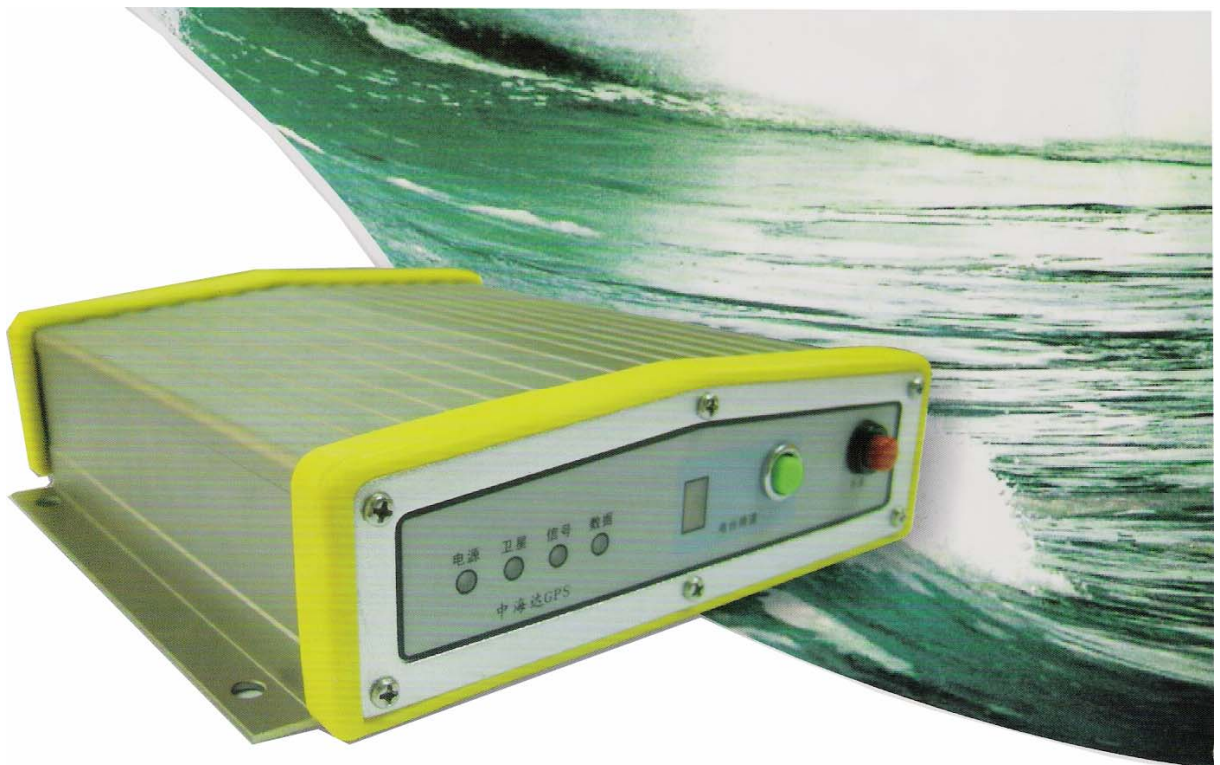
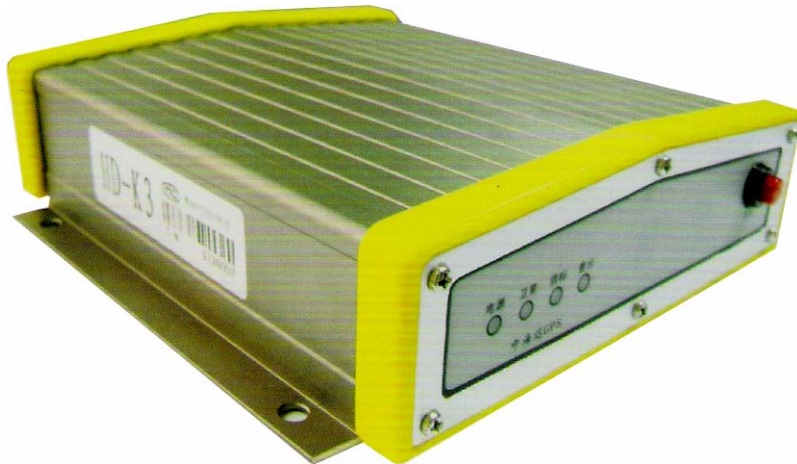


# Marine Surveying Instruments



- K Series Position and Orientation Instrument
- HD Series echosounder
- Marine Engineering solution project

## K3 Marine Beacon



Mainframe



Antenna

### Performance Feature

- Split-type design: separation design on GPS antenna and mainframe, GPS mainframe can be put in cockpit, it is more suitable for equipment operation and information view; integration design on GPS antenna and beacon antenna, no need of grounding wire
- Solid & metal body: metal materials, durable, shock-resistance, heat-dispersion
- High-precision positioning: 0.5 meters (CEP)
- Photoelectric isolation: photoelectric isolation technology improves interference prevention from computer, owning RS-485 remote transmission ability
- Power supply: 8-36V DC, 12V DC, 24V ship power

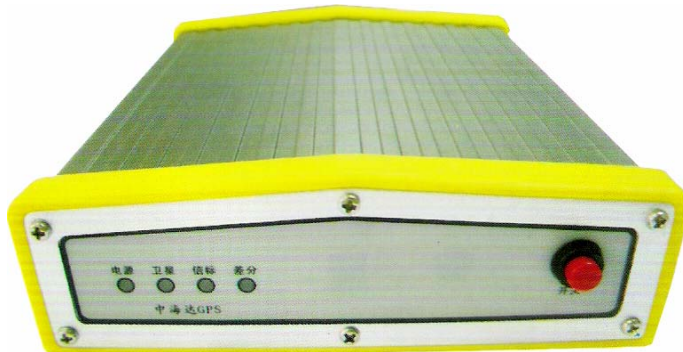
### Technology Parameters

- GPS / beacon signal: 12 channel GPS signal receiver, dual-channel automatically search signal
- Frequency range: 283.5KHz ~ 325KHz,
- Operation distance (base on the beacon signal): marine 500 km, land 200 km
- Positioning accuracy: 0.5m (CEP)
- Data transmission: standard NMEA - 0183 output format
- Photoelectric isolation RS-232/RS-485 port; Baud Rate:4800-57600bps
- DC power supply voltage: 8V ~ 36V
- Mainframe power: 2W
- Volume: 19cmX16cmX5cm Weight :0.5kg
- Environment parameters: -30°C ~ 70°C
- Storage temperature: -40°C ~ 80°C
- Defenses: Ip64 waterproof, dust resistance, shock resistance

### Application

marine surveying, dredging, engineering positioning, marine & island investigation

## K5 Marine Location & Orientation



Mainframe

### K5 Performance feature

- Split-type design: separation design on GPS antenna and mainframe, GPS mainframe can be put in cockpit, it is more suitable for equipment operation and information view; integration design on GPS antenna and beacon antenna, no need grounding line
- Solid&metal body: metal materials,durable,shock-resistance,heat-dispersion,
- High-precision positioning: 0.5 meters (CEP)
- Photoelectric isolation: photoelectric isolation technology, improve interference prevention from computer, owning RS-485 remote transmission ability.
- Power Supply: 8-36V DC, 1 2V DC, 24V ship power
- Built-in electronic gyroscope: guarantee the direction data output when missing lock
- Simple installation: two antennas installed in 1 meter long baseline, with allocation of one meter of standard installation bracket, without long-distance cabling; mainframe is linked directly with the computer by a data cable, no need two serial ports, low requirement on computer.

### Technology Parameters

- GPS / beacon signal: 12 channel GPS signal receiver,dual-channel automatically search signal
- Frequency range: 283.5KHz - 325KHz,
- Operation distance (basing on the beacon signal): marine 500 km, land 200 km
- Positioning accuracy: 0.5m (CEP)
- Orientation accuracy: <math><0.5^\circ</math> RMS
- Pitching angle accuracy: <math><1^\circ</math> RMS
- Data transmission: standard NMEA - 0183 output format
- Photoelectric isolation RS-232/RS-485 port; Baud Rate:4800-57600bps
- DC power supply voltage: 8V ~ 36V
- Mainframe power: 2W
- Volume: 19cmX16cmX5cm
- Weight :0.5kg
- Environment parameter: -30°C ~ 70°C
- Storage temperature: -40°C ~ 80°C
- Defenses: Ip64 waterproof, dust resistance,shock resistance



Antenna

### Application

Marine surveying, dredging, engineering positioning, pipe/cables paving

## K6 High Precision Orientation Instrument



Mainframe

### K6 Performance Feature

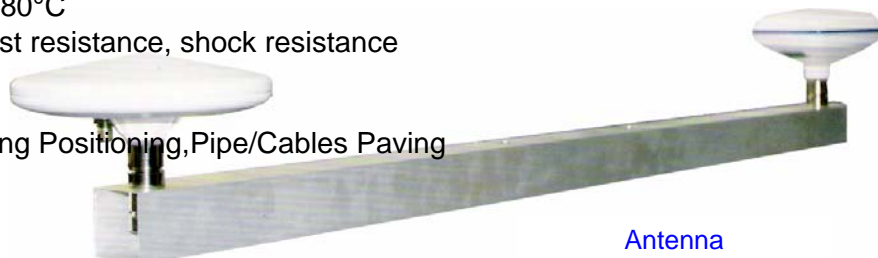
- Split-type design: GPS mainframe can be put in cockpit, 1-2 meters distance between two GPS antennas, convenient installation
- High accurate orientation:  $<0.1^\circ$  RMS (2 meters baseline)
- Photoelectric isolation: photoelectric isolation technology, improve interference prevention from computer, owning RS-485 remote transmission ability,
- Power Supply: 8-36V DC, 12V DC, 24V ship power
- Built-in electronic gyroscope: guarantee the orientation data output when GPS missing lock
- Simple installation: two antennas installed on a 2 meters long baseline, no need long-distance cable; mainframe is linked directly with the computer by a data cable, no need two serial ports, low requirement on computer

### Technology Parameters

- GPS / beacon signal: 12 channel GPS signal receiver
- Orientation accuracy:  $<0.15^\circ$  RMS (1 meter baseline)  $<0.1^\circ$  RMS (2 meters baseline)
- Pitching angle accuracy:  $<1^\circ$  RMS
- Data transmission: standard NMEA - 0183 output format
- Photoelectric isolation RS-232/RS-485 port; Baud Rate: 4800-57600bps
- DC power supply voltage: 8V - 36V
- Mainframe power: 2W
- Volume: 19cmX16cmX5cm
- Weight :0.5kg
- Environment parameter:  $-30^\circ\text{C} \sim 70^\circ\text{C}$
- Storage temperature:  $-40^\circ\text{C} \sim 80^\circ\text{C}$
- Defenses: Ip64 waterproof, dust resistance, shock resistance

### Applications

Marine Surveying, Dredging, Engineering Positioning, Pipe/Cables Paving



Antenna

## HD27T Single frequency Echo Sounder



### Main Features

- Embedded Windows XP operations system, fast, stable
- Dual-protection, one-key restoration system, 35 second fast start-up
- Huge storage memory
- High transmitting power, low power loss, low heat dispersion, long battery life
- Software controls gain, pulse width, power, scale, phasing, auto surveying operation
- ARM processor fast data collecting, fast USB2.0 bus data channel
- Real time, huge data capacity
- Touch-screen color LCD displayer, 400cd, easy-handled
- Built-in Hydrographic surveying two-in-one software, compatible with any type of GPS receiver
- Digital technology, get rid of the trouble of paper print
- Support external VGA and multi-terminal of display
- Excellent design for heating dispersion and waterproof
- Main body bracket supports multi-angle adjustment, perfectly solve the glistening problem in the field

### Specifications:

- Frequency: High 200KHz
- Resolution: 1cm
- Output Power: 350 Watts
- Depth Range: 0.3m to 600m
- Accuracy (Corrected for sound velocity)  $\pm 2\text{cm} + 0.1\%$  depth
- Draft Range: 0.0m to 9.0m
- Velocity of Sound Range: 1300 to 1700m/s

- Ports/Interface
  - Mouse/Keyboard Port
  - Printer Port
  - Two RS232 serial ports, supports various output string formats, adjustable Baud Rate
  - Two USB Ports
  - VGA Navigation Displayer port
- CPU main frequency: 500MHZ
- Inner Memory: 512M
- Input Power Requirement: DC 12V or AC 220V, power loss 20w
- Environment specifications: Working temperature -30°C to +60 °C , waterproof
- Dimensions: Width 34cm x Length 30cmx Height 15cm
- Weight: 9 Kg.
- Features:
  - Bright 12-inch LCD screen, resolving power: 800x600
  - Resistance Touch Screen
  - Built-in a electronic storage device of 1G
  - Built-in huge memory CF card of 2000M

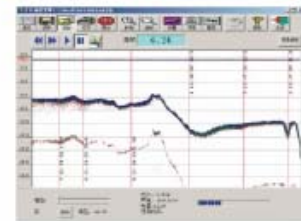
**Standard configuration:**

- Mainframe
- Hydrographic Survey Software
- ChartView Software
- Transducer
- Stainless steel fix pole
- Aluminium case
- Communication cables
- Printer (optional)
- Manual
- USB memory

**Applications( Hydrographic Survey)**

Reservoir

- River
- Harbours
- Dams
- Dredging
- Reconnaissance
- Estuaries
- Surf Zone
- Canals
- 



## HD-28T Full Digital Dual-frequency Echo Sounder



### Main Features

- Two frequencies combined survey, sillage from 10 cm to several meters measurable
- Low frequency suitable for deep water, sandy, fast flowing, many burbles area
- Embedded Windows XP operations system, well compatible, stable
- Built-in Hydrographic Surveying Software, compatible with any type of GPS receiver
- Excellent design for dispersing heat and waterproof
- Mainframe bracket supports multi-angle adjustment, well solve the glistening problem in the field

### Specifications:

- Frequency: High 200KHz, low 20KHz, Integrated Transducer
- Resolution: 1cm
- Output Power: Up to a maximum of 300 Watts RMS in both High and low Bands (range dependent)
- Depth Range: High 0.3m to 600m, low 1m to 3000m
- Accuracy (Corrected for sound velocity):  $\pm 2\text{cm} + 0.1\%$  depth
- Draft Range: 0.0m - 9.0m
- Velocity of Sound Range 1300 - 1700m/s
- Ports/Interface
  - Mouse/Keyboard Port
  - Printer Port
  - Two RS232 serial ports, supports various output string formats, adjustable Baud Rate
  - Two USB Ports
  - VGA Navigation Displayer port

- CPU main frequency: 667MHZ
- Input Power Requirement: DC 12V or AC 220V, power loss 20w
- Environment specifications: Working temperature -30°C to +60 °C, waterproof
- Dimensions: Width 34cm x Length 30cmx Height 15cm
- Weight: 9 Kg.
- Features:
  - Bright 12-inch LCD screen, resolving power: 800x600
  - Resistance Touch Screen
  - Built-in huge memory of 1000M

### Standard configuration:

- Mainframe
- Hydrographic Survey Software
- ChartView Software
- Transducer
- Stainless steel fix pole
- Aluminium case
- Communication cables
- Printer (optional)
- Manual
- USB memory

### Applications( Hydrographic Survey)

- Reservoir
- River
- Harbours
- Dams
- Dredging
- Reconnaissance
- Estuaries
- Surf Zone
- Canals



## HD-30T Multi-channel Scanner



### Specifications:

- Frequency: 200khz
- Output power: 200w
- Channels: 1 - 32
- Depth range: 0.5m - 300m
- Accuracy:  $\pm 2\text{cm} + 0.1\%$
- Resolution: 1cm
- Draft Range: 0.0m - .9m
- Velocity of Sound Range: 1300 - 1700m/s
- Maximum updating rate: 16time/s
- Ports/Interface:
  - Mouse/Keyboard Port
  - Printer Port
  - Two RS232 serial ports, supports various output string formats, adjustable Baud Rate
  - Two USB Ports
  - VGA Navigation Displayer port
- CPU main frequency: 667MHZ
- Input Power Requirement: DC 12V or AC 220V, power loss 20w
- Environment specifications: Working temperature -30°C to +60 °C, waterproof, saltproof
- Dimensions: Width 34cm x Length 30cm x Height 15cm
- Weight: 9 Kg.
- Features:
  - Bright 12-inch LCD screen, resolving power: 800x600
  - Resistance Touch Screen
  - Built-in huge memory of 1000M, data and map record simultaneously

### Standard configuration:

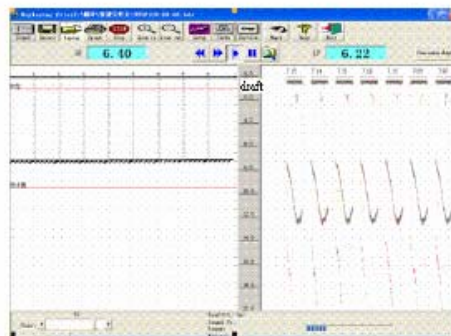
- Mainframe
- Hydrographic Survey Software
- ChartView Software
- Transducer
- Stainless steel fix pole
- Aluminium case
- Communication cables
- Printer (optional)
- Manual
- USB memory

### Feature

- Electronic map, visualize water bottom
- Digital data & image processing technology
- Auto controls gain and TVG
- Windows XP operating system
- Bottom tracking technology and pulse width selection perfectly combined in one
- Well-designed mounting, scanning without blind area
- Converter can be fixed at ship bottom or hanging
- Stability, continuous 24h working

### Applications( Hydrographic Survey)

- Layout
- Dredge up
- Sea-route surveying
- Sea scanning



All necessary cables and software required to interface and operate the three models are included.