



FUNCTIONS AND APPLICATIONS:

- **Voice Encryption:** Secure Digital Voice for Radio
- **Position Transfer:** Asset tracking over vast areas
- **Secure Data Modem:** Used by external laptop or PC

FEATURES & BENEFITS:

- Digital Voice: 600, 1200 & 2400 bps Vocoder
- Vocoder Options: TWELP* / MELPE**
- Data: Packet Modem & ARQ
- Security: AES-256 Encryption
- Address Book: Selective and Broadcast calls
- Position Transfer: Built-in GPS Module
- Connects to: Any HF or V/UHF radio
- Interoperates with: RA5
- RapidM PC Software: Extends capability
- Rack Mount: 19"
- Front Panel: Full operator interface
- Rear Panel: Intercom and Data interface

* TWELP voice coding by DSP Innovations Inc.(www.dspini.com)
 ** MELPe for USA customers only

VOICE, MESSAGE, POSITION

The **RA7** is a Secure Voice & Data Modem which can be mounted in a 19" rack. The modem intended for use in control rooms and and ships. The **RA7** is part of the **RA** product family and connects to a single HF or V/UHF radio to provide secure voice, data and position services.

RA7 SECURE DIGITAL VOICE

The Vocoder rate is adapted dynamically to allow optimal quality in all channels. Broadcast and Private-Lines selective call modes are supported, as well as automatic Late Entry.

USAGE MODES

Local User: The operator uses a handset connected to the **RA7** front panel. The **RA7** provides an Address Book to initiate Private Line calls or to send locally entered Messages or files.

Remote User: The operator is situated away from the **RA7**. Audio input is via the Intercom connector. The **RA7** can then be operated via **MessagePoint**, **GatePoint** or **TrackPoint** Software.

RA7 SECURITY

All over-the-air communications, locally stored messages and positions are encrypted. A Zeroize function is provided from the keypad which erases all data and keys.



VOICE/DATA MODE

Any time when PTT is pressed or a Voice call is initiated, the **RA7** will automatically go into 'Voice Mode'. Once voice communications is inactive for a time, the **RA7** will start or resume sending Data. The Voice/Data mode is indicated by an icon on the user interface.

RA7 MODEM

The **RA7** has a built-in high performance data modem that connects to A single HF or V/UHF transceivers via the radio audio interface. This combined with a low-rate vocoder and built-in cryptography creates a secure digital voice (SDV) solution.

JOINT OPERATIONS INTEROPERABILITY

The **RA7** interoperability with the **RT5** for mobile use. The same Key Management System is used on both devices.

EMAIL: MESSAGEPOINT & GATEPOINT

The **RA7** can connect with **MessagePoint** or **GatePoint** Software via the Local Ethernet port to provide end-to-end Email (with attachments) and GSM SMS connectivity (via Gatepoint) or Situational Awareness capability.

KEY MANAGEMENT & SYSTEM CONFIGURATION

The **KeyGen-256** software includes key generation tools and is provided on a CD along with the necessary cable and USB Key Fill Device.

The **System Configuration Software (SCS)** includes Network Configuration, Periodic position transfer, Address Book and CALLSIGN configuration.

SCS and **KeyGen-256** is part of the **Configuration Bundle** which includes all required manuals, cables, Fill device and software for system start-up.

POSITION TRANSFER

If configured to do so, position information is included with every Chat transmission and is sent periodically (configurable).

RA7 ACCESSORIES

Accessories - Included: H-250 Handset (PAM17W), GPS Active Marine Antenna (TNC), Power Connector interface kit.

Accessories – Required one per unit: Radio Cable - Contact RapidM for list of radio specific cables.

Accessories - Required one per network: Configuration Bundle.

Accessories - Optional: 19" Mounting Tray.

RA7 HARDWARE				RA7 ENVIRONMENTAL					
SIZE & WEIGHT	212 x 178 x 89 mm (w x d x h), 2U, 19"/2, 3.4 kg			TEMPERATURE	Operating: -20°C to +60°C, Storage: -55°C to +85°C				
COLOUR	Saddlewood Black (RAL9004)			ENVIRONMENTAL	MIL-STD-810F Humidity, Shock, Vibration, Dust, IP67				
POWER	AC & DC (CBP-L2045A)	90 – 264 VAC, 47 – 440 Hz, 100 – 370VDC		EMC / EMI	MIL-STD-461				
	DC (CBP-L2035A)	9 – 36 VDC (MIL-STD-1275B)		SAFETY	IEC/EN 60950				
RA7 SOFTWARE & MODEM									
SERVICES	Chat, Text, QuickCodes, File Transfer, Template-based Forms, Position Transfer. Email and SMS via MessagePoint & Gatepoint .								
SECURITY	Access code. Zeroize function for Emergency Clear.								
CRYPTOGRAPHY	AES 256-bit . 256x different COMSEC and LINKSEC keys.								
MODEM	STANAG 4538 based Packet Mode and ARQ.								
ALE	STANAG 4538 (3G) Fast Link Set-up (FLSU), Linking Protection and Occupancy Detection.								
DIGITAL VOICE	Purpose-built Robust Digital Voice Waveform RM-SDV2. Automatic Rate Adjustment DRC. Automatic Late Entry resynchronization.								
VOCODER	600, 1200 & 2400bps Low-rate Vocoder.								
DIGITAL VOICE PERFORMANCE	VOCODER RATE [bps]	END-TO-END LATENCY [s]	PESQ	CHANNEL USE	SPEECH QUALITY			UNDERSTAND-ABILITY LIMIT SNR [dB]	
					INTELLIGIBILITY	SPEAKER RECOGNITION	LATENCY & EMOTIONAL	CCIR POOR	AWGN
	2 400	1.6	3.1	Ground Wave	Very Good	Good	Acceptable	6.5	0.5
	1 200	2.2	3.0	Sky Wave	Good	Acceptable	Fair	4.0	-0.5
600	2.2	2.4	Sky Wave	Acceptable	Fair	-	0.5	-3.0	
OS AND BIT	Operating System: Linux. Comprehensive BIT (Built-In-Test), Continuous error detection.								
STORAGE	4 GB secure FLASH. Encrypted User Data Partition for Data-at-Rest secure storage.								
RA7 INTERFACES									
LINK INTERFACE (CMA14N)	Audio: 600Ω balanced TX & RX, PTT return (contact closure).								
	Serial Interface: Control and Data port: RS-232 levels. RxD, TxD.								
ETHERNET (HOLIN RJ45)	Ethernet: 10/100 Base-T (IEEE 802.3U compatible), embedded TCP/IP Stack, Auto cross-over detection.								
INTERCOM (U-183)	Intercom Audio: 600Ω balanced.								
HANDSET USB FILL (PAM17W)	Front Panel, Mic (150 Ohm), Phone (300 - 1,000 Ohm), PTT, GND.								
	USB 2.0 Full Speed Host Port: 5 VDC (100 mA) output.								
GPS ANT. (TNC)	Connection for external active GPS Antenna. 3.0 VDC, 35 mA supply provided on connector.								
KEYBOARD	QWERTY layout with backlighting. Dedicated backlight control. Built-in ambient light sensor. Zeroize key sequence. Dim to black.								
DISPLAY	2.4" Colour OLED, QVGA resolution (320 x 240), 15-bit colour depth. Status LED shows new message and charge. Auto night mode.								

ORDERING INFORMATION	STOCK NUMBER	DESCRIPTION
RA7 SECURE VOICE & DATA MODEM	RT7-TU-HSGPCVE4	RA7: 19"2U Modem 256b GPS BAU EN V4
CONFIGURATION BUNDLE: SCS, KEYGEN-256 & CABLES	RAP-BU-CFA5-VE4	Bundle: SCS 256b, Fill-D, Cb1 EN V4

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