

# Sonic 2020

## Multibeam echosounder



The Sonic 2020 is the most compact high performance wideband shallow water multibeam echosounder, suitable for a wide variety of general mapping applications. The Sonic 2020 provides over 20x selectable operating frequencies to choose from within the 200 to 400 kHz band, 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 2020 provides variable swath coverage selections from 10° to 130° as well as ability to rotate the swath port or starboard in real-time. The Sonic 2020 frequency agility, productive swath coverage, high update rate, narrow focused 2° beam widths and 60kHz broadband signal processing provide hydrographic professionals with quality data output for shallow water survey operations.

### Specifications

<b>Product</b>	Sonic 2020 multibeam echosounder
<b>Country of origin</b>	USA
<b>Manufacturer</b>	R2Sonic LLC

## 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.

- 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

## 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

## Performance summary

	Sonic 2020	Sonic 2022	Sonic 2024	Sonic 2026
<b>Applications</b>	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)
<b>Selectable Frequencies</b>	200kHz - 400kHz. Optional 700kHz	170 - 450kHz. Optional 700kHz		170 - 450kHz. Optional 90kHz and 100kHz/700kHz
<b>Beamwidth, across track and along track</b>	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
<b>Number of soundings</b>		Up to 1024 soundings per ping		
<b>Max speed (vessel)</b>		11.1 knots for full coverage (*)		
<b>Near-field focusing*</b>			Yes	
<b>Roll stabilized beams</b>			Yes	
<b>Pitch stabilized beams</b>	Yes		No	Yes
<b>ROBO™ Automated Operation</b>			Yes Auto Power, pulse width, rangeTrac™, GateTrac™, SlopeTrac™	
<b>Saturation monitor</b>			Yes	
<b>Selectable Swath Sector</b>	10° to 130° User selectable in real-time		10° to 160° User selectable in real-time	
<b>Sounding Patterns</b>			Yes	
<b>Sounding Depth</b>	up to 100m+		up to 400m+	up to 800m+
<b>Sounding Patterns</b>			Equiangular Equidistant single / double / quad modes Ultra High Density (UHD)	
<b>Pulse Length</b>		15µs - 1ms		15µs - 2ms
<b>Pulse Type</b>			Shaped CW	
<b>Ping rate</b>			up to 60Hz	
<b>Bandwidth</b>			up to 60kHz	
<b>Immersion Depth</b>	100m Optional 4000m		100m Optional 4000m & 6000m	100m Optional 4000m
		Note: FLS projectors are rated 3000m instead of 4000m		
<b>Bottom Detect Resolution</b>			3mm	
<b>Operating Temperature</b>	-10°C to 40°C			-10°C to 50°C
<b>Storage Temperature</b>			-30°C to 55°C	

## Electrical Interface

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

## Mechanical

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