TR3000VT

HF VEHICLE TRANSCEIVER

WIDEBAND HF TRANSCEIVER

The TR3000VT is a wideband HF transceiver for use in mobile base and vehicle applications, and provides the user with ECCM, secure digital voice and up to 48 kHz wideband data capability. The high performance and customer configurability of the TR3000VT is made possible by using the latest direct RF sampling and software defined radio (SDR) technology.

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FEATURES

- 120 kbps Asynchronous Data as per in MIL-STD-188-110D
- Tactical Data Link using xDL as per STANAG 4538 (3 kHz and 6 kHz)
- Automatic Link Establishment (ALE) 2G, 3G and 4G
- COMSEC - User definable INFOSEC & TRANSEC
- Wi-Fi hotspot for control & data interface
- Low Rate Secure Digital Voice (600 bps)
- Voice and Data Frequency hopping
- Last-ditch voice mode (300 bps)
- 500 W & 1 kW external Power Amplifier for base configuration
- 125 W Transmit Power
- SCA 4.1 Ready
- GPS Receiver: GPS, Galileo, BeiDou, NavIC
- Dedicated Remote Controller via IP Port

TRANSCEIVER FEATURES

- Data*
  - MIL-STD-188-110A serial tone (2400 bps)
  - MIL-STD-188-110D Appendix D (240 kbps)[1]
  - STANAG 4539 (9600 bps)
  - STANAG 4285 (2400 bps)
  - STANAG 4415 (75 bps)
  - STANAG 4538 xDL (7800 bps)
  - STANAG 4538 xDLW (4G) (15600 bps)
- Data Link Protocol (DLP)*
  - STANAG 5066 (2G) External Controller
  - STANAG 4538 xDL (3G)
  - STANAG 4538 xDL (4G) (WidebandxDL)
  - Internal ARQ SMS
- Digital Voice*
  - TWELP (Tri-Wave Excited Linear Prediction) 300, 600, 1200, 2400 bps
  - AES-256 Encryption
  - Auto lock on data
  - Crypto re-sync
- ALE*
  - MIL-STD-188-141B Appendix A, B (2G ALE)
  - STANAG 4538 (3G ALE)
  - MIL-STD-188-141D Appendix G (4G ALE)[1] (WALE)
- ECCM Frequency Hopping
  - Voice
  - Data
  - User defined hopping
- Encryption
  - Data & Digital Voice Hardware Encryption
  - Software Encryption
  - Customer Configured Algorithm

[1] 48 kHz, Software upgradable
* Powered by Rapid Mobile TC5

RECEIVER CHARACTERISTICS

Sensitivity	-113 dBm (SSB), -97 dBm (AM), -116 dBm (CW)
IF Rejection	> 90 dB (equivalent)
Image Rejection	> 90 dB (equivalent)
Frequency change time	≤ 10 ms

TRANSMITTER CHARACTERISTICS

RF Output Power	Low: 25 W (1.5 MHz - 29.9999 MHz) 10 W (30 MHz - 60 MHz)
	High: 125W (1.5 MHz - 29.9999 MHz) 50 W (30 MHz - 60 MHz)
Harmonic Emission	≤ -50 dBc(150 W), ≤ -60 dBc(500 W & 1 kW)
Spurious Emission	≤ -80 dBc (5%)
TX Phase Noise Floor	≤ -135 dBc/Hz (Fc ≥ ± 100 kHz)
Duty Cycle	50%
Protection	Power foldback protection with over temperature and infinite VSWR and overload protection from mismatch antenna and open/short circuit.

ENVIRONMENTAL CHARACTERISTICS

Vibration, Shock, etc.	MIL-STD-810F
EMI/EMC	MIL-STD-461G
Operating Temperature	-20°C to +60°C MIL-STD-810G

PHYSICAL CHARACTERISTICS

Size	290 mm x 92 mm x 308 mm
Weight	< 16 Kg

INTERFACE CHARACTERISTICS

Audio	Two six pin audio connector 10mW MF Conn 0 dBm 600 ohm Audio In/Out
Connectivity	Wi-Fi IEEE 802.11ac, Bluetooth (4.2) LAN (10/100BASE-T)
RF Interface	50 ohm

GENERAL CHARACTERISTICS

Frequency Range	TX: 1.5 MHz -60 MHz RX: 100 kHz - 60 MHz
Frequency Resolution	1 Hz
Modulation Formats	AM, CW, LSB, USB, FM
Voice Capabilities	Analog Voice, High Quality VOCODERs
Data Capabilities	STANAG 5066, STANAG 4538 xDL
Rate	75 - 240 kbps[1]
ECCM	Frequency Hopping
Hop Bandwidth	Full Band, Downloadable Hop Tables, Narrow Band
Encryption	Embedded (Digital), Algorithm Customisation
Frequency Stability	± 0.1 ppm
Power Supply	20V to 32V DC
GPS Receiver	Built-in for Synchronisation, Position reporting
Squelch	Intellegent Voice Squelch in Analogue mode or Digital Squelch in Digital Voice mode.

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