GNSS Performance	Number of Channels	1598
	Signal Tracking	BDS: B1I, B2I, B3I, B1C, B2a, B2b GPS: L1C/A, L2P, L2C, L5, L1C* GLONASS: G1, G2, G3* Galileo: E1, E5b, E5a, E5AltBoC*, E6c* QZSS: L1, L2C, L5 IRNSS: L5*; SBAS: L1C/A, L5*
	GNSS Features	Positioning & Heading output frequency: 1Hz - 50Hz; Initialization time: < 10s; Reliability: ≥ 99.99%; Supports PPS & BDS PPP
Positioning Accuracy	Single-Point	H: 1.5 m RMS; V: 3.0 m RMS
	Static	H: 2.5 mm + 0.5 ppm RMS; V: 5.0 mm + 0.5 ppm RMS
	RTK	H: 8 mm + 1 ppm RMS; V: 15 mm + 1 ppm RMS
	PPP	H: 10 cm RMS; V: 20 cm RMS Convergence time: ≤ 15 minutes
Heading Accuracy	4 m baseline	0.0375°
	2 m baseline	0.075°
User Interaction	OS	Linux OS
	Hardware	2.8-inch HD OLED screen; 1 indicator light; 8-key visual operation
	Web Server	Built-in web UI (Wi-Fi/USB access) for configuration, operation, status check & data transfer via desktop/mobile web browsers.
	Development	Secondary development kit; OpenSIC data format & interface
Cloud Services	Management	Web-based platform for remote registration and data interaction
Physical	Dimensions	150 mm × 195 mm × 60 mm
	Weight	1.45 kg
	Environmental	Operating Temp: -45°C to +85°C; Storage Temp: -55°C to +85°C
	Dust/Water Protection	IP67
	Drop Resistance	1.5 m drop resistant
Electrical	Power Supply	9-36V DC/100-240V AC
	Battery	6000mAh battery (≥8 hours)
Communication	I/O Ports	1x RJ45, 2x RS232, 1x USB-C, 1x PPS, 2x GNSS Antenna (TNC), 1x 4G Antenna (SMA), 1x Radio Antenna (TNC), 1x SIM Card Slot
	Radio UHF	RX radio module built in, working frequency 410-470 MHz, Support: Radio relay and Network-to-Radio routing Protocols: Farlink, SOUTH, TrimTalk450S, ZHD, HUACE
	Cellular	LTE Cat4, Global 4G Bands
	Bluetooth	BT4.2 (BR/EDR+BLE)
	Wi-Fi	802.11b/g/n standard
Data Storage/ Transmission	Data Storage	Built-in 64GB SSD supports external expansion
	Data Transfer	USB, FTP, and HTTP
	Formats	Static: SOUTH STH, Rinex2, Rinex3.02, etc.
		Correction formats: RTCM3.0, RTCM3.2 input and output
		GPS Output: NMEA 0183, PJK plane coordinates, Binary
		Network module: VRS, FKP, MAC; Supports NTRIP protocol

S83D

Professional Multi-purpose GNSS Positioning & Heading Receiver

1598 Channels

**Rich I/O**

Dual Antenna

BDS PPP

The S83D is a high-performance, dual-antenna GNSS receiver designed to deliver exceptional positioning and heading accuracy in the most demanding environments. Built on a powerful Linux OS platform, it integrates a massive 1598-channel engine to track all current and planned constellations. Specifically engineered for marine surveying and high-precision marine engineering, the S83D offers a seamless blend of robust hardware and cutting-edge PPP (Precise Point Positioning) technology, ensuring reliable performance even in remote offshore areas where traditional corrections are unavailable.

SOUTH SURVEYING & MAPPING TECHNOLOGY CO., LTD.

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WHAT IS BDS PPP?

BDS Precise Point Positioning (PPP) is a satellite-based augmentation service that allows the S83D to achieve high-precision results (Horizontal ≤ 10 cm) without the need for a local RTK base station or cellular network coverage.

By receiving correction data (such as orbit and clock errors) directly from the **BDS-3 PPP-B2b signal**, the S83D can calculate its precise position independently. This is a game-changer for **marine surveying**, where setting up a base station on land is often impossible and network CORS signals cannot reach far offshore. It provides a truly global, "plug-and-play" high-precision solution.

BDS-3 GEO

GNSS

SSR

OBS/NAV

Uplink Station

USER

GMCS

Ground Monitoring Station
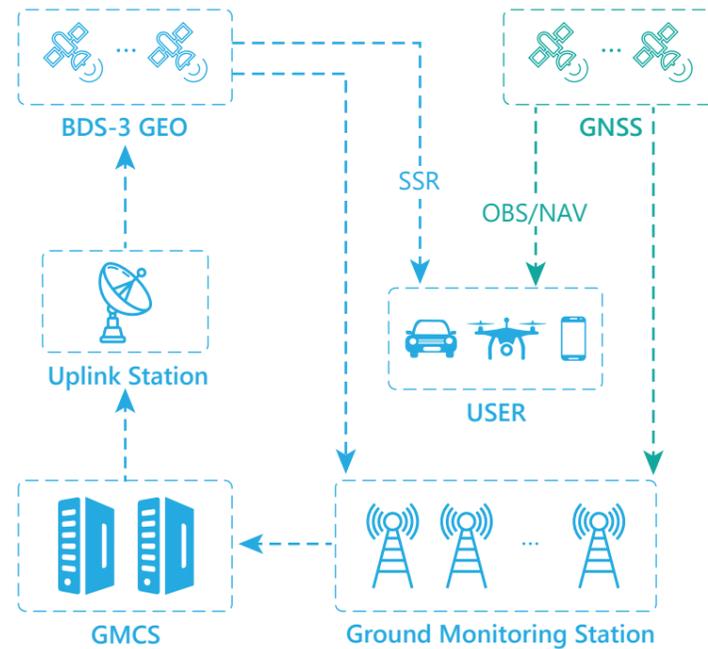
SOFTWARE & WEB UI
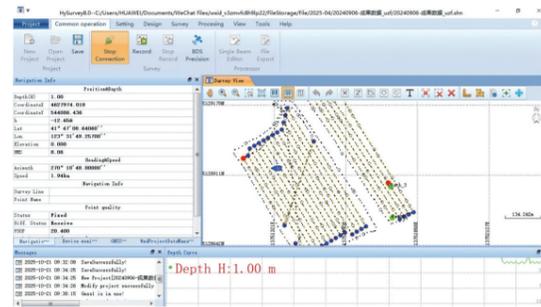
HYSURVEY 8.0: Professional Hydrographic Solution

HYSURVEY 8.0 is a specialized Windows-based software for single-beam echo sounder surveys. Known for its stable performance and professional multi-functionality, it is one of the most widely used hydrographic tools.

● **Full Compatibility:** Supports all types of GNSS receivers and multiple sensor integrations including IMU, SVP, and tide stations.

● **Streamlined Workflow:** Simplifies everything from equipment configuration to data processing and exporting final seabed coordinates.


Built-in Web UI

The S83D features a built-in Web UI accessible via Wi-Fi or USB. This platform allows users to monitor receiver status, configure data links, and manage firmware updates in real-time from any browser.
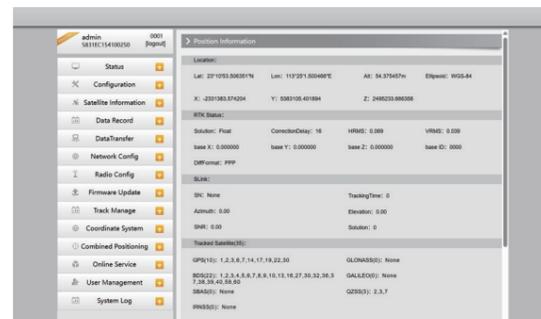
APPLICATIONS

Application Scenarios

Bathymetry & Hydrographic Surveys: Stable 3D positioning for echosounders and sidescan sonar.

Dredging Operations: Real-time monitoring of vessel and tool positioning for precise excavation.
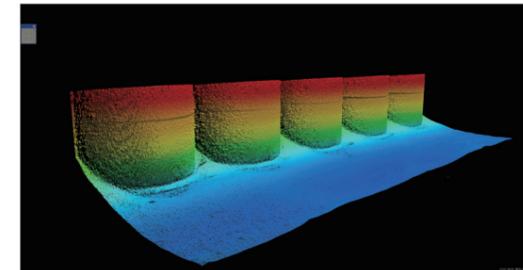
Offshore Construction: Reliable guidance for barge positioning and platform monitoring.

Unmanned Surface Vehicles (USV): Compact, rugged integration for autonomous surveying vessels.

STANDARD ACCESSORIES

SOUTH S83D LIST

Number	Name	Quantity
1	S83D Main Unit	1
2	GPS Antenna Cable(Std 15m)	2
3	RS232 Cable	1
4	12V 3A Power Adapter (5-pin)	1
5	Data & Power Cable	1
6	GNSS Antenna	2
7	Stainless Steel Suction Cups with Poles	1
8	Antenna Connecting Poles (30cm)	2
9	Instrument Case	2
10	4G Antenna	1
11	UHF Radio Antenna (15m)	1
12	1PPS Cable(Optional)	1