L3HARRIS™
FAST. FORWARD.

TACAN+

Reliable Tactical Airborne Navigation

TACTICAL AIRBORNE NAVIGATION SYSTEM

PROVEN, FLEXIBLE AND CONFIGURABLE NAVIGATION SOLUTION

The L3Harris Tactical Airborne Navigation System (TACAN+) provides efficiency, reduces cost and offers flexibility to pilots on various helicopter and military aircraft platforms. It is the only TACAN transceiver able to run four tactical airborne navigation systems with distance measuring equipment simultaneously, with two providing bearing at tracking velocity up to 1800 knots.

In addition to being compliant and compatible with a variety of avionics interfaces, L3Harris provides a host of optional peripheral control panels available in different configurations, lighting color, lighting voltages, panel color and sizes in addition to offering Night Vision Goggle [NVG] compatible. One of the system's most noted features is the high power transmitter packed into the world's lightest and smallest tactical airborne navigational systems ever produced, weighing only 5.2 pounds with a 750+ watt peak power transmitter enabling the TACAN+ to provide exceptional performance that meets or exceeds MIL-STD 291C and NATO STANAG-5034 performance parameters in both Air-to-Air and Air-to-Ground operations. Designed with rugged military environments in mind, the system has been tested and qualified to MIL-STD-810G, MIL-STD-704 and MIL-461E as well as meeting DO-160F helicopter vibration levels. The TACAN+ transceiver is designed and manufactured to inherently provide extremely high reliability by employing Highly Accelerated Life Testing (HALT) during the design, and performing Highly Accelerated Stress Screening (HASS) during manufacture.

The TACAN+ can utilize an ID-2502 Indicator Unit with high-intensity MIL-SPEC and sunligh-readable dot-matrix LEDs for maximum viewability. The Indicator will display DME Distance, TACAN Radial or Bearing, decoded station identification, ground speed, and time-to-station, as well as initiating a self-test at system startup. 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 L3Harris 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.

KEY FEATURES

- Interfaces with analog and digital flight instruments including ARINC 429 and MIL-STD-1553 architecture
- 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 buses update Flight Management or Inertial Systems simultaneously

AIR TO AIR (A-A) MODE

TACAN+ uniquely features two automatically enabled Air-Air (A-A) Transmit-Receive modes providing seamless and enhanced tactical capability, multiple mission capability, and overall operational value not found on other TACAN products. If no A-A bearing signal is detected, TACAN+ enters a High Signal Dynamics 20-Meter mode. In this mode, the TACAN+ receiver is configured to accommodate the strongest received A-A signal and still ensure adequate reception of other weaker signal participating aircraft. This mode enables multiple TACAN+ equipped aircraft to track a 'lead' aircraft across a wide range of flying scenarios, down to a minimum closest follower distance of 20 meters. Upon detecting an A-A bearing (Beacon) signal, TACAN+ automatically exits the High Signal Dynamics 20-Meter mode, and enters the Beacon Tracking mode. In the Beacon Tracking mode, the receiver is configured for optimal reception and tracking of the Beacon signal source.

AVIONICS SYSTEMS INTEGRATION

The TACAN+ provides seamless and extremely flexible options for avionics systems integration across a vast expanse of aircraft by virtue of supporting the following interfaces:

- > ARINC-429
- > MIL-STD-1553B
- > ARINC-410 (2 X 5)
- > TACAN BCD
- > Slip Code
- > Shifted BCD
- > RS-425 (CSDB)
- > Pulse Pair
- > 40 mV/nmi
- > OBS/CDI

SPECIFICATIONS

Weight	
TACAN+ Receiver-Transmitter	5.2 lb. max. (2.36 kg)
ID-2502 Display Unit	0.4 lb. (0.18 kg)
TACAN+ Mounting Tray	0.4 lb. (0.18 kg)
Control Units: F3849 F6555	 2.4" x 2.8" (6.10 x 7.11 cm) 2.24" x 2.8" (5.69 x 14.6 cm)
Size	
TACAN+ Receiver-Transmitter	4.97"(h) x 3.45"(w) x 10.75"(d)
ID-2502 Display Unit	1/2 3ATI x 6.9" (17.53 cm)
TACAN+ Mounting Tray	1/2 3ATI x 6.9" (17.53 cm)
Control Units: F3849 F6555	 2.4" x 2.8" (6.10 x 7.11 cm) 2.24" x 2.8" (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 @ 0.25 amps. Max.
Control Units (F3849, F6555)	5 to 28 VDC @ 0.15 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)	
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	126 channels (63 X and 63 Y mode)
Cooling	
TACAN+ RCVR-XMTR & ID-2502 Display Unit	Conduction & Convection
Shock and Vibration	
TACAN+ RCVR-XMTR	DO-160F Cat U2FF1 Helicopter Vibration Levels; MIL-STD-810F 514.5 Flight Vibration, 515.5 Acoustic Noise and 519.5 Gunfire
Tuning	
TACAN+ RCVR-XMTR	RS485, ARINC 429, ARINC 410, 2 X 5 w/ID-2502: Slip Code, TACAN BCD, Shifted BCD, COLLINS CSDB and MIL-STD-1553B
Control Units (F3849, F6555)	RS485, ARINC 429, 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	
0-99 Minutes ± 1 minute within 30 seconds	
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
Accuracy	0.5 deg. digital; ±1.0 deg. analog
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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L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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