SeaBat® T50-R

Ultrahigh resolution Multibeam Echosounder with fully integrated Inertial Navigation System

Extremely compact and flexible rack-mounted sonar system with built-in INS

The SeaBat T50-R is the newest addition to the leading SeaBat T-series product range, engineered from the ground up to evolve with your business. Combined with a very compact Rack-mounted Sonar Processor (RSP), the SeaBat T50-R produces unprecedented clean data, providing faster operational surveys and reduced processing time.

The SeaBat T50-R is fully frequency agile from 190 to 420kHz, allowing for improved swath performance and reduced survey time under challenging acoustic conditions.

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 T50-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
- Unprecedented clean and ultrahigh data quality for faster operational surveys and reduced processing time
- Fully frequency agile from 190 to 420kHz, 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
- Normalized backscatter designed for accurate, reliable and repeatable seabed classification
- Three-year standard warranty

SeaBat T50-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
- 25m cable configuration
- 2U form factor in standard 19" rack

SeaBat T50 sonar head assembly

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

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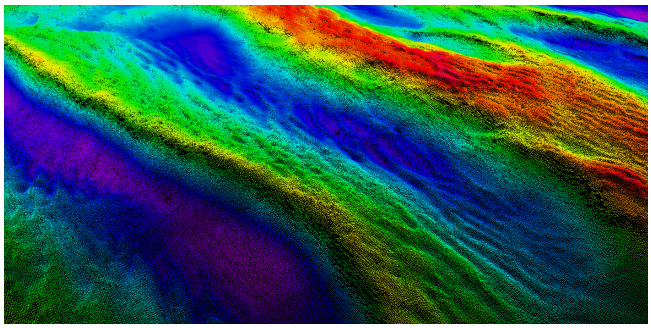
Extended range option

- Replace the standard projector with the TC2187 Extended range projector to achieve 900m range performance maintaining an impressive 1.5° high resolution beam width.
- In shallow water the TC2187 projector increases shallow water resolution to an unprecedented 0.5°*0.5°.



SeaBat T50, Courtesy of Hamburg Port Authority

TELEDYNE MARINE

SeaBat® T50-R

Ultrahigh resolution Multibeam Echosounder
with fully integrated Inertial Navigation System

SYSTEM SPECIFICATIONS

Input voltage:	100-230VAC 50/60Hz
Transducer cable length:	25m (standard) Optional: 10m or 50m
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]
T50 Rx (EM7218):	102.0	460.0	90.7	8.2	3.9
T50 Tx (TC2181):	86.6	93.1	280	5.4	3.4
T50 Tx (TC2187):	86.6	93.1	500	9.8	6.8
Rack-mounted Sonar Processor: * Standard 19" rack-mount	88 (2U)	478*	462	12.3-13.8	N/A
Teledyne Type 20/30 IMU:	123	118	95.6	3.0	1.6

	Extended Range Projector (TC2187)*		Standard projector (TC2181)	
T50 Acoustic performance:	400kHz	200kHz	400kHz	200kHz
Across-track receiver beam width[1]:	0.5°	1°	0.5°	1°
Along-track beam width[1]:	0.5°	1°	1°	2°
Number of beams:	10 - 1024			
Swath coverage (up to):	10°-150° Equi distance, 10°- 170° Equi Angle			
Typical Depth (CW[2]):	300 meters	600 meters	0.5-150 meters	0.5-375 meters
Max Depth (CW[3]):	350 meters	750 meters	250 meters	550 meters
Typical Depth (FM[2]):	350 meters	650 meters	0.5-180 meters	0.5-450 meters
Max Depth (FM[3]):	425 meters	900 meters	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			
Depth rating (sonar head):	50 meters			

	Roll/Pitch	Heading[4]	Heave[4]	TrueHeave[4]	Positioning accuracy (with RTK)	Optional:
Teledyne INS Type +20:	0.02°	0.015°	5cm/5%	2cm/2%	Horizontal: +/-(8mm + 1ppm*baseline length) Vertical: +/-(15mm + 1ppm*baseline length)	• Postprocessing POSPac MMS® • Trimble CenterPoint RTX® • Fugro MarineStar®
Teledyne INS Type +40:	0.008°	0.010°				

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description
*Optional
[1] Nominal values
[2] 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%.
[3] 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.
[4] With 4m GNSS base line. Heave 5cm/5% whichever is greater for periods +/- 20sec
[5] An extinction coverage of +/-20° is observed at about 530 meter water.

T50-R SCOPE OF SUPPLY

- Receiver EM7218
- Projector TC2181
- Rack-mounted Sonar Processor
- 25m receiver cable
- 25m projector cable
- Wet-end bracket
- Nuts and bolt for ease of installation
- Three-year warranty

OPTIONAL EXTRAS FEATURE

- Integrated INS Type +20 or Type +40
- 10m or 50m cable
- Hydrodynamic fairing
- Dual-head bracket
- Teledyne RESON Sound Velocity Probes
- Teledyne PDS Survey Package
- Teledyne RESON Service Level Agreements
- Normalized backscatter license
- Motion and positioning sensors
- X-Range - improves range and reduces external noise
- Multi-Detect - multiple detections for enhanced detail over complex features and water column targets
- FlexMode – increases data density where you need it most
- Extended range projector
- Full rate dual head across the entire frequency range

TELEDYNE | RESON

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Specifications subject to change without notice.
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