



## Seabed inertial measurement units

### The SGR family

The SGR7 is a robust, high precision receiver designed to be an ultra-flexible user-friendly device. From standalone meter-level to RTK centimeter level positioning, the SGR7 is flexible to meet your positioning needs. Capable of receiving several PPP correction signals like Oceanix you can go up to 4cm accurate, base station free. With an integrated 4G modem, gigabyte switch, onboard intelligence, INS Ready, display, 555 channels, and comprehensive support for all current GNSS signals, the SGR7 is a state of the art GNSS receiver.

### Enhanced Connectivity

The SGR7 is equipped with numerous interfaces including an integrated switch providing two gigabyte ethernet ports, and several RS232/485/422 serial ports. To provide RTK the SGR has an integrated 4G modem, providing the convenience of no extra costs and space of an additional modem. The modem can be used for standard internet functionalities as well.

### Benefits / Features

- Future-proofed with current and upcoming GNSS signal support
- Rugged IP67 housing for reliable use in harsh environments
- Multiple communication interfaces for ease of integration
- Advanced Web UI for remote configuration and access
- Scalable positioning options from meter to centimeter-level
- Optional 16GB of on-board memory for data logging

### INS Ready

Using sensor fusion in bringing together two different but complementary technologies: GNSS positioning and inertial navigation. The absolute accuracy of GNSS positioning and the stability of inertial measurement unit (IMU) gyro and accelerometer measurement are tightly coupled to provide



an exceptional 3D navigation solution that is stable and continuously available, even during periods when satellite signals are blocked. The SGR7 supports IMU's from different manufacturers from low accuracy mems to high accuracy FOG units. All ITAR Free.

### Seabed IMU-S

The Seabed-IMU-S family are submersible inertial measurement unit's. An inertial measurement unit, or IMU, is an electronic device that measures and reports a vessel/vehicle's velocity, orientation, and gravitational forces, using a combination of accelerometers and gyroscopes, sometimes also magnetometers. The SBD-IMU-S family is ideal for all environments but especially designed for Marine applications that require accurate 3D position, velocity and attitude (roll, pitch and azimuth) data. The SBD-IMU-S family has been designed to function at a maximum water depth of 30 meters. This makes it perfect for underwater operations.

### Benefits

- Tactical grade IMU performance
- Ideal for size constrained applications;
- Continuous, stable positioning;
- ITAR Free

# IMU range



## SBD-IMU-S1

The SBD-IMU-S1 is a MEMS based IMU integrated with SPAN technology to deliver 3D position, velocity and attitude. The SBD-IMU-S1 features low noise gyros and accelerometers in a small, lightweight, waterproof enclosure. The IMU is factory calibrated and compensated over its temperature operating range. The SBD-IMU-S1 enables precision measurements for applications that require low cost, high performance and rugged durability in a very small form factor.

**Dimension: 140x110.47x71**

**Weight: 1.02 kg**



## SBD-IMU-S2

The SBD-IMU-S2 is designed to perform with extreme stability in the most demanding environments, including thermal ambient conditions, with outstanding shock and vibration performance, the high reliability of the fiber optic gyro, or FOG technology is a core feature that assures sustained IMU operation and mission success.

**Dimension: 140x116x104**

**Weight: 1.2 kg**



## SBD-IMU-S3

The SBD-IMU-S3 is a near navigation grade sensor it contains fiber optic gyros and fully temperature compensated Micro Electromechanically Systems (MEMS) accelerometers. The low noise and stable biases of the accelerometer and gyro sensors mean the SBD-IMU-S3 is well suited for marine, ground or airborne survey applications. The SBD-IMU-S3 offers extremely high performance and precise accuracy at an affordable price point, it is a commercially exportable IMU that offers the highest level of performance in our IMU portfolio.

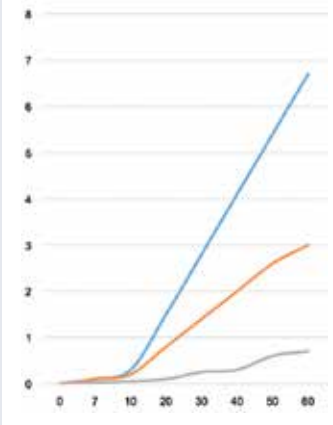
**Dimension: 212x185x170**

**Weight: 7kg**

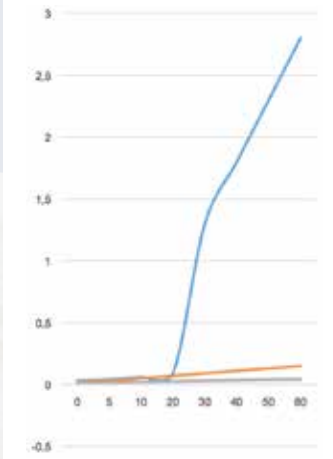
		IMU specs			SPAN System Attitude		
					RTK		PP
6.8W	8W	3.6W					
Commercial	Commercial	Commercial			Roll	Pitch	Heading
200 Hz	200 Hz	Up to 125 Hz					
≤0.5 deg/hr	≤0.05 deg/hr	0.05 deg/hr			Heading	Roll	Pitch
FOG	FOG	MEMS			Roll	Pitch	Heading
-40°C to +55°C	-40°C to +75°C	-40°C to +65°C					
30 m	30 m	30 m					
9g RMS	9g RMS	9g RMS					
8g RMS	8g RMS	8g RMS					
0.007	0.01	0.015					
0.007	0.01	0.015					
0.010	0.02	0.080					
0.007	0.01	0.015					
0.007	0.01	0.015					
0.010	0.02	0.080					

### SPAN Performance

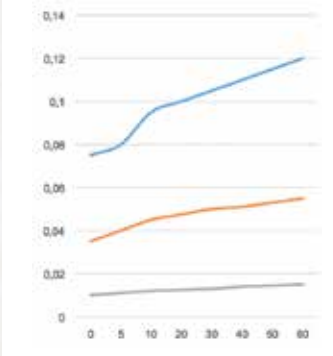
Horizontal Position Error (m)



3D velocity Error (m/s)



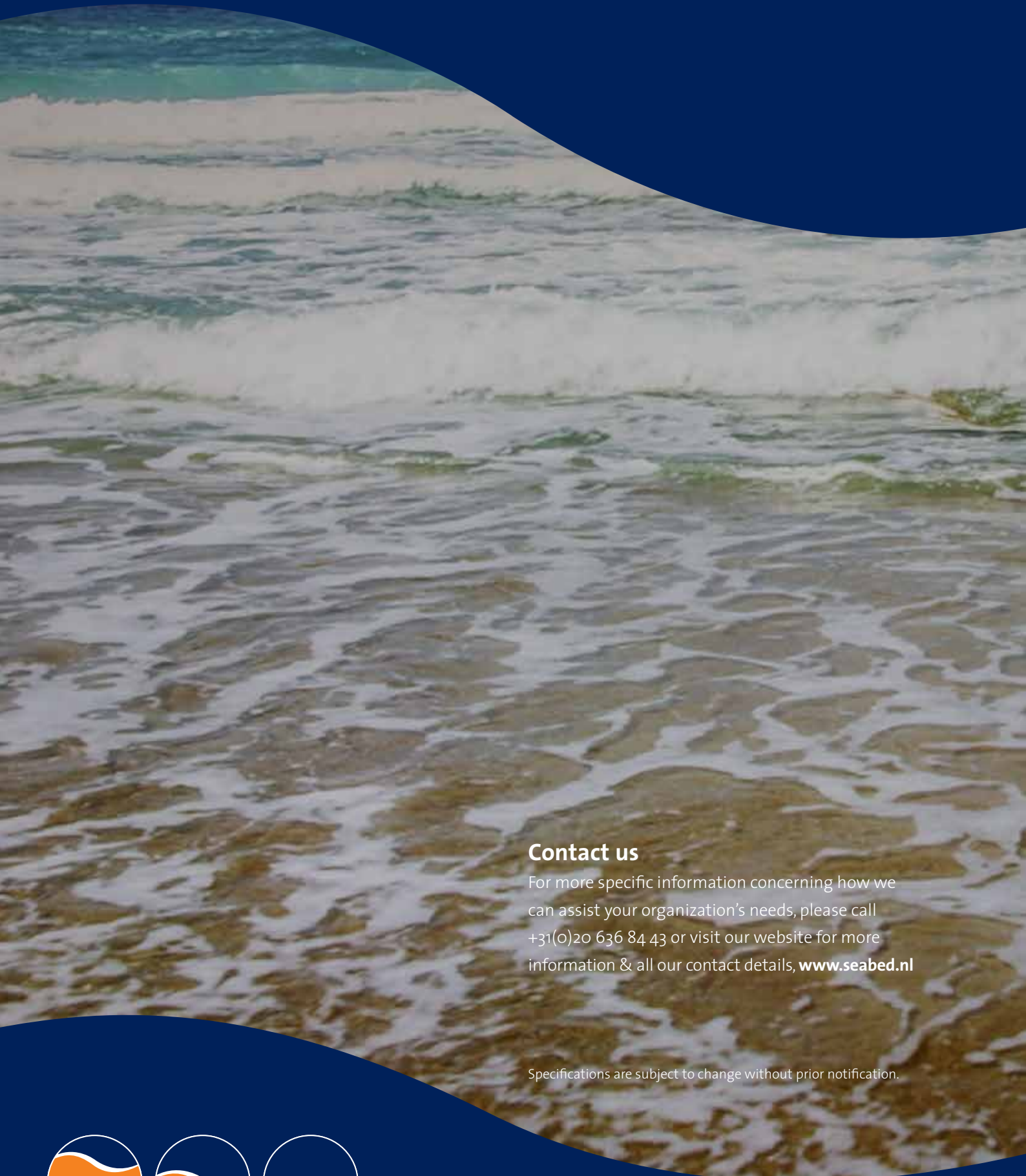
Heading Error (Deg)



— SBD-IMU-S1

— SBD-IMU-S2

— SBD-IMU-S3



### Contact us

For more specific information concerning how we can assist your organization's needs, please call +31(0)20 636 84 43 or visit our website for more information & all our contact details, [www.seabed.nl](http://www.seabed.nl)

Specifications are subject to change without prior notification.



# SEABED

Getting to the bottom of things