



Bathyswath-2 OMEGA (B2O)

The Bathyswath-2 technology embedded in OMEGA deck unit

Integrated with GNSS & INS



WIDE SWATH BATHYMETRY

Performance & Quality

Bathyswath-2 OMEGA is an integrated version of our bathymetric systems. This sonar system gives improved performance in a small, low-power package and an Ethernet interface. Bathyswath uses wide swath widths; this increases survey speeds significantly, especially in shallow water.

- 3 sonar frequencies (117, 234 or 468 kHz), in bathymetry and sidescan,
- Low-power consumption.

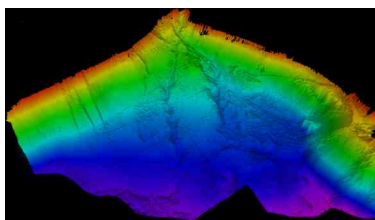


Integrated OMEGA deck unit

- One optional motion sensor (3 possibilities),
- One optional dual-antenna GNSS receiver for heading and positioning (3 possibilities),
- One or two embedded computers (one for sonar data acquisition and one for any specific applications).

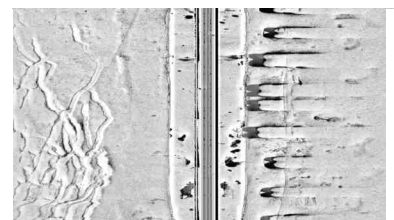
3 different types of transducers

- 117, 234 or 468 kHz.

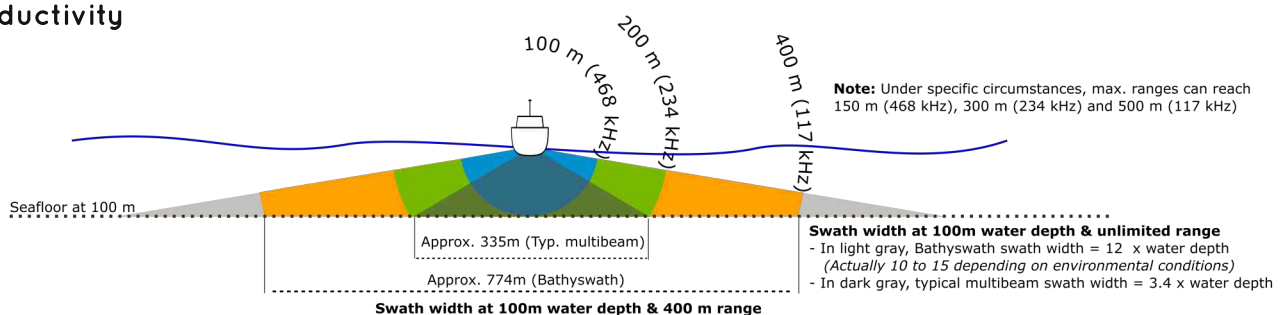


Software, 3D bathymetry & sidescan data

- Included in package price,
- Fully-functional survey software (for sonar, position, sound velocity and motion data acquisition) and post-processing software (for 3D rendering and digital terrain models),
- Bathyswath sonar is also compatible with most usual commercial software packages.



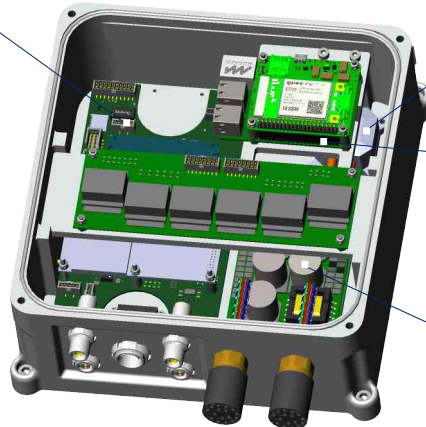
Productivity



DECK UNIT CONFIGURATION

Navigation Communication & Power Board (NCPB)

- Optional Embedded GNSS compass board (*Vega™ 40* or Trimble BD992 w/ or w/o INS) and Navsight processing unit (for Ekinox).
- Embedded Raspberry Pi CM3+ single board computer for sonar data acquisition.



Optional Motion Sensor

Ellipse-E or Ekinox-I-B

Optional Raspberry Pi 4

- For any specific end-user need.
- Embedded 4G/LTE module with integrated antenna (4.0 dBi - 4.6 dBi) for ext. communications.

Bathyswath-2 electronics

TECHNICAL SPECIFICATIONS

Sonar specifications

Available frequencies*	117 kHz	234 kHz	468 kHz
Operational slant range (m)	400	200	100
Maximum slant range (m)**	600	300	150
Horizontal beam width, two-way**	0.85°	0.55°	0.55°
Spatial resolution limit (mm)	6	3	1.5
Deck unit dimensions (mm) and weight (kg)	235 x 245 x 102 mm - 4.3 kg		
Deck unit sealing rating	IP67		
Transducers dimensions (mm)	200x550x70	100x340x55	60x230x40
Transducers weight air/water (kg)	8.6/1.3	5.0/0.8	1.0/0.15

* 1 transducer = 1 frequency

** Refer to our Bathyswath technical information document (pdf) available on www.iter-systems.com.

Optional integrated ancillary devices

GNSS :	<ul style="list-style-type: none">▪ Hemisphere Vega 40 GNSS Compass board.▪ Trimble BD992 Dual Antenna, positioning and heading.▪ Trimble BD992-INS.	GPS, GLN, GAL, QZSS, BDS, L-Band (Atlas), IRNSS, heading (0.04° @ 2m baseline), L1/L2, RTK 1cm, rover, 20 Hz (opt.), 0.5° pitch & roll.
INS/IMU :	<ul style="list-style-type: none">▪ Trimble embedded INS (BD992-INS)▪ Ellipse-E INS▪ Navsight Ekinox-I-B INS	GPS, GLN, GAL, BDS, L-Band (RTX or OMNISTAR), heading (0.09° @ 2m baseline), L1/L2/L5/E6, RTK 1cm, rover, 50 Hz. GPS, GLN, GAL, BDS, L-Band (RTX/OMNISTAR), heading (0.09° @ 2m baseline), L1/L2/L5/E6, RTK 1cm, rover, 100Hz, 0.1° pitch&roll. 0.1° pitch & roll 0.1° pitch & roll (0.05° RTK), 1° heading (compass), 5 cm R/T heave. 0.02° pitch & roll, 0.05° heading (w/ GNSS), 5 cm real-time heave.
Computer :	<ul style="list-style-type: none">▪ Raspberry Pi 4 (optional)▪ Raspberry Pi CM3+ (not optional)	4G/LTE communication module / 4Gb RAM, 32Gb micro SD, quad-core, Cortex-A72 (ARM v8) 64-bits 1.5GHz, bluetooth, WiFi. 32 Gb eMMC, 1Gb SDRAM (+32Gb SD card), Cortex A53 (ARM) 64-bits.
Power :	<ul style="list-style-type: none">▪ Power supply or battery	+12 to 36 VDC

"The quality of the data collected during the trial was high both in terms of coverage and resolution."
- Neil Crossouard - HR Wallingford survey specialist

FROM A TO Z



Sonar systems engineering.

Software development for our own products or for new interfaces with customers systems.



Training on client's site or on lake in front of our premises.

Remote technical support.

A WIDE RANGE OF APPLICATIONS



Marine services



Research



Environment



Natural resources



Archeology



Military REA

Bathyswath a brand of the company ITER Systems

ITER Systems is one of the world's most experienced team of developers of interferometric sonars. Its products are direct descendants of the world's first commercially available interferometric swath sonar system, developed into SWATHplus, which renamed Bathyswath in 2013. Bathyswath-2 was released in 2015, and Bathyswath-3 in early 2022 will give yet another significant advance in performance and usability.

ITER Systems provides innovation, quality product at an affordable price, for the international market with high quality technical support. A team of specialized engineers are located in France and in England to answer all your needs.

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