

High Resolution  
Multibeam  
Systems  
for:

Hydrography

Offshore

Dredging

Defense

Research

# SONIC 2024

Wideband Multibeam Echo Sounder

## Features:

- Ultra High Density (UHD) capability\*
- MultiSpectral Mode and Pipeline Mode\*
- Wideband 170 kHz – 450 kHz
- Optional UHR 700 kHz
- Beam Widths to 0.3° x 0.6°\*\*
- Selectable swath 10° to 160°
- Sounding Depth to 400m+
- Embedded Processor/Controller
- Low Weight, Volume and Power

## System Description:

The Sonic 2024 is the world's first broadband - wideband high resolution shallow water multibeam echo sounder. With proven results and unmatched performance, the Sonic 2024 has become an industry standard, setting the bar in innovation and compelling customer value.

The Sonic 2024 provides user selectable operating frequencies between 170 kHz and 450 kHz to 1 Hz resolution, and optional 700 kHz, with unparalleled flexibility to trade off resolution and range and controlling interference from other active acoustic systems.

In addition to selectable operating frequencies, the Sonic 2024 provides variable swath coverage selections from 10° to 160°, the ability to rotate the swath sector, as well as roll stabilization. Both the frequency and swath coverage may be selected 'on-the-fly', in real-time during survey operations.

The Sonar consists of the three major components: a compact and lightweight projector, a receiver and a small dry-side Sonar Interface Module (SIM). Third party auxiliary sensors are connected to the SIM.



The sonar operation is controlled from a graphical user interface on a PC or laptop typically 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 compact size, low weight, low power consumption 50W and elimination of separate topside processors make Sonic 2024 *very well suited* for small survey vessel, ROV or AUV operations.

| 200 kHz | 450 kHz      | 700 kHz     |
|---------|--------------|-------------|
| 1° x 2° | 0.45° x 0.9° | 0.3° x 0.6° |

**Beam widths at selected frequencies (nadir)**

\*Patent Pending: 62/329,631

\*\*Beam width to 0.3° x 0.6° with UHR 700 kHz option

# SONIC 2024 Multibeam Echo Sounder

## Systems Specification:

|                          |   |
|--------------------------|---|
| Frequency                | 170 kHz - 450 kHz<br>with 1 Hz resolution<br>Optional 700 kHz |
| Beamwidth, Across Track* | 0.3°  |
| Beamwidth, Along Track*  | 0.6°  |
| Number of Soundings**    | Up to 1024 per ping, per head                                 |
| Selectable Swath Sector  | 10° to 160°   |
| Sounding Depth***        | 400 m+  |
| Pulse Length             | 15 $\mu$ s - 1115 ms  |
| Pulse Type               | Shaped CW   |
| Ping Rate                | Up to 60 Hz   |
| Depth Rating             | 100m, Optional<br>4000m, 6000m                                |
| Operating Temperature    | -10° C to 50° C   |
| Storage Temperature      | -30° C to 55° C   |

## Electrical Interface

|                   |                               |
|-------------------|-------------------------------|
| Mains             | 90-260 VAC, 45-65 Hz          |
| Power Consumption | 50 W Avg.                     |
| Uplink/Downlink:  | 10/100/1000Base-T<br>Ethernet |
| Sync In, Sync out | TTL                           |
| GPS               | 1PPS, RS-232                  |
| Auxiliary Sensors | RS-232, Ethernet              |
| Deck Cable Length | 15m, Optional 25m, 50m        |

## Mechanical

|                     |                    |
|---------------------|--------------------|
| Receiver Dim (LWD)  | 480 x 109 x 190 mm |
| Receiver Mass       | 12.9 kg            |
| Projector Dim (LWD) | 273 x 108 x 86 mm  |
| Projector Mass      | 3.3 kg             |
| Sonar Interface     | 280 x 170 x 60 mm  |
| Module Dim (LWH)    | 2.4 kg             |
| Sonar Interface     |                    |
| Module Mass         |                    |

## Sonar Options

TruePix™ Imagery Output  
 Ultra-High Resolution UHR 700 kHz  
 Switchable Forward Looking Sonar Output  
 Raw Water Column Data Output  
 I2NS™ Integrated Inertial Nav. System  
 Mounting Hardware & Assemblies  
 4000/6000m Immersion Depth Ratings  
 Antifouling Coating Protection

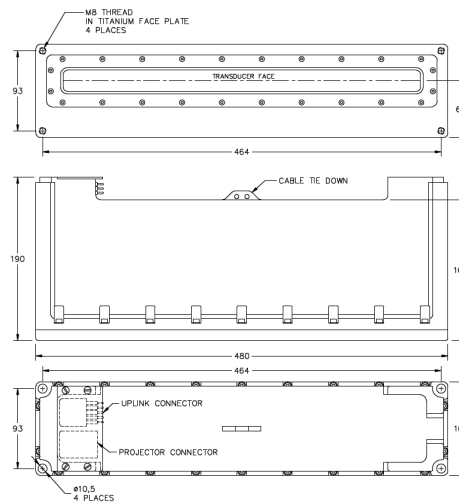
\*Beam width to 0.6° x 0.6° with UHR 700 kHz option

\*\*Limited to 256 soundings at immersion depths > 100m.  
 Optional no sounding limiter at immersion depth > 100m.  
 UHD requires the use of R2Sonic control software.

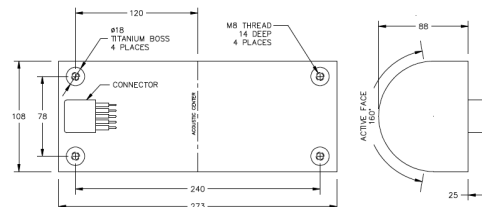
\*\*\*Max sounding depths depend on environmental conditions



**Sonar Interface Module**



**Sonic 2024 Receiver**



**Sonic 2024 Projector**

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