**Features & Benefits:**
- MIL-STD-188-110A Modem: Up to 2400 bps
- Hardware Solution: Performance & Reliability
- Works with Any Radio: via Audio Line
- Activation Keys: Unlock Upgrades

**Upgrades Available:**
- MIL-STD-188-110B Modem: Up to 9600 bps
- MIL-STD-188-110C Modem: Up to 16000 bps 3 kHz*
- MIL-STD-188-110C Orderwire: 75/4 bps*

**Also Available:**
- STANAG 5066 ARQ: RC50 Email Software
- MIL-STD-188-141B: 2G ALE

* Future feature

**Military Auxiliary Radio System (MARS)**
The basic RM2 MARS Solution fulfills the MARS requirement for a 2400 bps MIL-STD-188-110A data modem. The data rate can be extended to 9600 bps (MIL-STD-188-110B) by means of an activation key. Possible future MARS requirements can be added and activated as needed.

**High Performance Data Modem**
The RM2 is a compact HF data modem with exceptional performance and reliability. The RM2 is suitable Military Auxiliary Radio System (MARS) operators.

**Superior Modem Performance**
Long-range communication is especially prone to interference. The RM2 benefits from RapidM’s superior technology and experience in HF modem design. The modem features adaptive equalization and is able to deal with in-band distortion. The result is extended range and increased data throughput.

**DataPoint 110A/B Interface Software**
The RM2 is accompanied by the free DataPoint 110A/B Interface Software. This Windows software allows the user to configure and control the modem for basic MIL-STD-188-110A and MIL-STD-188-110B operation. DataPoint also allows data to be tunnelled to/from the MARS Communications Messaging Terminal.

**Package Contents (RM2 MARS Solution):**
- RM2 Modem with 110A Capability
- DataPoint 110A/B Interface Software
- Serial Remote Control Cable
- Wire-ended DC Power Connector

**Not Included:**
- HF Transceiver
- DC Power Supply (the RM2 can share a power supply with the transceiver)
- Windows PC with Serial Port
- MARS Communications Messaging Terminal
- Radio interface cable to be ordered separately
**WAVEFORMS**

<table>
<thead>
<tr>
<th>WAVEFORMS</th>
<th>MODULATION</th>
<th>DATA RATES &amp; CHARACTERISTICS</th>
<th>OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL-STD-188-110A</td>
<td>PSK</td>
<td>[75, 150, 300, 600, 1200, 2400, 2400 bps] (Coded), 4800 bps</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>MIL-STD-188-110B</td>
<td>PSK/QAM</td>
<td>[75, 150, 300, 600, 1200, 2400, 3200, 4800, 6400, 8000, 9600 bps] (Coded)</td>
<td>- ✓</td>
</tr>
</tbody>
</table>

**STANDARD CONFIGURATIONS**

**TWIN SERIAL PORT CONFIGURATION**

- **HF Transceiver (Any Make)**
  - Audio (Radio Interface Cable)

- **RM2 MIL-STD Data modem**
  - Data (RS-232)
  - Config. & Control (RS-232)

- **MARS**
  - Comms. Terminal Software
- **DataPoint 110A/B Interface Software**
- **PC/Laptop (WinXP/Win7)**

**VIRTUAL SERIAL PORT CONFIGURATION**

- **HF Transceiver (Any Make)**
  - Audio (Radio Interface Cable)

- **RM2 MIL-STD Data modem**
  - Data, Config. & Control (RS-232)

- **MARS**
  - Comms. Terminal Software
- **DataPoint 110A/B Interface Software**
- **PC/Laptop (WinXP/Win7)**

**REAR PANEL INTERFACES**

<table>
<thead>
<tr>
<th>GPS ANTENNA (MCX)</th>
<th>Int. GPS (optional)</th>
<th>High performance internal GPS module</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHERNET (RJ45)</td>
<td>Remote Control:</td>
<td>10/100 Base T (IEEE 802.3U compatible), full duplex RapidM Control Protocol (RAP1/RIPC) over TCP/IP</td>
</tr>
<tr>
<td>REM / GPS (DE9M)</td>
<td>Protocol:</td>
<td>RS-232, 115200 bps, 1 stop bit, 8 bit character lengths Control Protocol (RAP1 + RIPC)</td>
</tr>
<tr>
<td>RADIO / DATA (DE25M)</td>
<td>Protocol:</td>
<td>External GPS Control Pins: RS-232 (nominally input) 300 to 115200 bps (nominally 4800 bps), 1/2 stop bits, 7/8 bit data. PPS line: RS 232 (NMEA or TTL)</td>
</tr>
<tr>
<td></td>
<td>Radio Control:</td>
<td>Selectable RS-232, TTL and 1-wire modes (1-wire allows direct connection to Icom CT-17/CI-V)</td>
</tr>
<tr>
<td></td>
<td>Input Audio:</td>
<td>Balanced, –40 to +3 dBm adjustable into 600 ohm load</td>
</tr>
<tr>
<td></td>
<td>Output Audio:</td>
<td>Input Audio: 600 Ohm balanced, –35 to +3 dBm without adjustment</td>
</tr>
<tr>
<td></td>
<td>Keyline:</td>
<td>Open Collector (&lt;36 V, 200 mA)</td>
</tr>
<tr>
<td></td>
<td>Full Duplex</td>
<td>Full to ground to indicate external PTT</td>
</tr>
<tr>
<td></td>
<td>Raw Data:</td>
<td>75 to 230400 bps, 1 or 2 stop bits, 7/8 bit data (no Hardware flow control)</td>
</tr>
</tbody>
</table>

**HARDWARE**

- **WEIGHT**: 0.7 kg
- **ENVIRONMENTAL**
  - **SAFETY**: IEC/EN 60950
  - **FCC**: Title 47 CFR, Part 15 Subpart B Class A Digital Device.
  - **SHOCK**: 40G, 6-9 ms, 3 shocks in x, y & z direction
  - **VIBRATION**: Composite wheeled vehicle 10Hz – 2000Hz, @2.5g.
  - **TEMPERATURE**: -30°C to +70°C (operating), -40°C to +85°C (storage)
  - **HUMIDITY**: 0 to 90%, non-condensing

**ORDERING INFORMATION**

- **RM2 MARS SOLUTION, 110A MODEM (2400 bps)**
  - **STOCK NUMBER**: RM2-B0-MARS-000
  - **DESCRIPTION**: Bundle: RM2 MARS 110A, 2400 bps
- **UPGRADE: 110B 9600 bps**
  - **STOCK NUMBER**: MAR-SW-11BC-0PG
  - **DESCRIPTION**: Upgrade: 110B 9600bps
- **UPGRADE: RC50 EMAIL SOFTWARE**
  - **STOCK NUMBER**: MAR-SW-RC50-0PG
  - **DESCRIPTION**: Upgrade: RC50 Email 55066
- **UPGRADE: 2G ALE**
  - **STOCK NUMBER**: MAR-SW-2G00-0PG
  - **DESCRIPTION**: Upgrade: 2G ALE 141B

**INTERFACE CABLES**

- **WIRE-ENDED (FIT OWN RADIO CONNECTOR)**
  - **STOCK NUMBER**: RM2-CB-0881-V01
  - **DESCRIPTION**: Cable: RCTRL/AUD, Terminated V01
- **BARRETT 950/2050**
  - **STOCK NUMBER**: RM2-CB-0884-V01
  - **DESCRIPTION**: Cable: RCTRL/AUD Barrett 950/2050
- **CODAN 2110**
  - **STOCK NUMBER**: RM2-CB-0883-V01
  - **DESCRIPTION**: Cable: RCTRL/AUD Codan 2110
- **ICOM IC-78**
  - **STOCK NUMBER**: RM2-CB-0885-V01
  - **DESCRIPTION**: Cable: RCTRL/AUD Icom CI-V
- **ICOM IC-F8101**
  - **STOCK NUMBER**: RM2-CB-0886-V01
  - **DESCRIPTION**: Cable: RCTRL/AUD Icom IC-F8101
- **ICOM IC-M802/IC-F7000**
  - **STOCK NUMBER**: RM2-CB-0882-V02
  - **DESCRIPTION**: Cable: RCTRL/AUD Icom NMEA Unbal. V02

(1) RC50 requires 110B.
(2) 2G ALE requires RC50 or other control software. Future versions of DataPoint will also include 2G ALE control.
(3) Datasheets available from RapidM.