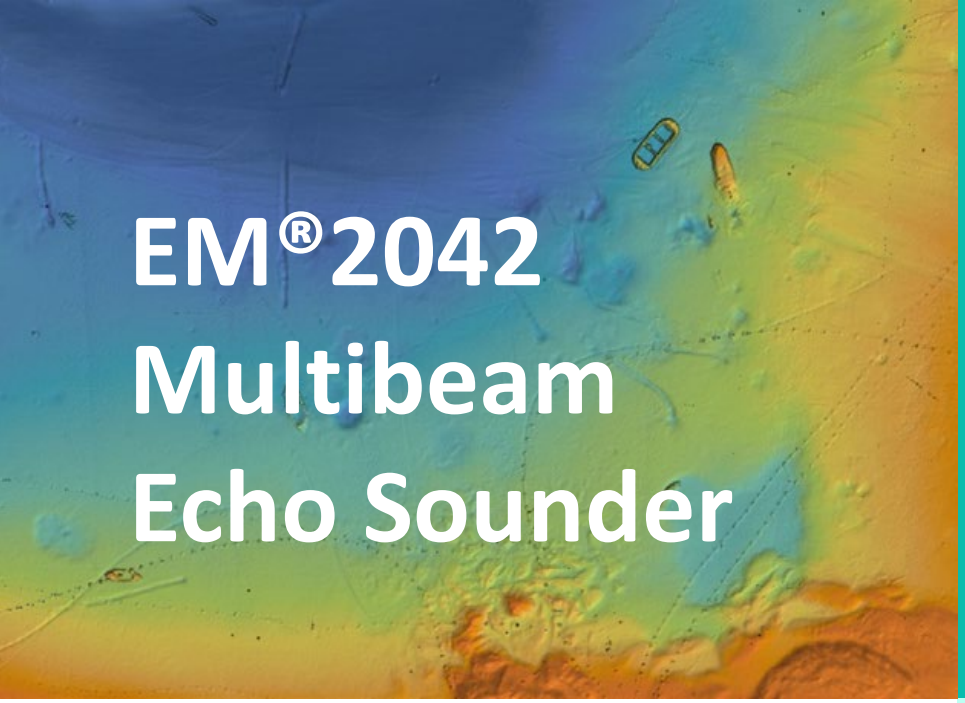


EM®2042 Multibeam Echo Sounder

KONGSBERG



The right choice for shallow water mapping applications

EM2042

Introducing the EM2042, the next generation of EM multibeam echo sounder that takes seabed mapping to new depths, by delivering unparalleled accuracy and resolution to your surveys. In the field of hydrography, offshore industry, dredging and marine science, the EM2042 is the perfect tool for your underwater mapping needs on any crewed or uncrewed surface platform. The ease of use and advanced features make it a must-have for professionals who demand the best data quality, reliability, and flexibility.

Components

The EM2042 can be delivered with a 0.4 or 0.7 beam width (@400kHz) transmitter (TX), with a single or dual 0.7 receiver (RX) optionally embedding a KONGSBERG miniMRU, and an AML sound velocity sensor. The TX and RX are connected to the topside processing unit through a single subsea cable, making it easy to set up and operate. EM2042 has the unrivaled dual RX variation, requiring only one TX array, generating up to 4096 soundings per ping cycle. In addition, a specialized dual TX and RX setup solves mounting scenarios where a large separation between receivers is required.

The unique EM2042 multi-transmitter combines three sectors to enable dynamic focusing on both transmission and reception, as well as roll, pitch and real 3-sector yaw stabilization.

The EM2042 transducers are 60% lighter than the previous generation, and have new, state of the art electronics greatly reducing the total power consumption of the system. A custom-made portable bracket for over-the-board installations can accommodate integration, in a fixed location with known offsets, for the most used INS sensors in hydrography, allowing a quick and easy setup.

KEY FEATURES (default deliveries)

- High resolution multi-frequency bathymetry and seabed backscatter
- Pitch , Roll and Multitransmitter Yaw stabilization
- Dual Swath for an enhanced sounding density (single RX)
- Water column backscatter logging
- Portable and modular setup of Titanium-made transducers
- Single cable with wet-mate connectors to the Processing Unit
- Engineered to surpass IHO Exclusive Order / LINZ Special Standard and others
- Seamless integration with SIS- and 3rd party software

OPTIONS

- Dual RX and Dual TX setups
- EM® HighFrequency mode (Single RX)
- Enhanced EM® MultiFrequency Backscatter mode
- QuadSwath™ (Single RX)
- Dual Swath for Dual RX setups
- Extra detections
- Backscatter calibration
- Embedded miniMRU or/and SV sensor in the receiver
- Portable mount for over the side installations
- USV integration kit
- Hydrographic Workstation (HWS) maritime certified for SIS
- Easy upgrade for EM2040 users

Expanded frequency range – Now with a new band

EM2042 features a wideband frequency range from 150 kHz to 700 kHz, offering different modes for various applications:

- 300 kHz: Ideal for most mapping tasks, balancing range and resolution
- 400 kHz: Optimized for inspection work
- 600 kHz and 700 kHz: Enhance small object detection and 3D mapping
- 200 kHz: Extends the range down to 600 meters
- A new 150 kHz band complements EM® MultiFrequency mode, improving seabed classification in a single pass

New Feature – Ready for QuadSwath™

The EM 2042 is ready to deliver up to 4 swaths per ping cycle, ensuring the most demanding sounding density requirements, and improving the definition of seafloor features in high-speed surveys.



Technical specifications

Frequency range	150 – 700 kHz
Ping rate	Up to 50 Hz
Number of soundings	Up to 1024 per swath 4096 for Single RX QuadSwath or Dual RX Dual Swath
Swath coverage	Up to 170° (single RX) / 220° (dual RX)
Depth range	0.5 m to max 600 m
Depth rating	50 m
Beam stabilisation	Roll (± 15°), pitch (± 10°), yaw (± 10°)
Pulse form	CW / FM (CHIRP modulation)
Bandwidth	>120 kHz
Shortest pulse length	14 µs
Depth accuracy	Up to 5.5 mm
Embedded Kongsberg MRU angular accuracy	Up to 0.008 Roll/Pitch, 0.03 Heading (RMS) (Seapath 2.5m baseline)
Embedded SV	AML X2change™ SVT sensor
Power requirements	93 W
Software compatibility	Kongsberg SIS, QPS, CARIS, EIVA, Beamworx, PDS, Hypack, SonarWiz and others





Beamwidth							Physical dimensions (excluding connectors, and extra hardware)		
	150 kHz	200 kHz	300 kHz	400 kHz	600 kHz	700 kHz	Dimensions (W x D x H)	Weight (in air)	Weight (in water)
TX 04	1°	0.7°	0.5°	0.4°	0.25°	0.225°	691.2 x 120 x 138.1 mm	20.0 kg	9.0 kg
TX 07	2°	1.5°	1°	0.7°	0.5°	0.45°	372 x 120 x 138.1 mm	10.9 kg	5.0 kg
RX 07	2°	1.5°	1°	0.7°	0.5°	0.45°	340 x 124 x 120 mm	6.1 kg	1.6 kg
Processing Unit (2U for 19” rack)							482.5 x 424 x 88.6 mm	10.5 kg	
Portable Processing Unit (IP67)							370 x 390 x 101 mm	10.5 kg	
OEM Processing Unit (USV)							329.4 x 220.2 x 71 mm	3.1 kg	