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T-1401 TACAN Accessory Unit

The T-1401 provides a user friendly test solution for TACAN receiver/transmitters



- ***NATO codified***
- ***Easy to operate***
- ***IEEE-488 GPIB via ATC-1400A***
- ***Complete air-to-air, ground-to-air and inverse MODES of operation***
- ***Two-year limited warranty***

IFR is a leader in the design, manufacture and marketing of Avionics test systems.

The T-1401 TACAN accessory unit interfaces with the ATC-1400A Transponder/DME Test Set to form the TACAN Test System. The TACAN Test System simulates a TACAN transmitter for testing TACAN receivers and transmitters. The TACAN Test System can be operated manually using external controls or remotely by ATE control through the GPIB bus.

Operation

The T-1401 provides a full range of TACAN bearing and DME simulation required to test and service air-to-air and ground-to-air airborne equipment in both normal and inverse modes. The control settings on the T-1401 front panel determine the mode of operation. In the absence of an ATC-1400A, the T-1401 operates with X Mode pulse spacing. Selecting Ground-to-Air (G/A) Mode enables the Identification and Equalizer pulse pairs. The ATC-1400A also sends mode information when connected to the T-1401 through the IFR Bus. ATC-1400A mode information includes Identification On/Off, Equalizer On/Off, X/Y Mode and P1 and P2 pulse spacing.

Interconnect

The T-1401 may be hard mounted to the ATC-1400A using supplied hardware. Electrical interface to the ATC-1400A is via the IFR and AUX buses using two 25 way interconnect cables and 2 SMB-to-SMB coaxial cables. Line power is switched through the T-1401 for synchronized power up of both test sets.

Features

- *Programmable air-to-air interrogation rate*
- *Variable 15 Hz modulation*
- *Variable 135 Hz modulation*
- *Phase shift selection between 15 and 135 Hz*
- *Simulated bearing selection and display*
- *Programmable bearing/rate selection*
- *Identifies air-to-air replies from UUT*

Specification

Modulation

15 and 135 Hz independently adjustable from 0% to 39% in 1% steps, ±1% of selected value, distortion ±2%

Bearing

0° to 359.9° per second 0.1° increments (±0.05°)

Bearing Rate

0° to ±39° in 1.0° increments (±0.02°)

15/135 Hz Phase Shift

0° to ±39° in 1.0° increments (±0.2°)

ΔF

±3.9% of nominal in 0.1% steps (±0.01%)

Main Reference Burst

Length

12 pulse pairs nominal in G/A X Mode

13 single pulses nominal in G/A Y Mode

10 single pulses nominal in A/A X or Y Mode

Adjustable +1, +2, -1 or -2

Spacing

30.0 μs nominal, adjustable ±3.9 μs in 0.1 μs increments (±0.1 μs)

Auxilliary Reference Burst

Length

6 pulse pairs nominal in G/A X Mode

13 single pulses nominal in G/A Y Mode

Adjustable +1, +2, -1 or -2

Spacing

24.0 μs nominal in G/A X Mode

15.0 μs nominal in G/A Y Mode

Adjustable ±3.9 μs in 0.1 μs increments (±0.1 μs)

Position

The first ARB following the MRB may be disabled.

A/A Interrogations

0 to 3999 per second, selectable in 1 Hz steps

Pulse Characteristics

Spacing

12 μs ±0.1 μs (X channel DME and TACAN replies)

30 s ±0.1 μs (Y channel DME and TACAN replies)

12 μs ±0.1 μs (X channel A/A TACAN interrogator)

24 μs ±0.1 μs (Y channel A/A TACAN interrogator)

P2 Deviation

±7.9 μs in 0.1 μs increments (X channel)

±7.9 μs in 0.1 μs increments (Y channel)

Spectrum

55 dB down from center frequency measured at ±800 kHz

UUT Pulse A/A Reply

Spacing Detector

Centered at 62 μs for X channel, 74 ms for Y channel

UUT Pulse Interrogation Spacing Detector

Centered at 12 μs for X channel DME, G/A, A/A; 36 μs for Y Channel DME and G/A; and 24 μs for Y channel A/A

Calibration Interval

1 year

AC Supply

100 to 120 VAC, 220 to 240 VAC, 50 Hz to 60 Hz, ≤+10 % of the nominal voltage

43 W maximum (163 W maximum with ATC-1400A)

AC Output

Line output, fused at 3 A and switched

Environmental

Temperature

5° to 40°C

Relative Humidity

≤80% for temperatures upto 31°C, decreasing linearly to 50% at 40°C

Altitude

≤4000 m (13,124 ft)

Electromagnetic Compatibility

Complies with the limits in the following standards:

EN 55011 Class B

EN50082-1

Safety

Complies with EN 61010-1:1993 for class 1 portable equipment and is for use in a pollution degree 2 environment. The instrument is designed to operate from an installation category 1 or 2 supply.

Dimensions

425 mm wide, 467 mm deep, 89 mm high

16.8 in. wide, 18.4 in. deep, 3.5 in. high

Weight

8.1 kg (18 lbs.)

Versions and Accessories

When ordering please quote the full ordering number information.

Ordering Numbers

Versions

1401-110	T-1401 TACAN Bearing and DME Simulation, 110 VAC operation
1401-220	T-1401 TACAN Bearing and DME Simulation, 220 VAC operation

Accessories (Supplied)

Line Cord

AUX Bus Interface Cable

IFR Bus Interface Cable

Operation Manual

1 x RF Coaxial Interface Cable

Line Cord from ATC-1400A to T-1401

All IFR Avionics products delivered with Factory Certificate Of Calibration

IFR - "Working together to create solutions for the world of communications."

IFR is a world leader in developing leading edge test and measurement equipment. The priority at IFR is to understand your communications test needs and respond to them. IFR has the flexibility and expertise to create just the right test solution for you. We understand that just as you are the expert in designing wireless products, we are expert in wireless test.

Combining the quality of our test products with their reliability, excellent price/performance ratio and minimal requirements for maintenance, every IFR test system represents an outstanding lifetime value.

IFR - "Working together with our customers to be flexible and innovative in providing effective test solutions for the rapid design, manufacture and maintenance of communications systems."

The added value IFR includes with each and every test set we sell will make you more productive. We offer a two-year standard warranty on all products and we will continue to support your product for five years beyond its final production. Our outstanding Customer Service Department offers calibration, out-of warranty repairs and consulting. Our Sales and Training Departments offer clear and concise product information with realistic performance specifications, technology training and application training. Our experienced engineers will help you develop application software and through continuous improvement programs, upgrades are always available.

IFR will continue to build upon our technology resources with an aggressive commitment that will enable you to excel in some of the world's most dynamic, high growth markets.

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