

# SeaBat<sup>®</sup> 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)

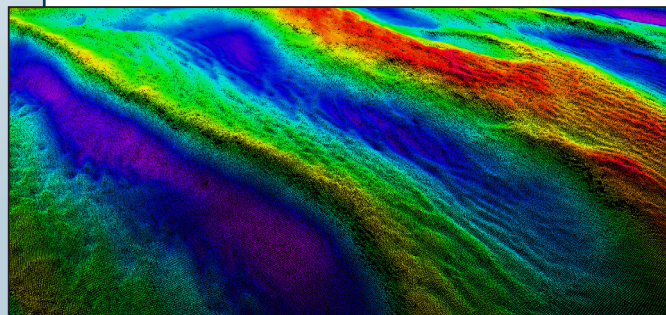
- Single point for all cable connections – for fast mobilization
- Accurate sensor time tagging and motion stabilization from the optional integrated INS
- 25m cable configuration
- 2U form factor in standard 19" rack

### SeaBat T50 sonar head assembly

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

### 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**  
RESON  
Everywhereyoulook™



SeaBat® T50-R

Ultrahigh resolution Multibeam Echosounder  
 with fully integrated Inertial Navigation System

SEABAT T50-R SYSTEM SPECIFICATIONS

Input voltage	100-230VAC 50/60Hz
Transducer cable length	25m (standard) Optional: 10m, 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]
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 <sup>1</sup>	0.5°	1°	0.5°	1°
Along-track beam width <sup>1</sup>	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 <sup>2</sup> )	300 meters	600 meters	0.5-150 meters	0.5-375 meters
Max Depth (CW <sup>3</sup> )	350 meters	750 meters	250 meters	550 meters
Typical Depth (FM <sup>2</sup> )	350 meters	650 meters	0.5-180 meters	0.5-450 meters
Max Depth (FM <sup>3</sup> )	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			

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>			Vertical: +/- (15mm + 1ppm*baseline length)	
	0.008°	0.010°				

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

<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.

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 war-ranty

OPTIONAL EXTRA FEATURE

- Integrated INS Type +20 or Type +40
  - 10m, 50m or 100m cable
  - Hydrodynamic fairing
  - Dual-head bracket
  - Teledyne RESON Sound Velocity Probes
  - Teledyne PDS Survey Package
  - Teledyne RESON Service Level Agree-ments
  - 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



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www.teledynemarine.com/reson

Tel. +45 4738 0022 (Europe) • Tel: +1 805 964 6260 (USA)

Email: reson@teledyne.com