



TACTICAL AIR NAVIGATION (TACAN)





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TACAN (Tactical Air Navigation) is a polar coordinate type radio air navigation system that provides aircrew with range and bearing (azimuth) information on the ARINC429 / MIL 1553B Bus for display on the Mission Computer/CDU. Using this information, pilot can fly directly to particular location or use the bearing and distance from a specific beacon to fix his geographic location. The range in nautical miles indicates the distance of the aircraft from the surface beacon. The bearing indicates the direction in degrees with respect to Magnetic North. TACAN can transmit, receive and process time coded pulse pairs or single pulses. The design is based on channel selectable Frequency Synthesizer, solid-state Transmitter / Receiver, High speed 32 bit DSP processor, FPGAs with ARINC429 / MIL 1553B Bus compatibility. The system will incorporate extensive built in test facility and diagnostic features for easy testability and maintainability.

HAL has produced similar equipment DME (Distance Measuring Equipment) for HJT-36 Aircraft. TACAN is fitted on various aircrafts like SU-30, MIG-29UPG, MIG-29K/KUB, IJT, JAGUAR/DARIN-III, LCA and HAWK. TACAN has won the HAL Innovation Award for the year 2013 - 14.

Combination of our rich experience with latest digital technology makes HAL TACAN the affordable choice for users.

Key Features

- ✧ High-speed 32-bit DSP processor for acquisition of bearing information, distance acquisition and system operation.
- ✧ ARINC429 / MIL 1553B Bus compatibility for both input and output functions.
- ✧ Dual Antenna ports with automatic selection.
- ✧ Pilot selectable channel type (252 channels: 126X and 126Y) and frequency through mission Computer/ Display.
- ✧ Solid-state 250W transmitter.
- ✧ Extensive BITE facility is available for checking the unit serviceability.
- ✧ Beacon identification facility in the output.
- ✧ Operational on 28V DC supply.
- ✧ Operating Modes:
 - a) T/R (with ground beacon and airborne beacon)
 - b) Receive (with ground or airborne beacons)
 - c) A/A (air to air with another aircraft equipped with same TACAN system)



TACAN



RAM 2700A



VOR/ILS



ACS-235



IFFT 2410A



DACS



ADU

Specifications

Parameter	Specifications
Power output of Transmitter	250 W (Peak) minimum
Frequency range	Tx : 1025 to 1150 MHZ Rx : 962 to 1213 MHZ
Receiver Sensitivity	-90dBm for Range, -87dBm for Bearing
Range Processing	0 to 300 NM Accuracy: ± 0.1 NM
Bearing	± 1 degree through out the dynamic range
Distance Dynamic Memory	Upto 15 Secs
Control & data output	ARINC429 / MIL 1553B
Beacon Identification	1350Hz with Morse code
Audio Power output:	100mW(± 2 dB) on a 600 Ω load

Suppression interface	Bi-directional
Mechanical Dimensions & Weight	3/8 ATR size (290mmX 60 X 190mm) and weight : 6..0 Kg.
Power supply	28V DC Typical, Max 50 Watts
QUALIFICATION & COMPLIANCE	
EMI/EMC	MIL-STD 461 C
Environmental	MIL-STD 810D
Reliability	MIL-STD-217F
Power Supply	MIL-STD-704D
Software compliance	IEEE 12207
PLATFORMS	HAWK-AJT, Su-30 MKI, Jaguar, DARIN –II, DARIN III, MiG-29K, MiG 29KUB, MiG 29 UPG, LCA, IJT



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