The Modulus Technology MiniPod complete with RFR Receiver is a lightweight ruggedised GPS receiver, designed to survive 50m immersion, that transmits data back to a vessel or the shoreline.

The shock mounted robust dual L1 + L2 band GPS receiver has both wired and wireless applications, including providing streamer head and tail positioning and source positioning for 3D UHR seismic operations.

The interconnect flexibility of the MiniPod allows for RS232, RS485, 1PPS and wireless options to be configured by the user. It is externally powered by default with an external battery option.

The MiniPod can be fitted with an internal compass to provide accurate heading, pitch and roll of equipment.

### Key Features
- Robust GPS receiver with integrated antenna.
- Dual band L1 + L2 receiver.
- Full constellation of positioning satellites.
- Submersible, 50m rated.
- Wide area corrections or external RTCM.
- Internal and external shock mounts.
- Worldwide RF remote wireless data options.
- Atlas correction option.
- External battery option.
- Internal compass option.

### Applications
- Seismic streamer head and tail positioning.
- Seismic source positioning.
- Ideal for subsea excavation vehicles (jetting & trenching), and surface positioning of towed sensors such as magnetometers, operating in shallow waters.

### Technical Specification

#### MODEL VARIANTS

<table>
<thead>
<tr>
<th>Model</th>
<th>GPS Receiver</th>
<th>AHRS</th>
<th>External RF Antenna</th>
<th>RF Directional Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCN-101G</td>
<td>✓</td>
<td></td>
<td></td>
<td>800m</td>
</tr>
<tr>
<td>BCN-101GA</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>800m</td>
</tr>
<tr>
<td>BCN-101A</td>
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<td>800m</td>
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<tr>
<td>BCN-101G-EXT</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>2000m</td>
</tr>
<tr>
<td>BCN-101GA-EXT</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2000m</td>
</tr>
</tbody>
</table>
**SPECIFICATION**

**Configuration**

Receiver type: GNSS Multi-frequency L1 & L2, RTK with carrier phase.

GNSS compatibility: GPS, GLONASS, BeiDou, QZSS & GALILEO

Channels: 372

SBAS tracking: 3 channel parallel tracking.

Differential Options: SBAS, Autonomous, External RTCM or CMR, RTK, L-Band (Atlas) DGPS

**Horizontal Accuracy (RMS 67%)** Dependent on corrections:

<table>
<thead>
<tr>
<th>Option</th>
<th>Accuracy (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTK</td>
<td>8mm + 1ppm</td>
</tr>
<tr>
<td>SBAS (WAAS)</td>
<td>0.3m</td>
</tr>
<tr>
<td>Unaided</td>
<td>1.2m</td>
</tr>
<tr>
<td>Atlas H10</td>
<td>0.04m</td>
</tr>
<tr>
<td>Atlas H30</td>
<td>0.15m</td>
</tr>
<tr>
<td>Atlas H100</td>
<td>0.50m</td>
</tr>
</tbody>
</table>

**Warm up time (Typical):**

- From cold: <60s  (No almanac or real time clock)
- Warm start: <30s  (Almanac & RTC, no position)
- Hot start: <10s

**Connectivity**

- Connector: 8 pin MCBH connector (male)
- Power: 18-36VDC
- Communication: RS232 (2 bi-directional ports), RS485 (2 wire bi-directional), RS485 (4-wire)
- Position Protocol: NMEA 0183 protocols supported, (GPGGA, GPRMC & GPGLL standard)
- Refresh Rate: 10Hz standard, 20Hz optional
- Correction I/O Protocol: Hemisphere GNSS proprietary, ROX Format, RTCM v2.3, RTCM v3.2, CMR, CMR+
- 1PPS: 5V, 1ms pulse width, 20mA optional

**Integrated AHRS**

- Bearing resolution: 0.1° displayed. Internally calculated to 0.01°
- Heading sensor accuracy: 0.5° RMS standard; ±0.1° resolution/repeatability
- Pitch/Roll sensor accuracy: ±0.10° RMS ±0.1° resolution/repeatability

**OPTIONS**

- External Battery: Part number # BPK-101G-10 (10 days).
- External Omni-Directional RF Antenna. Part number # BCN-101G-4003.