K7 Integrated Location and Orientation Instrument

Adopting the latest integrated design, built-in dual GPS antenna, electronic gyro, tilt sensors, K7 can quickly provides accurate position and heading information with the Hi-target navigation software for precise location and orientation of marine engineering.

Technical Advantages

- Integrated antenna and sunscreen design, waterproof, shockproof, high corrosion resistance, easy to install and maintain.
- With built-in electronic gyro and tilt sensors, it still maintains high orientation accuracy, when satellite signal in a short-term interruption.
- Rapid location and orientation data update rate, up to 20Hz/s.
- Adopting COAST technology, K7 maintain an accurate orientation in 40 minutes or even longer, when the differential signal is interrupted.
- Photoelectric isolated transmission: photoelectric isolation technology improves interference prevention from computer; RS-485 remote transmission.
- Wide Voltage: 9~36V wide DC power supply, 12V battery power supply, 24V marine power is also available.
- Broad scope of application, when there is no beacon inland, it can achieve high-precision orientation.



Technical Parameters

- GPS Signal: Dual 12 channels; L1, C/A Code, smoothing Carrier Phase;
- Data update rate: Standard 10Hz, up to 20 Hz(including location and orientation)
- Positioning accuracy: DGPS(SBAS) 1.0m CEP
- Orientation accuracy: < 0.5°RMS
- Pitching angle accuracy: < 1°RMS
- Starting time: < 60s
- Orientation fixed time: < 20s
- Re-capture time: < 1s
- Data Transmission
- Data format: Standard NMEA-0183 output format
- Port: Photoelectric isolation RS-485 port
- Baud rate: 4800~38400bps (19200 default)
- Voltage: 9~36VDC
- Consumption: < 5W
- Volume: 50cm*19cm*13cm
- Weight: 1.3kg
- Operation temperature: -32℃~74℃
- Storage temperature: -40℃~85℃
- Humidity: 100% without blocks
- Defenses: IP67

Application

Marine surveying, dredging, engineering positioning, pipe laying

K10 Split Dual-frequency RTK

As the latest generation of RTK system, K10 is a split dual-frequency RTK system with PCC board. It adopts a new circuit and design, realizing great improvement in function and performance.



Technology Advantages

- GNSS positioning performance
- Adopting the PCC board to achieve quick tracking satellites and high positioning performance
- Data transmission
- Integrated with working modes of GPRS, CDMA, UHF built-in radio, and URS data transmission station, enable data transmission to be the most convenient and efficient.
- Data collection
- Collecting and recording data in real time all day around. In USB communication port, plug and play, no need extra software.
- Ultra-long-distance RTK
- Capable of ultra-long-distance RTK, making your surveying work much more economical Application of seamlessly compatible CORS system
- Based on CORS applications, supplemented by the application of mature network data transmission technology and seamlessly compatible CORS system, only one single K10 rover can realize RTK performance.

Technology Parameters

- 220 Channels
- GPS: Synchronous L1C/A, L2E, L2C, L5
- GLONASS: Synchronous L1 C/A, L1 P, L2 C/A(GLONASS M only), L2P(optional)
- SBAS: Synchronous L1C/A, L5
- GIOVE-A: Synchronous L1 BOC, E5A, E5B, E5AltBOC1 (optional)
- GIOVE-B: Synchronous L1 CBOC, E5A, E5B, E5AltBOC1 (optional)
- GALILEO: (Upgraded to reserve)
- Advanced PCC Maxwell 6 Custom Survey GNSS Technology
- Very low noise GNSS carrier phase measurement with < 1mm precision in a1 Hz bandwidth
- Proven Trimble low elevation tracking technology initialization time3……typical< 10 seconds Initialization reliability3… > 99.9%
- 1Hz, 2Hz, 5Hz, 10Hz, 20 & 50Hz positioning outputs(Default 10Hz)
- Up to 50Hz raw measurement & position outputs Reference outputs……CMR, CMR+, RTCM2.1, 2.2, 2.2, 2.3, 3.0, 3.1
- Navigation outputs……ASCII: NMEA-0183 GSV, AVR, RMC, HDT, VGK, VHD, ROT, GGK, GGA, ZDA, VTG, GST, PJT, PJK, BPQ, GLL, GRS, GBS and Binary: Trimble GSOF

Accuracy

- static：horizontal±2.5mm+1ppm vertical±5mm+1ppm
- RTK：horizontal±1cm+1ppm vertical±2cm+1ppm
- RTD：±0.45m（RMS）

Input/output data format

- Differential message：CMR、CMR+、RTCM2.1、RTCM2.2、RTCM2.3、RTCM3.0、RTCM3.1
- Observation date format：ZHD

Port component

- 1 serial port for differential data
- 1 COM3
- 1 GNSS antenna port
- 1 GPRS antenna port
- 1 UHF antenna port
-

Initialization

- time：<30s
- Liability：>99.9%

Data record/storage

- built-in64M flash memory card
- U disc style, plug and paly

Power supply

- 7~36V DC

Environment

- Operating temperature：-30℃~+60℃
- Storage temperature：-30℃~+65℃
- Weight：1.0kg
- Size：22.5x13.8x7cm
- Defenses：IP65

www.gnss-gps.com

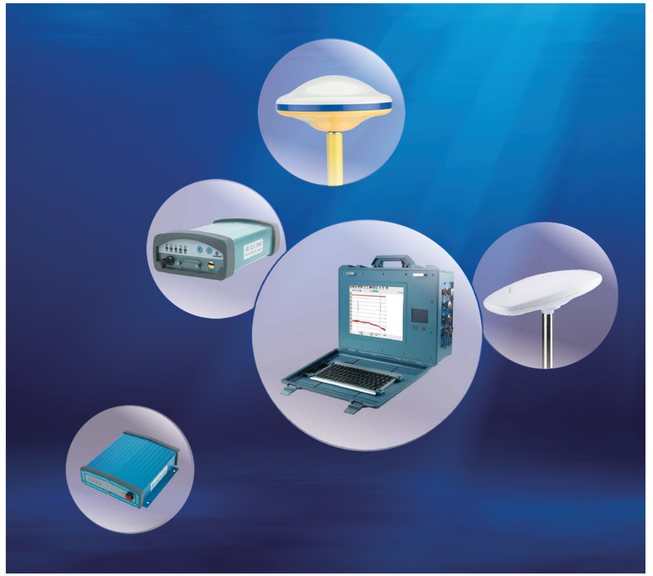
HI-TARGET

Hi-Target Surveying Instrument CO.,Ltd

ADD:10th Floor, ChuangxinBuilding, Tian'an Technology Zone, No.555, North of PanyuRoad, PanyuDistrict, 511400, Guangzhou City, China Tel：0086-20-22883930 Fax：0086-20-22883900 E-mail：Info@zhdgps.com

Hi-Target

Marine Surveying Product Categories



Hi-Target surveying Instrument Co., Ltd, established in 1999, engaging in marine echosounder technology for more than 10 years, it launched the first echsounder in China in 1999, has profound hydrographic suvery technology experience which always made the surpassed, hi-accuracy, reliable, stable echosounder.

HI-TARGET This brochure is just for reference, any revision is subject to our final confirmation.

HI-TARGET

Key Benefits

- Easy to compatibilities with different brands of GPS which is NMEA output data format(Topcon, Leica,Trimble), compass, surge compensator
- Easy to upgrade of frequency adjustable version HD370A,and easy to compatibilities with different brand trasducers
- Field work and post processing software already in the whole package，adapt latest marine technology
- Paperless recording, high resolution for permanent data storage
- Windows XP Operation
- High-resolution screen with touch mouse area
- High quality ABS+ Synthetic PC material Mainfame,not easy to be corroded, strong serial ports
- User friendly trackball Mouse, you can move the cursor to any place by moving the ball when the boat is shaking
- Lighter weight
- Shock resistance, waterproof, dustproof, portable

HD370/370A/380/390 Performance Advantages

A — Accuracy

- Advanced VF Frequency adjustable technology lower the buzzer noise caused by the transducer，eases interference echo.
- Latest designed TVG curve provides perfect Gain Control for Sonar transmission attenuation.
- Advanced bottom digitizing capabilities and pulse width selection technology assure the accuracy of underwater survey.

B — Efficiency

- 30 Hz water dapth collection rate, improve sounder efficiency and provide echogram more detailed and precise.
- Adjustable frequency for various transducer, expand the scope of application.

C — Stable Performance

- Embedded windows XP operation system, stable operation.
- Adopt unique "Fast Mapping Failback" technology for protection from virus
- Dual storage disk, dual operation system，one key ghost.
- High strength ABS+PC material cover, waterproof, shock resistance.

D — Convenience

- Range is automatically and manually.
- Digital image resolution technology, display like falls and record, easy to reply and print.
- Portable design, easy to carry.
- 1024X768 dpi high-resolution, high-brightness LCD display, high definition in the sun.

E — Compatibility

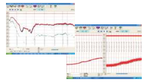
- Easy to configure with various transducer.
- Internal two-in-one software process marine GPS and echo-sounder data, able to work with any GPS, attitude indicator and surge detector and so on.
- Able to connect to external VGA display, support multi display terminal.
- Able to connect USB keyboard and mouse.

Hi-Target the 3rd Generation Digital Echosounder Series

Digital Echosounder	HD370 Single Frequency	HD370A Single Frequency (Adjustable)	HD380 Dual Frequency	HD390 Multi-Channel
Image				
Working Frequency	200 KHZ	100-750KHZ（Adjustable）	High frequency 100-750KHZ (Adjustable) Low frequency 10-50KHZ (Adjustable)	150~750KHZ（Adjustable）
Transmission Power	500W（200KHZ transducer）	500W（200KHZ transducer）	500W（200KHZ High frequency Channel) 1000W（20KHZ Low frequency Channel）	500W（200KHZ transducer）
Bathymetric Range	0.3m-600m		0.3m-600m (High frequency) 0.3m-2000m (Low frequency)	0.3~600m (Under Transducer)
Bathymetric Accuracy	±10mm+0.1%h，definition：1cm		±10mm+0.1%h definition：1cm	±10mm+0.1%h
Draft Range	0.0m-15m			
Adjustment Range of Sound Velocity	1370-1700m/s，definition 1m/s			
CPU	Industrial embedded high speed low power CPU,fequency :1.6GHZ			
Memory	1G			
Max.depth Collection Rate	30 times/second	30 times/second	30 times/second	25 times/second
Internal Storage Device	4G CF card storage（can be customized）	4G CF card storage（can be customized）	4G CF card storage（can be customized）	4G CF card storage（can be customized）
LCD Display	12 inches，definition 1024X768，1000cd/ m2	12 inches，definition 1024X768，1000cd/ m2	12 inches，definition 1024X768，1000cd/ m2	12 inches，definition 1024X768，1000cd/ m2
External Ports	Two RS-232 ports，three USB ports，one DC power port，two TX ports (for transducer)	Two RS-232 ports，three USB ports，one DC power port，two TX ports (for transducer)	Two RS-232 ports，three USB ports，one DC power port，two TX ports (for transducer)	Two RS-232 ports，three USB ports，one DC power port，two TX ports (for transducer)
Power Supply	DC 10~14V / AC 220V	DC 10~14V / AC 220V	DC 10~14V / AC 220V	DC 10~14V / AC 220V
Power Consumption	20W	20W	20W	20W
Working Temperature	-30°C~60°C	-30°C~60°C	-30°C~60°C	-30°C~60°C
Dimension	440mmL X 341mmW X 164mmH	440mmL X 341mmW X 164mmH	440mmL X 341mmW X 164mmH	440mmL X 341mmW X 164mmH
Weight	9kg	9kg	9kg	9kg
Transducer				

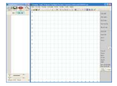
Software

Hi-Target developed the third generation of echosounder is installed the latest Hi-Target depth sounding software and marine positioning software, powerful function and simple operation, would be your best partner in survey project.



Hi-Target Depth Sounding Software

Hi-Target Depth Sounding Software adopts entirely automatic design, setting parameter in advance, only boot-strap can start surveying. Sounder data is intuitively displayed by figure. Echogram is saved in digital encrypted files, data saving in long time storage, replay, inquiry and print.



Hi-Target Navigation Sounding Software

Combining of position and Depth Sounding function, In virtue of this software, only require GPS receiver and power supply system, can Hi-Target the third generation of echosounder implement; high precised positioning, echo sound surveying, increasing efficiency, and reducing cost of system configuration.



Software Parameter & Environment Setting

Hi-Target Sounding and Positioning software is simple for setting. One interface for you to set sea gauge, sound velocity, transmission power, gain and frequency adjustment parameter, simple and intuitive.

Application Mode

Ideal for reservior,river,lake and ocean surveying, and marine construction engineering surveying

Working Station Echoing Mode



Hi-Target third generation of the echosounder is integrated with high stable industrial controlling computer, echosounder, depth measuring software and marine surveying software. Only need to connect to DGPS receiver and 12V DC battery can launch survey work, greatly simply water depth survey work.

Combined Echoing Mode



Hi-Target third generation of the echosounder also carries out working mode with echosounder + laptop + GPS + battery, satisfying customer's traditional surveying requirement.

Precise Echoing Mode



Hi-Target third generation of the echosounder can connect to surge compensator, for correcting error which evocable from surge in water depth surveying, to increase surveying precision.

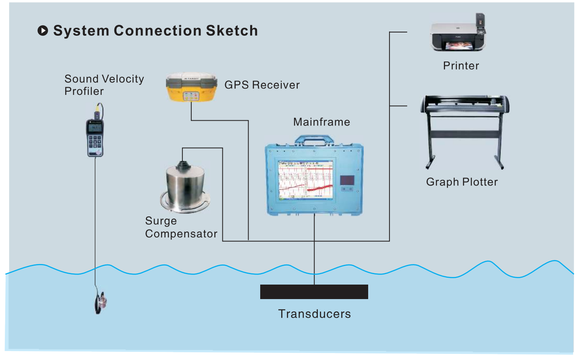
Construction Positioning Surveying Mode



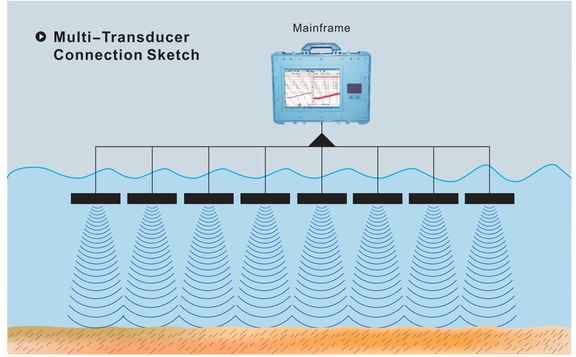
Hi-Target third generation of the echosounder is not only a set of digital echosounder, but also a set of stable Industrial Controlling Computer. To effectively solve unstable AC power supply on board, it"s available for direct power supplying in 12V DC, connecting GPS receiver and processing construction.

H D390 Application Mode

System Connection Sketch



Multi-Transducer Connection Sketch



K2 SBAS Receiver

K2 Satellite-station Receiver is designed to simultaneously receive GPS signal and differential signal from geosynchronous satellites. It's also called SBAS receiver. K2 can achieve sub-meter accuracy without base station or beacon. It's such a convenient receiver with simple equipment, signal stability, wide operating range that it can work in any region where covered by GPS signal.



Five Advantages

- Integrated design, light weight, high sealed, waterproof, dustproof and shock-resistance.
- Simple operation, by plugging into power supply.
- No need base station, wide range of land and sea operations.
- High Precision Positioning, SBAS differential positioning accuracy of 2-3m.
- Applying PPP technology, position accuracy 0.5m.

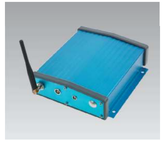
Technology Parameters

- GPS signal: 12 channels+L1C/A code, support WAAS, EGNOS, MASA etc. SBAS.
- Positioning accuracy: 2-3m
- Voltage: DC 9~36V wide voltage input, adapting voltage instability on board.
- Volume: ∉184.5mm*87.5mm
- Weight: 0.5kg

Application

K2 is widely used in marine survey, dredging, rock dumping, sand dumping, hydrographic project, and inland & lake area survey, GIS data collection, reconnaissance survey, positioning projects, etc.

K3 Split Designed Marine Beacon Receiver



Features

- Split-type design: split design on GPS antenna and mainframe, make it more suitable for equipment operation and information view.
- Solid & metal body: metal, durable, shock-resistance, heat-dispersion
- High-precision positioning: 2-3m
- Photoelectric isolated transmission: photoelectric isolation technology improves interference prevention from computer; RS-485 remote transmission.
- Power supply: 8~36V wide range power supply, adapting voltage instability on board.

Application

- Marine surveying, dredying, ergneering positioning, marine & island investigation.



Technology Parameters

- GPS/beacon signal: 12channels GPS+SBAS, dual-channel searching signal automatically Frequency range: 283.5KHz~325KHz
- Operation distance(basing on beacon signal): marine 500km, land 200km
- Positioning accuracy: 0.5m
- Data transmission: Standard NMEA-0183 output format
- DC power supply voltage: 8V~36V
- Power consumption: 2W
- Volume: 19cm*116cm*5cm
- Weight: 0.9kg
- Defenses: IP67 waterproof, dust resistance, shock resistance