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
Beamwidth, across track
Beam width, along track
Number of beams
Swath sector
Max Range setting
Pulse Length
Pulse Type
Depth rating
Operating Temperature
Storage Temperature

200kHz-400kHz 0.5° 1.0° 256 130° 400m 10µs-1ms Shaped CW 200m 0°C to 40°C -30°C to 55°C

Electrical Interface

Mains	90-260 VAC, 45-65Hz
Power consumption	<50VV
Opiink/Downlink:	TU/TUU/TUUUBase-T
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) Receiver Mass	480 x 109 x 190 mm 12 kg
Projector Dim (LWD)	273 x 108 x 86 mm
Projector Mass	6 kg
Sonar Interface Module Dim (LWH)	280 x 170 x 60 mm
Sonar Interface Module Mass	3 kg
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	Durable custom
boxes	shipping boxes
Applications computer	PC configured for
	running applications
	software
Applications laptop	Laptop configured for
	running applications
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3000m rated projector

and receiver heads

3000m depth

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Sonar Interface Module



Sonic 2024 Receiver



Sonic 2024 Projector