1100 Series Mini Beacon

1100 Series Mini Beacons incorporate the next generation of Applied Acoustics’ Sigma 2 acoustic protocols. Utilising bi-directional wide band width spread spectrum provides precise range resolution and positional stability.

The Sigma 2 protocols are designed for use with Easytrak Nexus 2. The 1100 Series also retains compatibility with all Easytrak systems and other USBL manufacturers.

The 1100 series coupled with the Nexus 2 provides Multi-Fire functionality, providing positional updates in <3 sec from an array of 10 beacons.

The MiQ Data Uplink function provides 3rd party data plus position to the surface for a variety of applications.

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 2 bi-directional spread spectrum technology
- Precise range resolution
- Multi-Fire common interrogate compatibility
- MiQ Data uplink functionality
- Quick and easy configuration
- Directional or omni-directional beam pattern options available
- High power option model to operate longer ranges
- Auto tune detect for optimal performance
- Options for use with remote transducers

Applications

- General purpose tracking and positioning applications
- Static and dynamic operations e.g. ROV, sidescan sonar
- Navigation + Data for monitoring third party sensors

Technical Specification

MODEL TYPES – PHYSICAL SPECIFICATION
Housing material: Hard anodised aluminium, with clear protection sleeve and stainless steel cage

<table>
<thead>
<tr>
<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>1115</td>
<td>±45°</td>
<td>194dB</td>
<td>2000m</td>
<td>74mm</td>
<td>410mm</td>
</tr>
<tr>
<td>1115H</td>
<td>±30°</td>
<td>196dB</td>
<td>2000m</td>
<td>74mm</td>
<td>410mm</td>
</tr>
<tr>
<td>High Power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1119</td>
<td>±90°</td>
<td>188dB</td>
<td>1500m</td>
<td>74mm</td>
<td>395mm</td>
</tr>
<tr>
<td>1122</td>
<td>±20°</td>
<td>202dB</td>
<td>4000m</td>
<td>95mm</td>
<td>418mm</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**: 60 days
- **Operational life, AAE Sigma 2**: Dependent on pulse rate and operational mode
  - 1115: 55 hours at 1.0pps
  - 1115H: 35 hours at 1.0pps
  - 1119: 55 hours at 1.0pps
  - 1122: 35 hours at 1.0pps
- Operational life reduced when used with non AAE USBL systems.

**Configuration**
- **Transmit frequency range**: 21 - 31kHz
- **Receive frequency range**: 17 - 31kHz
- **Turnaround time**: Auto select upon protocol. User defined
- **Transmit pulse width**: Auto select upon protocol
- **Refresh rate**: >1Hz
- **Multi-Fire**: 10 IDs
- **MIQ Data Uplink**: Navigation + Data @ 800Bps payload
  - Fixed RS232 interface @ 9600, 8, N, 1

**External Inputs**
- **Connector type**: MCBHS5 5-way connector
- **Responder key**: + 5 to 25 Volts
- **External power**: 22 to 35 Vdc@80mA
- **Charge**: Onboard fast charger for 3 hour charge, typical. Activated and monitored via 1082 Smart Switch or 1083 Multi-Charger

**USBL COMPATIBILITY**
AAE 1100 Series beacons use Tone, Chirp, MFSK, DSSS and FHSS as transmission/reception protocols, allowing cross-compatibility with many USBL systems, including:

- AAE Nexus, Nexus 2: Sigma 1, Sigma 2 Spread Spectrum systems
- AAE Easytrak: All models, tone systems
- iXblue: GAPS USBL
- Kongsberg: HiPAP
- Sonardyne: USBL

**OPTIONS**
- Compatibility with USBL systems not listed above
- Non-rechargeable batteries (alkaline)
- Survival depth to 4000m
- Remote transducer (supplied with Model BCN-1110 electronic bottle);
- RM90, omni-directional rated to 1500m. RM45, directional, rated to 2000m.
  - Inter connect 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