Innomar "smart" Sub-Bottom Profiler

Innomar "smart" SBP

The **Innomar "smart"** model is the smallest member of the **Innomar** sub-bottom profiler family. It has been designed for inshore surveys in shallow waters down to 100 metres water depth using small boats, but can also be used in coastal areas.

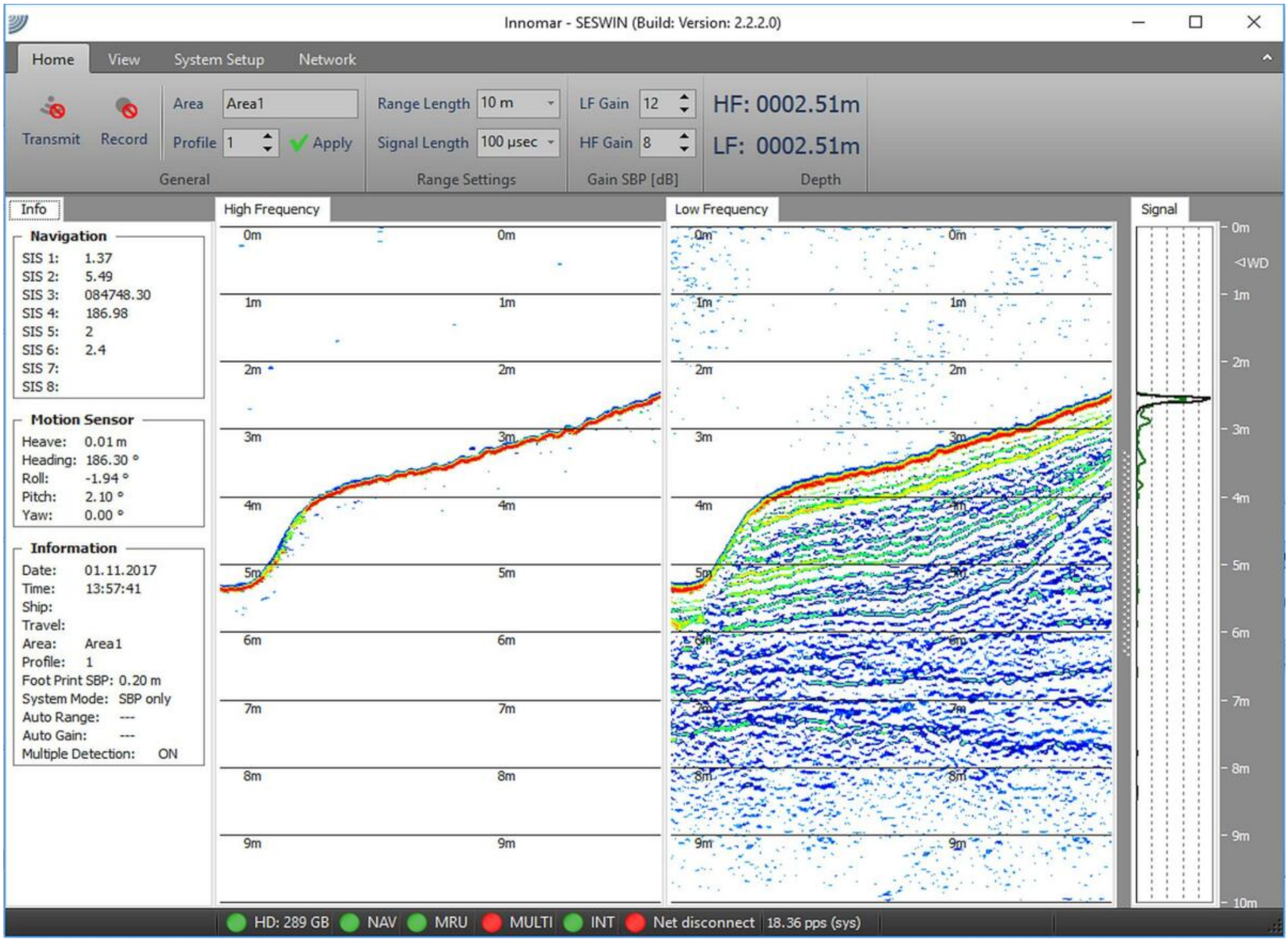
Because of its small size and weight this system is convenient even on the smallest boat and on uncrewed remotely or autonomously operated vehicles (USV/ASV).

The topside unit is controlled via Ethernet (LAN / WiFi) using any Windows based PC or tablet.

The **Innomar "smart"** model acquires full-waveform data that can be processed with any seismic software (SEG-Y format). **Innomar** also provides the ISE post-processing software specialized on the **Innomar SBP** data.

This model has been first launched as "SES-2000 smart" in 2017, **the latest generation has been introduced in 2022**.

The **Innomar "smart"** model is utilized on the **Innomar "autonomous"** uncrewed surface vehicle (USV) for remote-controlled and autonomous surveys in sensible environments.



Innomar "smart" SBP online data example (screenshot SESWIN data acquisition software)

Technical Specification

Water Depth Range	0.5 – 100 m below transducer
Sediment Penetration	up to 20 m (depending on sediment type and noise)
Sample / Range Resolution	c. 1 cm / up to 8 cm (depending on pulse settings)
Transmit Beam Width (-3dB)	c. ±2.5° for all frequencies / footprint c. 9% of water depth
Ping Rate	up to 40 Hz (pings/s)
Heave / Roll / Pitch Compensation	heave (depending on external sensor data)
Primary Frequencies (PHF)	c. 100 kHz (frequency band 90 – 110 kHz)
PHF Source Level / Acoustic Power	>235 dB//µPa re 1m / c. 2 kW
Secondary Low Frequency (SLF)	centre frequency 10 kHz
SLF Total Frequency Band	5 – 15 kHz
SLF Pulse Type	Ricker, CW
Pulse Width	user selectable 0.1 – 0.5 ms (CW)
Data Acquisition and Recording	digital 16 bit / c. 70 kHz (SLF full waveform, PHF envelope)
Data File Format	Innomar "RAW" (16 bit), "SEGY" (via SESconvert)
External Sensor Interfaces	HRP (motion, RS232), GNSS position, depth (both RS232 / UDP), trigger (BNC)

Bottom Detection	internal (PHF and SLF data) or external depth
Depth Accuracy	(2.5 cm @ 100 kHz / 5 cm @ 10 kHz) + 0.1% of water depth
Remote Control / Survey Integration	basic functions via COM or Ethernet (UDP), NMEA
Topside Unit (Transceiver)	W 47 cm × D 36 cm × H 17 cm (IP65) / weight c. 9 kg
Transducer	W 27 cm × D 21 cm × H 6 cm / weight c. 10 kg (incl. 15 m cable)
Transducer Depth Rating	Surface
Power Supply	10–30 V DC; optional external AC power supply (100–240 V AC)
Power Consumption	<100 W
Control / Data Storage PC	external PC/Laptop/Tablet (MS Windows 10/11 OS), not included
First / Latest Product Generation	2017 / 2022

Included Features

- 16-bit SLF full waveform data acquisition (sub-bottom data) / Innomar "RAW" data format
- SESWIN basic remote-control via COM / UDP (e.g. line start/stop, line name)

Optional Features

- SESWIN extended remote-control via Ethernet (all survey settings)
- external AC power adapter (100–240 V AC)
- Pre-configured laptop PC (control unit)
- Transducer bracket for over-side-mounting

Software

- **SESWIN** data acquisition software
- **SES Convert** data converter software (RAW to SEG-Y, XTF, ASCII)
- **SES NetView** for online data and system information display on remote computers
- **ISE** post-processing software (optional)

Technical specifications are subject of change without notice.

Product overview

"smart" SBP	"compact" SBP
"light" SBP	"standard" SBP
"sidescan-100"	

Shallow Water	High Power
Remotely Operated	Multi-Transducer
Innomar Software	

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1997 - 2024

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