



TACAN+

TACTICAL AIRBORNE NAVIGATION SYSTEM



Avionics Systems

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Lighter..Smaller..Proven

The L-3 airborne TACAN+ is the world's lightest and smallest TACAN ever produced at 5.2 pounds. Over 25 years experience has resulted in this remotely controlled system with over 500 watts of power output. It is the only TACAN available with the capability to track up to four ground stations simultaneously in range and two in bearing. Tracking velocity is up to 1800 knots. TACAN+ employs software controlled antenna switching, allowing the aircraft to be configured for dual antennas if needed.

The TACAN+ system can be used for Air-to-Air and Air-to-Ground operations and meets MIL-STD 291C and NATO STANAG-5034. Designed with rugged military environments in mind, the system has been tested to MIL-STD-810G, MIL-STD-704 and MIL-461E as well as meeting DO-160F helicopter vibration levels. The TACAN+ system features lightning protected circuitry and is subjected to Highly Accelerated Stress Screening (HASS) and Highly Accelerated Life Testing (HALT) to achieve maximum system reliability.

The TACAN+ can utilize an **ID-2502 Indicator Unit** with high intensity MIL-SPEC and sunlight readable dot-matrix LEDs for maximum viewability. The Indicator will display DME Distance, TACAN Radial or Bearing, decoded station ident, groundspeed, and time-to-station, as well as initiating a self-test at system turn-on. Pilots may display one or two TACAN tuned stations simultaneously according to in-flight needs. A second ID-2502 can be installed to provide independent left and right side, or front and rear instrumentation. The ID-2502 Indicator Unit is also offered as a Night Vision Goggle (NVG) compatible display.



The L-3 TACAN+ incorporates a Sine/Cosine bearing output along with a CDI interface per ARINC 547, and low and high level flags per ARINC 547 and 579. This bearing information is pilot selectable, from either the number one (1) or number two (2) tracking

channels. The TACAN+ provides an ARINC 568 Digital Range output from either the number one (1) or number two (2) tracking channels for display of range information on remote EFIS or HSI displays.

Features:

- Interfaces with analog and digital flight instruments including ARINC 429 and MIL-STD-1553 architecture
- New Air-to-Air bearing capability
- Can be used as a pilot-controlled positioning system and/or as a blind navigation sensor
- Capable of tracking up to four ground stations simultaneously in range and two in bearing
- Multiple input/output busses update Flight Management or Inertial Systems simultaneously
- Powerful and lightweight 500 watt transceiver featuring a Maintenance Port for ease of service
- Compatible with a variety of cockpit displays including the L-3 GH-Series of Electronic Standby Systems
- Real-Time Ident on four channels

The TACAN+ system can utilize a wide range of **TACAN Control Units** for direct tuning of the Receiver/Transmitter via ARINC 2 x 5 or multiple control unit



formats (TACAN BCD, Slip Code, Shifted BCD, Collins CSDB, ARINC 2 x 5 and MIL-STD-1553B) through the ID-2502 Indicator Unit, if one is utilized in the system configuration. Control Units provide channel selection per ARINC 410, 2-out-of-5 code. The Control Units also provide power on/off, ID Tone Volume, Air-to-Air or Air-to-Ground mode, and X and Y mode of operation. TACAN+ Control Units are offered in different configurations, lighting color, and voltages, as well as Night Vision Goggle (NVG) capability, panel color and sizes to fit each particular aircraft and helicopter requirement.

**“ANY PLATFORM, ANY MISSION –
TACAN+ EXCEEDS THE NEED”**

Trainer

Fighter

Support

Helicopter



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WEIGHT

TACAN+ Receiver-Transmitter 5.2 lbs. (2.36 kg.)
ID-2502 Display Unit 0.4 lbs. (0.18 kg.)
TACAN+ Mounting Tray 0.4 lbs (0.18 kg.)
Control Units:
F3849 1.25 lbs. (0.567 kg.)
F6555 2.0 lbs. (0.907 kg.)

SIZE

TACAN+ Receiver-Transmitter 4.97" h x 3.45" w x 10.75" d
(12.62 cm x 8.76 cm x 27.31 cm)
ID-2502 Display Unit 1/2 3ATI x 6.9" (17.53 cm)
Control Units:
F3849 2.4" x 2.8" (6.10 x 7.11 cm)
F6555 2.24" x 5.75" (5.69 x 14.6 cm)

POWER REQUIREMENTS

TACAN+ Receiver-Transmitter 18 TO 32 VDC @ 1.5 amps Max.
ID-2502 Display Unit 18 TO 32 VDC @ .25 amps Max.
Control Units: F3849, F6555 5 or 28 VDC @ .15 amps Max.

TEMPERATURE

TACAN+ Receiver-Transmitter -54 to +71 degrees C
ID-2502 Display Unit -20 to +71 degrees C
Control Units: F3849, F6555 -20 to +71 degrees C

ALTITUDE

TACAN+ Receiver-Transmitter to 70,000 feet
ID-2502 Display Unit to 55,000 feet
Control Units: F3849, F6555 to 70,000 feet

CHANNELS

252 (consisting of 126 X Mode and 126 Y Mode Channels)
126 Channels for Air-to-Air Ranging (Mil-Std-291C & NATO STANAG 5034)

FREQUENCY RANGE

RECEIVER 962 TO 1213 MHz. (All 252 X and Y Mode Channels)
TRANSMITTER 1025 to 1150 MHz (All 252 X and Y Mode Channels)
AIR TO AIR MODE 126 Channels (63 X Mode and 63 Y Mode)

COOLING

TACAN+ Receiver-Transmitter & ID-2502 Display Unit ... Conduction & Convection

VIBRATION

TACAN+ Receiver-Transmitter D0-160F Cat U2FF1 Helicopter Vibration Levels

TUNING

TACAN+ Receiver-Transmitter: RS485, ARINC 429, ARINC 410, 2 X 5,
With ID-2502: Slip Code, TACAN BCD, Shifted BCD, COLLINS CSDB and MIL-STD-1553B
Control Units:
F3849, F6555 ARINC 410, 2 X 5

POWER OUTPUT

500 watts peak minimum, 750 watts peak typical

RECEIVER SENSITIVITY

-85dBm minimum for range
-79dBm minimum for bearing

RANGE

Capability: 0.0-400 nm Tracking Capability
Accuracy: ± 0.1 nm 0 to 399.9 nm
Display Resolution ID-2502: ± 0.1 nm from 0.0 to 99.9, ± 1.0 nm from 100-400 nm
ARINC 568: 0.0 - 399 ± 0.1 nm

RANGE TRACKING RATE

0 to 1800 nm Per Hour

GROUND SPEED (ID-2502 DISPLAY)

0-999 Kts ± 1 Kt or 1% within 30 seconds

TIME-TO-STATION (ID-2502 DISPLAY)

0-99 Minutes ± 1 minute within 30 seconds

BEARING ACCURACY

Accuracy 0.5 degrees digital; ± 1.0 degrees analog - Radial Track rate: 10 degrees/sec

MEMORY TIME

8 seconds Nominal Range and Bearing

ACQUISITION TIME

3-5 seconds Nominal Distance and Bearing

ID TONE

10 MW at 1350 Hz into a 600 Ohm load (Level Adjustable)

STATION IDENT

Up to 4 letters (Displayed on ID-2502)

SYSTEM TEST

Automatic upon system turn on and background testing during operation

DISTANCE OUTPUTS

ARINC 568 Pulse Pair* (Output limited to 204.0 nm)
40 mv/nm* (Output limited to 199.9 nm)
ARINC 568 Six wire*
RS485 Serial Digital provides distance for all four stations simultaneously

DISTANCE FLAG

ARINC 568, 40 Millivolt (Output limited to 204.0 nm)

AIR-TO-AIR

Per Mil-Std-291C & NATO STANAG 5034

BEARING

RS485 Serial Digital format provides TACAN bearing for two stations simultaneously,
Sine/Cosine AC, 7.9 volts peak*, 100 Ma Peak Low Level CDI Outputs (per ARINC 547):
Course 150 Mv per 10 degrees
Deviation ± 10 degrees full scale up to 5 ea 1,000 Ohm loads
Flag Outputs Per ARINC 547 & ARINC 579
Low Level 0.5 VDC, 1 Ma maximum, up to 4 ea 1,000 Ohm loads
High Level 28 VDC, 250 Ma maximum
To/From Output Up to three 200 Ohm loads

ARINC 429 and MIL-STD-1553B

Input — Channeling Frequency
Output — Distance, Ground Speed, Time to Station, Bearing,
Channeling Frequency, Ident., Equivalent I.D.



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