

# RT3

## Tactical Voice & Data Encryptor



DATASHEET



### Functions and Applications

- **Voice Encryptor:** Secure Digital Voice for Radio
- **Secure Data Modem:** Used by External Laptop or PC
- **Position Transfer:** Blue Force Tracking from Built-In GPS
- **Deployment:** Armored Vehicles

### Features and Benefits

- **Vehicle Use** (Skin-Mount) 6 – 36 VDC, MIL-STD-1275
- **Robust Modem:** STANAG 4538, 3G ALE and ARQ
- **Extended Range:** 300 to 2400 bps Vocoder
- **Security:** AES-256 Encryption for Voice and Data
- **Any HF or V/UHF Radio:** Using 3 kHz Audio
- **Interoperates with:** RT7, RT5 and RT1
- High Voice Clarity, Automatic Vocoder Rate Adjustment
- Best-in-Class RapidM Voice Modem Performance
- **RapidM PC Software:** Connection via Ethernet
- **TacPoint** Support for Blue Force Tracking
- **Loudspeaker** Internal
- **GPS and GLONASS** Positioning Built-In
- 2-Year Warranty

\* TWELP Voice Coding by DSP Innovations Inc. (www.dspini.com)

\*\* MELPE for USA Customers Only

### Secure Voice and Position for Any Radio

The RT3 is a purpose-built device designed to deliver clear, secure digital voice communications to mobile warfighters, whilst providing commanders with vital blue force position information in the most adverse channel conditions. Designed for vehicle installation, this unit seamlessly integrates with any HF or V/UHF radio via the audio or accessory interface, ensuring reliable communication when on the move.

### Command Vehicle Application and Position Tracking

Equipped with interfaces for integration with intercom systems and Ethernet LAN, the RT3 can operate independently or in conjunction with TacPoint. When connected to TacPoint via Ethernet, the RT3 transforms into an optimal vehicular command and control system for deployed RT units, offering commanders real-time situational awareness during field operations. Other fielded units are visualised on a digital map along with chat and file transfer services for command and control. Moreover, the RT3's configurable feature allows periodic position reports, easily received and displayed by RT5 units and TacPoint software.

### Communications Security

To counter the threat of eavesdropping in radio communications, the RT3 features built-in AES encryption to protect all over-the-air communications with a trusted algorithm. For added security, a zeroise function allows users to easily erase all user information and cryptographic keys with a simple keystroke.

## RT3 Internal Modem

Equipped with a built-in STANAG 4538 modem, the RA3 offers automatic link setup, 3G ALE, and error-free packet data transfers via the Ethernet port.

## Call Function

Additionally, a single call button facilitates point-to-point private calls to a configurable user, typically the unit commander, leveraging RapidM's advanced Vocoder-modem combination to enhance voice quality and extend communication range in adverse conditions.

## Superior Voice Quality and Performance

Long-range radio communications are often compromised by interference and noise. The RT3 overcomes these challenges by utilising RapidM's advanced HF modem technology, featuring the latest generation Vocoder modem combination. This technology dramatically improves voice quality in adverse channel conditions, increases data throughput and extends voice communication range.



Deployable in various military environments, from manpacks to vehicles, squads or company deployments, the RT3 is an ideal solution for the command and control of fielded RT units, ensuring secure communication for modern military operations.

## User Interface

The RT3 features an intuitive user interface that requires minimal training. Examples of the user-friendly design are shown below.

## Key Management and System Configuration

The RT3 cryptographic keys are configured using the Key Management Software (KMS256), which forms part of the configuration bundle and includes essential key management tools. It is supplied with the required cable and a key fill device for secure and efficient key loading.

The RT3 system and network are configured through the System Configuration Software (SCS), which enables streamlined configuration of the network, address book, and CALLSIGNS.

RT3 Hardware				RT3 Environmental				
Size and Weight	163 × 96 × 41 mm (W × D × H) 800 g			Temperature	Operating: -40°C to +60°C Storage: -55°C to +85°C			
Colour	Olive Drab (RAL6022)			Immersion	MIL-STD-810F Method 512.4 Proc 1, 30 Min at 1m			
Power	6 – 36 V DC Input, 1.5W Nominal MIL-STD-1275 Vehicle Power and Polarity Protection			Environmental	MIL-STD-810F Humidity, Shock, Vibration, Dust			
				EMC / EMI	MIL-STD-461			
				Safety	IEC/EN 60950			
RT3 Software and Modem								
Messaging	Position Transfer Automatic Push or Pull (Initiated from <b>TacPoint</b> ) Capability. ATTACK Alert and MEDIVAC Quick-Codes via <b>RT3</b> Stand-Alone: These are Broadcast Emergency Messages Received by All on the Network. Chat, Text, File Transfer, Template-Based Forms and Email via <b>TacPoint</b> Software Suite (Connects to RT3 via Ethernet Interface).							
Security	Advanced Encryption Standard (AES), 256-Bit Key Length. Key Selection via Keypad. Zeroise Function. Tamper Detection.							
Modem	STANAG 4538 3G LDL, HDL Packet Mode, ARQ, Robust Data Extensions. Up to 9600bps in 3kHz Bandwidth.							
ALE	STANAG 4538 (3G) Fast Link Set-up (FLSU), Linking Protection, Occupancy Detection.							
Digital Voice	Purpose-Built Robust Digital Voice Waveform. Automatic Rate Adjustment DRC. Late Entry Resynchronisation.							
Vocoder	<b>TWELP</b> : Tri-Wave Excited Linear Prediction High Performance Vocoder. 600, 1200 and 2400bps Low-Rate Vocoder. 300bps Supported for Incoming Point-to-Point Calls or via <b>TacPoint</b> Software.							
Digital Voice Performance	Vocoder Rate [bps]	End-to-End Latency [s]	PESQ	Channel Use	Speech Quality		Understandability Limit SNR [dB]	
					Intelligibility	Speaker Recognition	CCIR Poor	AWGN
	2 400	1.6	3.1	Ground Wave	Very Good	Good	6.5	0.5
	1 200	2.2	3.0	Sky Wave	Good	Acceptable	4.0	-0.5
	600	2.2	2.4	Sky Wave	Acceptable	Fair	0.5	-3.0
Position and Quick-Code Transfer Performance							-4	-9
RT3 Interfaces								
J1: Radio Interface <small>(P17N 10-PIN)</small>	RADIO Audio: 600Ω Balanced TX [D] and RX [B], Audio Common [H], PTT [C], GND [A], Power Input 6 – 36 VDC [G] RADIO Control: RS-232 Levels. Rx/D [F], Tx/D [E]							
J4: Handset / Fill <small>(P17W 10-PIN)</small>	MIC (150 Ohm Coil or Electrostatic) [E], PHONES (300 - 1,000 Ohm) [F], PTT_IN [K], GND [J] INTERCOM Audio: 600Ω Balanced, INTCOM_RX+ [B], INTCOM_TX+ [C], INTCOM_COM [H], INTCOM_PTTOUT [D] USB Port: Fill Interface. 5 VDC (100 mA) [K], HOST+ [A], HOST- [G]							
J5: Ethernet <small>(S2 4-PIN)</small>	ETHERNET: 10/100 Base-T (IEEE 802.3U Compatible), Embedded TCP/IP Stack, Auto Cross-Over Detection.							
J3: GPS Antenna <small>(TNC)</small>	External Active GPS Antenna. 3.0 VDC, 35 mA Supply Provided.							
Loudspeaker	2 × 4 Watt 8 Ohm Internal							
J2: Power <small>(Amph S2 4-PIN)</small>	6 – 36 VDC, MIL-STD-1275 Vehicle Power and Polarity Protection. PWR_IN+ [1], GND [2]							
Keypad	Simple Layout with Backlighting. Power ON/OFF. Call Button for Private Commander Link. Volume Control, Speaker Mute, Clear/Secure Control, Dedicated ATTACK ALERT and MEDIVAC Buttons. Dedicated Backlight Control. Zeroise Key Sequence.							
LEDs	PWR: Power Connection, RAD: Radio TX, RX, Control, SEC: Clear vs Secure, LNK: Linking, Linked, GPS: Acquiring, Acquired							
Ordering Information		Stock Number			Description			
RT3 Tactical Voice & Data Encryptor		RT3-TU-0000CVE4			RT3: Term Green SDV 256b GPS UM EN V4			

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