

RM8 Software-Defined VHF UHF High Speed Data Modem

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Offering a wide range of standards-based waveforms and protocols, the RM8 software defined modem with ALE, offers interoperable data modem and link setup in a standalone unit for strategic and maritime data communications.

Whether point-to-point or point-to-multipoint, the RM8 can be operated as a VHF or UHF software-defined modem, which is activated by the user with a key selection.

Intended for operation with VHF or UHF radios with an audio bandwidth exceeding 21 kHz, the RM8 transfers data at rate of up to 96,000 bps over a standard 25 kHz VHF or UHF radio channel.

Low data rates (up to 32 kbps) use Offset QPSK and 8-PSK waveforms and are suitable for radios with a non-linear power amplifier (PA).

The very high rates use QAM and require a linear PA or can work with wideband FM or AM radios.

Adaptive equalization mitigates the effects of VHF or UHF channel multi-path. Convolutional encoding combined with soft decision

Viterbi decoding provides forward error correction. High performance Doppler tracking allows operation at up to 250 km/h relative speed (at 80 MHz).

Key Features

- ✓ VHF/UHF modem operation
 - ✓ 96000 bps in 24 kHz channel
 - ✓ 48000 bps in 12 kHz channel
- ✓ Adaptable configuration

- ✓ Bandwidths: 24, 12, 9, 6 & 3 kHz
- ✓ Menu-Driven control & configuration
- ✓ Synchronous/Asynchronous DTE port
- ✓ Ethernet LAN interface for Control
- ✓ AC and DC Power
- ✓ Compatible with RC66/ARQ
- ✓ License keys unlock software

Additional Features

- ✓ High Data Rate Modems

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- ✓ Up to 96000 bps (128-QAM)
- ✓ Up to 76800 bps (64-QAM)
- ✓ Up to 48000 bps (16-QAM)
- ✓ Low Data Rate Modems
 - ✓ Up to 32000 bps (8-PSK)
 - ✓ Up to 16000 bps (QPSK)
- ✓ Adaptive Equalization

External Interfaces

The RM8 unit is fully controllable via the front panel as well as by the serial remote or Ethernet control interface and provides a DTE port for synchronous and asynchronous data.



RM8 based Synchronous V/UHF Data System

Specifications

BANDWIDTH	DATA RATES [BPS]	V1
24 kHz	High Rate: 96000, 76800, 64000, 48000 (Coded) Low Rate: 32000, 16000, 9600, 4800, 2400 (Coded)	•
12 kHz	High Rate: 48000, 38400, 32000, 24000 (Coded) Low Rate: 16000, 8000, 4800, 2400, 1200 (Coded)	•
9 kHz	High Rate: 36000, 28800, 24000, 18000 (Coded) Low Rate: 12000, 6000, 3600, 1800, 900 (Coded)	•
6 kHz	High Rate: 24000, 19200, 16000, 12000 (Coded) Low Rate: 8000, 4000, 2400, 1200, 600 (Coded)	•

3 kHz	High Rate: 12000, 9600, 8000, 6000 (Coded) Low Rate: 4000, 2000, 1200, 600, 300 (Coded)	•
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GENERAL		
Environmental Specifications	Climatic: Storage: -30 °C to +77 °C Operation: -30 °C to +70 °C Safety: CE: Low Voltage Directive (Directive 73/23/EEC as amended) Safety: CE: Electromagnetic Compatibility (EMC) Directive (Directive 89/336/EEC as amended)	
Size	Width: 212.2 mm Depth: 225.6 mm	Height: 41.1 mm (excl. front panel) Height: 44.1 mm (incl. front panel)
Installation	Compact design: The unit occupies a width less than ½ of an 1U 19" rack slot.	
Presets	Factory and Custom Presets	

INTERFACES	
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/	Remote Control Pins: RS-485 Multi-drop, RS-422 balanced or RS-232 Protocol: Control Protocol (RAP1 + RIPC, ASCII S5066 Annex E)
GPS Port (DE9M)	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
GPS Antenna (MCX)	Built-in GPS receiver: Time reference for 2G ALE Linking protection (AL-2).
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.
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
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

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