



## FEATURES & BENEFITS:

- AES-256 Encryption (Voice, Position, Data)
- 600 – 2400 bps TWELP Vocoder
- Automatic Vocoder Rate Adjustment
- 99 Keys, Updatable with KMS
- Interoperates with RA1, RA2, RA3 & RA7
- Best-in-class Voice Modem
- Assured Voice Clarity
- Private Line Voice, Link Setup
- Extended Range, BLOS Links Especially
- Intelligent Plain Voice Squelch (SSB/FM)
- Noise Reduction Handset/Headset Compatible
- Ultra-rugged purpose-built PDA
- Built-In Data Modem, ALE & ARQ
- SMS, Chat & QuickCodes
- Email & File Transfer
- GPS, Compass, Navigation & Position Tracking
- 5 – 36 V DC Input, Vehicle Surge Protection
- Works in extreme temperature
- Compatible with any HF & V/UHF Transceiver
- Ideal for First Responders - minimal training
- Ideal for Manpack, in-Vehicle & Desktop Use
- 2 Year Warranty

## EMAIL:

- RA5 to RA5 Email Included as Standard
- PC Email Interface via *MESSAGEPOINT*

## SECURE VOICE, DATA & POSITION FOR ANY RADIO

The **RA5** is a high performance digital secure voice terminal purpose-built for situations where PC / PDA and Modem functions are required in a rugged integrated format. The **RA5** is suitable for first responders, security agencies, governmental, paramilitary and even military users requiring voice privacy and secure data communications - vehicular or hand-held. The **RA5** easily integrates with HF, VHF and UHF transceivers via the audio interface.

## INFORMATION SECURITY

Beyond-Line-Of-Site (BLOS) communication is vulnerable to eavesdropping. The **RA5**'s built-in encryption means that all digital voice and data communications are secured by a trusted algorithm.

## RELIABLE & ROBUST VOICE

The internal Vocoder digitizes the voice. The information is then encrypted and converted to an in-band signal by the data modem. The Vocoder dramatically improves voice quality in adverse channel conditions, extending the range of voice communications. The unit is also capable of detecting plain voice (analogue SSB or FM).

## SUPERIOR MODEM PERFORMANCE

Long-range communication is especially prone to channel fading. Both digital voice and data operation benefits from RapidM's superior technology and experience in HF modem design. The modem features adaptive equalization and can deal with in-band distortion and interference resulting in extended range and increased data throughput. Data can work on poor links when voice communication is not possible.

## PRIVATE LINE VOICE

'Private Line' conversations are not heard by other units. The unit to call can be selected from the Contacts List.



## RA5 SECURE DATA MESSAGING

The **RA5** can provide both Broadcast or point-to-point *Chat*, *SMS* and *Email* data communications from headquarters to regional centres and mobile stations. File transfer from an external USB drive is also supported. The built-in address book allows messaging to individuals or multiple recipients. Icons indicate priority level and delivery status of messages.

Access to the unit is restricted by means of a Personal Identification Number (PIN). All locally stored messages are encrypted.

Automatic Link Establishment (ALE) can optionally be used to determine the best channel for establishing voice and data links. The transceiver is automatically switched to the correct channel (radio control required). Notwithstanding the use of ALE to control a transceiver, the **RA5** can still link with an **RA5** on in 'fixed channel mode' or with no radio control.

The result is rapid, reliable and secure data messaging using a variety of existing radios.

## RA5 ACCESSORIES

- H-250/U style handset
- USB cable for file transfer, camera, SCS, KSM and S/W field upgrades
- Radio Interface Cable (Radio specific)
- Shock Mounting bracket
- Carry Pouches
- Vehicle Mounting bracket & GSP Re-radiator

Contact **RAPIDM** for complete list of accessories.

## SCS - SYSTEM CONFIGURATION SOFTWARE (CONFIG BUNDLE)

Configuration and is performed using the **SCS** (System Configuration Software). Configuration files are securely transferred to multiple **RA5** devices using a USB drive.

## RA KMS – KEY MANAGEMENT SYSTEM (CONFIG BUNDLE)

The **RA5** encryption keys can be updated using the **KEY MANAGEMENT** Software. Key sets are securely transferred to multiple **RA5** devices using a USB drive.

## MESSAGEPOINT - EMAIL & CHAT (PC SOFTWARE OPTION)

The **RA5** can be connected to a PC/Laptop running the **MESSAGEPOINT** Software to offer *Email* services. Compression is used to increase effective data throughput. The **RA5** can interoperate with Other **RA** devices on Email using **MESSAGEPOINT**.

## GATEPOINT - SMS & EMAIL (PC SOFTWARE OPTION)

The **RA5** can provide a 'modem mode' in which it connects with the **GATEPOINT** Software on a PC via the Ethernet port extending Email connectivity to fixed-net users and the internet.

The GSM gateway enables SMSs to be sent to and from the Global GSM network. This uses a Third Party GSM modem located at the **GATEPOINT**.

## TRACKPOINT – TRACKING (PC SOFTWARE OPTION)

The **TRACKPOINT** PC software allows a base station to track the position of mobile units. Each unit has a unique ID and can be assigned an alias or callsign. The **RA2**, **RA3**, **RA5** and **RA7** units can interface to **TRACKPOINT** via the Ethernet interface.

ENCRYPTION	
KEY FILL	99 factory loaded keys in encrypted storage. New keys can be loaded via <b>KMS</b> PC Software for Windows™.
ALGORITHM	Advanced Encryption Standard (AES), 256-bit key length.
RANDOM NUMBER	True random number generator based on random physical events.
RA5 SOFTWARE, VOCODER & MODEM	
VOCODER	TWELP: Tri-Wave Excited Linear Prediction, high performance vocoder
VOCODER RATES	600, 1200, 2400 bps
MODEM	High performance serial tone BLOS modem (V/UHF compatible) featuring adaptive equalization. The modem is able to deal with in-band interference and multipath/fading (up to 10 ms, 30 Hz).
MESSAGING	Email, TextMsg, SMS, QuickCodes, File Transfer, Position push / pull.
MODEM	RapidM proprietary packet modem, up to 10,000 bps, including Links Setup and built-in ARQ.
OS AND BIT	Operating System: Linux. Comprehensive BIT (Built-In-Test), Continuous error detection. 8 GB secure FLASH
HARDWARE	
WEIGHT	490 g including batteries
SIZE	148 x 82 x 28 x mm (w x d x h)
COLOUR	Black (RAL 9002)
POWER	Battery: 2 x Standard AA-size cells, or 2 x NiMH AA-size, internal charger
	External: 5 – 36 V DC (vehicle surge protected)
BATTERY LIFE	> 12 hrs (Operational profile dependant)
ENVIRONMENTAL	
SAFETY	IEC/EN 60950
FCC	Title 47 CFR, Part 15 Subpart B Class A Digital Device.
EMC / EMI	EN 55022, EN 55024
ENVIRONMENTAL	Humidity, Shock, Vibration
TEMPERATURE	-20°C to +60°C (operating), -30°C to +75°C (storage)
IMMERSION	IP67
RA5 INTERFACES	
KEYBOARD	QWERTY layout with backlighting. Dedicated backlight control. Built-in ambient light sensor.
DISPLAY	2.4" Colour OLED, QVGA resolution (320 x 240), 15-bit colour depth. Status LED for 'message waiting' and charge indication
GPS	16-Channel receiver, -160 dBm sensitivity, LNA, embedded active patch antenna
USB HOST PORT	USB Host Port 5V (100mA) output
ETHERNET PORT	10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack, Auto cross-over detection
AUDIO PORT	Input: 10k Ohm unbalanced 5 Vp-p max. Output: Unbalanced, -40 to +0 dBm adjustable into 600 ohm load. PTT Output, Audio return
SERIAL PORT	Selectable RS-232, TTL and 1-wire modes (1-wire allows direct connection to Icom CI-V interface) The Port is automatically configured for the selected Radio. Contact RapidM for a selection of predesigned radio cables.
POWER	5 - 36 V DC input for operation and battery charging, 0.3 – 2.2 Watt

ORDERING INFORMATION	STOCK NUMBER	DESCRIPTION
RA5 SECURE VOICE & DATA TERMINAL	RA5-TU-SBDVDVE4	RA5: Term Black SDV 256b GPS S/B EN V4

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