Proteus is a Software Defined Radio-based satellite modem for secure IP-centric communications. It supports the efficient delivery of resilient, secure services and is inherently flexible to meet today’s and tomorrow’s needs. Designed for fixed, land mobile, airborne and naval platforms, Proteus delivers maximum satellite bandwidth efficiency and data throughput while offering robust protection against jamming and interception. The modem is suitable for operation through all transparent satellite payloads on all commonly encountered frequency bands.

The modem offers unparalleled flexibility, lower through life costs and the means to maintain interoperability as network-centric architectures evolve.

Using the Software Communications Architecture framework, multiple waveforms can be stored and loaded on demand, thus redefining the modem’s capabilities through managed software upgrades and enabling portability of waveforms. New functions can be cost-effectively developed and installed without changes to the modem hardware or platform. Ethernet interfaces, advanced routing and Quality of Service protocols are supported as a part of the feature-rich IP functionality. Sophisticated diagnostic tools are also incorporated.

**Features**

- Ability to reconfigure and upgrade by over-the-air software download
- Flexibility to incorporate and tailor new waveforms
- Multiple waveforms, including bandwidth efficient, protected anti-jam and low power spectral density, on a common hardware platform
- Adaptive Coding and Modulation (ACM)
- Scope to apply national Network Security (NETSEC) and Transmission Security (TRANSEC)
- DAMA for efficient use of allocated bandwidth
- Support for Dynamic Link Exchange Protocol (DLEP)
- Full QoS, VLAN and routing capabilities
- Seamless integration with existing IP baseband
- Selectable Layer 2 and Layer 3 baseband operation

**Waveforms**

- Frequency Hopping over entire Bandwidth (up to 1.2 GHz)
- Low Power Spectral Density (LPSD)
- Dynamic Single Carrier Per Channel (Dynamic SCPC)

**Waveform Features**

- ESM and EMCON Silence supported
- Transmission Security (TRANSEC)
- Network Security (NETSEC)
- Security option software or hardware
- Data rates 112kbps – 10Mbps
- Demand Assigned Multiple Access (DAMA)
- Adaptive Coding and Modulation (ACM)

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**Description**

<table>
<thead>
<tr>
<th>Description</th>
<th>Ground IP Modem</th>
<th>Airborne IP Modem</th>
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<tbody>
<tr>
<td>IF Interface</td>
<td>Extended L Band (950 to 2150MHz)</td>
<td></td>
</tr>
<tr>
<td>Input Power Levels</td>
<td>-55dBm to 0dBm</td>
<td>-40dBm to -5dBm</td>
</tr>
<tr>
<td>Output Power Levels</td>
<td>-55dBm to 0dBm</td>
<td>-40dBm to -5dBm</td>
</tr>
<tr>
<td>Frequency Reference Support</td>
<td>External (10MHz)</td>
<td>External (10MHz)</td>
</tr>
<tr>
<td>Time Reference Support</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Management Interfaces</td>
<td>IP ✓ Panel ✓</td>
<td></td>
</tr>
<tr>
<td>User Data</td>
<td>10/100/1000 Ethernet</td>
<td>10/100 Ethernet</td>
</tr>
<tr>
<td>Form Factor</td>
<td>19” Rack Mount, 1U high 450mm deep</td>
<td>Sub1/2 ATR ARINC 193.5mm (H) x 124mm (W) x 175mm (L)</td>
</tr>
<tr>
<td>Mass</td>
<td>6kg &lt;5kg</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to +50°C Operating -10°C to +60°C Storage</td>
<td>-20°C to +55°C Operating (-40°C to +70°C for 30 mins) -40°C to +85°C Storage</td>
</tr>
<tr>
<td>Cooling</td>
<td>Internal Fan Cooled</td>
<td>Forced Air</td>
</tr>
<tr>
<td>Power</td>
<td>110V to 240V AC 65W</td>
<td>28V DC 70W</td>
</tr>
</tbody>
</table>

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