

SONIC 2024

Multi Beam Echo Sounder



Features:

- Fifth generation Sonar Architecture
 - 200kHz – 400 kHz wideband operation
 - Embedded processor/controller
 - Low weight, volume and power consumption
 - Networked modules
- Fixed 1° along-track beam width
- Focused 0.5° across-track beam width
- Sonar data tagged with GPS time
- Available in 200m and 3000m immersion depth rating
- 60 kHz wideband signal processing
- Easy installation and operation



Applications:

- Hydrographic mapping
- Dredge control, Harbor mapping
- Historical site surveys
- Pipe line surveys, site surveys, excavation monitoring from ROV's and AUV's in the offshore sector.
- Fisheries habitat surveys
- Marine research
- Coastal monitoring

System Description:

The fifth generation Multi beam architecture networks the modules, and embeds the processor/controller in the sonar head. The processors and bulky custom interfaces that characterize previous generations have been eliminated. With a wide operating frequency band of 200 kHz to 400 kHz, the user has unparalleled flexibility in trading off resolution and range and controlling interference from other active acoustic systems. The unprecedented 60 kHz signal bandwidth offers twice the resolution of any other commercial sonar in both data accuracy and image.

The Sonar consists of the outboard projector and receiver modules, and the inboard Sonar Interface Module (SIM). Third party auxiliary sensors (GPS, and SVP) are connected to the Sonar Interface Module. The sonar data is tagged with GPS time.

The sonar operation is controlled from a graphical user interface on an optional flat panel PC or laptop which typically is equipped with navigation, data collection and storage applications software.

The operator sets the sonar parameters in the sonar control window, while depth, imagery and other sensor data are captured and displayed by the applications software.

Commands are transmitted through an Ethernet interface to the Sonar Interface Module. The Sonar Interface Module supplies power to the sonar heads, synchronizes multiple heads, time tags sensor data, and relays data to the applications workstation and commands to the sonar head.

The receiver head decodes the sonar commands, triggers the transmit pulse, receives, amplifies, beamforms, bottom detects, packages and transmits the data through the Sonar Interface Module via Ethernet to the control PC.

The elimination of separate processors and interface bottles makes this sonar *well suited for AUV installation*. Apart from the projector and receiver, the only hardware to be housed on the AUV is an interface board the size of a PC/104 board, Ethernet ports for interface, and the provision of isolated 48V DC power.

The standard data output format is compatible with SeaBat™ 8125 for ease of interface to existing systems. An expanded format will be released as part of a planned firmware update, to incorporate additional features.

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Systems Specification:

Frequency	200kHz-400kHz
Beamwidth, across track	0.5°
Beam width, along track	1.0°
Number of beams	256
Swath sector	130°
Max Range setting	400m
Pulse Length	10µs-1ms
Pulse Type	Shaped CW
Depth rating	200m
Operating Temperature	0°C to 40°C
Storage Temperature	-30°C to 55°C

Electrical Interface

Mains	90-260 VAC, 45-65Hz
Power consumption	<50W
Uplink/Downlink:	10/100/1000Base-T Ethernet
Data interface	10/100/1000Base-T Ethernet
Sync In, Sync out	TTL
GPS	1PPS, RS-232
Auxiliary Sensors	RS-232
Deck cable length	25m

Mechanical:

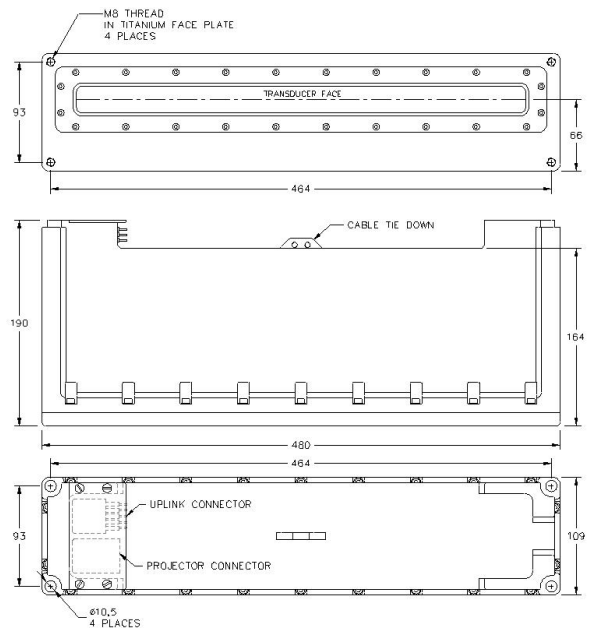
Receiver Dim (LWD)	480 x 109 x 190 mm
Receiver Mass	12 kg
Projector Dim (LWD)	273 x 108 x 86 mm
Projector Mass	6 kg
Sonar Interface Module	280 x 170 x 60 mm
Dim (LWH)	
Sonar Interface Module	3 kg
Mass	

Options:

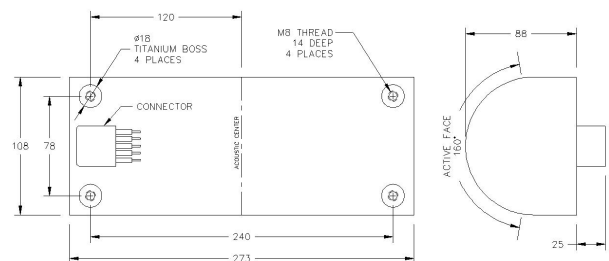
Deck cable	75 m underwater cable with MS dry connector, and Impulse wet connector.
Imagery output	Side scan and snippets backscatter
Re-usable shipping boxes	Durable custom shipping boxes
Applications computer	PC configured for running applications software
Applications laptop	Laptop configured for running applications software
3000m depth	3000m rated projector and receiver heads



Sonar Interface Module



Sonic 2024 Receiver



Sonic 2024 Projector

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