



# SeaBat® T20-R

High resolution Multibeam Echosounder with fully integrated Inertial Navigation System

## Superior acoustic quality engineered for the demanding marine environment

The SeaBat T20-R is a new addition to the leading SeaBat product range engineered from the ground up to evolve with your business. Combined with a Rack-mounted Sonar Processor (RSP), SeaBat T20-R provides uncompromised survey data in a highly compact package designed for small vessel use.

The solution includes a range of powerful software features at an attractive price, with the option for future feature expansions to grow with your needs.

The Rack-mounted Sonar Processor comes with an optional industry leading fully integrated Inertial Navigation System for accurate sensor time tagging and motion stabilization.

The SeaBat T20-R is designed for very fast mobilization on any type of survey vessels, securing minimal interfacing and low space requirements.

### Product benefits

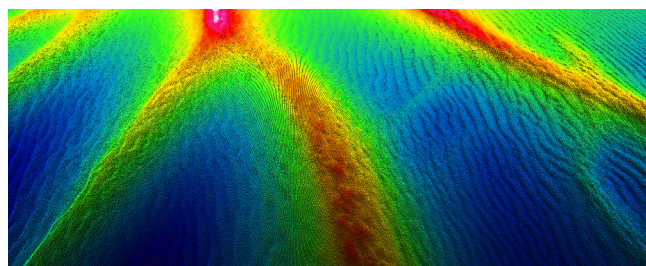
- All-in-one, fully flexible and fully integrated survey system
- The compact system allows for fast mobilization, minimal interfacing and extremely low space requirements
- Impressively clean and high data quality for faster operational surveys and reduced processing time
- Fully frequency agile from 190 to 420 kHz, allowing for improved swath performance and reduced survey time under challenging conditions
- Unique Vertical Detection Mode for improved detection along vertical structures
- The new compressed water column data significantly reduces data volume while maintaining the required information



## SeaBat T20-R Standard configuration

### Rack-mounted Sonar Processor (RSP)

- Single point for all cable connections – for fast mobilization
- Accurate sensor time-tagging and motion stabilization from the optional integrated INS
- 10m cable configuration
- 2U form factor in standard 19" rack



SeaBat T20, Sandwaves

### SeaBat T20 sonar head assembly

- 190 – 420kHz wide-band sonar arrays
- Lightweight sonar bracket
- Robust titanium housing
- Less than 8kg in water

### 3 years warranty

Our hardware is quality-tested to meet the most demanding standards. Backed by the full support of our comprehensive after-sales program and 3 years of warranty, you can be sure that the SeaBat T20-R won't let you down.



**TELEDYNE MARINE**  
RESON  
Everywhere you look™

SeaBat® T20-R

High resolution Multibeam  
Echosounder with fully integrated  
Inertial Navigation System



SYSTEM SPECIFICATIONS

Input voltage:	100-230VAC 50/60Hz					
Transducer cable length:	10m (standard) Optional: 25m, 50m or 100m					
Temperature (operational / storage):	Rack-mounted Sonar Processor: -5°C to +45°C / -30°C to +70°C Sonar wet-end: -2°C to +36°C / -30°C to +70°C					
	height [mm]	width [mm]	depth [mm]	weight [kg/air]	weight [kg/water]	
T20 Rx (EM7219):	123.2	254.0	102.0	5.0	2.2	
T20 Tx (TC2181):	86.6	93.1	280.0	5.4	3.4	
Rack-mounted Sonar Processor: <small>* Standard 19" rack-mount</small>	88.0 (2U)	478.0*	462.0	12.3-13.8	N/A	
Teledyne Type 20/30 IMU:	123.0	118.0	95.6	3.0	1.6	
T20 Acoustic performance:	400kHz		200kHz			
Across-track receiver beam width <sup>1</sup> :	1° (center)		2° (center)			
Along-track beam width <sup>1</sup> :	1°		2°			
Number of beams:	10 - 1024					
Swath coverage (up to):	10°-140° Equi distance, 10°-170° Equi Angle					
Typical Depth (CW <sup>2</sup> ):	0.5-150 meters		0.5-375 meters			
Max Depth (CW <sup>3</sup> ):	250 meters		550 meters			
Typical Depth (FM <sup>2</sup> ):	0.5-180 meters		0.5-450 meters			
Max Depth (FM <sup>3</sup> ):	300 meters		575 meters			
Ping rate (range dependent):	Up to 50 pings/s					
Pulse length (CW):	15 – 300µs					
Pulse length (FM):	300µs – 10ms					
Depth resolution:	6mm					
Teledyne INS Type +20:	Roll/Pitch	Heading <sup>4</sup>	Heave <sup>4</sup>	TrueHeave <sup>4</sup>	Positioning accuracy (with RTK)	Optional postpro- cessing with POSPac MMS. Optional Fugro MarineStar®, Trimble CenterPoint RTX
	0.02°	0.015°	5cm/5%	2cm/2%	Horizontal: +/- (8mm + 1ppm*baseline length)	
Teledyne INS Type +40:	Roll/Pitch	Heading <sup>4</sup>	Heave <sup>4</sup>	TrueHeave <sup>4</sup>	Vertical: +/- (15mm + 1ppm*baseline length)	
	0.008°	0.010°	5cm/5%	2cm/2%		

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description

<sup>1</sup> Nominal values

<sup>2</sup> This is a depth range within which the system is normally operated, from the minimum depth to a depth value corresponding to the max. swath -50%.

<sup>3</sup> This is the single value corresponding to the depth at which the swath is reduced to 10% of its max. value. For actual swath performance refer to Product Description.

<sup>4</sup> With 4m GNSS base line. Heave 5cm/5% whichever is greater for periods +/- 20sec

<sup>5</sup> An extinction coverage of +/-20° is observed at about 530 meter water.

T20-R SCOPE OF SUPPLY

- Receiver EM7219
  - Projector TC2181
  - Rack-mounted Sonar Processor
  - 10m Receiver cable
  - 10m Projector cable
  - Waterproof cable set
  - Wet-end bracket
  - Nuts and bolts for ease of installation
  - 3-year warranty

OPTIONAL EXTRAS

- Integrated INS Type +20 or Type +40
  - 25m, 50m or 100m cable
  - Hydro dynamic fairing
  - Dual head bracket
  - RESON Sound Velocity Probes
  - Teledyne PDS Survey Package
  - RESON Service Level Agreements
  - Normalized backscatter
  - Motion and positioning sensors
  - X-Range – improve range and reduce external noise
  - Multi-Detect – multiple detections for enhanced detail over complex features and water column targets
  - FlexMode – increase data density where you need it most
  - Pipe Detection & Tracking – optimize detection of pipes
  - Full rate dual head across the entire frequency range



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