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 rates 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
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.

### Specifications

<table>
<thead>
<tr>
<th>BANDWIDTH</th>
<th>DATA RATES [BPS]</th>
<th>V1</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 kHz</td>
<td>High Rate: 96000, 76800, 64000, 48000 (Coded)</td>
<td></td>
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<tr>
<td></td>
<td>Low Rate: 32000, 16000, 9600, 4800, 2400 (Coded)</td>
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<tr>
<td>12 kHz</td>
<td>High Rate: 48000, 38400, 32000, 24000 (Coded)</td>
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<tr>
<td></td>
<td>Low Rate: 16000, 8000, 4800, 2400, 1200 (Coded)</td>
<td></td>
</tr>
<tr>
<td>9 kHz</td>
<td>High Rate: 36000, 28800, 24000, 18000 (Coded)</td>
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<tr>
<td></td>
<td>Low Rate: 12000, 6000, 3600, 1800, 900 (Coded)</td>
<td></td>
</tr>
<tr>
<td>6 kHz</td>
<td>High Rate: 24000, 19200, 16000, 12000 (Coded)</td>
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</tr>
<tr>
<td></td>
<td>Low Rate: 8000, 4000, 2400, 1200, 600 (Coded)</td>
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</tbody>
</table>
### GENERAL

| Environmental Specifications | Climatic:  Storage: -30 °C to +77 °C  
|                             | Operation: -30 °C to +70 °C  
| 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 ⅓ 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/ 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)  
| 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  

RM8 Software-defined VHF UHF Modem