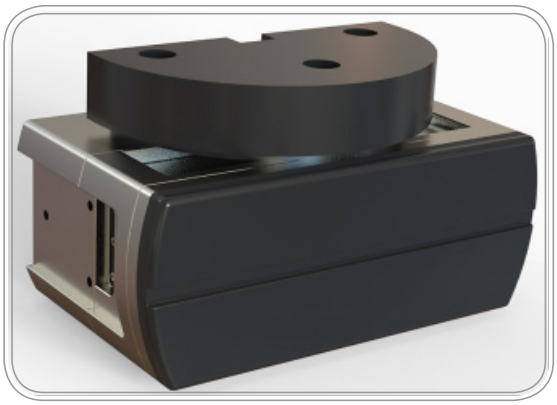
Teledyne RESON

SeaBat® F30

Forward Looking 3D bathymetry and ultra high resolution 2D imaging combined in one sonar



The SeaBat F30 is a High-Resolution Forward-Looking Sonar System designed specifically for 12 ¾ inch (approx. 324mm) AUVs/UUVs. The SeaBat F30 operates at 200 kHz or 635 kHz illuminating a wide, 120° horizontal sector ahead of the Sonar Head Assembly. The high frequency 635 kHz provides high-resolution classification functionality, whereas the lower frequency 200 kHz provides long-range detection capability.

The SeaBat F30 is an ideal sonar platform for development of advanced forward-looking sonar applications include AUV/UUV obstacle avoidance, terrain mapping, concurrent mapping and localization (CML), object classification and more.

The 200kHz array consists of 3 distinct sub-arrays, distributed in the vertical direction, which is processed in the real time enabling vertical height discrimination of targets ahead of the sonar; using a combination of Interferometric and Vernier processing

The SeaBat F30 is primarily intended for use on AUV/UUVs, but also applicable to ROVs and small submarines – and is depth rated up to 6,000m.

Components
- EM7221 receiver unit
- TC2182 projector unit
- Subsea Sonar Processor (SSP)

AUV/UUV
The AUV version of the F30 provides on-board data processing and logging as well as interface to third party sensors. The standard configuration is supplied with a Subsea Sonar Processor in 6,000m depth-rated titanium pressure housing.

Options
- Teledyne PDS
- SVP-70 sound velocity probe
- System Integration & Training
- Small form-factor SSP-Exo for OEM vehicle integration

PRODUCT BENEFITS

- Unique dual frequency sonar with 2D imaging and 3D FLS bathymetry
- 3D mode provides range, bearing, and vertical incidence angle for all echoes
- Compact design saves valuable vehicle real estate
- Reduced cost of ownership due to COTS platform
- Industry standard SeaBat 7k data interface simplifies application development and integration work

Subsea Sonar Processor (SSP)

SeaBat® F30

SEABAT F30 SYSTEM SPECIFICATIONS

Power requirement	36-54 VDC 180W max/200W peak 80-100W low power mode (operation mode dependent)
Transducer cable length	3m standard, 10m optional
System depth rating	6000m

Frequency	**200kHz**	**635kHz**
Horizontal beamwidth	Transmit > 120° Receiver: 2.0° +/- 0.05° (approx. for center beam)	Transmit > 120° Receiver: 0.6° +/- 0.03° (approx. for center beam)
Vertical beamwidth	Transmit: 25° +/- 3° Receiver: 43° +/- 3°	Transmit: 25° +/- 3° Receiver: 33.5° +/- 4°
Max ping rate	50Hz (±1Hz)	
Pulse length	CW: 30-300 uS at 34 kS, 15-300uS at 66 kS / FM: 300uS-17 mS at 635 kHz, FM: 300uS-21 mS at 200 kHz	
Number of beams	112 Equiangular	512 Equiangular
Typical range (up to)	5m to 500m	5m to 250m
Range resolution	25mm	
Data output	635kHz: 2D display image for visualization; access to raw beam amplitude and phase data. 200kHz: Beam records providing decimated Vernier processed depths relative to sonar position allow for topology mapping ahead of the sonar.	
Temperature (operational / storage):	-2° to +36C / -30° to +70°C	

	Height [mm]	Width [mm]	Depth [mm]	Weight [kg/air]	Weight [kg/water]
TC 2182 200/635khz	51	117(radius)	135	2.0	1.2
EM 7221 200/635 khz	120	300	123.3	8.5	5.3
Subsea Sonar Processor (SSP)	494	Ø174	N/A	24.4	10.2

Receiver unit shown without the SeaBat 7130 compatibility bracket mounted

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description
*Supplied Sonar User Interface Software runs on user supplied PC or laptop (subject to minimum processing requirements)

Specifications subject to change without notice.
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