Gaps Series

Pre-calibrated USBL positioning and communication systems

Gaps Series are Ultra Short Baseline (USBL) positioning and communication systems which combine a USBL antenna and a fiber-optic gyroscope (FOG) in the same housing. Their unique 3D acoustic array enables tracking and communication from the deep sea to extremely shallow water, even at angles above horizontal.

FEATURES

- Compact, all-in-one AHRS/INS and USBL solution
- Absolute georeferenced position for up to 40 beacons
- Acoustic communication (telemetry)
- Compatible with dynamic positioning systems
- Over 500 available preconfigurable targets
- Simultaneous beacons tracking
- 3D acoustic array geometry
- 3rd party transponder compatibility

BENEFITS

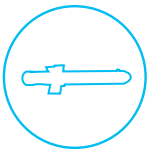
- Calibration-free
- Horizontal-tracking
- Highly accurate positioning
- Robust and stable positioning
- Multiple tracking capabilities
- Plug & play deployment & operation

TRACK RECORD

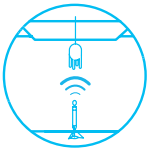
- Integration with all major DP (1, 2, 3 systems) on the market (PRS/MRU&Gyro in one equipment)
- Interfaced available with all major navigation suites
- Major Windfarm, O&G, Cable Laying, Scientific and Defense operations all around the world

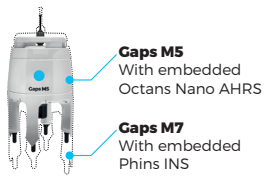
APPLICATIONS

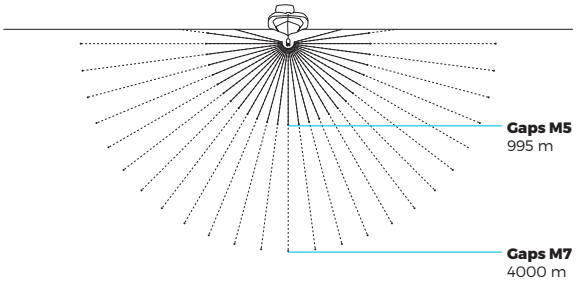

ROV tracking


AUV tracking


Marine work


DP





contact@ixblue.com | www.ixblue.com
EMEA +33 1 30 08 88 88 | Americas +1 303 993 4649 | APAC +65 6747 4912

iXblue

2022-02 | V002 - REV A

GAPS SERIES SPECIFICATIONS

Positioning[1]	Gaps M5	Gaps M7
Operating range	995m	4000m
Acoustic Precision* (% of slant range CEP50)	0.10%	0.06%
Absolute accuracy** (% of slant range CEP50)	0.2%	0.06%
Range / Bearing precision	0.02m / 0.10°	0.02m / 0.03°

Performance	Gaps M5	Gaps M7
Coverage	200 deg below acoustic array	200 deg below acoustic array
Operating frequency	21.5 to 30.5 kHz	21.5 to 30.5 kHz
Positioning rate	0.8 seconds	0.8 seconds
Number of target	40	40

Mechanical	Gaps M5	Gaps M7
Housing	Carbon fiber painted	Carbon fiber painted
Weigth in air/water	14 kg / NC	16 kg / -7 kg
Dimensions (HxØ)	520x296 mm	638x296 mm

INS/AHRS specifications	Gaps M5	Gaps M7
Type	AHRS	INS
Heading accuracy	0.15 deg seclat (RMS)	0.01 deg seclat (RMS)
Roll/Pitch accuracy	0.1° RMS	0.01° RMS

*: in vertical condition, acoustic and INS/AHRS precision. SNRin > 20 dB
**: In vertical conditions. Including GNSS error of 0.1m. Sound velocity profile compensated. Transponder transmit level = 191 ref µPa@1m. Slant range of 900m. SNR>20dB

contact@ixblue.com | www.ixblue.com
EMEA +33 1 30 08 88 88 | Americas +1 303 993 4649 | APAC +65 6747 4912

iXblue

GAPS SERIES SPECIFICATIONS

Environments

Temperature (Operating and storage)	-5 °C to +35 °C and -40 °C to +70 °C
Shock vibration	XPX 10-812 class B
EMC	89 / 336 / EEC – EN 60945

Interfaces

	Gaps M5	Gaps M7
Power supply	100 to 240 VAC / 50~60Hz or 24/36 VDC - 22 W	100 to 240 VAC / 50~60Hz or 24/36 VDC - 30 W
Control / command	Ethernet with web-based MMI	Ethernet with web-based MMI
Input / output	1x Ethernet (RJ45) and 4 x Serial (RS232/422/485)	1x Ethernet (RJ45) and 4 x Serial (RS232/422/485)
Synchronisation	TTL (BNC) 2 ouputs and 2 inputs (1pps)	TTL (BNC) 2 ouputs and 2 inputs (1pps)

GAPS BOX SPECIFICATIONS

Dimension	233 mm x 330 mm x 94 mm
Weight	4.6 kg
Temperature (Operating and storage)	-5°C to +50°C -40°C to +80°C

GAPS SERIES TRANSPONDERS

Gaps is compatible with all iXblue MF beacons including:

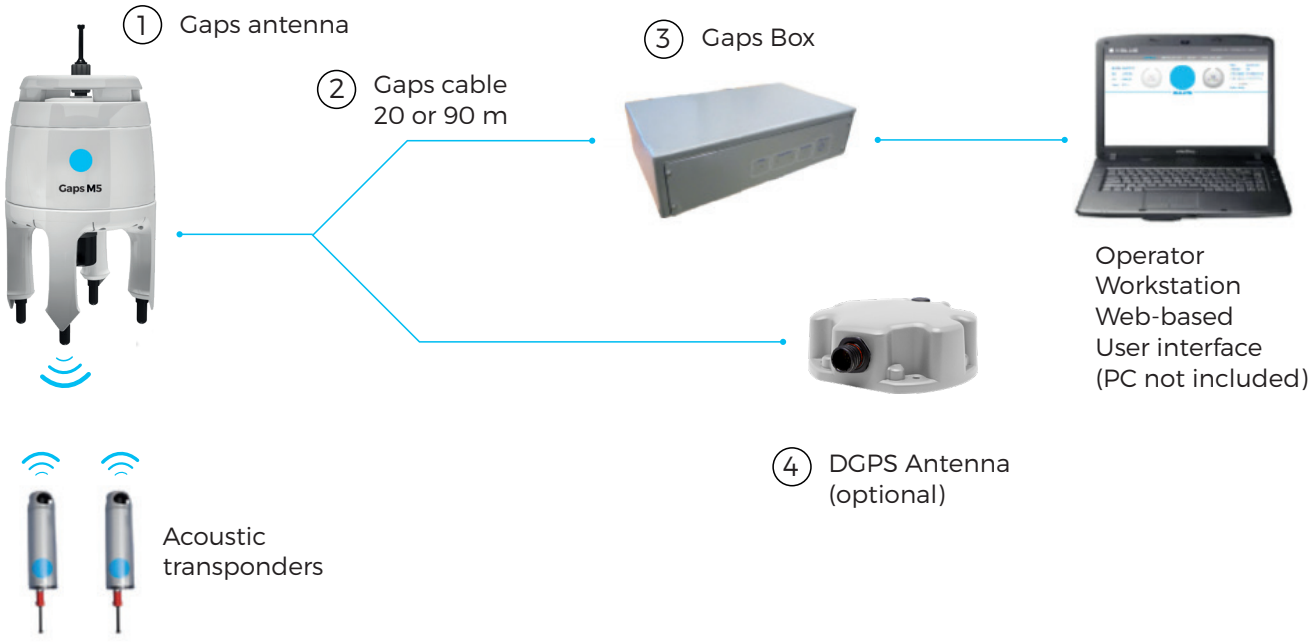
Name	Description	Acoustic communication	Applications
MT9x2 series 	Internal rechargeable battery, OEM, 1000, 3000m depth rated		ROV, Tow fish and diver positioning
MT8x2 series 	Internal Lithium battery 3000m and 6000m depth rated		ROV, Tow fish and diver positioning
MTBx2 series 	Mini transponder for AUV OEM and 300m depth rated	●	AUV positioning
Canopus 	LBL and Sparse LBL Intelligent transponder 4000 and 6000m depth rated	●	AUV positioning, LBL calibration, Dynamic Positioning (DP)

Third-party transponders compatibility: contact iXblue

contact@ixblue.com | www.ixblue.com
EMEA +33 1 30 08 88 88 | Americas +1 303 993 4649 | APAC +65 6747 4912

iXblue

COMPONENTS

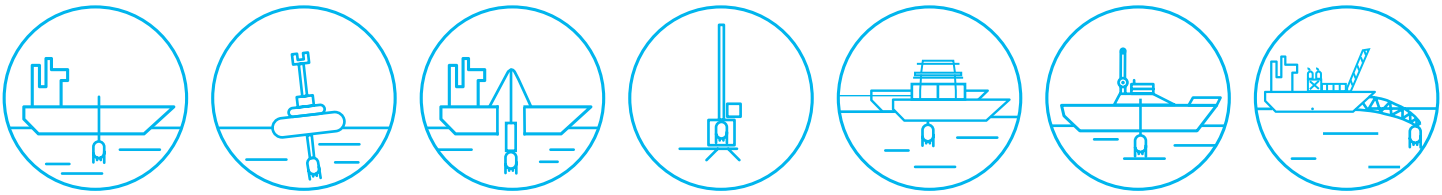


1 **Gaps antenna**
This is the main part of the Gaps system. It combines a USBL acoustic array and INS/AHRS in the same mechanical structure.

2 **Gaps cable**
20/50/95m long cable used to communicate with Gaps head. Extendable up to 190m with a Repeater Box.

3 **Gaps Box**
Gaps Box designed to interface between the Gaps head and external peripherals.

4 **DGPS Antenna**
A complete turnkey solution is available on option, including a GPS receiver.



contact@ixblue.com | www.ixblue.com
EMEA +33 1 30 08 88 88 | Americas +1 303 993 4649 | APAC +65 6747 4912

iXblue