RM8X4

QUAD SOFTWARE DEFINED MODEM

DATASHEET



Key Features

- **Designed for Redundancy –** 4 PSUs
- **Quad (4) functions -** 1U 19" rack slot.
- **Deployable in ship-borne, shore station and strategic communication installations**
- **4 Ch. Receive Diversity mode –** < 6 dB gain
- **Software Defined Functions –** S/W Options
- **Split-site Operation –** S/W support
- **Front Panel Set-up / Control –** Menu driven
- **Companion Products -** RC8X4 & RC66 ARQ
- **Long-term product availability –** 20 Years
- **Data Modems –** LF / HF / MF / VHF / UHF
- **ISB Capable –** MIL-STD-188-110B, App. F
- **W/band HF –** MIL-STD-188-110C, App. 6 kHz
- **2G ALE –** MIL-STD-188-141C, App. A
- **3G ALE –** STANAG 4538 FLSU
- **3G Packet Data –** STANAG 4538 xDL
- **Wideband V/UHF –** RapidM proprietary
- **Management LAN –** 1 to 4 interfaces
- **Data Ports –** 4 synchronous data interfaces
- **Data LAN –** 4 data interfaces for IP traffic
- **Audio I/F –** 8 baseband interfaces
- **Aux Audio I/F –** 4 interfaces for ANDVT
- **Radio Control –** 8 radio control interfaces

RM8-WB Product Overview

The *RM8X4 Quad Software Defined Modem* is a purpose-built standalone hardware platform housing four independent *modem & ALE controller* functions. The *RM8X4* unit has high commonality with the *RM8* and is intended for strategic and maritime data communications where size, weight, power and cost are at a premium. The *RM8X4* can be installed as both land and ship-borne 19-inch rack equipment occupying only a single 1U slot.

The *RM8X4* offers the same wide range of standards-based waveforms and protocols found in the *RM8*. These are suitable for interoperable link setup operations and data transfer, whether point-to-point or point-to-multipoint.

The *RM8X4* is capable of 4-channel receive diversity processing offering a significant performance gain and making the *RM8X4* ideal for Naval and maritime shore station deployment.

The operation of the *RM8X4* is determined by the selection of a built-in modem software pack. *RapidM* offers a choice between HF & WBHF modem and ALE 2G/3G controller software packs that can be activated with the appropriate *RapidM* activation key.

LF/HF & WBHF Data Modem

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ALE 2G, 3G & Packet Data

The *RM8X4* includes all the *2G & 3G ALE Controller* functionality found in the *RM8* - 2G Link set-up, 3G FLSU and error-free 3G packet data transfer – see *RapidM RM8* datasheet for more information.



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Modem & ALE Specifications

The *RM8X4* includes all the *2G & 3G ALE Controller* functionality found in the *RM8*. The basic functions are either HF of V/UHF modem. The HF modem offer additional software options as follows:

- **HF basic modem** – *RapidM RM8* HF modem datasheet available, (M1 or M2 software)
- **V/UHF basic modem** – *RapidM RM8* V/UHF modem datasheet available, (V1 or V2 software)
- **2G ALE option for HF** – *RapidM RM8* 2G ALE datasheet available
- **3G ALE FLSU option for HF** – *RapidM RM8* 3G ALE datasheet available
- **3G Packet data option** – *RapidM RM8* 3G ALE datasheet available
- **Works with RC66 ARQ** – *RapidM RC66* datasheet available
- **Works with RC8 & RC8X4 ARQ** – *RapidM RC8 & RC8X4* datasheets available
- **WBHF Data Modem Modes** – *MIL-STD-188-110C App. D 3, 6 kHz*

General Specifications			
Size & Weight	○ Width: 212.2 mm ○ Depth: 225.6 mm	○ Height: 41.1 mm (excl. front panel) ○ Height: 44.1 mm (incl. front panel)	○ Weight: 4.8 kg
Power Supply	○ **Variant 1, AC Supply**: 90-264 VAC, 40–440 Hz, 2A; 100-370 VDC ○ **Variant 2, AC + DC:** 90-264 VAC, 40–440 Hz, 2A; 100-370 VDC & 6–36 VDC MIL-STD 1275B protection		
Environmental Specifications	○ Climatic: ○ Storage/Operation: -30°C to +77°C (MIL-STD-810F) ○ 90% non-condensing at 30 °C (MIL-STD-810F) ○ Mechanical: ○ Vibration: Surface Ship, Marine Vehicles, Aircraft, Min. Integrity (MIL-STD-810F) ○ Shock: 40 G, 11 ms (MIL-STD-810F) ○ ○ EMC: MIL-STD-461E ○ MIL-STD-461E, CE Marking -Directives 73/23/EEC and 89/336/EEC ○ MTBF ○ > 22,000 hours		
Installation	Compact design: The unit occupies the full width of a 1U 19" rack slot		
Power Consuption	Operational < 30 Watt (Apparent power)		
Presets	Factory and Custom Presets		

Interfaces (Per Function)		Nr
DTE (Data) Port (DB25F)	RS-422 balanced, RS-423, RS-232 unbalanced., MIL-STD-188-114 (interoperable), EIA 530A compliant Half & Full Duplex operation, Synchronous, Standard and High-speed Async modes	4
Remote Control/ GPS Port (DE9M)	Remote Control Pins: RS-485 Multi-drop, RS-422 balanced or RS-232 Protocol: Control Protocol (RAP1 + RIPC, ASCII S5066 Annex E)	4
	External GPS Control Pins: RS-232 (nominally input) Data Rate: 300 to 19200 bps, 1/2 stop bits, 7/8 bit data. PPS line: RS 232/422 (NMEA) or TTL ** Note: Only a single GPS is required to be connected to the RM8X4 unit.*	1*
Ethernet CTRL Port (RJ45)	Remote Control: 10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack Protocol: Control Protocol (RAP1 + RIPC)	4
Ethernet DATA Port (RJ45)	IP Packet Data: 10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack Protocol: Raw IP packet data, requires 3G ALE.	4
Ethernet DATA Port (RJ45)	One local control via 2-button key and 4-way navigation button. Four 32x202 pixel graphical LCD displays. Four bi-colour LED indicators per function: SEL, TX, RX & ALE	1/4
Radio Control & Audio Ports (DB25M)	Radio Control Pins (2 channels): RS-232, up to 115200 bps, 1/2 stop bits, 7/8 bit data Supports for various radio control protocols are built-in.	4
	Input Audio (2 channels): 600 Ohm balanced, –20 to +10 dBm without adjustment Output Audio (2 channels): Balanced, –40 to +10 dBm adjustable into 600 ohm load Keyline: Non-polarized contact closure (<45 V, 200 mA). PTT Sense Input: Pull to ground to indicate external PTT.	4
	Aux Audio Pins: Connection of microphone for ALE voice calling Input Audio: 600 ohm balanced, –20 to +10 dBm without adjustment or MIC input (selectable) Output Audio: Balanced, –40 to +10 dBm adjustable into 600 ohm load	4
External Clock (SMA)	External clock input for coherent phase-frequency transmit & receive diversity operation.	1
Local Control	Local control via 32x202 pixel graphical LCD display and 16-key keypad. 3 bi-colour LED indicators Alphanumeric and digit keypad for fast data entry, 4-way navigation button. *** Note: Internally four independent PSU units are used, one per function.*	1**

Ordering Information	Stock Number	Description
RM8X4 (HF Modem M1)	RME-84-RA-M14.1	SDM: RM8X4 M1 (110C 3,6 110B-F) V4.1
RM8X4 (HF Modem M2)	RME-84-RA-M24.1	SDM: RM8X4 M2 (HF S4285, S4539) V4.1

Other RM8X4 Software Options	Stock Number	Description
2G ALE (MIL-STD-188-141B)	R84-SW-O-2G-1.8	SW MDL-2G ALE / MS 141B, App. A, B V1.8
3G ALE (STANAG 4538) FLSU, xDL	R84-SW-O-3A-3.7	SW MDL-3G ALE 4538 FLSU, xDL V3.7

* Contact RapidM for datasheets.

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Cyntony Corporation
195 Follen Road
Lexington, Massachusetts
sales@cyntony.com
781-430-0675

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