

iq Product Datasheet

Sonar iq[®]

Single Frequency Echosounder Bathymetric Survey System



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Starting a hydrographic Survey has never been this easy. We offer a complete system to easily map the Seabed anywhere. It comes complete with a Singlebeam Echosounder, RTK GNSS, Mounting Frame, Windows Tablet PC with 4G and Hydrographic software.

Applications:

- Hydrographic Surveys
- Aquaculture

No additional Powersupply is needed.

The Echosounder Easily interfaces over USB with the Tablet PC. The simple USB Cable interfaces to the RTK Receiver. The Tablet powers the RTK Receiver. If you do need additional Power, simply plug a Powersupply into the Tablet and you are all set.

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Acoustic Frequency	450 kHz or 200 kHz
Beam width	5° (450kHz) / 10° (200kHz) Conical (-3dB)
Transmit Pulse Width	10µsec ~ 200µsec (10µsec step)
Ranges	0.15 m ~ 100 m
Housing	Acetal
Repetition (Ping) Rate	10 Hz max
Sampling Rate	100 kHz
Water Column Resolution	appx. 7.5 mm
Altimeter Range Resolution	1.0 mm
Temperature Resolution	0.1°C
Tilt sensor integrated (optional)	Dual-axis, horizontal operation : ±90°
Tilt sensor integrated (optional)	Inclination data accuracy : 0.1
Digital Output Interface	USB (EU400, EU200), RS-232,485,422 (ECT400S, ECT200S)
Communication Speed	4,800 ~ 921,600 baud (115,200 baud default)
Data Output Format	ASCII TXT, NMEA0183, or user defined (optional)
Configuration and Data reading	Echollogger Control Program or any terminal program
Operation Temperature	-10°C +50°C
Power supply	USB powered, 2W max (EU400, EU200), 8~75 VDC, 2W max (ECT400S, ECT200S)
Dimensions	D56 mm x L80 mm (without connector)
Weight	270g (exc. cable)



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SIGNAL TRACKING

Channels	1598
GPS	L1C/A, L2P, L2C, L5, L1C
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GLONASS	L1, L2, L3
Galileo	E1, E5a, E5b, E6, E5 AltBoc
QZSS	L1C, L2, L5, L1C/A
Navic	L5
SBAS	WAAS, EGNOS, SDCM, BDSBAS, GAGAN

ACCURACY

RTK reliability	> 99.99%
RTK initialization	< 10s
Hot start	< 15s
Cold start	< 50s
Re-acquisition time	< 1s
Static post-processing	± 2.5mm+0.5ppm Horizontally ± 5mm+0.5ppm Vertically
RTK	± 8mm+1ppm Horizontally ± 15mm+1ppm Vertically
RTD	± 0.5 m Horizontally ± 1.0m Vertically
SBAS	< 1.0 m 3D RMS
Tilt surveying	< 2.5cm, within 60° tilt

DATA FORMAT

Data recording formats	RINEX 2.X, 3.X, binary data
Correction data formats	RTCM 2.x, 3.x, CMR, CMR+1
Data output formats	NMEA-0183 messages, binary data
Data output rate	1Hz, 2Hz, 5Hz, 10Hz, 20Hz
Supported protocols	VRS, FKP, MAC, Ntrip

COMMUNICATION

BT	BT4.0
Wi-Fi	IEEE 802.11 a/b/g/n 2.4G 5G, support configuration & data download via web UI
4G	FDD-LTE B1/B3/B5/B7/B8 TDD-LTE B38/B39/B40/B41 TDSCDMA B34/B39 WCDMA B1/B2/B5/B8 GSM B2/B3/B5/B8 CDMA1x/CDMA2000 BC0/BC1
UHF modem2	- Frequency range: 410 – 470Mhz - Channel Spacing: 250 kHz - Transmit power: 0.5W/1W/2W selectable - Working range: 5km – 15km3
Interface	1 7-pin lemo port for RS232 transmission and power supply 1 SIM card slot for 4G 1 TNC connector for UHF antenna

ELECTRICAL

Power	6-28V DC
Battery	6600mAh, 3.6V, more than 12 hours working time
Power consumption	< 2.85 W4

PHYSICAL

Size	12.3 × 12.3 × 7.0cm
Weight	834 g, with batteries inside
Memory	8 GB
Display	0.93" OLED display
Button	2 buttons for power/enter and function
Indicator	2 LEDs indicating satellite tracking and correction data
Housing	Magnesium-aluminum alloy
Speaker	For voice broadcast of real-time status

ENVIRONMENTAL

Working temperature	-30°C ~ +65°C
Storage temperature	-40°C ~ +85°C
Waterproof & dustproof	IP67
Shock and Vibration	Designed to survive a 2m drop onto concrete
Humidity	100% no condensation

Note:

1. The CMR and CMR+ formats are only for GPS.
2. The enhanced UHF modem is not compatible with the normal UHF modem on the market. For different user needs, SingularXYZ also provides normal UHF as an option compatible with UHF of other brands. Please clarify your requirements when placing the order.
3. The maximum working range of the enhanced UHF modem is 15km in ideal environments.
4. The power consumption of Y1 varies with the different work modes.

All specifications are subject to change without notice.



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Tech Spec

Basic parameters

Dimension	339.3 x 230.3 x 26mm
Weight	Device unit 1500g
Device Color	Black
LCD	12.2 inch IPS 16:10, 1920x1200 dpi 650nits
Touch Panel	10 point G+G capacitive touch screen
Camera	Front 2.0MP Rear 8.0MP
I/O	USB 3.0 Type-A x 1, USB Type-C x 1, DB9 - Serial RS232 port SIM Card x 1, TF Card x 1, HDMI 2.1a Mini x 1, 12PIN Pogo Pin x 1, Ø3.5mm standard earphone jack x 1, Ø5.5mm DC jack x 1
Power	AC100V ~ 240V, 50Hz/60Hz, Output DC 19V/3.42A
Fingerprint	Standard

Battery

Built-in Battery	7.4V/700mAh
Type	Built-in Li-polymer battery
Removable Battery	7.4V/6300mAh
Type	Removable Li-polymer battery
Endurance	4.5hrs (50% volume sounds, 200 lumens brightness, 1080P HD video display by default)

Performance

CPU	i7-1255U
OS	Windows 11 Pro OS
RAM	16 GB
Storage	1 TB

Network connections

Wi-Fi	WiFi 6 802.11a,b,d,e,g,h,i,k,n,r,u,v,w,ac,ax (2.4G+5.8G)
Bluetooth	BT5.1 Transmission distance: 10m
5G	5G SA&NSA: LTE FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B40 WCDMA: B1/B5/B8 GSM: B3/B8 N1/N3/N5/N7/N8/N20/N28/N38/N40/ N41/N71/N77/N78/N79

Reliability

Operating temperature	-20 °C ~ 60 °C
Storage temperature	-30 °C ~ 70 °C
Humidity	95% Non-Condensing
Rugged feature	IP65 certified, MIL-STD-810G certified
Drop Height	1.22m drop
Electrostatic Discharge	± 8kV contact discharge, ± 15kV air discharge

Including:

Docking Station

iQ Radio.eu



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