1000 Series Midi Beacons incorporate Applied Acoustics’ proprietary Sigma acoustic protocols, proven for use with Applied Acoustics’ USBL tracking systems, other manufacturers’ USBL systems that operate with wide bandwidth transmissions as well as those using ‘narrow band’ tone signalling.

With an industry standard 5-pin connector, the beacons are quick and easy to configure using the 1082 Smart Switch or 1083 Multi-Charger that also activate and monitor the charging of the battery pack.

Key Features

- AAE proprietary Sigma bi-directional Spread Spectrum technology
- Quick, easy configuration
- Directional or omni-directional beam pattern, depending on application
- Externally configurable as transponder, responder or pinger
- Optional high power model to operate longer ranges
- Options for use with remote transducer

Applications

- General purpose tracking and positioning applications
- Static and dynamic operations e.g. ROV, sidescan sonar

Technical Specification

MODEL TYPES – PHYSICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Beam Pattern</th>
<th>SPL*</th>
<th>Survival Depth</th>
<th>Diameter</th>
<th>Length</th>
<th>Weight in air</th>
</tr>
</thead>
<tbody>
<tr>
<td>1033H</td>
<td>±30°</td>
<td>203dB</td>
<td>4000m</td>
<td>100mm</td>
<td>540mm</td>
<td>6.86kg/3.01kg</td>
</tr>
<tr>
<td>1035</td>
<td>±45°</td>
<td>200dB</td>
<td>4000m</td>
<td>100mm</td>
<td>540mm</td>
<td>6.86kg/3.01kg</td>
</tr>
<tr>
<td>1039</td>
<td>±45°</td>
<td>203dB</td>
<td>4000m</td>
<td>100mm</td>
<td>540mm</td>
<td>6.86kg/3.01kg</td>
</tr>
<tr>
<td>1039H</td>
<td>±90°</td>
<td>191dB</td>
<td>4000m</td>
<td>100mm</td>
<td>540mm</td>
<td>6.84kg/3.01kg</td>
</tr>
</tbody>
</table>

*Effective SPL is 5dB less when used with iXblue GAPS USBL systems

ELECTRICAL SPECIFICATION

Battery
- Battery type: Rechargeable. NiMH as standard
- Listening life: 90 days
### Operational life, AAE Spread Spectrum

<table>
<thead>
<tr>
<th>Model</th>
<th>Operational Life at 1.0pps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1033H</td>
<td>30 hours</td>
</tr>
<tr>
<td>1035</td>
<td>60 hours</td>
</tr>
<tr>
<td>1035H</td>
<td>30 hours</td>
</tr>
<tr>
<td>1039</td>
<td>150 hours</td>
</tr>
</tbody>
</table>

Operational life reduced when used with non AAE USBL systems

### Configuration

- **Transmit frequency range**: 24 – 33.5kHz
- **Receive frequency range**: 17 - 31kHz
- **Turn around time**: 15/30/60/100ms dependent on channel selection
- **Transmit pulse width**: 1.5/3.0/10ms dependent on channel selection

### External Inputs

- **Connector type**: MCBH5M 5-way connector
- **Responder key**: + 5 to 25 Volts
- **External power**: 22 to 35 Vdc@120mA
- **Charge**: Onboard fast charger for 4 hour charge, typical. Activated and monitored via 1082 Smart Switch or 1083 Multi-Charger

### USBL Compatibility

AAE 1000 Series beacons use Tone, Chirp, MFSK, DSSS and FHSS as transmission/reception protocols, allowing cross-compatibility with many USBL systems, including:

- **AAE Nexus**: Spread Spectrum systems
- **AAE Easytrak**: All models, tone systems
- **ixblue**: GAPS USBL
- **Kongsberg**: HPR/HiPAP
- **ORE/Edgetech**: USBL
- **Sonardyne**: USBL

### Options

- Compatibility with USBL systems not listed above
- Non-rechargeable batteries (alkaline)
- Remote transducer (supplied with Model BCN-1030 electronic bottle); RM90, omni-directional rated to 1500m. RM45, directional, rated to 2000m. RM15, directional, rated to 4000m. Interconnect cable for each option, 2m standard
- Depth sensors 100m/300m/1000m/2000m/4000m (adds D suffix to model number)
- Digital depth transmission when used with AAE Nexus USBL systems
- Floatation collar, Toroidal beam (1035)