

ECHO 81

YOUR SUBSEA SOLUTIONS SPECIALIST



KONGSBERG

EM 2040P

MULTIBEAM ECHO SOUNDER

The EM 2040P MKII is a shallow water multibeam echo sounder based on EM 2040 technology, an ideal tool for any high resolution mapping and inspection application.

With this release, Kongsberg Maritime has upgraded the hardware and software to increase the swath and improve the data quality of our EM 2040 series.

Key Facts

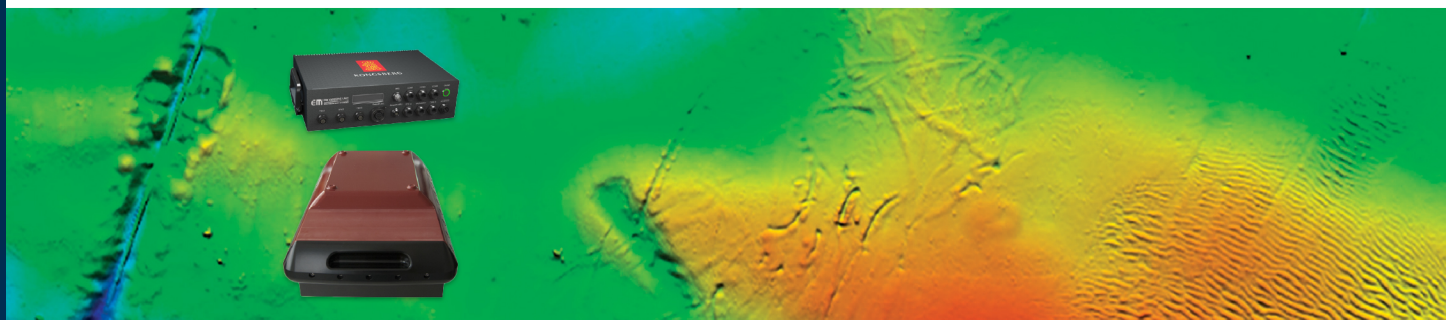
The system fulfils, and even surpasses, IHO-S44 Exclusive Order and the more stringent LINZ specification.

The EM 2040 was the first 3-sector broadband multibeam echo sounder in the market, now available as a 200 - 700 kHz system. The operator can on the fly choose the best operating frequency for the application: 300 kHz for near bottom, 200 kHz for deeper waters and 400 - 700 kHz for very high resolution inspection. 600 kHz wide area high frequency mapping mode offers an unprecedented 100 - 120° swath width. 700 kHz inspection mode provides the highest resolution available contained within a narrow 30° swath.

By alternating between the frequency modes per ping, the system is capable of providing the operator with Multi Frequency Backscatter of up to 5 frequencies in a single pass. The same functionality allows the system to alternate between a full swath mode and a high resolution mode providing full coverage while maintaining ultra high resolution over a target.

Due to the large operating bandwidth, the system has an output sample rate up to 60 kHz. The system can effectively operate with very short pulse lengths. The shortest pulse is 14 microseconds, which gives a raw range resolution (ct/2) of 10.5 mm.

The angular coverage for the 200 and 300 kHz is up to 170° on slopes and piersides, with coverage up to 7.5 times water depth on a flat bottom.



TECHNICAL SPECIFICATIONS

Frequency range	200 to 700 kHz
Max ping rate	50 Hz
Swath coverage sector	Up to 170°
Depth Rating	30 metres
Beam patterns	Equiangular, equidistant, high density and ultra high density
No. of beams per ping	512 (single swath) / 1024 (dual swath)
Roll stabilised beams	± 15°
Pitch stabilised beams	± 10°
Yaw stabilised beams	± 10°

Coverage example for EM 2040P MKII with bottom type rock (BS = - 10 dB), NL = 45 dB, FM enabled

Operating mode	Cold ocean water		Cold fresh water	
	Max depth	Max coverage	Max depth	Max coverage
200 kHz	550 m	830 m	1250 m	1770 m
300 kHz	450 m	610 m	750 m	1000 m
400 kHz	225 m	320 m	320 m	440 m
600 kHz	80 m	115 m	100 m	130 m
700 kHz	45 m	23 m	50 m	25 m

Pulse lengths						
200 kHz		300 kHz		400 kHz	600 kHz	700 kHz
CW	FM	CW	FM	CW	CW	CW
19 to 324 µs	1.5 to 12 ms	19 to 324 µs	1.5 to 6 ms	14 to 108 µs	100 to 410 µs	70 µs

Beamwidth					Physical dimensions (excluding connectors and mounting arrangements)	
200 kHz	300 kHz	400 kHz	600 kHz	700 kHz	Dimensions	Weight
2°	1.3°	1°	0.65°	0.6°		
Sonar head with titanium backlid					482/414* x 298 166 mm (LxWxH)	23 kg / 20 kg* 4.7 kg in water
Sonar head with aluminum backlid					482/414* x 298 166 mm (LxWxH)	19.5 kg / 16.5 kg* 1.7 kg in water
Processing Unit (2U for 19" rack)					482.5 x 424 x 88.6 mm (WxDxH)	10.5 kg
Portable Processing Unit (IP67)					370 x 390 x 101 mm (WxDxH)	10.5 kg

Laptop, Hydrographic Work Station (HWS) and monitor can be delivered on request.

* With and without removable handles

FEATURES

Included Features

- 200-400 kHz wide frequency range
- Seabed image
- Water column display and logging for SIS users
- FM chirp
- Roll, pitch and yaw stabilisation
- Short pulse lengths, large bandwidth
- Transmit and receive nearfield focusing
- Easy to install

Optional features

- Dual swath
- 600 kHz and 700 kHz modes
- EM® MultiFrequency Mode
- Water column display and logging
- Water column phase logging
- Extra detections
- Integrated AML SVT sensor



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www.echo81.com



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