RM8X4 Quad Software Defined HF VHF High Speed Data Modem

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Housing four independent modem & ALE controller functions, the RM8X4 quad software defined modem is a standalone hardware platform for strategic and maritime data communications where size, weight, power and cost are at premium. The RM8X4 is deployable in ship-borne, shore station and strategic communication installations occupying only a single 1U slot in a 19-inch rack.

Offering the same wide range of standards- based waveforms and protocols found in the RM8, the RM8x4 is 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 the built-in modem software, activated by the user with a key. AT Communications offers a choice between high frequency (HF) and wideband high frequency (WBHF) modems and 2G/3G ALE controller software options.

Low Frequency (LF), High Frequency (HF) and Wideband High Frequency (WBHF) Data Modems

The RM8X4 functions come standard with the M1 or M2 suite of data modems – see RM8 datasheet. Included in the M1 package are the MIL-STD-188- 110C App. D modes for 3 & 6 kHz bandwidth.

AT Communications offers the full suite 110C App. D modems up to 24kHz for HF ground wave operation. This is useful for operation over seawater.

2G, 3G ALE & Error Free 3G 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.

Features

- ☑ Designed for Redundancy with power supplies
- ☑ Quad (4) functions - 1U 19" rack slot.
- ☑ 4 Channel Receive Diversity mode – < 6 dB gain
- ☑ 4 synchronous data interfaces
- ☑ Split-site Operation – S/W support
- ☑ Front Panel Set-up/Control– Menu driven
- ☑ Data modem selection– LF/HF/MF/VHF/UHF
- ☑ ISB Capable – MIL-STD-188-110B, App. F

- ☑ 3G ALE – MIL-STD-188-141C, App. A
- ☑ 3G ALE – STANAG 4538 FLSU; 3G Packet Data – STANAG 4538 xDL
- ☑ Wideband HF – MIL-STD-188-110C, App. D G/W
- ☑ Wideband VHF, UHF
- ☑ Data LAN – 4 interfaces for IP traffic
- ☑ Management LAN–1 to 4 interfaces
- ☑ Audio I/F – 8 base band interfaces
- ☑ Aux Audio I/F – 4 interfaces for ANDVT
- ☑ 8 radio control interfaces
- ☑ Companion Products - RC8X4 & RC66 ARQ
- ☑ 20 year product availability

Software-defined Options:

- ☑ HF, VHF, or UHF basic modem
- ☑ 2G ALE option for HF
- ☑ 3G ALE FLSU option for HF 3G Packet data
- ☑ RC66 ARQ
- ☑ RC8 & RC8X4 ARQ
- ☑ WBHF Data Modem G/Wave operation

General Specifications

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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
Environmental Specifications	Climatic	Storage/Operation: -30 °C to +70 °C (MIL-STD-810F) Humidity: 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, 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 Consumption		Operational < 30 Watt (Apparent power)
Presets		Factory and Custom Presets
Interfaces Per Function		
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
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)
		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
Ethernet CTRL Port (RJ45)		Remote Control: 10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack Protocol: Control Protocol (RAP1 + RIPC)
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.
User Interface For Unit Control		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
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.
		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.
		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
External Clock (SMA)		External clock input for coherent phase-frequency transmit & receive diversity operation.
Power Supply		Wide-range supply input: AC Only Supply: 90-264 VAC, 40–440 Hz, 2A & 100-370 VAC. Makes the unit suitable for use on military base stations, vessels and aircraft. ** Note: Internally four independent PSU units are used, one per function.

RM8X4 Quad - Software Defined - High Speed Data Modem