



TR3000

HF FIXED INSTALLATION TRANSCEIVER



WIDEBAND HF TRANSCEIVER

The TR3000 is a 2U 19" wideband HF transceiver for use in base stations, shelters, or naval installations, and provides the user with a secure digital voice and up to 48 kHz wideband data capability. The high performance and customer configurability of the TR3000 is made possible by using the latest direct RF sampling and software defined radio (SDR) technology.

The TR3000 has a compact modular design, solid state and complies to MIL-STD-810G. Designed according to Military and NATO standards.

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FEATURES

- Supports Asynchronous Data according to STANAG 4539, MIL-STD-188-110D (240 kbps)¹
- Tactical Data Link using xDL as per STANAG 4538 (3 kHz and 6 kHz)
- Supports Automatic Link Establishment (ALE) 2G, 3G and 4G
- COMSEC - User definable INFOSEC & TRANSEC
- Automatic Own Position reporting (internal GPS)
- 150 W Transmit Power (Optional 500 W, 1 kW, 5 kW and 10 kW External Amplifiers)
- Low Rate Secure Digital Voice (600 bps)
- Voice and Data Frequency hopping
- Last-ditch voice mode (300 bps)
- Wi-Fi hotspot for control and data interface
- Voice over Internet Protocol (VoIP)
- Full colour display
- Frequency hopping with GRC-150, 1250 and TR2000 radios
- Voice and data encryption compatibility with RT7 & RT5 data terminal

TRANSCIVER 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
- Embedded co-site filters
- Split Site capability
- Variants
 - Dedicated Wideband Transmitter only
 - Dedicated Wideband Receiver only

¹ 48 kHz, Software upgradable

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	150 W external high power amplifiers available 500 W, 1 kW, 5 kW and 10 kW
Carrier Suppression (SSB & CW)	≤ 60 dBc
Unwanted Sideband	≤ 60 dBc
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	100%
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-810G
EMI/EMC	MIL-STD-461G
Operating Temperature	-20°C to +55°C MIL-STD-810G

PHYSICAL CHARACTERISTICS

Size	19" Rack 2U, 400 mm
Weight	< 10 Kg

INTERFACE CHARACTERISTICS

Audio	Two six pin audio connector 0 dBm 600 ohm Audio In/Out
Connectivity	RS232, USB2.0 Device (USB-C Connectors) Wi-Fi IEEE 802.11ac LAN (10/100BASE-T) CAN

GENERAL CHARACTERISTICS

Frequency Range	TX: 1.5 MHz - 32 MHz RX: 100 kHz - 32 MHz
Frequency Resolution	1 Hz
Modulation Formats	AM, CW, LSB, USB, FM
Voice Capabilities	Analog Voice, High Quality VOCODERS
Data Capabilities	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	85-265 VAC (47- 63 Hz), 28 VDC
GPS Receiver	Built-in for Synchronisation, Position reporting
Preset Channels	500 Channels

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