

Sonic 2024

Multibeam echosounder



The Sonic 2024 is the world's first proven wideband high resolution shallow water multibeam echosounder. With proven results and unmatched performance, the Sonic 2024 produces reliable and remarkably clean data with maximum user flexibility through all range settings to 500m. The unprecedented 60 kHz signal bandwidth offers twice the resolution of any other commercial sonar in both data accuracy and image. With over 20 selectable operating frequencies to choose from 200 to 400 kHz, the user has unparalleled flexibility in trading 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° as well as ability to rotate the swath sector. Both the frequency and swath coverage may be selected 'on-the-fly', in real-time during survey operations. Spec Sheet version 3.2 February 2010. Subject to change without notice 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. Sonar data is tagged with GPS time.

Specifications

Product	Sonic 2024 multibeam echosounder
Country of origin	USA
Manufacturer	R2Sonic LLC

The sonar operation is controlled from a graphical user interface on a PC or laptop which is 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, beam forms, 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 of 50W and elimination of separate topside processors make Sonic 2024 very well suited for small survey vessel or ROV/AUV operations.

- Ultra High Density (UHD): 1024 soundings per ping
- Selectable operating frequencies 'on-the-fly' in steps of 1Hz
- Ability to rotate the swath sector 'on-the-fly'
- Free firmware updates can be done remotely
- Low power consumption for the performance delivered
- Light & compact
- Training delivered by experts
- Options upgradable remotely
- Embedded processor / controller in the sonar head that enables fast and powerful computation at low power (no separate topside processor)
- 3-year warranty
- All R2Sonic MBES exceed IHO-S44 Special Order, when installed following the instructions from the Manual and used with the I2NS and the Sound Velocity Sensor offered by R2Sonic

Multibeam Echosounder Specifications

We apply our technical expertise and experience as surveyors to serve you: Our portfolio is elegantly simple while technologically advanced and user-friendly. Beamwidth and depth range are the 2 main characteristics that differentiate each of those MultiBeam EchoSounders (MBES). All options can be implemented on all products, except for the option to operate at 90kHz/100kHz that is exclusive to the Sonic 2026 (at the expense of the UHR option). This provides high flexibility to end-users to upgrade their equipment remotely. These options go beyond just opting for a longer cable; they all bring extra capabilities and functionalities, allowing even the entry level sonar to benefit from advanced operating modes. Additionally, the firmware of all 4 MBES can be upgraded remotely.

Performance summary

	Sonic 2020	Sonic 2022	Sonic 2024	Sonic 2026
Applications	Entry level hydrography Very small vessels Small ASV and AUV	Construction, Dredging Autonomous Surface Vehicle Offshore O&G (pipeline)	Autonomous Surface Vehicle, Construction Dredging Offshore O&G (pipeline) Offshore WindFarm (cable, towers)	Advanced hydrography Research Seafloor characterization Autonomous Underwater Vehicle (AUV) Remote Operated underwater Vehicle (ROV)
Selectable Frequencies	200kHz - 400kHz. Optional 700kHz	170 - 450kHz. Optional 700kHz		170 - 450kHz. Optional 90kHz and 100kHz/700kHz
Beamwidth, across track and along track	1° x 1° at 700kHz 2° x 2° at 400kHz 4° x 4° at 200kHz	0.6° x 0.6° at 700kHz 0.9° x 0.9° at 450kHz 2° x 2° at 200kHz	0.3° x 0.6° at 700kHz 0.45° x 0.9° at 450kHz 1° x 2° at 200kHz	0.45° x 0.45° at 450kHz 1° x 1° at 200kHz 2° x 2° at 90kHz & 100kHz
Number of soundings		Up to 1024 soundings per ping		
Max speed (vessel)		11.1 knots for full coverage (*)		
Near-field focusing*			Yes	
Roll stabilized beams			Yes	
Pitch stabilized beams	Yes		No	Yes
ROBO™ Automated Operation			Yes Auto Power, pulse width, rangeTrac™, GateTrac™, SlopeTrac™	
Saturation monitor			Yes	
Selectable Swath Sector	10° to 130° User selectable in real-time		10° to 160° User selectable in real-time	
Sounding Patterns			Yes	
Sounding Depth	up to 100m+		up to 400m+	up to 800m+
Sounding Patterns			Equiangular Equidistant single / double / quad modes Ultra High Density (UHD)	
Pulse Length		15µs - 1ms		15µs - 2ms
Pulse Type			Shaped CW	
Ping rate			up to 60Hz	
Bandwidth			up to 60kHz	
Immersion Depth	100m Optional 4000m		100m Optional 4000m & 6000m	100m Optional 4000m
		Note: FLS projectors are rated 3000m instead of 4000m		
Bottom Detect Resolution			3mm	
Operating Temperature	-10°C to 40°C			-10°C to 50°C
Storage Temperature			-30°C to 55°C	

Electrical Interface

	Sonic 2020	Sonic 2022	Sonic 2024	Sonic 2026
Mains	90-260VAC, 45-65Hz			
Power consumption	20W avg	35W avg	50W avg	100W avg
Uplink/downlink	10/100/1000Base-T Ethernet			
Sync in, Sync out	TTL			
Deck cable length	15m, optional 25m and 50m			

Mechanical

	Sonic 2020	Sonic 2022	Sonic 2024	Sonic 2026
Sonar Dimension (Sonic 2020)	140 x 161 x 133.5 mm			
Sonar Mass (Sonic 2020)	4.4kg			
Receiver Dim (LWD)	276 x 109 x 190 mm		480 x 109 x 190 mm	
Receiver Mass		7.7kg	12.9kg	
Projector Dim (LWD)			273 x 108 x 86 mm	480 x 109 x 196 mm
Projector Mass			3.3kg	13.4kg
Sonar Interface Module Dim (LWH)	280 x 170 x 60 mm			
Sonar Interface Module Mass			2.4kg	

Only R2Sonic does it

- Multispectral mode: survey with up to 5 frequencies in 1 pass and with 1 MBES. Saves Time & Money!
- Increased true sounding density with UHD It Provides Accurate and Truthful Resolution*
- Smallest Beamwidth Available! Down to 0.3° x 0.6°
- Clean and small data files which reduces processing time and Saves Time & Money!
- Ability to upgrade options remotely
- Free firmware updates
- Optional 6-year warranty, which minimizes risk on investment
- 24/7 technical support via email and phone wherever you are in the world
- Express and high quality repairs, performed by the team that engineered the systems