APPLIED ACOUSTICS
Underwater Technology
An AAE Technologies Group Company

Quick Start Guide
1300A Micro Beacons

Model Types

Model	Beam Pattern	SPL	Dia.	Length	Survival Depth
1319A	±90°	183dB	52mm	298mm	600m
1329A	±90°	183dB	52mm	298mm	600m

Weight in Air/Water: 1319A 1000g/440g
1329A 1200g/550g

Packing List

- 1319A / 1329A Beacon
- BCN-0319-3003 – Shorting on connector
- BCN-1319A-4000 – Communications lead
- BCN-1010-8002 - Acoustic support disc

Beam Pattern

Omni-directional (±90°)

Handling

Although these beacons are resistant to mechanical vibration and shock, every effort should be made to avoid careless handling.

Beacon Support and Mounting

The beacon must be held securely by means of a mechanical clamp or clamps and to not overstress the beacon's main tube. To avoid corrosion, any attachments must be electrically isolated and preferably non-metallic.

NOTE: - Damage to the beacon's anodising must be avoided at all cost, as this will reduce the operational life of the beacon.

When mounting a beacon, its position should be considered to maximise its operational performance. Beacons need to be mounted so that there is a clear and unobstructed sound path between the transducer and the ship's tracking system.

1319A Micro Beacon

Transducer — Fit Nylon Screws Only — Main Body Tube (Protective sleeve not shown) — End-cap

Operation

WARNING: - Before deployment: Fit Shorting on connector. If ROV powered, ensure Pins 2 & 5 are connected together to operate.

- For transportation and storage ensure the Shorting on connector has been fully removed. In this configuration the beacon is switched off.
- For normal operation, switch beacon ON by fitting the Shorting on connector.
- Channel configuration is controlled by the 'Beacon Editor' software (V1.5 or above) via connection to the Beacon using the communications lead BCN-1319A-4000.
- Charge battery by connecting the communications lead BCN-1319A-4000 to the Beacon and a computer USB port. Fast charging available by connecting to a mains USB charger.

NOTE: - High internal temperatures may occur if the beacon is left out in direct, strong sun light. This may lead to reduced battery operational life span and reduced charge capacity or failure during charging. A 72°C thermal fuse is included in the battery pack(s) which will render the beacon inoperative should this temperature be exceeded.

Channel Configuration

- Connect communication lead to the Beacon and to PC USB port
- Check LED is flashing on communication lead.
- Use 'Beacon Editor' software (V1.5 or above) to select or confirm channel configuration.
- Remove communication lead.
- To extend battery life, only fit the Shorting on connector when ready to use or test.

Functionality

Using an AAE PAM tester:

- Select matching channel in the transponder testing function. PAM will transmit, receive and display turnaround times. It should be possible to achieve short ranges in air (1 metre typical).

Charging

ROV

Connect 24VDC 50mA supply across MCBH5M connector external supply (pin 4) to ground to trickle charge battery pack.

USB

- Connect communication lead to Beacon and to either a PC USB port or the mains USB charger.
- For charge status, check the LED flashing rate on the communication lead.
- On starting a charge cycle the Beacon will start in trickle charge mode for at least 2 minutes to check the condition of the battery.
- Status of battery can be seen in 'Beacon Editor'.

LED Charge Rate indicator:-

Blink Rate	Function
2 Seconds	Trickle Charging
1 Second	Normal Charging
0.5 Second	Fast Charging
Permanent on	Charge Complete
Uneven blink	Error, charge stopped

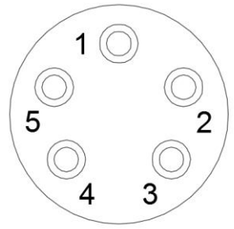
The recommended operating temperature for the Mains USB charger is 0 to 40°C. It is also advised that after charging the Beacon it is vented of any internal pressure. Refer to the maintenance section on operating the PRV.

NOTE: If a charge cycle is interrupted before completion, wait 30 minutes before continuing to ensure a full charge is achieved.

Charging Times

Computer USB port:	1319A	8 hours
	1329A	16 hours (Typ.)
VAC Mains USB charger:	1319A	4.0 hours
	1329A	8 hours

Micro WET-CON Pinout



Micro WET-CON Pinout
Beacon External View

PIN	FUNCTION
1	RESPONDER/COMMS
2	0V
3	CHARGE STATUS
4	24 TRICKLE
5	ON/OFF SHORT/COMMS

MCBH5M Bulkhead Connector Specification

PIN 1. -External Trigger
-Input Range +5 to +24VDC
-1ms minimum Key
PIN 2. -0VDC Common
PIN 3. -Charge Status Output
PIN 4. -External Supply
-Input Range +18 to +32VDC 50mA
-Recommended fuse = 200mA (max)
PIN 5. -Power Switch
-Connect to Pin 2 to switch on Beacon

Maintenance

Initial Inspection

- Inspect the beacon for obvious signs of mechanical damage or corrosion.

Before charging / channel configuration

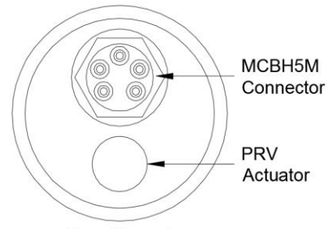
- Before connecting to the beacon, ensure all connections are not damaged.

'O' Rings

- Typical 'O' ring guidelines are to check their integrity and are clean, ensure all seals and sealing faces are undamaged and contamination free, with a light covering of 'O' ring lubricant.

Pressure Relief Valve (PRV)

- A Pressure Relief Valve (PRV) is fitted to all 1300 Series beacons as a safety precaution. Any Internal pressure can be vented by pulling out the actuator on the connector endcap. Once fully vented, ensure the PRV is fully seated back into the endcap before deployment.



Rear View of
Connector Endcap

Compatibility

AAE Easytrak- Tone Channel

Channel	RXF1 (Hz)	RXF2 (Hz)	TXF1 (Hz)	TAT (ms)	Pulse Width (ms)
A0	17500	-	30000	30	2
A1	18500	-	28000	30	2
A2	19500	-	26000	30	2
A3	20500	-	29000	30	2
A4	21500	-	27000	30	2
A5	22500	-	30000	30	2
A6	18000	20000	27000	60	2
A7	18000	21000	28000	60	2
A8	18000	22000	30000	60	2
A9	18000	23000	29000	60	2
B0	20000	18000	30000	60	2
B1	20000	21000	29000	60	2
B2	20000	22000	28000	60	2
B3	21000	18000	27000	60	2
B4	21000	20000	26000	60	2
B5	21000	22000	28000	60	2
B6	21000	23000	30000	60	2
B7	22000	18000	26000	60	2
B8	17000	-	25000	30	2
B9	19000	-	25000	30	2

Sigma II Quickset- Spread Spectrum

Channel	Wakeup Freq (Hz)	Reply Code	Transponder TAT (ms)	Responder TAT (ms)
AA	18000	17	75	75
AB	18500	18	75	75
AC	19000	19	75	75
AD	19500	20	75	75
AE	20000	21	75	75
AF	20500	22	75	75
BC	21000	23	75	75
BD	21500	24	75	75

iXblue

Compatible channels as detailed below: -

The Interrogate Frequency is selectable from 19.5kHz to 22.5kHz in 1kHz steps.

The Reply Code is selectable from 00 to 09, 22 & 23 for a total of 12 codes.

Turn-Around-Time is selectable from 20 milliseconds to 200 milliseconds in 1 millisecond steps.

Kongsberg HPR3

Channel	RXF1 (Hz)	TXF1 (Hz)	Trans TAT (ms)	Pulse Width (ms)
01	20492	29762	30	10
02	21552	30488	30	10
03	22124	31250	30	10
04	22727	31847	30	10
05	23364	32468	30	10
06	24038	27173	30	10
07	24510	27777	30	10
08	25000	28409	30	10
09	26042	29070	30	10
11	21552	27173	30	10
22	22727	28409	30	10
33	23923	29762	30	10
44	25126	31250	30	10
55	26455	32468	30	10

Kongsberg HiPAP

Channel	RXF1 (Hz)	RXF2 (Hz)	TXF1 (Hz)	Trans TAT (ms)	Pulse Width (ms)
12	21000	21500	29250	60	10
13	21000	22000	29750	60	10
14	21000	22500	30250	60	10
15	21000	23000	30750	60	10
16	21000	23500	27250	60	10
17	21000	24000	27750	60	10
18	21000	24500	28250	60	10
21	21500	21000	28500	60	10
23	21500	22000	29500	60	10
24	21500	22500	30000	60	10
25	21500	23000	30500	60	10
26	21500	23500	27000	60	10
27	21500	24000	27500	60	10
28	21500	24500	28000	60	10
31	22000	21000	28750	60	10
32	22000	21500	29250	60	10
34	22000	22500	30250	60	10
35	22000	23000	30750	60	10
36	22000	23500	27250	60	10
37	22000	24000	27750	60	10
38	22000	24500	28250	60	10
41	22500	21000	28500	60	10
42	22500	21500	29000	60	10
43	22500	22000	29500	60	10
45	22500	23000	30500	60	10
46	22500	23500	27000	60	10
47	22500	24000	27500	60	10
48	22500	24500	28000	60	10
51	23000	21000	28750	60	10
52	23000	21500	29250	60	10
53	23000	22000	29750	60	10
54	23000	22500	30250	60	10
56	23000	23500	27250	60	10
57	23000	24000	27750	60	10
58	23000	24500	28250	60	10
61	23500	21000	28500	60	10
62	23500	21500	29000	60	10
63	23500	22000	29500	60	10
64	23500	22500	30000	60	10
65	23500	23000	30500	60	10
67	23500	24000	27500	60	10
68	23500	24500	28000	60	10
71	24000	21000	28750	60	10
72	24000	21500	29250	60	10
73	24000	22000	29750	60	10
74	24000	22500	30250	60	10
75	24000	23000	30750	60	10
76	24000	23500	27250	60	10
78	24000	24500	28250	60	10
81	24500	21000	28500	60	10
82	24500	21500	29000	60	10
83	24500	22000	29500	60	10
84	24500	22500	30000	60	10
85	24500	23000	30500	60	10
86	24500	23500	27000	60	10
87	24500	24000	27500	60	10

V-NAV

Channels 0001 to 7199 are supported.

Operational Life

Listening life	1319A	30 days min (at 2°C)
	1329A	45 days min (at 2°C)
Operational life	1319A	30 hours at 1.0pps (AAE Easytrak CH) 24 hours at 1.0pps (HiPAP / HPR400)
	1329A	72 hours at 1.0pps (AAE Easytrak CH) 56 hours at 1.0pps (HiPAP / HPR400)

Troubleshooting

Check for external damage to the bulkhead connector and transducer.

Check that the Beacon is recognised by 'Beacon Editor Software', and the correct channel selected.

Check that battery is charged.

Are you out of range? Maybe a higher powered unit is required. Are you within the beam pattern of the transducer? The beacon may not be 'illuminating' the vessel on account of obstructions or severe ray bending due to thermoclines.

Transportation by Air

All equipment should be switched off prior to air transportation. Switching off is achieved by removing the Shorting on connector from the Beacon.

NiMH Battery Packs
This battery pack is **not** classified as dangerous goods for transportation by air.
Any paperwork accompanying beacons that use these battery types should state this clearly.

End of Life Recycling / Disposal

Within the EU all electronic components and batteries must be taken for separate collection at the end of their working life under EU WEEE directives. Applied Acoustics as a manufacturer within the EU will responsibly dispose of any returned end of life Applied Acoustics components / batteries through a registered WEEE scheme. In order to prevent uncontrolled waste disposal and promote re-cycling please return any end of life Applied Acoustic components shipping paid by sender to our UK head office. There may be a charge for this service. Please contact Tech Support for a RMA number prior to shipping.

Applied Acoustic Engineering Ltd has made every effort to ensure that the information contained in this guide is correct at time of print. However our policy of continual product improvement means that we cannot assume liability for any errors which may occur. Please refer to operation manual for further information.

Spares

The following beacon spares are available from stock. Please reference the model number and serial number of the unit you require spares for.

BCN-0319-3003	Shorting on Connector
BCN-1319A-4000	Communication Lead
Kit-13*xx* 'O' Rings	13*xx* 'O' Ring Service Kit
Kit-121*x*-131x Battery	131*x* Replacement Battery
Kit-132*x* Battery	132*x* Replacement Battery

Battery Replacement

In due course, rechargeable batteries will require replacement and this can be achieved quite simply with the 1300 Series. We recommend a maximum 3 year life for re-chargeable packs. Replace battery packs with Applied Acoustic Engineering battery packs only. Applied Acoustic Engineering battery packs are constructed with numerous safety features for long operational life.

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Thank you for choosing AAE Technologies Ltd as one of your equipment suppliers. We hope you experience many years of reliable operational use from our products.

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Modulus Technology Ltd carries out all technical support, servicing and repairs for all companies in the AAE Technologies Group. If you have any technical issues with our products please contact the Modulus Technology team:

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