

SAGEA

Full Autonomous Bathymetry USV

First Indonesian autonomous USV with proven professional application. High performance, customisable payload at affordable price guaranteed with full local support



GEOMON SOFTWARE



AUTONOMOUS WAYPOINT



RC OPERATION



scan me



USV SAGEA

USV Sagea adalah kapal survey yang dapat diprogram untuk bergerak secara autonomous. dengan pilihan Teknologi GPS : Single antenna rover, RTK & PPK, Multi antenna With heading output, RTK & PPK
 Payload : SBES single freq, SBES single freq, MBES, ADCP.
 Light Weight : Standard FG hull, Light weight CF hull.
 Hull : Standar hull, Long hull. Batt : Single, Double.

USV SPECIFICATION

Hull : Composite Hull
Berat : 30 Kg
Kecepatan Maksimal : 10 Knot (without payload)
Kecepatan Survey : 2 - 3 Knot
Ketahanan Baterai : 6 Hours @ 3 Knot survey speed
Jarak Komunikasi : Data Telemetry - 2 Km , Remote Control - 1 Km
Payload : 17 Kg
Autonomous Software dengan Generator Waypoint

CONFIGURATION

SG - 01 - P01 - LA - H01 - 1



GNSS TECHNOLOGY

01 : Single antenna rover, RTK & PPK (Geodetic Multiband Receiver)
02 : Multi antenna With heading output, RTK & PPK (Geodetic Multi antenna Multiband Receiver)

PAYLOAD

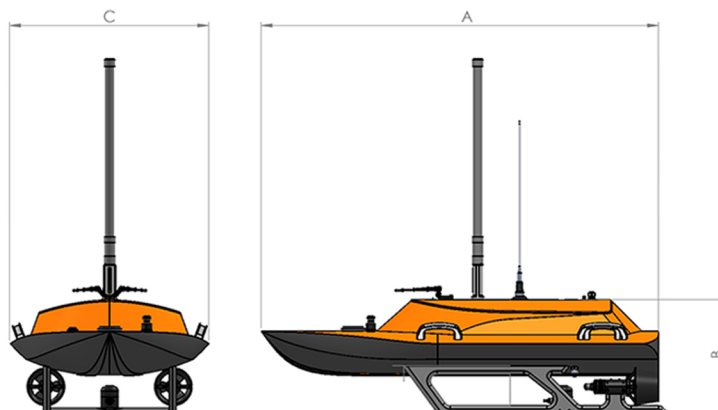
P01 : SBES Single Freq Echosounder
P02 : SBES Dual Freq Echosounder
P03 : MBES Multi Beam Echosounder
P04 : ADCP Acoustic Doppler Current Profiler
**Customizable Payload*

LIGHT WEIGHT

LA : Menggunakan Bahan Carbon Fiber Composite agar bobot Ringan dan Efektif.

HULL

H01 : Standar hull, Ukuran Lambung kapal yang standar, A = 1200mm, B = 400mm, C = 600mm membuat kapal menjadi praktis saat proses survey.





GEOMON

SAGEA Monitor

USV

Graphical User Interface

Telah dikembangkan selama 9 Tahun
dengan pengalaman aplikasi
profesional komersial pada
lingkungan kerja yang sebenarnya



FEATURES



User Friendly

Software yang mudah
untuk di Operasikan



GNSS Status

Status sinyal Phase Fix GNSS selalu
termonitor untuk menjamin kualitas
hasil survey



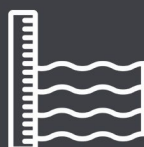
Waypoint Generator

Membuat waypoint secara otomatis dalam
boundary dengan jarak antar garis rute
yang dapat diatur



Real Time Survey Monitor

Membaca semua pergerakan USV dalam Peta
yang dapat dikustomisasi



Depth Trace Monitor

Jejak kedalaman terpantau secara langsung
dalam Peta Navigasi



Speed Indicator

Dilengkapi dengan indikator khusus
untuk memantau kecepatan USV.



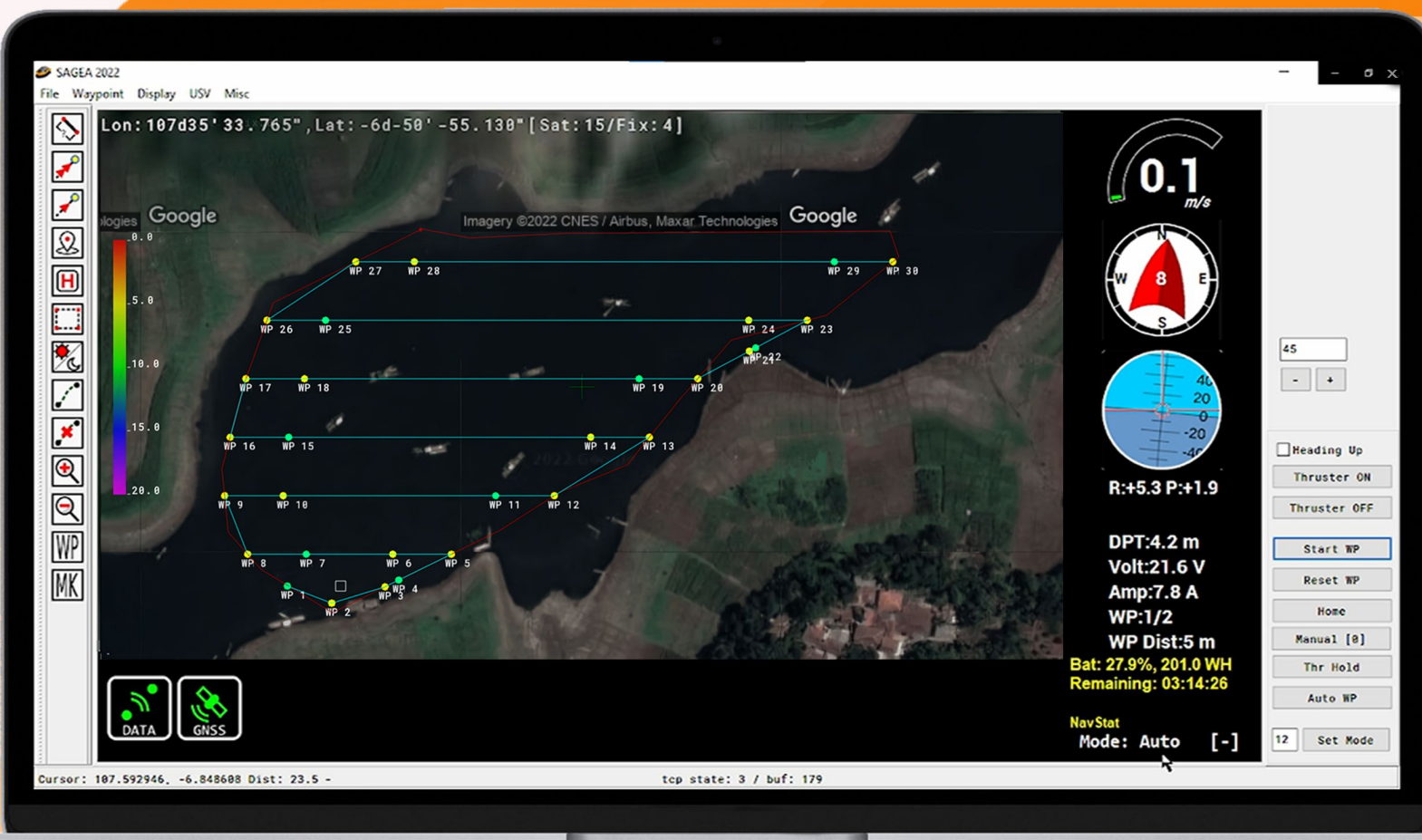
USV Attitude Indicator

Menampilkan sikap wahana dalam orientasi
Roll, Pitch dan Yaw



Remaining Battery Prediction

Mampu memberi informasi status battery
pada USV yang sedang digunakan



Measure Distance

Create Fast Waypoints

Create Slow Waypoints

Create Marker

Set Home

Create Boundary

Use Dark Background

View Snail Trail

Erase Snail Trail

Zoom In

Zoom Out

Edit WP

Edit Marker

Status GNSS

Lon: 107d35' 33.765", Lat: -6d-50' -55.130" [Sat: 15/Fix: 4]



Depth Trace Monitor



Indicator Connection to USV



Indicator GNSS Connection

DPT:4.2 m
Volt:21.6 V
Amp:7.8 A
WP:1/2
WP Dist:5 m

DPT = output depth
Volt = battery voltage
Amp = battery current
WP = direction to WP- / WP total
WP Dist = distance to WP

Bat: 27.9%, 201.0 WH
Remaining: 03:14:26

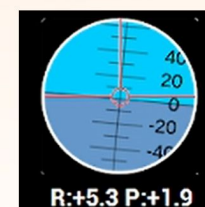
Battery prediction



Speed Indicator



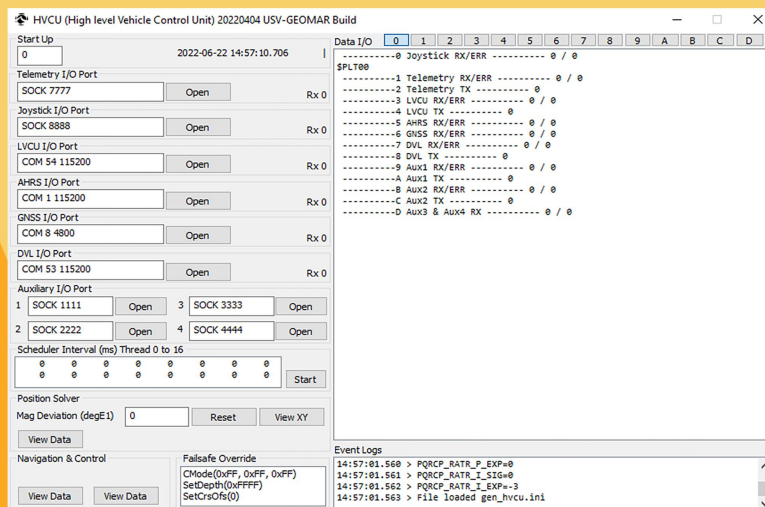
Heading Indicator



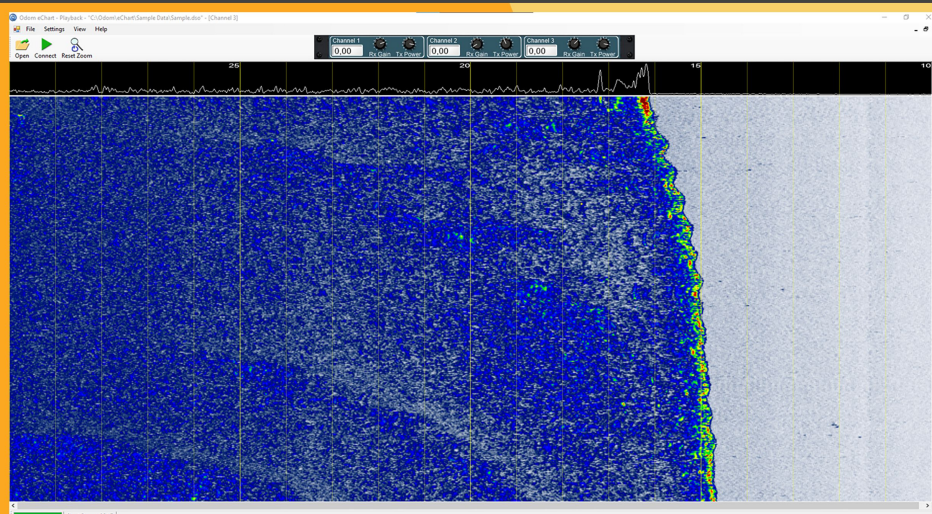
Roll and Pitch Indicator

COMPLEMENTARY SOFTWARE

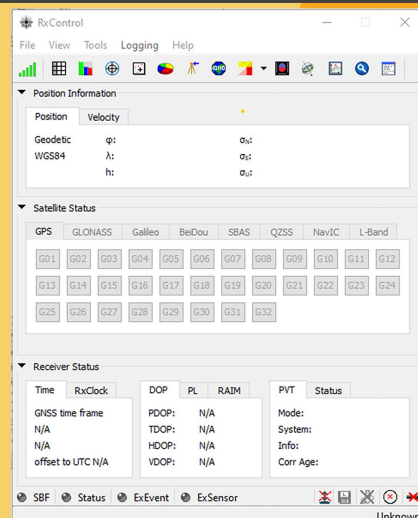
USV SAGEA



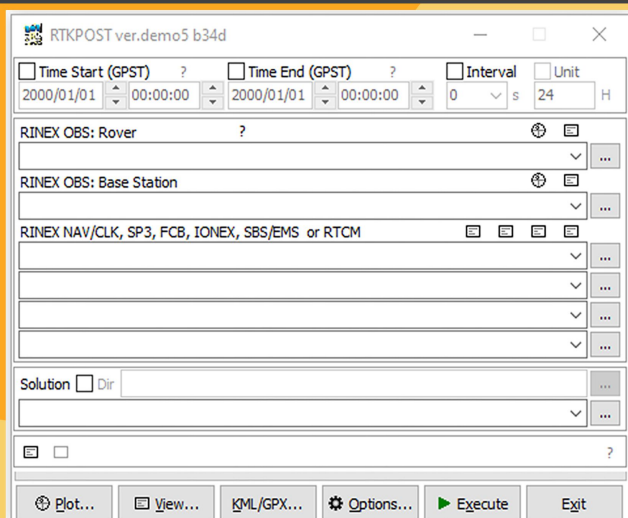
HVCU SAGEA LOGGER
- Untuk akuisisi output data USV



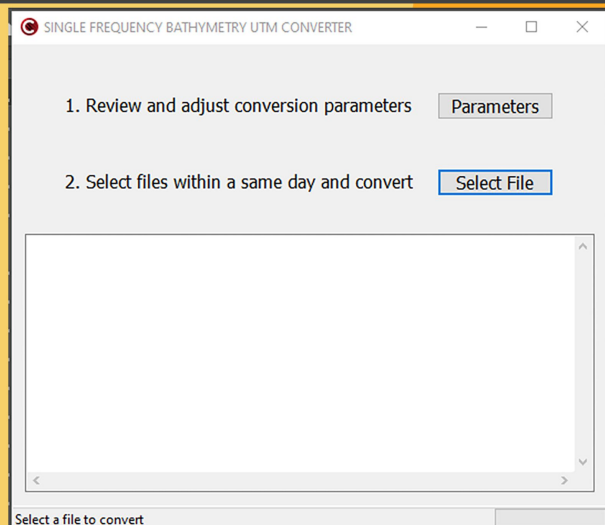
ODOM eChart
- Untuk setting parameter SBES dual freq dan akuisisi data



RXTools
- Untuk setting modul GNSS, merubah RAW to RINEX format, dan akuisisi data



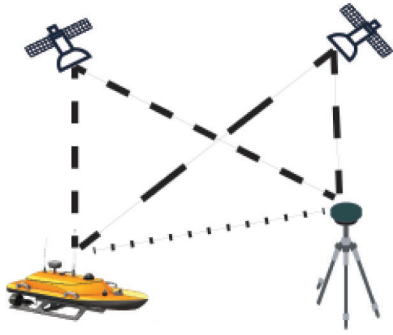
RTKPOST
- Untuk melakukan post processing GNSS



SAGEA LogProcessor
- Untuk penggabungan X,Y,Z point cloud

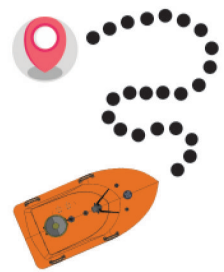
USV SAGEA

Dengan Mode GNSS RTK



SETTING GNSS

- Setting GNSS Base station
- Pairing GNSS Base station dengan GNSS USV



PENGAMBILAN RAW DATA USV

- USV beroperasi secara autonomous
- Pengambilan data GNSS dan ECHOSOUNDER
- Software : Sagea HVCU logger dan GEOMON

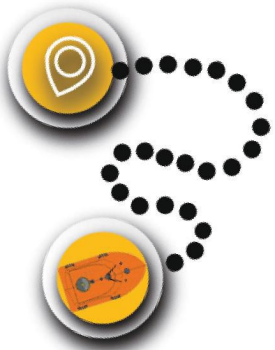


- Penggabungan data GNSS dengan data kedalaman berdasarkan time maker
- Penggabungan dengan data pasang surut
- Menghasilkan output pemetaan batimetri
- Software : LogProcessor Sagea

PENGGABUNGAN DATA SURVEY

USV SAGEA

Dengan Mode GNSS PPK



- USV beroperasi secara autonomus
- Pengambilan data GNSS dan Echosounder
- Software GNSS: RX tools (Septentrio)
- Software Echosounder : eChart

PENGAMBILAN RAW DATA USV



- Pengunduhan data CORS
- Pengolahan data GNSS USV dengan data CORS
- Software : RTKPost

POST PROCESSING DATA GNSS



- Penggabungan data GNSS dengan data kedalaman berdasarkan time maker
- Penggabungan dengan data pasang surut
- Menghasilkan output pemetaan batimetri

PENGGABUNGAN DATA SURVEY



HYPACK
a xylem brand

HYPACK® ECHO

A SIMPLIFIED SOLUTION FOR SINGLE BEAM BATHYMETRIC AND HYDROGRAPHIC SURVEYING



***Surveying
Made Simple***

HYPACK® ECHO is our software package for bathymetric and hydrographic surveying, which use single beam echosounder (SBES) technologies. HYPACK® ECHO is a good choice for any industry that requires an SBES survey, and is especially suitable for support mining operators or military surveyors in need of professional-grade software with a simplified workflow. HYPACK® ECHO is built on the same core as HYPACK®, which ensures ECHO can be maintained and continuously improved for the future.

FEATURES

- Survey planning and real-time navigation
- Full positioning support including RTK and Differential GPS
- Support for popular AUV interfaces (MAVLink, SeaRobotics)
- Background charts (ENC and Web Map support)
- View and analyze single beam data, including echogram support
- Final Products include plotting and exporting to ASCII XYZ and DXF

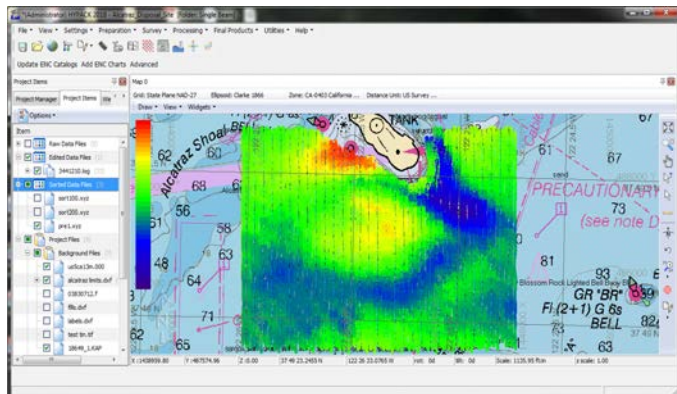
BENEFITS

- Simple and focused solution
- The software is designed to display only the tools applicable to SBES surveying
- Support provided by our experienced and knowledgeable support team
- Upgradeable to our full suite of tools, HYPACK® MAX

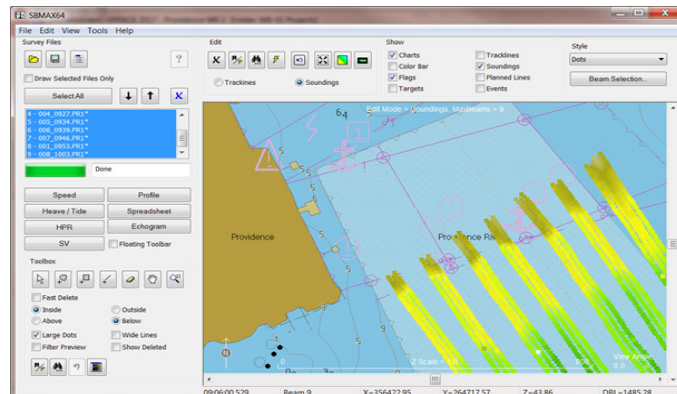


HYPACK® ECHO EDITOR

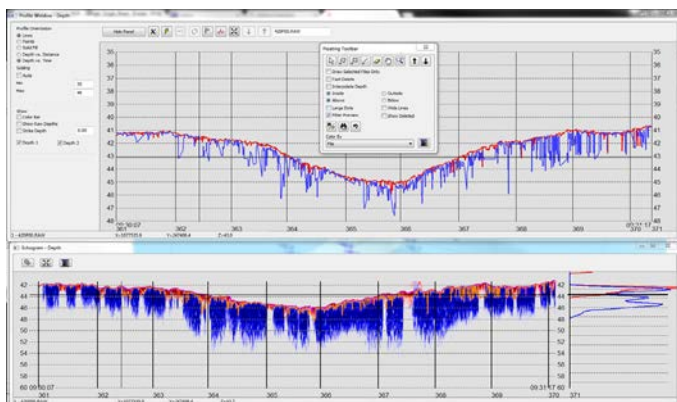
Powerful and intuitive software for single beam echosounder data review, cleaning and visualization.



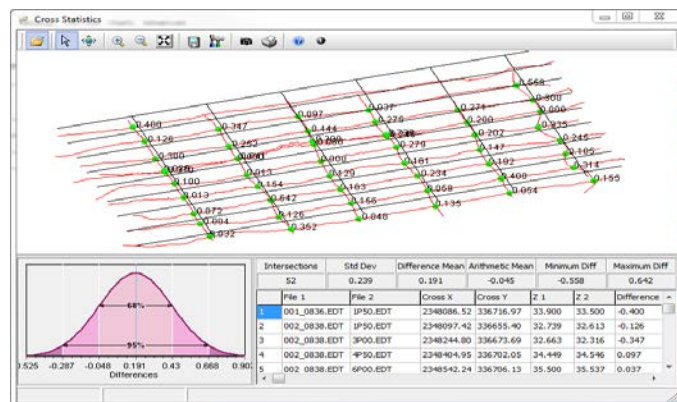
Colored sounding on ENC background chart.



Single beam data editing, sorting, and DXF Contours.



Single beam bathymetric profile and echogram.



Cross-statistics module for performance test.

HYPACK® ECHO Specifications

Survey Planning	HYPACK® Shell, Web Map Server, Line Creation, Autonomous Mission Planning
Geodesy	Support for UTM, State Plan, Multiple Grids, WGS84, and Other Ellipsoids
Position Support	GPS (NMEA-0183), RTK Support (NMEA, POS MV, SBG, VectorNav)
Motion Support	TSS1 Message
Echosounders Supported	Atlas, CEEDUCER PRO/CEESCOPE, EchoLogger, ELAC MKII HydroStar, HydroBall, Innerspace, Kaijo, Knudsen, Kongsberg, Marimatech, NaviSound, Navitron, Ocean Data Bathy, SonarLite, SonarMite, Teledyne Odom, and any NMEA compatible sonar
Data Processing Engine	HYPACK® Single Beam Editor (SBMAX64) with DXF Contour and XYZ Sort Option
Export Files	XYZ, HS2x, EDT, DXF, DWG, DGN, KMZ, SHP
Final Products	Sort, Export to XYZ, Plotting, DXF Contours



HYPACK
a xylem brand

HYPACK
56 Bradley Street
Middletown, CT 06457 USA

1-860-635-1500
sales@hypack.com
HYPACK.com

TECHNICAL SPECIFICATIONS

Frequency	High: 200kHz
	Low: 24kHz
Maximum Transmitting Power	400W@200kHz
	1200W@24kHz
Depth Range	0.15~300m/1.0~900 ft.@200kHz
	0.8~2000m/2.4~6000 ft.@24kHz
Accuracy	0.01m/0.1 ft. +/- 0.1% of depth @200kHz
	0.10m/0.30 ft. +/- 0.1% of depth @24kHz
Resolution	0.01m/0.10 ft @200kHz
	0.10m/0.30 ft @24kHz
Sound Velocity	1370~1700m/s
Ping Rate	Maximum 30Hz
Output Data Format	Standard NMEA 0183, DESO 25, ODOM, Knudsen, Bathy, Echotrac, Hi-Target
Screen	17inches; Resolution: 1280 x 1024@60Hz
CPU	1.92GHz, Quad-core (windows 7)
RAM	2GB
Storage	128GB SSD
Interfaces	RS-232*3, USB*4, Power Port*1, Transducer Port*1, VGA*1
Input Power	10~30 VDC or 220 VAC
Consumption	80 watts
Operating Temperature	-20°C ~ 70°C
Weight	9.5 kg(20lbs)
Dimensions	480mm(18.8 in)H×360mm(14.1 in)W×110mm(4.3 in)D
Material of Shell	High strength ASA
Certification	CE, EN 60945

*Description and specification are subject to change without any further notice.



AUTHORIZED DISTRIBUTION PARTNER

22M113

Hi-Target Surveying Instrument Co., Ltd

ADD: Building 13, Tian'An Technology Zone HQ Center, No. 555,
North of Panyu RD, Panyu District, 511400 Guangzhou, China.
www.hi-target.com.cn +86-20-28688296 info@hi-target.com.cn

HD-MAX

NEW

Dual-Frequency Echo Sounder



HD-MAX

Hydrographic Solution

HD-MAX dual-frequency echo sounder is widely used in sediment measurement for dredging and other water depth measurement projects in shallow water, deep water, and high sandy water. The full-featured Hi-MAX Sounder hydrographic software integrates bathymetry, navigation, and post-processing. Equipped with a 17" large screen and industrial computer platform, HD-MAX offers a set of reliable solutions for hydrographic offices around the world with a robust dual-frequency transducer and a user-friendly survey pole.



HD-MAX + HiMAX Sounder



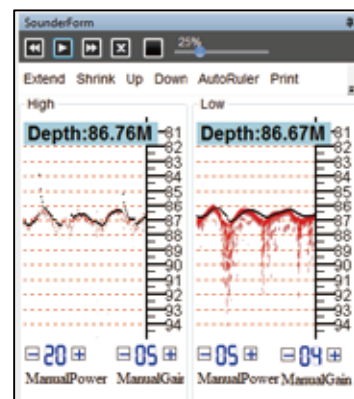
Transducer

The Combination of High and Low Frequency

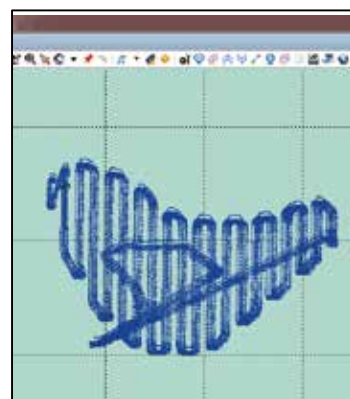
HD-MAX features the simultaneous operation of both high and low frequencies, making it a good performer in both shallow and deep water. High frequency brings good accuracy, accurately measuring the depth of shallow water. Low frequency has large emission energy and strong capacity of penetration, with no fear of complex deep water. Moreover, Hi-MAX Sounder software uses the different propagation characteristics of high and low frequencies to output the real-time difference of water depth value between the low and high frequencies, which is the thickness of the sediment under the water.

The Full-featured Hi-MAX Sounder Software

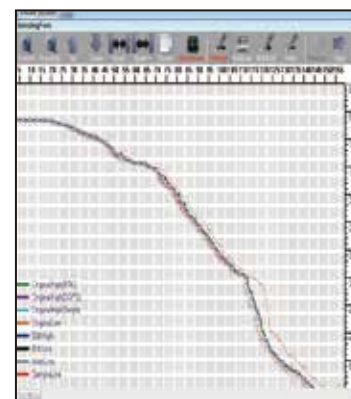
Powerful Hi-MAX Sounder hydrographic software integrates bathymetry, navigation and post-processing. Hi-MAX Sounder displays, processes and export dual frequency data. At the same time, Hi-MAX Sounder supports access to standard NMEA data from any receiver to provide accurate GNSS coordinates for your bathymetry data. For more surveying scenarios, Hi-MAX Sounder also supports third-party sensors of attitude, surge, rosette, sound speed, combined navigation, water level meter, etc.



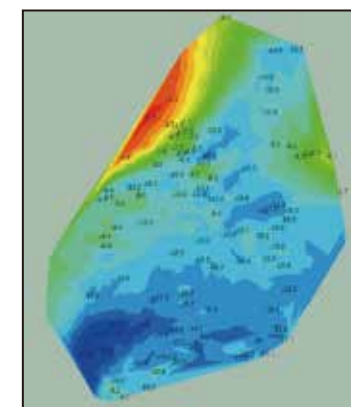
Surveying



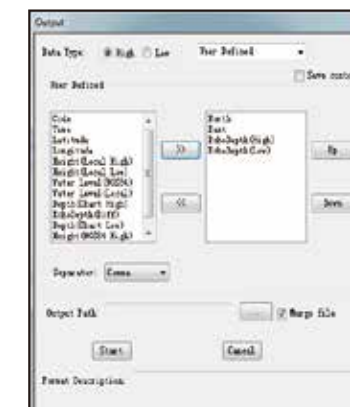
Track



Process



Result Preview



User-defined Export



External Sensor

FEATURES

- Dual-frequency
- The Full-featured Hi-MAX Sounder Software
- Rugged Industrial Platform
- CE and EN 60945 Certification
- New Processing Circuit
- Frequency Span Available for Special Projects
- Multiple I/O Interfaces
- 17-inch Large Tempered Glass Screen
- Shortcut Buttons
- Window 7 Operating System
- 128 GB Internal Data Storage

APPLICATIONS



Tracking of the Seabed

Using the high energy of low-frequency sound waves and low attenuation in the water, HD-MAX is capable of bottom tracking of the ocean.



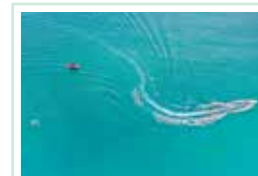
Turbid Water with High Sand Content

HD-MAX can be easily operated in water with a high sand content of 3~35kg/m³. Low-frequency sound waves allow HD-MAX to penetrate a large amount of sand in the river to obtain the underwater topography.



Sediment Measurement for Dredging

As a good tool for sediment measurement, the combination of high and low frequency can provide the thickness of sediment, which is important for guiding dredging projects for ports, harbors, and channels.



Measurement at High Speed

HD-MAX supports measurement at a high speed with the highest ping rate of 30Hz. Under the condition of the measurement vessel reaching the full speed of 10.6 knots and the depth of water is 10~40 m, the echoes received by HD-MAX are stable and there are no secondary echoes or spurious echoes.