



TRNAV GROUND TERMINAL

OVERVIEW

In an environment where GNSS integrity and availability are increasingly challenged, **Terrestrial Radio Navigation System (TRNAV)** delivers a reliable and assured **PNT (Positioning, Navigation, and Timing)** for manned/unmanned air, land and maritime platforms.

TRNAV Ground Terminals are deployed at known locations and transmit signals to operate as reference stations for TRNAV Onboard Terminals.

Designed for easy deployment, allowing rapid and straightforward field installation without the need for complex infrastructure.

The system features universal mounting holes, enabling installation on tripods, towers, and various operational platforms.



KEY FEATURES

- **Integrated Navigation and Communication:** Combines navigation, timing, and high-bandwidth communication within a single, integrated system. Delivers precise Positioning, Navigation, and Timing (PNT) information, even in contested or GNSS-denied environments.
- **Ad-Hoc Mesh Networking:** Automatically forms self-organizing mesh networks, enabling seamless communication under node mobility without reliance on a central infrastructure.
- **Automatic Time Synchronization:** Provides native time synchronization, eliminating the need for external timing sources and simplifying system deployment and operation.
- **Relaying Capability:** Extends operational range and enables reliable communication with non-line-of-sight nodes through multi-hop relaying.
- **Dynamic Network Management:** Allows nodes to seamlessly join, rejoin, or leave the network as needed, ensuring flexibility and adaptability.
- **Flexible Operating Modes:** Supports multiple modes of operation, including RxTx and Rx-only configurations, to meet diverse mission and platform requirements.
- **Compact and Lightweight:** Small form factor and low weight enable easy integration across multiple platforms (UAVs, manpacks, vehicles).
- **High-Speed Platform Performance:** Offers enhanced navigation performance for high-dynamic and high-speed platforms compared to conventional GNSS-based solutions.
- **Robust Security:** Implements AES-256 encryption and supports spread-spectrum techniques such as Frequency Hopping Spread Spectrum (FHSS) and Direct Sequence Spread Spectrum (DSSS) for secure and resilient communications.

TRNAV GROUND TERMINAL



Product Code

10W: TUALNAV-MBL-10W-S03

40W: TUALNAV-MBL-60W-S03



Weight (g)

1755 ± 25



Dimensions (mm) **

200 x 150 x 45



RF Output Power

10W / 40W



Data Encryption

AES 256



Range *

10W: 80 km (Typical)

40W: 200 km (Typical)



Multiple Access Type

TDMA (Adhoc)



ECCM

FHSS/DSSS



Data Interfaces

Ethernet, RS485



Environmental Tests

MIL-STD-810G



EMI / EMC

MIL-STD-461F



Input Voltage

28-32 VDC



Power Consumption

10W: Max: 50W

Typical: 18 W@20% duty cycle

20W: Max: 90W

Typical: 25 W@20% duty cycle



Mating Connector (Power)

Circular (D38999) Female 4 Pin



Mating Connector (Data)

Circular (D38999) Male 37 Pin



RF Connector - Data Link

N-Type Female

* via an omnidirectional antenna

** dimensions exclude connectors and antenna

TRNAV

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