KNUDSEN

Mini

SOUNDER

Mini

SOUNDER

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SOUNDER SERIES

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Mini SOUNDER

Knudsen Sounder Systems are the next benchmark in survey echosounders. The affordable MiniSounder Sounder is industry unique in both compact size and performance. Less than 3 kg. in weight, the system incorporates the latest in digital signal processing technology and includes Knudsen SounderSuite Windows application software for easy interface to your computer via a USB connection. The MiniSounder is ideal for easy transport to changing project sites, and is well suited for quick deployment on small survey platforms in open air environments.

Available only in a single channel configuration but with a wide frequency range, the MiniSounder also offers the flexibility of using more than one MiniSounder together (up to 4) simultaneously within one user application. An attractive low cost, easy portability, and expandable design architecture make the MiniSounder an excellent choice for any project.

Technical Specifications: *(subject to change without notice)*:

Available Channels
- Single channel only

Frequency
- 24kHz - 210kHz

Output Power
- Up to 1kW

Input Power
- 12-30 VDC

Pulse Length
- Up to 4ms

Gain
- Manual, automatic (AGC), and time varied (TVG)
- 96db range of programmable analog gain

Ranges
- 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000

Phasing
- Manual and automatic (up to 50% overlaps)

Units
- Meters, Feet, or Fathoms

Resolution
- 1cm (0-99.99), 1dm (100-999.9), 1m (>1000)
- 1/100ft (0-99.99), 1/10ft (100-999.9), 1ft (>1000)
- 1/100fm (0-99.99), 1/10fm (100-999.9), 1fm (>1000)

Sound Velocity
- 1300 - 1800 m/s Resolution 1m/s
- 4265 - 5906 ft/s Resolution 1ft/s
- 710 - 984 fm/s Resolution 1 fm/s

Draft
- 0-100m Resolution 1cm
- 0-328ft Resolution 0.01ft
- 0-54fm Resolution 0.01fm

Interface
- USB 2.0 Full Speed (12Mbps)

Output Data
- Full resolution envelope data in KEB binary format and XTF (for sidescan only)
- User configurable ASCII digital depth strings

Dimensions
- 257mm (10.1") x 158mm(6.2") x 89mm (3.5")

Weight
- less than 3kg (7lbs)

Installation
- Desktop or Bulkhead

Operating Temperature
- 0 - 50°C

Additional Features
- Frequency agility on all channels
- Built-in drivers for all popular GPS
- Built-in test signal generator
- Compatible with industry standard dataloggers and processing software (Hypack, QINSy, SonarWiz)
- Heave compensated echogram

Options
- Sidescan option
- Network option for multiple PC operation
- Remote Display Indicators
- EchoSim Sonar Signal Simulator

SounderSuite Software (included)
- Compatible with Windows Vista or higher
- Easy to use Graphical User Interface (GUI)
- Postsurvey Display and Printing Software
- Large Digitized Depth Display
- Print to standard Windows printers

SOUNDER PORTABLE SERIES

Knudsen Sounder Systems are the next benchmark in survey echosounders. The Sounder Portable system incorporates the latest in digital signal processing technology and includes Knudsen SounderSuite Windows application software for easy interface to your computer via a USB connection. The unit, housed in a lightweight, rugged, splashproof case, is ideal for easy transportation to changing project sites, and quick deployment on small survey platforms in open air environments

Available in a 2 or 4 channel configuration, the versatile system is particularly well suited to multiple survey roles and includes a wide range of standard shallow water bathymetry and sidescan frequencies.

Technical Specifications: *(subject to change without notice)*:

Available Channels
- Sounder 1612: up to 2 channels
- Sounder 1614: up to 4 channels

Frequency
- All channels: 24kHz - 210kHz
  (12kHz option available)

Output Power
- Up to 1kW per channel

Input Power
- 12 -30 VDC

Pulse Length
- Up to 4ms

Gain
- Manual, automatic (AGC), and time varied (TVG)
- 96db range of programmable analog gain

Ranges
- 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000

Phasing
- Manual and automatic (up to 50% overlaps)

Units
- Meters, Feet, or Fathoms

Resolution
- 1cm (0-99.99), 1dm (100-999.9), 1m (>1000)
- 1/100ft (0-99.99), 1/10ft (100-999.9), 1ft (>1000)
- 1/100fm (0-99.99), 1/10fm (100-999.9), 1fm (>1000)

Sound Velocity
- 1300 - 1800 m/s Resolution 1m/s
- 4265 - 5906 ft/s Resolution 1ft/s
- 710 - 984 fm/s Resolution 1 fm/s

Draft
- 0-100m Resolution 1cm
- 0-328ft Resolution 0.01ft
- 0-54fm Resolution 0.01fm

Interface
- USB 2.0 Full Speed (12Mbps)

Output Data
- Full resolution envelope data in KEB binary format and XTF (for sidescan only)
- User configurable ASCII digital depth strings

Dimensions
- 488mm (19.2") x 386mm(15.2") x 185mm (7.3")

Weight
- Sounder 1612: 9kg (20lbs)
- Sounder 1614:11kg (24lbs)

Installation
- Splash-proof case

Operating Temperature
- 0 - 50°C

Additional Features
- Frequency agility on all channels
- Built-in drivers for all popular GPS
- Built-in test signal generator
- Compatible with industry standard dataloggers and processing software (Hypack, QINSy, SonarWiz)
- Heave compensated echogram

Options
- Sidescan option
- Network option for multiple PC operation
- Remote Display Indicators
- EchoSim Sonar Signal Simulator

SounderSuite Software (included)
- Compatible with Windows Vista or higher
- Easy to use Graphical User Interface (GUI)
- Postsurvey Display and Printing Software
- Large Digitized Depth Display
- Print to standard Windows printers

SOUNDER RACK SERIES

Knudsen Sounder Systems are the next benchmark in survey echosounders. The Sounder Rack system incorporates the latest in digital signal processing technology and includes Knudsen SounderSuite Windows application software for easy interface to your computer via a USB connection. The unit, housed in a 3U rackmount case, is ideal for quick installation to a standard equipment rack on your survey platform.

Available in a 2 or 4 channel configuration, the versatile system is particularly well suited to multiple survey roles and includes a wide range of standard shallow water bathymetry and sidescan frequencies.

Technical Specifications: *(subject to change without notice)*:

Available Channels
- Sounder 1602: up to 2 channels
- Sounder 1604: up to 4 channels

Frequency
- All channels: 24kHz - 210kHz
  (12kHz option available)

Output Power
- Up to 1kW per channel

Input Power
- 12 -30 VDC

Pulse Length
- Up to 4ms

Gain
- Manual, automatic (AGC), and time varied (TVG)
- 96db range of programmable analog gain

Ranges
- 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000

Phasing
- Manual and automatic (up to 50% overlaps)

Units
- Meters, Feet, or Fathoms

Resolution
- 1cm (0-99.99), 1dm (100-999.9), 1m (>1000)
- 1/100ft (0-99.99), 1/10ft (100-999.9), 1ft (>1000)
- 1/100fm (0-99.99), 1/10fm (100-999.9), 1fm (>1000)

Sound Velocity
- 1300 - 1800 m/s Resolution 1m/s
- 4265 - 5906 ft/s Resolution 1ft/s
- 710 - 984 fm/s Resolution 1 fm/s

Draft
- 0-100m Resolution 1cm
- 0-328ft Resolution 0.01ft
- 0-54fm Resolution 0.01fm

Interface
- USB 2.0 Full Speed (12Mbps)

Output Data
- Full resolution envelope data in KEB binary format and XTF (for sidescan only)
- User configurable ASCII digital depth strings

Dimensions
- 533mm (21") x 483mm(19") x 133mm (5.25")

Weight
- Sounder 1602: 9kg (20lbs)
- Sounder 1604:10kg (22lbs)

Installation
- 3U Rackmount case

Operating Temperature
- 0 - 50°C

Additional Features
- Frequency agility on all channels
- Built-in drivers for all popular GPS
- Built-in test signal generator
- Compatible with industry standard dataloggers and processing software (Hypack, QINSy, SonarWiz)
- Heave compensated echogram

Options
- Sidescan option
- Network option for multiple PC operation
- Remote Display Indicators
- EchoSim Sonar Signal Simulator

SounderSuite Software (included)
- Compatible with Windows Vista or higher
- Easy to use Graphical User Interface (GUI)
- Postsurvey Display and Printing Software
- Large Digitized Depth Display
- Print to standard Windows printers

AUTONOMOUS PRECISION ECHOSOUNDER
## ECHOLOGGER EA400

FEATURES

- Fully self-contained Echosounder
- Backscatter data collection along full water columns
- Long Life with 3 D-type alkaline batteries
- Ideal for long-term monitoring with a 32GB SD card
- High speed downloading via the SD card
- Bluetooth Communication for real-time monitoring
- User friendly GUI software provided
- Deep sea version available (up to 1,000m)
- Very unique in the market

APPLICATIONS

- Sediment Monitoring
- Accurate Backscatter Data
- Altitude Measurement
- Wireless Real-time Bottom Tracking
- Wave Height/ Tide Monitoring
- Bridge Scour Monitoring
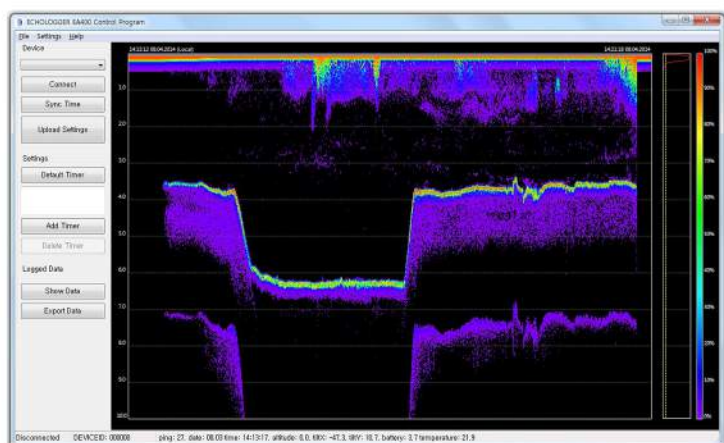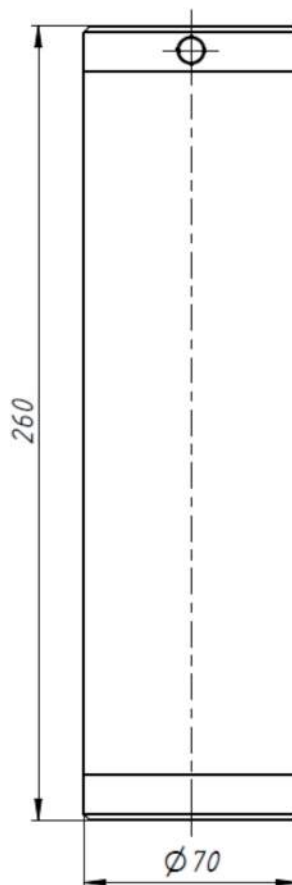
SPECIFICATION

Working Mode	Echosounder / Altimeter
Acoustic Frequency	450 KHz
Beam Width	5° (-3dB) Conical Beam
Transmit Pulse Duration	10 μsec to 200 μsec in 10 μsec steps
Ranges	0.15 m to 100 m
Temperature Resolution	0.1°C
Temperature Accuracy	0.5°C (-10°C to +50°C)
Sample Rate	100 kHz
Water Column Resolution	Up to 7.5 mm
Repetition (Ping) Rate	Up to 10 Hz
Range Resolution	Up to 1 mm
Tilt sensor	
Dual-axis, Horizontal Operation	±90° (up, down)
Inclination Data Accuracy	0.1°
PC Interface	USB 2.0 (Bluetooth v2.1 optional)
Data Output Format	Binary, ASCII TXT, NMEA0183
Data Storage Mdeia	Micro SD Card (up to 32GB, SDHC)
Downloading Media	Removable Micro SD card, USB, Bluetooth
Activation	Magnetic Switch or Activation Button
Operation Mode Indication	Dual Color LED
Power Supply	3 D-type Alkaline Batteries
Operation Lifetime	up to 1 Year (depend on ping rates)
Operation Temperature	-10°C to +50°C
Maximum Operating Depth	100 m (deeper versions available on request)
Housing Material	PVC
Dimensions	D70mm x L260mm
Weight	1.5kg in Air with Batteries (0.5kg in Water)

EchoLogger

Dual Frequency single beam echosounder

Ultracompact

Echologger EU D032/ ECT D032 is an ultracompact portable dual frequency single beam echosounder for hydrographic and environmental survey applications. The device carries two frequencies (30 & 200kHz) working simultaneously (alternating). It is a self-contained device with a transducer, operating electronics and a tilt sensor in an ultracompact single unit. Singal can penetrate through soft sediments to detect hard bottom classification as well as detect the surface layer.

Digital echogram replacing paper chart

Echologger EU D032/ ECT D032 operates in echogram mode recording high resolution full water column acoustic envelope as well as in digital depth mode generating NMEA compatible digital altitude data
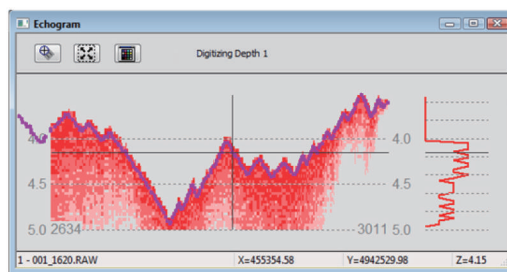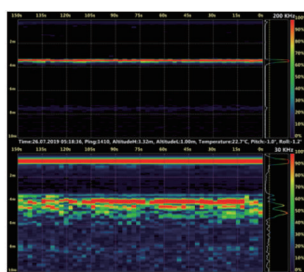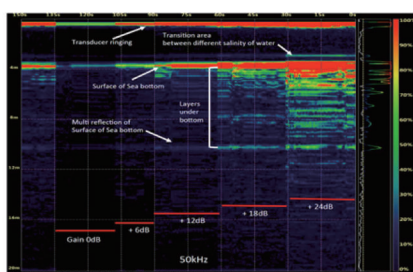
Combability

Echologger EU D032/ ECT D032 works with most of data collectors in the market through USB, RS-232C or Bluetooth. It is also compatible with major hydrographic data acquisition softwares such as HyPack , HydroMagic and free Echologger Control Program.

Quick and easy mobilization

Echologger EU D032/ ECT D032 mobile kits can support quick and easy mobilization with optional Bluetooth power pack or directly to data collector/mini PC through USB port or long-range wifi module

USV application
- EU D032/ ECT D032
- RTK/PPK GNSS
- Survey poles
- Mounting bracket

Small boat application
- EU D032/ ECT D032
- RTK/PPK GNSS
- Survey pole
- Mounting bracket
- Rugged tablet / Data collector

Small boat application
- EU D032/ ECT D032
- RTK/PPK GNSS
- Survey pole
- Mounting bracket
- DU-BS21 (BT power pack)

Small boat application
- D032
- RTK/PPK GNSS
- Survey poles
- Mounting bracket
- Long-range WiFi

www.echologger.com

Specifications

Acoustic Frequency	30 kHz / 200 KHz
Beam width	26° / 5° Conical (-3dB) (echo mode)
Transmit Pulse Width	100μsec ~ 1,000μsec
Transmit Power	Max. 30 W, adjustable
TVG Control	Up to 60 dB,
Gain Control	-30 dB to +30 dB
Operating Distance Range	1.5 m ~ 200 m (30 kHz) /0.5 m ~ 200 m (200 kHz)
Repetition (Ping) Rate	100 Hz max
Sampling Rate	Max 100 kHz; adjustable, or auto mode (default)
Water Column Resolution	Appx. 7.5 mm @ 100 kHz sampling
Altimeter Range Resolution	1.0 mm
Temperature sensor Resolution	0.1°C
Tilt sensor integrated	Dual-axis (Roll & Pitch) ±90°, Inclination data resolution 0.1°
Digital Output Interface	EU D032: USB 2.0 ECT D032: RS-232, RS-485 (selectable)
Communication Speed	EU D032: 4,800 ~ 921,600, 3M baud (115,200 baud default) ECT D032: 4800 ~ 921,600 baud (115,200 baud default)
Data Output Format	Profile 10/12bit resolution ASCII Text Profile 12bit Binary / 8bit companded Binary Altitude NMEA0183 / Simple Altimeter Deso-25 Sonarmite DFX
Configuration and Data reading	Echologger Echosounder Control Program (Dual) or any Terminal program
Multi node Internetworking (RS485 only)	Up to 32 units
Connector	EU D032: LTW 12-05PMMS-SH8003 ECT D032S: LTW M12A-08PMMS-SH8002 ECT D032: SEACON MCBH8SS
Power supply	EU D032: USB Powered, 2W max ECT D032: 10 ~ 75 VDC, 2W max, Internally isolated
Operation Temperature	-10°C +50°C
Operating Depth	EU D032 / ECT D032S: 1m (for surface vehicle) ECT D032C: 100m
Housing	Acetal
Dimensions	Ø96 mm x L90 mm (without connector)
Weight	740g (without cable)
Other features	Use both frequencies simultaneously or separately Compatible with major hydro-graphic softwares (Hypack, HydroMagic, HydroPro etc.) GPS integrated data

EofE Ultrasonics Co., Ltd.

303, Venture Center, Hanggongdaehangro 76
Goyang-Si 10540, Korea
Tel : +82-2-3158-3178
info@echologger.com

ULTRACOMPACT PRECISION ECHOSOUNDER
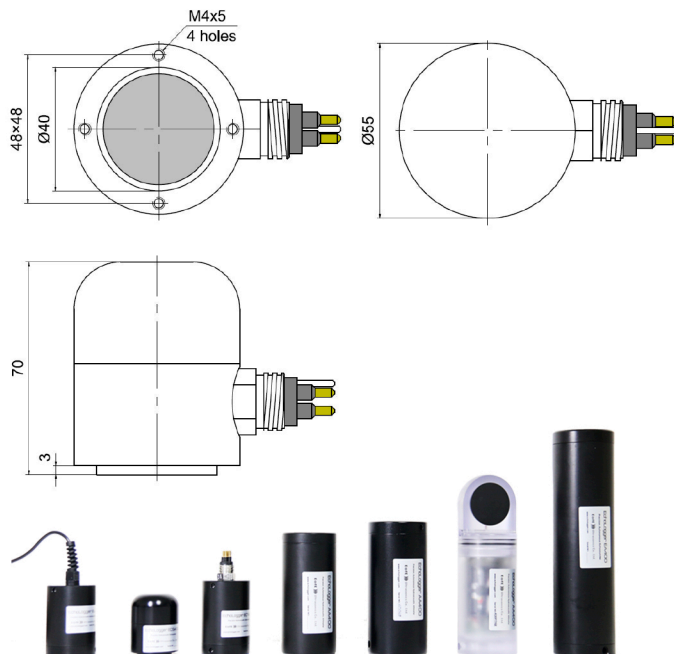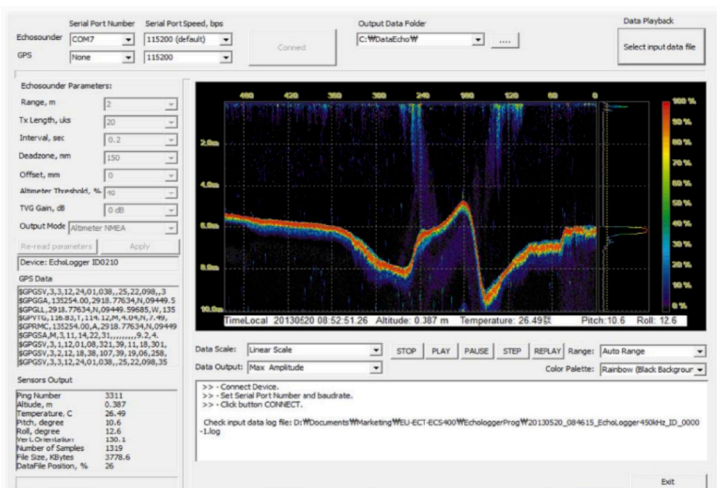## ECHOLOGGER ECS400

FEATURES

- Real-time backscatter data collection along full water columns
- Ultra compact (50mm dia. x 70mm length)
- Ideal for navigation of ROV/AUVs
- Serial interface (RS232, 485, 422)
- Compatible with Hypack, Topcon receiver, HydroPro(Trimble)
- Seacon underwater wet connector in place
- User friendly GUI software provided for instant image update
- Tilt sensor integrated (option)
- Depth rate up to 1,000m

APPLICATIONS

- Altitude Measurement for Navigation
- Sediment Move Monitoring
- Bridge Scour Monitoring
- Harbor Security
- Wave/Tide Monitoring

SPECIFICATION

Acoustic Frequency	450 KHz
Beam width	5° Conical (-3dB)
Transmit Pulse Width	10μsec ~ 200μsec (10μsec step)
Ranges	0.15m~100m
Housing	ECT400 - PVC
	ECS400 - Aluminium (anodised)
Connector	SEACON
Operating Depth	100 m (Higher depth rate avaialble on request)
Repetition (Ping)	10 Hz max
Rate Sampling Rate	100 kHz
Water Column Resolution	>7.5 mm
Altimeter Range Resolution	<1.0 mm
Temperature Resolution	0.1°C
Temperature Accuracy	0.5°C (-10°C ~ +50°C)
Tilt sensor integrated (optional)	
Dual-axis, horizontal operation	±90°
Inclination data accuracy	0.1
Digital Output Interface	RS-232, RS-485, RS-422
Communication Speed	4800 ~- 115200 baud (115200 baud default)
Data Output Format	ASCII TXT, NMEA0183, or user defined (optional)
Configuration and Data reading	Echologger Control Program
	Or any terminal program
Operation Temperature	-10°C +50°C
Power supply	8 ~ 75 VDC, 2W max
Dimensions	ECT: D56 mm x L85 mm (without connector)
	ECS: D55 mm x L70 mm (without connector)
Weight	ECT400 - 270g (PVC),
	ECS400 - 310g (Aluminum),
Other features	Hypack Compatible (NMEA)
	GPS integrated data

PRECISION DUAL FREQUENCY ECHOSOUNDER
ECHOLOGGER ECS D24/ECT D24

ECS D24

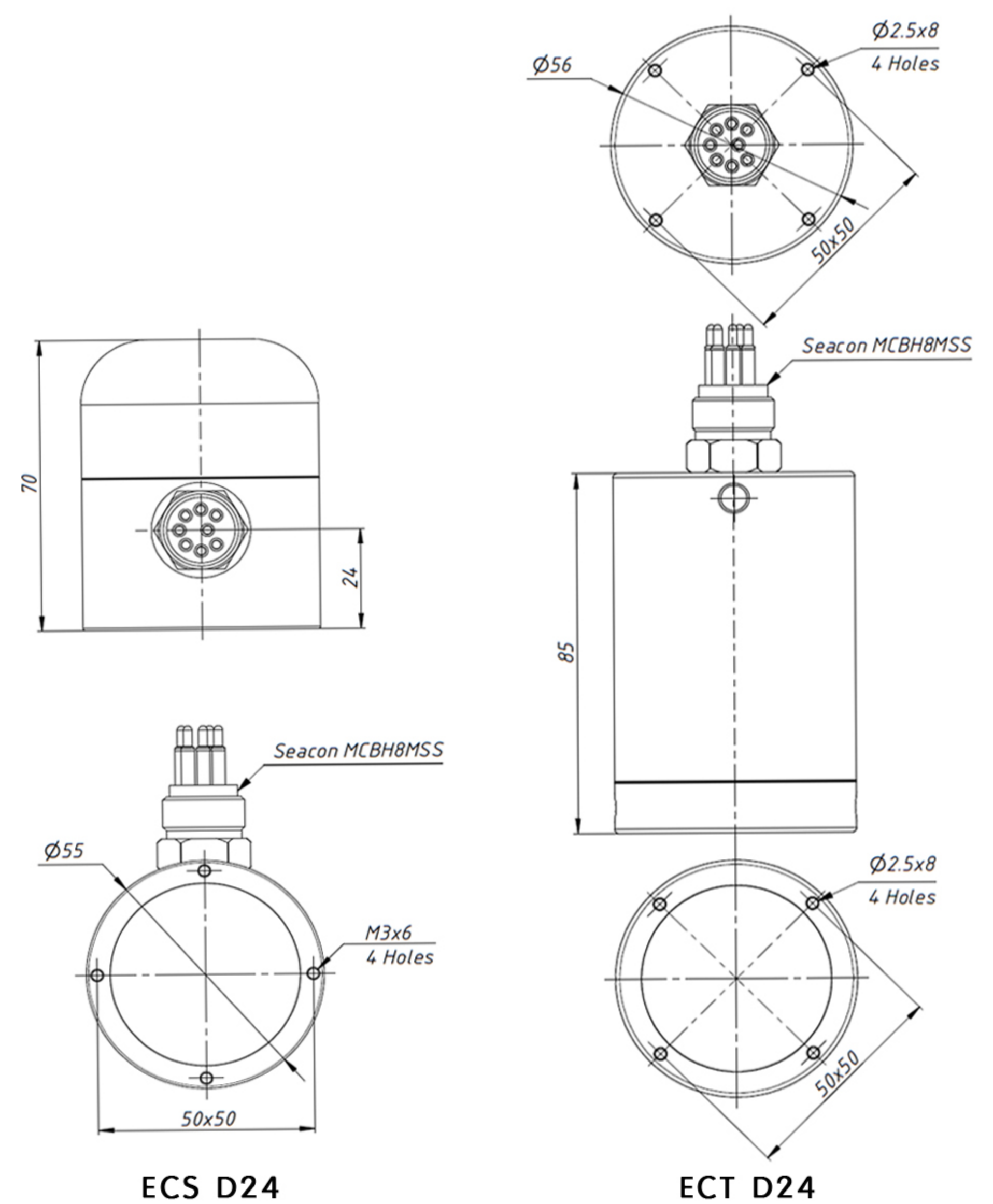ECT D24

FEATURES

- Real-time backscatter data collection along full water columns
- Ultra compact (50mm dia. x 70mm length)
- Ideal for navigation of ROV/AUVs
- Serial interface (RS232, 485)
- Multi-node interface supported with RS485
- Tilt sensor integrated as standard
- User friendly GUI software provided for instant image update
- Compatible with Hypack, Topcon receiver, HydroPro(Trimble)
- Seacon underwate wet connector installed
- Depth rate (standard 100m,up to 6,000m available on request)

APPLICATIONS

- Altitude Measurement for Navigation
- Sediment Move Monitoring
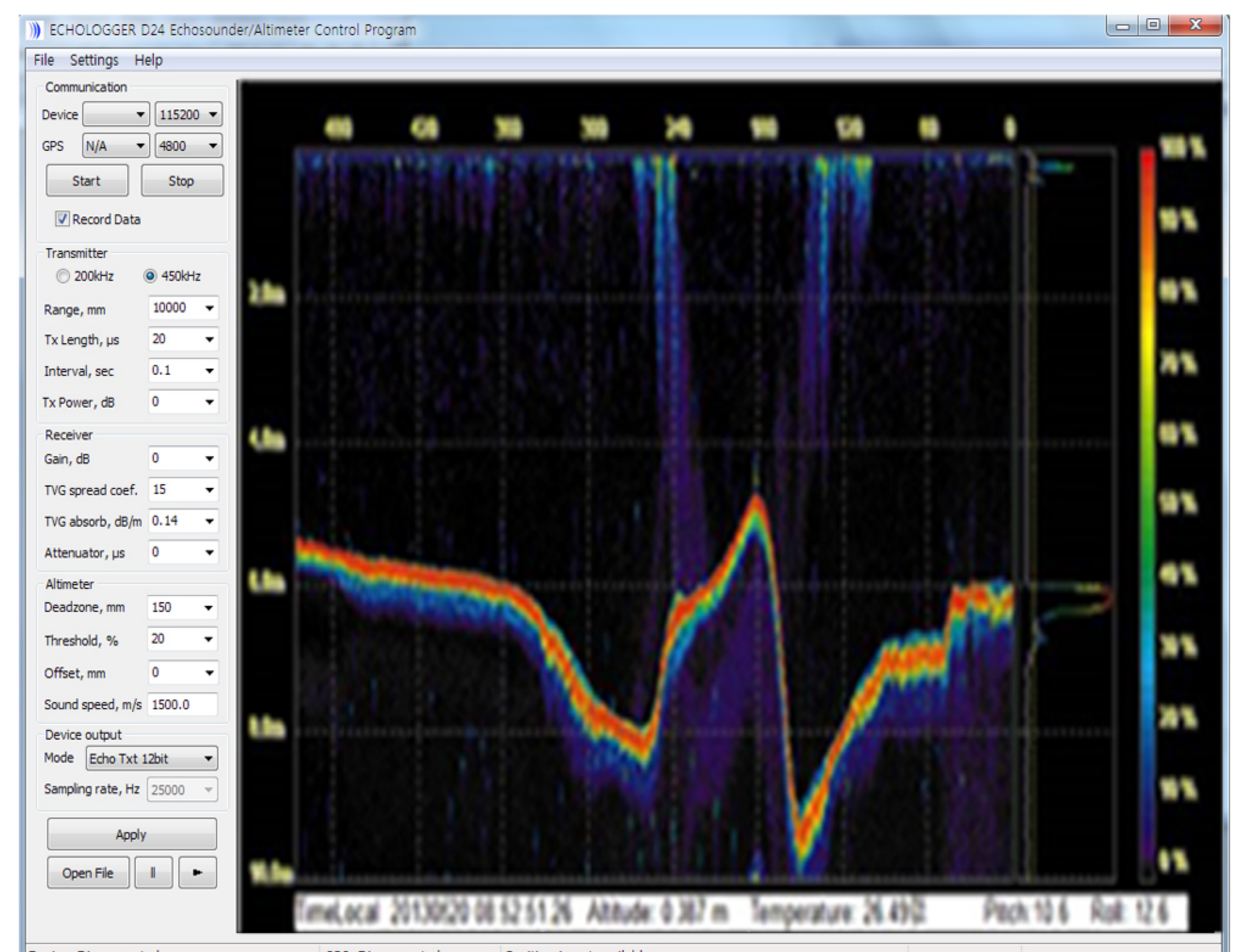- Bridge Scour Monitoring
- Harbor Security
- Wave/Tide Monitoring

ECS D24

ECT D24

EGT D24

SPECIFICATION

Acoustic Frequency	200 kHz / 450 kHz
Beam width	10° / 5° Conical (-3dB)
Transmit Pulse Width	10μsec ~ 200μsec
Transmit Power	Max. 50 W (adjustable)
TVG Control	Up to 60 dB
Gain Control	-30 dB to +30 dB
Input Signal Attenuator (-20dB)	Activation time 0~300,000 μSec
Ranges	0.15 m ~ 200 m (200kHz), 0.15 m ~ 100 m (450kHz)
Repetition (Ping) Rate	100 Hz max
Sampling Rate (Profiling mode)	Max 100kHz; adjustable, or auto mode (default)
Water Column Resolution	Appx. 7.5 mm @100kHz sampling
Altimeter Range Resolution	1.0 mm
Temperature sensor Resolution	0.1° C
Tilt sensor integrated	Dual-axis (Roll & Pitch) ± 90° , Inclination data resolution 0.1°
Synchronization	Outward / Inward (S/W selectable) - ECT D24U & ECS D24U
Analog Output Interface	1.25V, 2.5V, 5V, 10V max (S/W selectable) , Distance or Envelope
Digital Output Interface	ECS D24U,ECT D24U: USB 2.0 , ECS D24S,ECT D24S: RS-232, RS-485 (selectable by select pin)
Communication Speed	4800 ~ 921600, 3M baud (115200 baud default)
Data Output Format Profile	Profile 10bit/12bit resolution ASCII Text
	Profile 12bit resolution Binary
	Profile 8bit resolution Binary (12bit compressed to 8bit)
	Altitude NMEA0183 / Altitude Simple
Multi node Internetworking(RS485 only)	ECS D24S,ECT D24S: Up to 32 units
Configuration and Data reading	Echologger Control Program or any Terminal program
Connector	ECS D24U: SEACON MCBH8MSS pigtail, ECT D24S: SEACON MCBH8MSS
	ECS D24S: SEACON MCBH8MSS, ECT D24U: SEACON MCBH8MSS, EGT D24: Cable Gland
Operation Temperature	-10° C +50° C
Operating Depth	ECS D24U: Standard 1m, 100m, (up to 6000m) , ECT D24U: 1m, 100m, 1000m, 6000m
	ECS D24S: Standard 1m, 100m, (up to 6000m) , ECT D24S: 1m, 100m, 1000m, 6000m
Housing	ECS D24U: Aluminium (100m, 1000m), ECT D24U: Acetal (100m), Aluminium (1000m)
	ECS D24S: Aluminum (100m, 1000m, 6000m), ECT D24S: Acetal (100m), Aluminum (1000m, 6000m)
	EGT D24: Acetal (1m) IP68
Dimensions (100m rate)	ECS D24U: D55 mm x L70 mm (without connector), ECT D24U: D56 mm x L85 mm (without connector)
	ECS D24S: D55 mm x L70 mm (without connector), ECT D24S: D56 mm x L85 mm (without connector)
	EGT D24: D56 mm x L80 mm (without cable gland)
Weight (100m rate)	ECS D24U: 320g (100m, 1000m versions), ECT D24U: 280g (100m version)
	ECS D24S: 320g (100m, 1000m versions), ECT D24S: 280g (100m version)
	EGT D24: 240g (without cable)

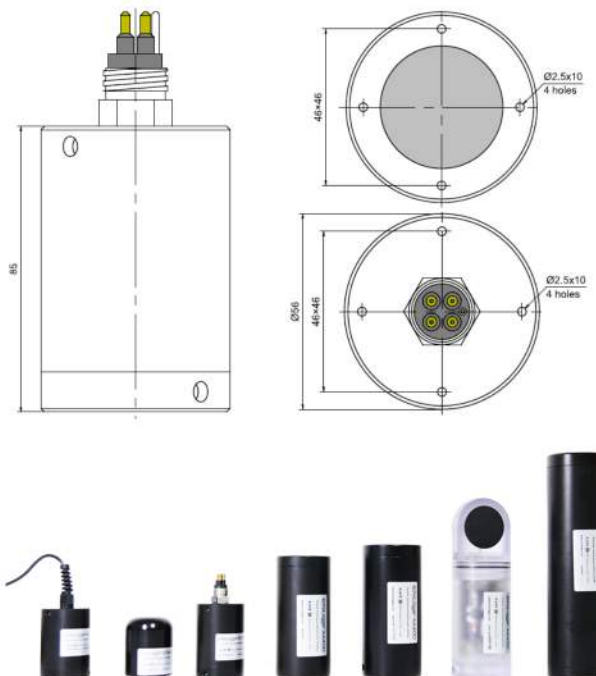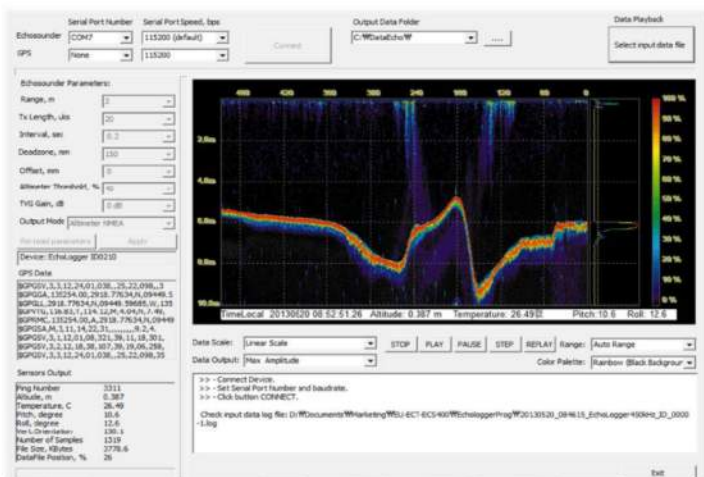# ULTRACOMPACT PRECISION ECHOSOUNDER
ECHOLOGGER ECT400

FEATURES

- Real-time backscatter data collection along full water columns
- Ultra compact (50mm dia. × 70mm length)
- Ideal for navigation of ROV/AUVs
- Serial interface (RS232, 485, 422)
- Compatible with Hypack, Topcon receiver, HydroPro(Trimble)
- Seacon underwater wet connector in place
- User friendly GUI software provided for instant image update
- Tilt sensor integrated (option)
- Depth rate up to 1,000m

APPLICATIONS

- Altitude Measurement for Navigation
- Sediment Move Monitoring
- Bridge Scour Monitoring
- Harbor Security
- Wave/Tide Monitoring

SPECIFICATION

Acoustic Frequency	450 KHz
Beam width	5° Conical (-3dB)
Transmit Pulse Width	10μsec ~ 200μsec (10μsec step)
Ranges	0.15m~100m
Housing	ECT400 - PVC
	ECS400 - Aluminium (anodised)
Connector	SEACON
Operating Depth	100 m (Higher depth rate avaialble on request)
Repetition (Ping)	10 Hz max
Rate Sampling Rate	100 kHz
Water Column Resolution	>7.5 mm
Altimeter Range Resolution	<1.0 mm
Temperature Resolution	0.1°C
Temperature Accuracy	0.5°C (-10°C ~ +50°C)
Tilt sensor integrated (optional)	
Dual-axis, horizontal operation	±90°
Inclination data accuracy	0.1
Digital Output Interface	RS-232, RS-485, RS-422
Communication Speed	4800 ~- 115200 baud (115200 baud default)
Data Output Format	ASCII TXT, NMEA0183, or user defined (optional)
Configuration and Data reading	Echologger Control Program
	Or any terminal program
Operation Temperature	-10°C +50°C
Power supply	8 ~ 75 VDC, 2W max
Dimensions	ECT: D56 mm x L85 mm (without connector)
	ECS: D55 mm x L70 mm (without connector)
Weight	ECT400 - 270g (PVC),
	ECS400 - 310g (Aluminum),
Other features	Hypack Compatible (NMEA)
	GPS integrated data

DUAL FREQUENCY ECHOSOUNDER
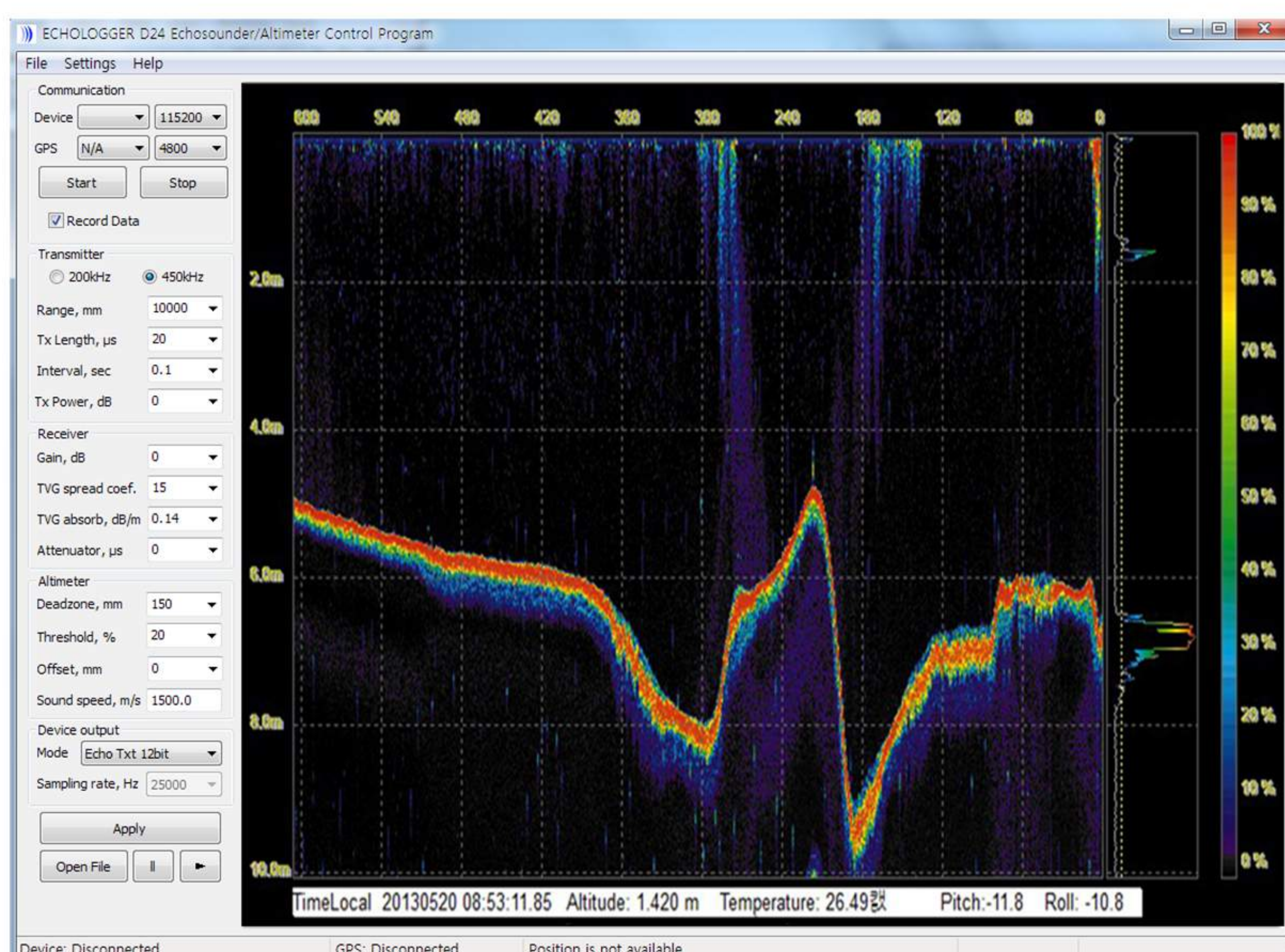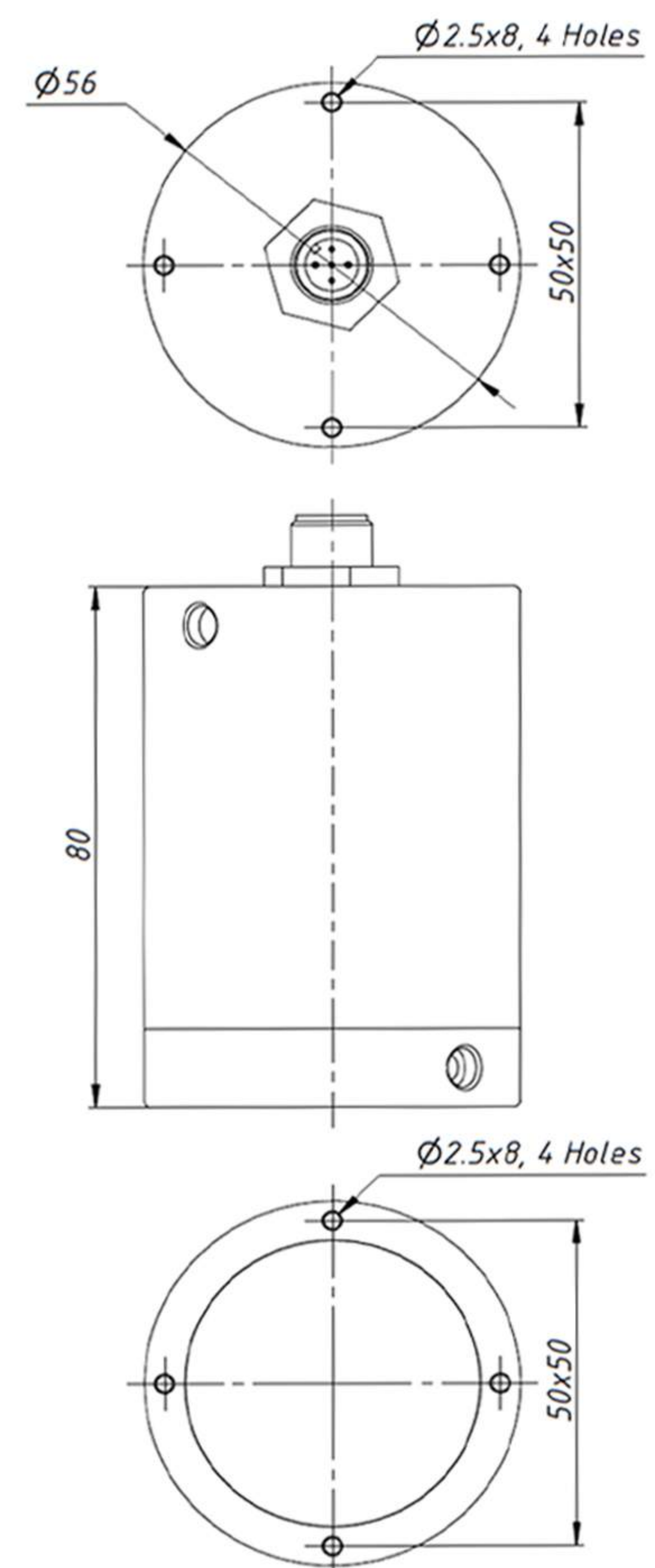## ECHOLOGGER EU D24 (USB type)

FEATURES

- Plug and Play with a laptop PC via USB port
- Extremely easy to use
- Real-time backscatter data collection along full water columns
- Compatible with Hypack, Topcon receiver, HydroPro(Trimble)
- User friendly GUI software provided for instant image update
- Tilt sensor integrated as standard
- Fully adjustable parameters
- Affordable price

APPLICATIONS

- Sea bed mapping
- Sediment Move Monitoring
- Bridge Scour Monitoring

SPECIFICATION

Acoustic Frequency	200 kHz / 450 KHz
Beam width	10° / 5° Conical (-3dB)
Transmit Pulse Width	10μsec ~ 200μsec
Transmit Power	Max. 50 W (adjustable)
TVG Control	Up to 60 dB
Gain Control	-30 dB to +30 dB
Input Signal Attenuator (-20dB)	Activation time 0~300,000 μSec
Ranges	0.15 m ~ 200 m (200kHz), 0.15 m ~ 100 m (450kHz)
Repetition (Ping) Rate	100 Hz max
Sampling Rate (Profiling mode)	Max 100kHz; adjustable, or auto mode (default)
Water Column Resolution	Appx. 7.5 mm @100kHz sampling
Altimeter Range Resolution	1.0 mm
Temperature sensor Resolution	0.1° C
Tilt sensor integrated	Dual-axis (Roll & Pitch) ± 90° , Inclination data resolution 0.1°
Synchronization	Outward / Inward (S/W selectable) -ECT D24U & ECS D24U
Analog Output Interface	1.25V, 2.5V, 5V, 10V max (S/W selectable), Distance or Envelope
Digital Output Interface	USB 2.0
Communication Speed	4800 ~ 921600, 3M baud (115200 baud default)
Data Output Format Profile	Profile 10bit/12bit resolution ASCII Text
	Profile 12bit resolution Binary
	Profile 8bit resolution Binary (12bit compressed to 8bit)
	Altitude NMEA0183 / Altitude Simple
Configuration and Data reading	Echologger Control Program or any Terminal program
Connector	EU D24 - LTW 12-05PMMS-SH8003 & 5m USB 2.0 Cable
Power supply	USB Powered, 2W max
Operation Temperature	-10° C +50° C
Operating Depth	Standard 1m, 100m (up to 6000m)
Housing	EU D24: Acetal (1m) IP68
Dimensions (100m rate)	EU D24: D56 mm x L80 mm (without connector)
Weight (100m rate)	EU D24: 240g

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# PRECISION ECHOSOUNDER USB CONNECTION
ECHOLOGGER EU400

FEATURES

- Plug and Play with a laptop PC via USB port
- No additional power supply is required
- Real-time backscatter data collection along full water columns
- Compatible with Hypack, Topcon receiver, HydroPro(Trimble)
- User friendly GUI software provided for instant image update
- Tilt sensor integrated (option)

APPLICATIONS

- Sea bed mapping
- Sediment Move Monitoring
- Bridge Scour Monitoring
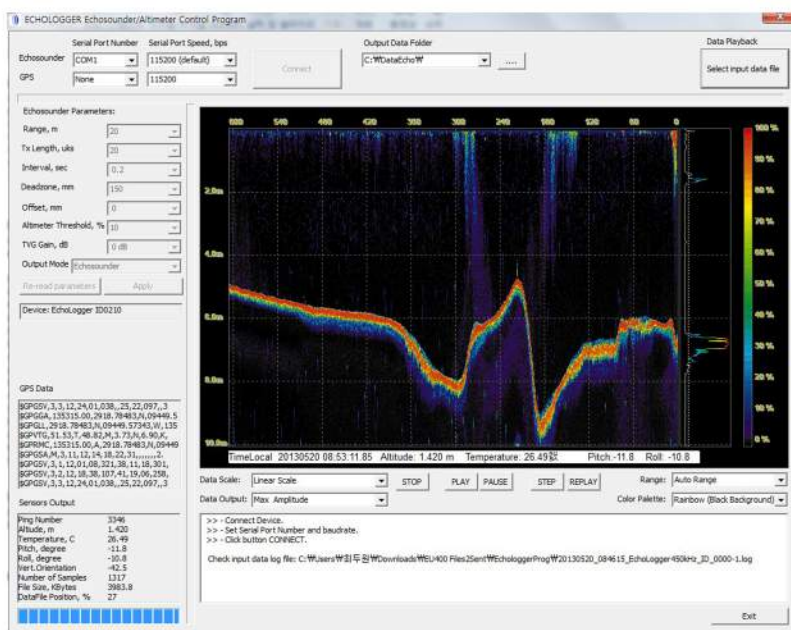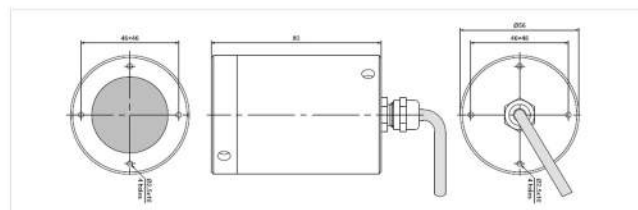
SPECIFICATION

Acoustic Frequency	450 KHz
Beam width	5° Conical (-3dB)
Transmit Pulse Width	10µsec ~ 200µsec (10µsec step)
Ranges	0.15 m ~ 100 m
Housing	Acetal
Connector	USB
Operating Depth	5 m (Cable length dependant)
Repetition (Ping) Rate	10 Hz max
Sampling Rate	100 kHz
Water Column Resolution	>7.5 mm
Altimeter Range Resolution T	<1.0 mm
emperature Resolution	0.1°C
Temperature Accuracy	0.5°C (-10°C ~ +50°C)
Tilt sensor integrated (optional)	
Dual-axis, horizontal operation	±90°
Inclination data accuracy	0.1
Digital Output Interface	USB
Communication Speed	4800 ~ 115200 baud (115200 baud default)
Data Output Format	ASCII TXT, NMEA0183, or user defined (optional)
Configuration and Data reading	Echologger Control Program
	Or any terminal program
Operation Temperature	-10°C ~ +50°C
Power supply	USB powered, 2W max
Dimensions	D56 mm x L80 mm (without connector)
Weight	420g
Other features	Hypack Compatible (NMEA)
	GPS integrated data