window permits one-man operation in most aircraft.
- Inverse mode testing.
SPECIFICATIONS

- **Mechanical**
  - Weight: 4.0 lbs. (1.8 kg) including rechargeable batteries
  - Size: 13.0" x 3.4" x 2.4" (33.5 cm x 8.6 cm x 6.1 cm)

- **Environment**
  - Temperatures: -20° +50° C

- **Electrical**
  - Operating Modes: Ground-to-Air Range Bearing (X,Y)
    - Air-to-Air Range & Bearing (X,Y)
    - Air-to-Air Range only (X,Y)
    - Inverse or Normal
  - Channels:
    - 31(X) 992 MHz
    - 91(X) 1178 MHz
    - 93(Y) 1054 MHz
    - 29(Y) 1116 MHz
    - A/A29(X,Y) 1116 MHz
    - A/A93(X,Y) 1054 MHz
  - Accuracy: ±0.002%

- **Bearing**
  - Eight fixed positions: 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°
  - Accuracy: +1.0 degree (T/R), +2.0 degree (A/A)

- **Range**
  - Eight fixed Positions: 0, 5, 68, 125, 194, 283, 297 and 389 nautical miles (Custom ranges from 0 to 399 nautical miles available upon request)
  - Accuracy: ±0.1 nautical mile

- **Decoding**
  - Accepts interrogations within ±1 µsec of nominal

- **Coding**
  - All pair spacing within +0.5 µsec of nominal

- **Modulation**
  - T/R: Composite 15 & 135 Hz 40% ±10%
  - A/A: 15 Hz 20% ±10%
  - Inverse: 15 Hz 20% ±10%

- **Transponder Delay**
  - Go/No-Go indication of TACAN A/A Reply Delay

- **Radiating Capability**
  - 10 to 100 feet (app.3 to 30 meters) from aircraft antenna

- **Direction Connection (RF In/Out)**
  - Power In: 36 dBm peak
  - Power Out: -40 dBm minimum

- **Direction Connection (W/Measurement Attenuator)**
  - Power In: 500 to 5,000 Watts
  - Power Out: -65 to -144 DBMS
  - Accuracy: ±2 DBMS for peak power, ±3 DBMS for bearing sensitivity

- **Trigger Output**
  - North Reference Trigger (NRT) 15 Hz Sync.

- **Controls**
  - Off, Battery Test, Mode-Channel Select, Peak Power Measurement, Range/Bearing Select, Normal/A-A Range Only/Inverse Mode Switch, Modulation On/Off, Meter Illumination Switch

- **Indicators**
  - Illuminated indicator for Battery Status, Interrogations, Transmission, A/A Delay, and Peak Power

- **Power Source**
  - Integral Rechargeable batteries provide 3 hours of continuous operation @ -20° C
  - Battery Charger/Eliminator allows AC operation & battery Charging with 115/220 V, 50-420 Hz line voltage

- **MTBF**
  - 3000 hours

- **Calibration Interval**
  - 2 years

- **Ordering Information**
  - MTS-100M3 System (Airco Republic Electronics P/N 2001006-003), NSN 6625-01-516-8211, includes MTS-100M3 TACAN Ramp Test Set, MA-1 Measurement Attenuator, BC-1 Battery Charger, BP-1 Battery Pack, EC-2 Equipment Carrying and interconnecting Cables.

VERSION DIFFERENCES

The MTS-100M2, a derivative of the MTS-100, incorporates a special added feature to meet industry’s inverse Mode TACAN requirements, with both “Direct Connect” and “Radiate” modes. It was designed to test the AN/ARN-139 TACAN system and other inverse mode TACAN systems. It provides a video output at VIDEO connector J, which allows viewing of the airborne interrogator transmitted signal to verify antenna rotation and proper pulse output.

The MTS-100M3 (P/N 2001006-003) complies with explosive atmosphere requirements of MIL-STD 810F, method 511.4, procedure 1.