Smart Sonar System

NAMIN



EXPERT IN SONAR SOLUTIONS

PERCEIVE THE VAST OCEAN
EXPLORE THE FAR FRONTIERS



COMPANY PROFILE



RoHS COMPLIANCE
DIRECTIVE 2011/65/EU
ATTESTATION OF CONFORMITY



LOW VOLTAGE DIRECTIVE,
ELECTROMAGNETIC COMPATIBILITY DIRECTIVE
ATTESTATION OF CONFORMITY

Deeper Sight. Smarter Insight
Deeper Perception, Smarter Decisions

Shanghai Smart Sonar System Co., Ltd. is a premier innovator of high-performance sonar technologies, headquartered in the Shanghai West Hongqiao Beidou Industrial Park. With a formidable intellectual property portfolio exceeding 60 proprietary patents and software copyrights, the company maintains a strategic operational footprint with dedicated subsidiaries across China’s key maritime hubs.

Our competitive edge is anchored in a multidisciplinary R&D collective of industry veterans and elite engineers. This team brings decades of specialized expertise in underwater sonar physics and complex system integration to every project. We are dedicated to pioneering next-generation underwater perception, delivering mission-critical data for Maritime Security, Search and Rescue (SAR), Sustainable Aquaculture, Offshore Engineering, and Subaquatic Archaeology.

PRODUCT SERIES

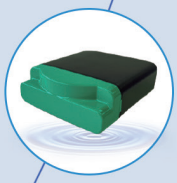
01 HANHAI SERIES
IMAGING SONAR

02 TANJIE SERIE
INDUSTRIAL PRODUCTS

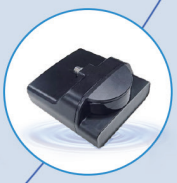
03 LINGHANG SERIES
SOFTWARE ECOSYSTEM

04 APPLICATION SOLUTIONS

C900SE



C900PRO/C900H PRO



C750D/C750DH



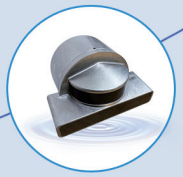
C400H



C750D PRO/C750DH PRO



C400H6



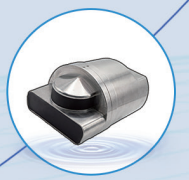
Underwater Life Detector



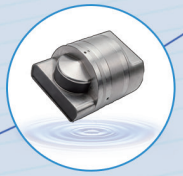
C1200D/C1200DH



C750DH45



C750DH6



C200



SV



01 HANHAI SERIES
IMAGING SONAR

We independently develop a range of deep-sea equipment capable of diving to 500m, 1000m, 4500m, and 6000m, precisely covering detection needs from coastal waters to the hadal zone. High reliability and advanced intelligence provide a one-stop solution for multi-scenario marine research and engineering challenges, making deep-sea operations simpler, safer, and more efficient.



C750D / Compact Size, Excellent Mounting Flexibility

The C750D imaging sonar penetrates turbid waters with high-definition acoustic imaging, revealing underwater structures and targets. Its superior compatibility and environmental adaptability allow for easy integration onto various platforms like ROVs, AUVs, and diver systems, operating effectively in rivers, lakes, and seas.

Applications: Marine Ranching / Nuclear Power Cooling Water / Waterway Survey / Subsea Pipeline Inspection / Underwater Security



C750DH / 1000m Operation, Real-time Imaging

Built for extreme underwater environments, the C750DH features a lightweight yet robust titanium alloy housing with exceptional pressure resistance, enabling stable operation at 1000 meters depth. Its powerful dual-frequency acoustic system delivers sharp, clear images even in dark depths, providing underwater insight beyond visible light for deep-sea ROVs and AUVs. An indispensable tool for professional deep-sea exploration and underwater engineering.

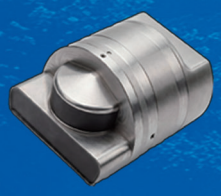
Applications: Marine Ranching / Nuclear Power Cooling Water / Waterway Survey / Subsea Pipeline Inspection / Underwater Security



C750DH45 / Pressure & Corrosion Resistant, Built for the Abyss

Designed for extreme deep-sea exploration, the C750DH45 delivers a leap in performance based on proven legacy. It utilizes high-performance pressure-resistant materials and precision engineering to withstand the pressure at 4500-meter depths. ensuring stability and reliability in extreme conditions. The innovative dual-frequency acoustic system significantly improves imaging resolution and range in dark, high-pressure, complex deep-water environments, offering exceptionally clear visibility and decision-making support for sectors including scientific research and deep-water engineering.

Applications: Deep-Sea Resource Exploration / Deep-Sea Scientific Research / Deep-Sea Engineering Construction / Subsea Pipeline Inspection



C750DH6 / The Pinnacle of Sonar, The Extreme of the Deep Sea

The C750DH6 represents the cutting edge of deep-sea exploration technology. Integrating pressure-resistant structure, efficient acoustics, and reliable electronics, it reaches the abyssal depths of 6000 meters with unparalleled pressure tolerance and environmental adaptability. Even under extreme conditions, it outputs stable, clear acoustic images, providing irreplaceable underwater vision for national-level deep-sea science and ocean resource exploration, unveiling the mysteries of the ultra-deep sea.

Applications: Abyssal Scientific Research / Deep-Sea Resource Exploration (e.g., Polymetallic Nodules, Hydrothermal Sulfides) / Subsea Cable / Pipeline Inspection / Ultra-Deepwater Engineering Operations

C750D HANHAI SERIES IMAGING SONAR

ADVANCED TECHNOLOGY | **DUAL-FREQUENCY ADJUSTABLE**

COMPACT STRUCTURE | **NEAR & FAR COVERAGE**

The C750D imaging sonar is designed for real-time underwater imaging in complex environments including rivers, lakes, and coastal waters. It can be deployed on multiple platforms such as ROVs, AUVs, and divers to meet requirements for underwater detection, obstacle avoidance, and construction operations. It is widely used in water rescue, nuclear power cooling systems, marine ranching, marine engineering, underwater security, and related fields.

PRODUCT PARAMETERS

C750D		C750DH
Operating Frequency	750kHz / 1.2MHz	750kHz / 1.2MHz
Range (Max)	120m / 40m	120m / 40m
Horizontal Aperture	130° / 80°	130° / 80°
Vertical Aperture	20° / 12°	20° / 12°
Depth Rating	500m	1000m

NOTE: "H" SUFFIX = TITANIUM ALLOY VERSION

C750D



C750DH

APPLICATION AREAS



Fishery & Aquaculture



Nuclear Power Cooling Water



Water Rescue



Offshore Engineering

PRODUCT ADVANTAGES

Compact Design, Easy Operation:

Miniaturized design enables single-handed operation and convenient installation. Equipped with control software for real-time viewing of sonar imagery and parameter adjustment.

Fully Proprietary:

This product is developed with full proprietary intellectual property. An SDK is available, providing comprehensive support for secondary development.

Strong Compatibility, Broad Adaptability:

Superior structural design delivers strong compatibility and broad adaptability, enabling integration with multiple platforms to meet diverse industry requirements. A 1000m depth-rated titanium alloy version is available.

C750D Pro HANHAI SERIES IMAGING SONAR

MAJOR UPGRADE | **EXCEPTIONAL DETAIL**

NEXT-GEN FIELD OF VIEW | **MICRO-DETAIL DETECTION**

The C750D Pro features a completely new hardware architecture, achieving key breakthroughs in core performance. This new architecture optimizes the data processing chain, enabling more efficient handling of massive data during detection, further reducing image noise and enhancing detail recognition capabilities.

PRODUCT PARAMETERS

	C750D Pro	C750DH Pro
Operating Frequency	750kHz / 1.2MHz	750kHz / 1.2MHz
Range (Max)	120m / 40m	120m / 40m
Horizontal Aperture	136° / 136°	136° / 136°
Vertical Aperture	20° / 20°	20° / 20°
Depth Rating	500m	1000m

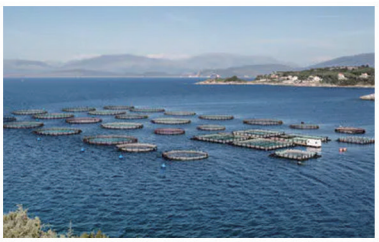
NOTE: "H" SUFFIX = TITANIUM ALLOY VERSION

C750D Pro



C750DH Pro

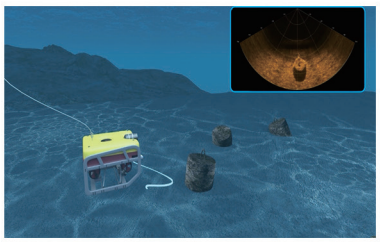
APPLICATION AREAS



Marine Ranching



Offshore Operations



Underwater Survey

PRODUCT ADVANTAGES

Product Advantages:

Ultra-Clear Imaging, Detailed Viewing: Equipped with a new hardware architecture and advanced signal processing technology, it provides ultra-high-definition sonar images, clearly distinguishing the shapes of targets like fish schools.

Ultra-Wide Horizontal Beamwidth for Efficient Large-Area Search:

The upgraded horizontal beamwidth significantly increases the coverage width per scan. This translates directly to higher efficiency in underwater scanning, ideal for quickly locating fish schools in open waters, substantially reducing blind cruising time, and markedly increasing target detection probability.

C750DH45/H6 HANHAI SERIES IMAGING SONAR

PRESSURE & CORROSION RESISTANT | **FULL OCEAN DEPTH COVERAGE**

STRONG COMPATIBILITY | **RELIABLE PERFORMANCE**

The C750DH Series is a full-ocean-depth imaging sonar engineered for extreme deep-sea exploration. High-strength, pressure-resistant materials and precision manufacturing ensure stable, reliable operation under the most demanding conditions. An upgraded dual-frequency acoustic system delivers superior imaging resolution and range in the deep ocean's dark, high-pressure environment—providing decision-critical clarity for scientific surveys, deepwater engineering, and professional applications.

PRODUCT PARAMETERS

	C750DH45	C750DH6
Operating Frequency	750kHz / 1.2MHz	750kHz / 1.2MHz
Range (Max)	120m / 40m	120m / 40m
Horizontal Aperture	130° / 70°	130° / 70°
Vertical Aperture	20° / 12°	20° / 12°
Depth Rating	4500m	6000m

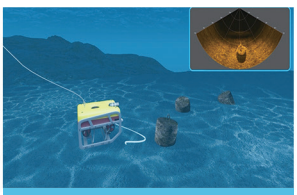
NOTE: "H" SUFFIX = TITANIUM ALLOY VERSION

C750DH45

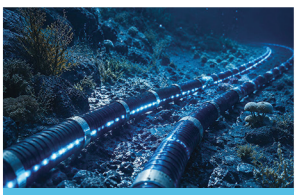


C750DH6

APPLICATION AREAS



Deep-Sea Mining



Submarine Cable



Scientific Expedition



Resource Exploration

PRODUCT ADVANTAGES

Full-Depth Pressure Resistance:

Precision-engineered with high-strength pressure-resistant materials for stable operation at extreme depths — 4,500 m (DH45) and 6,000 m (DH6).

Professional Optimization:

Optimized for deep-sea research and engineering. Reliably deployed on ROV/AUV platforms, delivering accurate data for resource exploration, ocean surveys, and pipeline inspection.

C900SE/Pro HANHAI SERIES IMAGING SONAR

COMPACT SIZE | **SIMPLE OPERATION**

ENERGY EFFICIENT | **CLEAR VISIBILITY**

The C900Pro imaging sonar is a powerful tool for efficient underwater exploration. Leveraging its compact size, low power consumption, and strong environmental adaptability, it can be flexibly integrated into various operational platforms, enabling clear detection and identification of multiple targets in complex waters like rivers, lakes, and seas.

PRODUCT PARAMETERS

	C900SE	C900Pro	C900H Pro
Operating Frequency	900kHz	900kHz	900kHz
Range (Max)	80m	80m	80m
Horizontal Aperture	60°	130°	130°
Vertical Aperture	20°	20°	20°
Depth Rating	300m	500m	1000m

NOTE: "H" SUFFIX = TITANIUM ALLOY VERSION

C900Pro



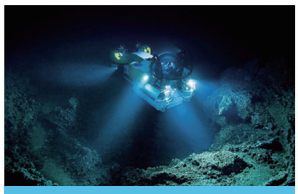


C900SE

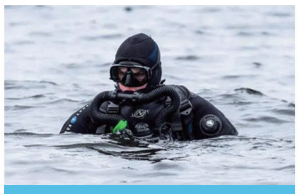
APPLICATION AREAS



Research & Education



Underwater Survey



Diving Operations



Water Rescue

PRODUCT ADVANTAGES

Comprehensive Service:

Customized solutions, complete maintenance and upgrade services, timely and reliable technical support.

100% Self-Controlled:

Independently developed, fully controllable, supports product integration and secondary development.

Excellent Mounting Flexibility:

Can be used for underwater detection via diver mounting, or deployment on ROVs, AUVs, etc.

C400H/H6 HANHAI SERIES IMAGING SONAR

WIDE-AREA DETECTION | **STRONG COMPATIBILITY**

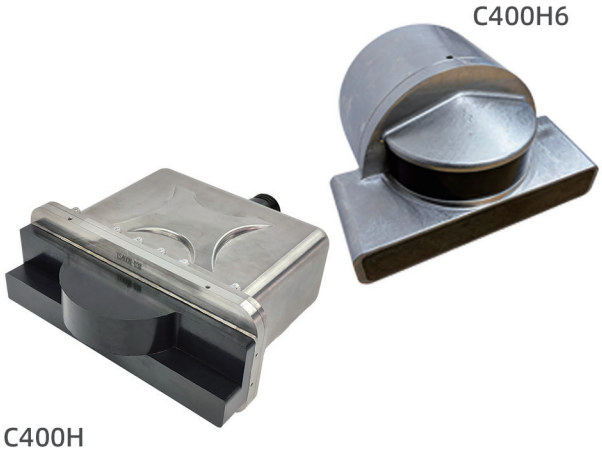
RAPID IDENTIFICATION | **MILITARY-GRADE QUALITY**

The C400H Imaging Sonar is engineered for long-range underwater detection. With an impressive maximum detection range of up to 250 meters against typical targets, it delivers reliable detection and precise target locking—even in extensive or low-visibility waters.

PRODUCT PARAMETERS

C400H		C400H6
Operating Frequency	400kHz	400kHz
Range (Max)	200m	250m
Horizontal Aperture	136°	130°
Vertical Aperture	20°	20°
Depth Rating	1000m	6000m

NOTE: "H" SUFFIX = TITANIUM ALLOY VERSION



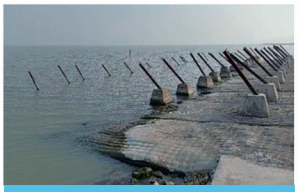
C400H6

C400H

APPLICATION AREAS



Underwater Security



Surface Obstacle Avoidance



Underwater Obstacle Avoidance



Scientific Research & Survey

PRODUCT ADVANTAGES

Long-Distance Detection:
Maximum detection range of 200 meters, 136° horizontal beamwidth. Range resolution reaches 125mm at 100 meters.

100% Self-Controlled:
Independent R&D, full IP, performance meets international advanced levels. Supports customization and secondary development.

Strong Compatibility, Wide Adaptability:
Powerful compatibility allows integration onto various platforms to meet different industry needs.

C1200D HANHAI SERIES IMAGING SONAR

SHARP IMAGING | **METICULOUS CRAFTSMANSHIP**

HIGHLY ADAPTABLE | **DOMESTIC HIGH-END**

The C1200D dual-frequency high-definition imaging sonar operates at 1.2MHz and 1.8MHz, both delivering high-definition imaging. The 1.8MHz frequency provides ultra-high resolution for close-range inspection, capable of identifying millimeter-level details. The 1.2MHz frequency offers a wide 136° horizontal beamwidth for large-area high-definition coverage. Its compact size allows integration onto ROVs, AUVs, diver systems, and other platforms, making it a benchmark product for high-end underwater imaging equipment in China.

PRODUCT PARAMETERS

C1200D		C1200DH
Operating Frequency	1.2MHz / 1.8MHz	1.2MHz / 1.8MHz
Range (Max)	40m / 25m	40m / 25m
Horizontal Aperture	136° / 66°	136° / 66°
Vertical Aperture	20° / 12°	20° / 12°
Depth Rating	500m	1000m

NOTE: "H" SUFFIX = TITANIUM ALLOY VERSION

C1200D



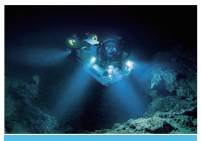


C1200DH

APPLICATION AREAS



Urban Pipeline Inspection



Underwater Inspection



Marine Engineering



Education & Research



Underwater Security



Emergency Response

PRODUCT ADVANTAGES

Product Advantages:

Dual-Frequency HD: Two HD bands (1.2MHz & 1.8MHz) achieve full coverage from large-area scanning to close-range inspection, meeting the imaging needs of various complex underwater tasks with a single device.

Domestic High-End:

A technical benchmark for high-end underwater imaging equipment in China. The C1200D represents independent innovation from core design to system integration, showcasing top-tier performance and quality.

High Practicality:

Compact size for easy installation and portability. Compatible with various domestic and international underwater platforms, providing reliable support for obstacle avoidance, search and rescue, inspection, and construction.

C200 HANHAI SERIES
IMAGING SONAR

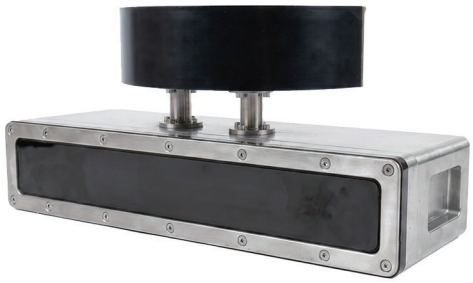
LONG-RANGE AND WIDE-AREA SCANNING | **LOW-ATTENUATION REAL-TIME IMAGING**

HIGH PERFORMANCE IN TURBID WATERS | **BALANCED DETECTION RANGE & RESOLUTION**

The C200 Imaging Sonar is a medium-to-long-range imaging sonar commonly utilized by large underwater platforms (such as AUVs, ROVs, and surface vessels). Its core functions include underwater forward obstacle detection, navigation, collision avoidance, and terrain awareness.

PRODUCT PARAMETERS

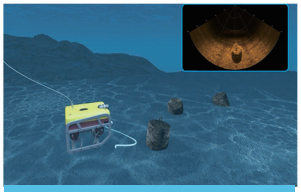
C200	
Operating Frequency	200kHz
Range（Max）	300m
Horizontal Aperture	130°
Vertical Aperture	25°/8°
Depth Rating	500m



APPLICATION AREAS



AUV Long-Range Cruise Obstacle Avoidance



ROV Forward-Looking Navigation Collision Prevention



Vessel Navigation in Shallow Narrow Waters



Under-Ice, Turbid-Water & Port Obstacle Search

PRODUCT ADVANTAGES

Long-Distance Detection:
Maximum detection range of 300 meters, 130° horizontal beamwidth. Range resolution reaches 125mm at 100 meters.

100% Self-Controlled:
Independent R&D, full IP, performance meets international advanced levels. Supports customization and secondary development.

Strong Compatibility, Wide Adaptability:
Powerful compatibility allows integration onto various platforms to meet different industry needs.

02 TANJIE SERIES INDUSTRIAL PRODUCTS

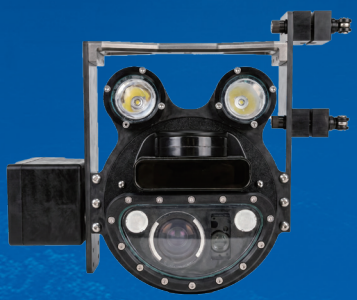
Namin is committed to applying sonar technology across various underwater scenarios, developing multiple industry-specific products. These include the SOV for urban pipeline network inspection, underwater life detectors for emergency response, handheld and dipping sonars for diver and anti-diver applications, multibeam echosounders and side-scan sonars for underwater topographic mapping and target search, and various unmanned platforms equipped with sonars for different application needs.



▲ Underwater Life Detector



▲ HMD Head-Mounted Display



▲ SV Periscope



▲ Handheld Sonar

UNDERWATER LIFE DETECTOR

TANJIE SERIES / INDUSTRIAL PRODUCTS

INTELLIGENT DETECTION | **RAPID SINGLE-PERSON DEPLOYMENT**

RUGGED & PORTABLE | **FAST RESPONSE**

The Underwater Life Detector is a portable acoustic detection device designed for rapid search and identification of underwater targets. It supports both single-person handheld operation and boat-mounted moving observation. Equipped with tilt adjustment, it adapts to complex underwater environments, featuring rapid response, quick deployment, and accurate target identification.

PRODUCT PARAMETERS

Underwater Life Detector		
Equipped With	C750D	C900SE
Operating Frequency	750kHz /1.2MHz	900kHz
Range (Max)	120m@750kHz 40m@1.2MHz	80m@900kHz
Pan-Tilt Tilt Angle	-45° ~ 0°	
Battery Life	4h	
Detection Pole Length	0.9~1.85m (Telescopic)	
Usage Mode	Handheld + Boat-mounted	



APPLICATION AREAS



Underwater Security



Maritime Police



Emergency Management

PRODUCT ADVANTAGES

Rapid Response:

High-precision underwater imaging quickly locks onto targets. Real-time alarm triggering significantly improves rescue efficiency.

Lightweight Design - Full Scenario Adaptability:

Single-person deployment in 3 minutes. Flexible switching between handheld/boat-mounted modes. Clearly captures life signals even in currents, turbid water, and dark conditions.

Wide-Area Observation with Tilt Function:

Adjusts sonar viewing angle and increases observation area.

Multi-Function Integrated Deck Unit:

Provides power for sonar (4+ hours battery life, supports charge-discharge concurrently), Wi-Fi, RJ45 Ethernet, GPS/BeiDou positioning.

SV Periscope

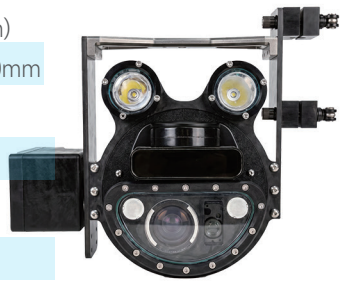
Acoustic-Optical Fusion | **Rugged & Compact**

Single-Person Deployment | **Rapid Response**

The SV Periscope is a detection device integrating acoustic and optical technologies, consisting of an underwater acoustic-optical integrated module, telescopic pole, connecting cables, a power supply and communication control unit, and SV pipe sonar periscope acquisition software. It enables rapid inspection of pipe connection conditions including pipe material, diameter, orientation, burial depth, and length, delivering accurate detection results without omissions and significantly improving the efficiency of pipeline network survey and maintenance operations.

PRODUCT PARAMETERS

SV307			
Operating Frequency	750kHz / 1.2MHz	Fill Light	Low Beam (>800 lm) High Beam (≥2000 lm)
Range Resolution	4m / 2.5mm	Dimensions	324mm×253mm×350mm
Angular Resolution	1° / 0.6°	Main Unit Weight	7.8kg
Horizontal Beamwidth	130° / 70°	Main Cable Length	15m
Vertical Beamwidth	20° / 12°	Tilt Angle	±45°
Probe Length	> 80m	Roll Angle	0° / 90°



APPLICATION AREAS



Municipal Sewage



River Outfall



Sluice Gate Flow Detection

PRODUCT ADVANTAGES

Acoustic-Optical Fusion:

Features a stainless steel housing with a portable waterproof processing unit, effectively resisting corrosion and reducing noise interference to ensure reliable operation.

Fully Proprietary:

The entire system is built with independently developed technology, ensuring full technical autonomy and operational independence, free from external dependencies.

Single-Person Deployment:

The underwater SV module emphasizes lightweight, portable, and rapid deployment. Key features include rapid response, 3-minute setup, accurate underwater target search, and stable operation in complex working conditions.

HANDHELD SONAR

TANJIE SERIES / INDUSTRIAL PRODUCTS

PORTABLE & LIGHTWEIGHT | **LONG-RANGE OBSTACLE AVOIDANCE**
FLEXIBLE OPERATION | **FULL DATA LOGGING**

The Handheld Sonar is a portable underwater detection device designed for divers operating in low visibility or complex environments to search, locate, and identify underwater targets. The device integrates sonar and vision modules, real-time display, and human-machine interaction. It provides clear, intuitive underwater "vision" in poor light or turbid water, enabling functions like obstacle avoidance warning and target search. Used in underwater survey, rescue, and offshore operations, suitable for various water environments.

PRODUCT PARAMETERS

Handheld Sonar	
Dimensions	≤400x335x220mm
Max Operating Depth	60m
Obstacle Warning Range	≥120m (@C750D) / ≥80m (@C900SE)
Operating Temperature	-10~+50℃
Protection Rating	IP68



SONAR HMD

TANJIE SERIES / INDUSTRIAL PRODUCTS

ACOUSTIC VISUALIZATION | **COMPACT DESIGN**
IMMERSIVE PERCEPTION | **MULTI-DEVICE COMPATIBILITY**

The HMD Diving Sonar Glasses are an innovative device integrating modern display technology with diving gear. Mounted securely on diving masks or helmets, it projects sonar images directly into the diver's field of view, providing real-time awareness of the operational environment. Used in military diving, engineering inspection, marine research, and shipwreck archaeology.

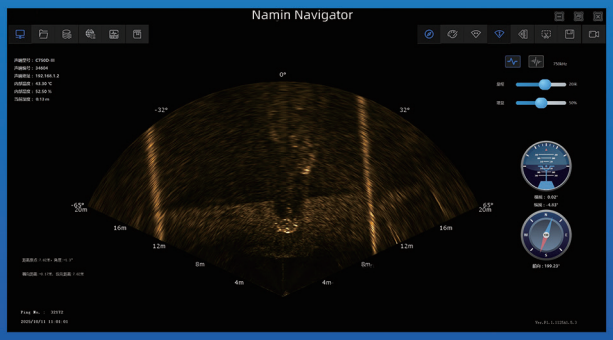
PRODUCT PARAMETERS

Sonar HMD	
Dimensions	≤130x75x65mm
Max Operating Depth	100m
Display Resolution	1920x1080
Operating Temperature	-5~+35℃



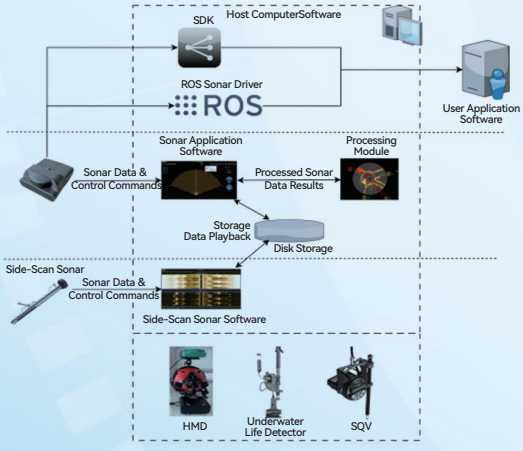
03 LINGHANG SERIES SOFTWARE ECOSYSTEM

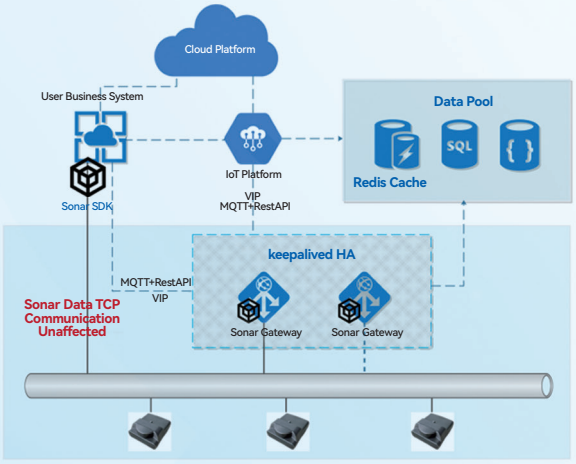
Namin Navigator, a software system compatible with all imaging sonar models released by the company. During underwater survey operations, the software enables control of the sonar, as well as data reception, storage, and real-time display. It provides users with clear and intuitive underwater imaging, supporting comprehensive underwater situational awareness.



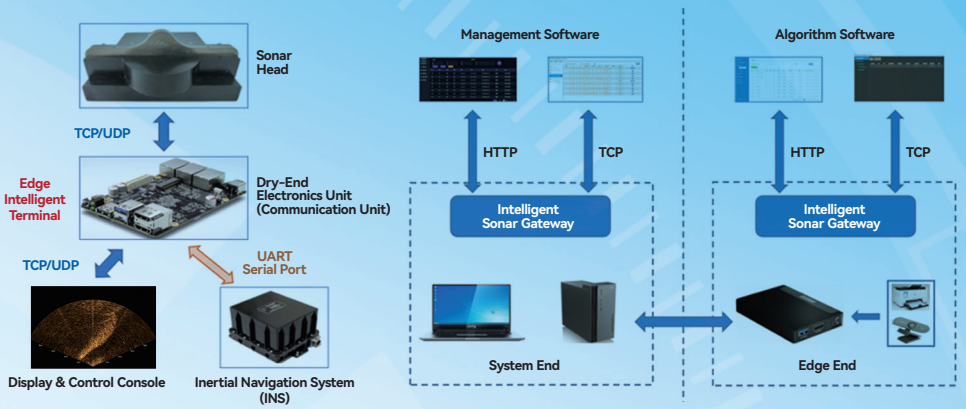
- Real-Time Sonar Imaging Display and Parameter Control
- Extensive System Parameter Configuration Capabilities
- Multi-Parameter Auxiliary Information Display
- Supports Target Ranging and Positioning
- Captures Key Images and Data
- Supports Multi-Data Replay

FLEXIBLE SCALABILITY AND CUSTOMIZATION CAPABILITIES

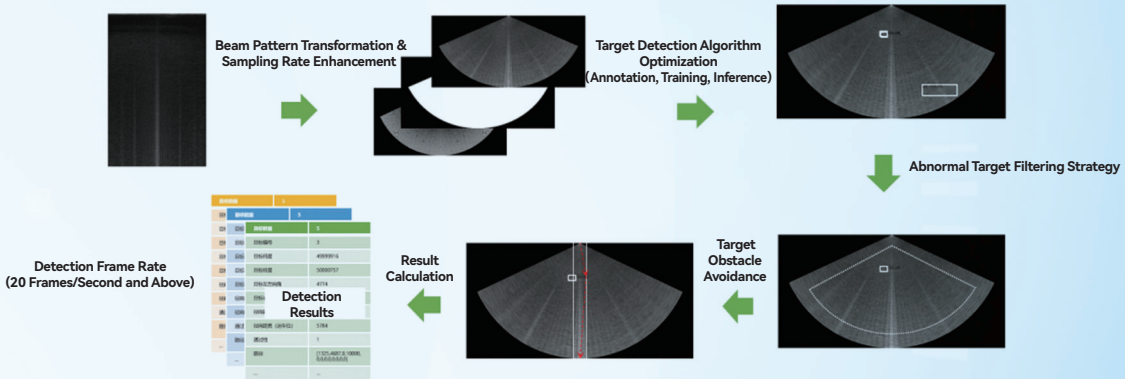




PROPRIETARY FUNCTIONAL MODULES



Ai-powered Expansion
Image Stitching Functionality
Time-division Control
Intelligent Obstacle Avoidance & Target Tracking



CROSS-PLATFORM & MULTI-LANGUAGE ADVANTAGES

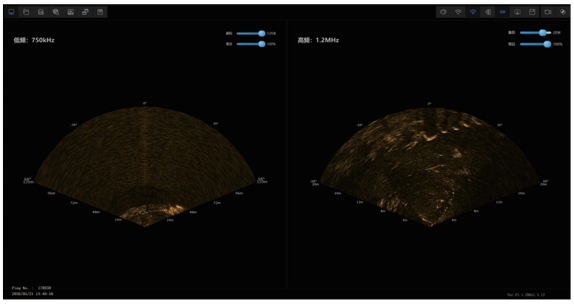




Namin Navigator

The software supports cross-platform operation (Windows, Linux, ROS 1/2), is compatible with multiple operating systems and architectures, and has obtained certification from Kylin OS and UOS. It currently supports multiple languages, including Chinese, English, and Japanese, meeting the operational needs of users with different language preferences and enabling a broader user base to utilize it with ease.

Dual-Frequency Simultaneous Display



Near & Far in Sync, No Switching

Low frequency scans wide and far; high frequency captures close-up HD detail. Both show live on one screen – no manual switching, 50%+ faster awareness.

Full View + Detail, Seen at Once

Low frequency maps the whole scene and target positions; high frequency shows outline, material and fine features. Nothing missed, nothing blurred.

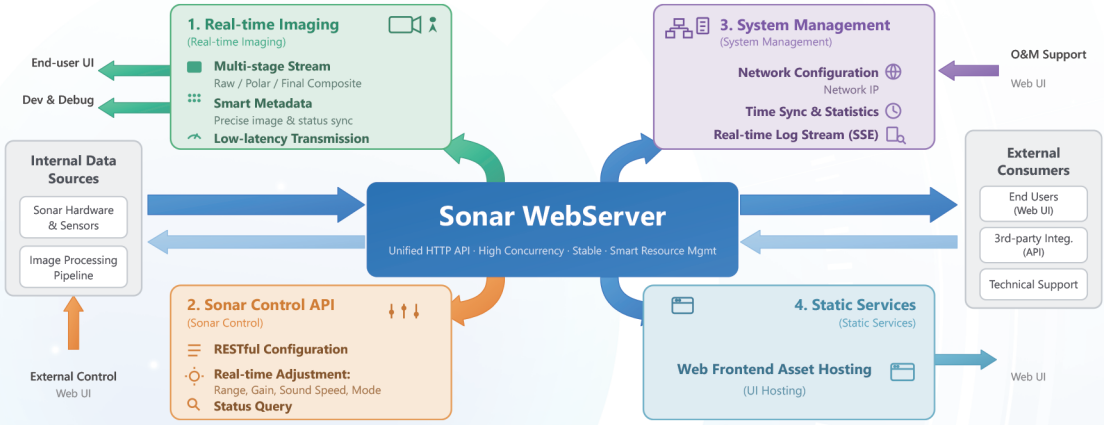
Strong Adaptability in Harsh Environments

The two frequencies complement each other, imaging reliably in turbid or low-light conditions where optics fail. Works on vessels, USVs, ROVs and more.

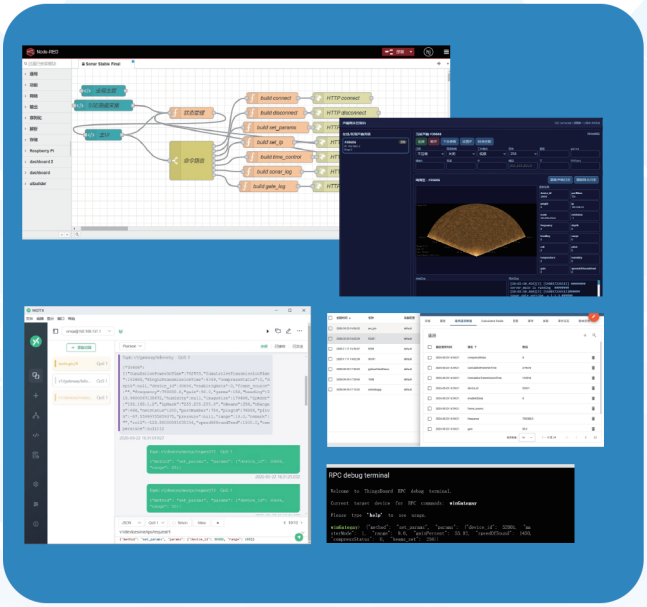
Fewer Misjudgments, Higher Work Quality

Side-by-side high/low-frequency comparison cuts single-frequency blind spots. With AI recognition, target position and size are labeled automatically.

Sonar Web – Features & Services



Gateway Application Expansion
Web + Node-RED + IoT Connectivity



- Direct browser monitoring
  no client to install; open it and see live sonar imagery instantly.
- Access anytime
  anywhere across phone, PC and large displays.
- Node-RED low-code
  integration – build data flows by drag-and-drop.
- Custom data processing, filtering and forwarding to fit any display terminal.
- MQTT + RestAPI integration with IoT platforms; dual-gateway hot standby for zero downtime.

04 APPLICATION SOLUTIONS

Namin focuses on national strategic needs for deep and distant seas, expanding high-frequency sonar applications to deep-sea aquaculture and biomass monitoring at nuclear power plant intakes, enhancing food and energy security. Addressing the need for deep-sea mining sensors, we solved the challenge of 6000-meter depth detection. Our application scenarios span all dimensions from "National Security" to "Livelihood Assurance," and from "Scientific Exploration" to "Industrial Efficiency."Future Direction: Namin sonar will evolve towards higher resolution, lower power consumption (for small UUVs), updated algorithms (signal processing optimization in complex marine environments), and multi-modal fusion (integrating with radar and optical devices for "Air-Sea-Bottom" integrated perception), further expanding applications in deep-sea exploration, autonomous marine equipment, and marine ecology protection.



OFFSHORE WIND POWER
Foundation Inspection



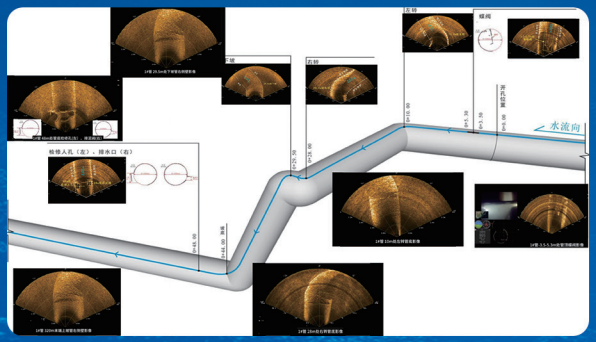
MARINE ENGINEERING
Cable Burial Inspection & Imaging Sonar



EMERGENCY RESPONSE
Underwater Target Search



AQUACULTURE
Biomass Monitoring



WATER UTILITIES
Urban Pipeline Network
& Sewage Well Inspection



DEFENSE
Unmanned Exploration Systems,
Underwater Security, etc.

BIOMASS MONITORING SOLUTION

SOLUTION

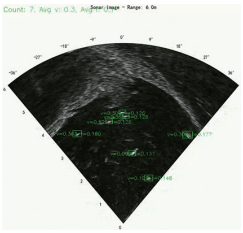
REAL-TIME MONITORING + INTELLIGENT IDENTIFICATION

Imaging Sonar / C750D Series

- Utilizes underwater sound waves with superior penetration.
- Strategic deployment enables extensive coverage.
- 512 beams deliver ultra-high resolution.



AI Image Recognition / Proprietary AI Software



- High identification accuracy.
- Diverse functional options.
- Highly customizable.

APPLICATION AREAS & Case Examples

Ecological Environment Monitoring



- Flexible deployment methods with strong environmental adaptability.
- Accurate identification of specific species.
- Captures behavioral dynamics and aids research on behavioral patterns.

Marine Ranching



- Customized installation for different net types.
- Comprehensive monitoring of fish school status and feeding processes, reducing labor costs.
- Auxiliary environmental monitoring improves fish survival rates.

Nuclear Power Cooling Water Monitoring



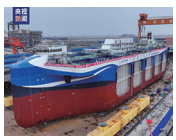
- Identification of nuisance species.
- Biomass statistics within the detection range.
- Multi-zone interaction for early warning.

Indoor Aquaculture Facilities



- Fish population counting.
- Assists precision feeding.
- Monitoring of fish behavior patterns enables disease warning.

Aquaculture Vessels



- High integration, can be connected to the vessel's overall system.
- Multi-device coordination enables school-level monitoring across the entire aquaculture vessel.
- Net damage status monitoring and intrusion fish detection.

WATER UTILITIES INDUSTRY SOLUTION

Underwater inspection in the water utilities sector faces challenges from complex environments (turbid water, suspended solids interference, variable flow rates), leading to limited accuracy in underwater topographic mapping and difficulty in identifying structural defects. Traditional detection technologies suffer from low data processing efficiency, insufficient accuracy, susceptibility to missed detections, and relatively high risks associated with manual inspection operations.

SOLUTION

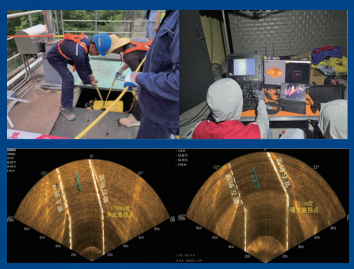
Urban Pipeline Network Inspection

▸ Imaging Sonar C750D

A high-performance imaging sonar capable of delivering high-definition imagery in various complex underwater environments, assisting operators in accurately locating various defects within urban pipeline networks, thereby ensuring their safe operation.

▸ High-Performance ROV

Capable of carrying the imaging sonar and other detection equipment, it can operate safely in various complex underwater working conditions, enabling inspection of pipelines and channels while they are in service, thus improving inspection efficiency.



Shanghai Raw Water Pipeline Inspection



C750D



High-Performance ROV

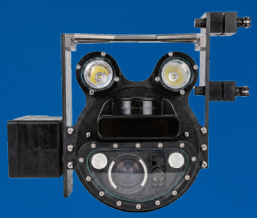
Sewage Well Inspection

▸ SV(Sonar View)

Seamlessly integrates surface optical and underwater acoustic data acquisition. Efficiently detects the underwater structure of wells and sedimentation levels, filling the technical gap for rapid underwater investigation prior to effective systematic reconnaissance and diversion construction in high-water-level pipeline networks. Can generate a "Well Connection Overview Diagram" with one click, visually displaying information (including pipe length, diameter, burial depth, flow space/siltation thickness) of connecting pipes at various orientations and depths within the well, ensuring accurate detection data. Results can be uploaded to pipeline network information systems, digital platforms, or the cloud.



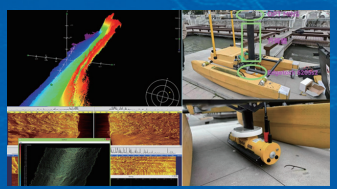
Well Connection Overview Diagram



SV

River & Waterbody Mapping

An integrated sonar system combining Multibeam Echosounding and Side-Scan capabilities, deployed using advanced foldable Unmanned Surface Vessels (USVs). Applied in rivers, lakes, and coastal shallow, wide-water environments, it simultaneously generates underwater topographic data and side-scan imagery in a single survey, increasing efficiency at least fourfold compared to traditional methods.



Survey Results

Installation Structure



Bathymetric Side-Scan Sonar

MORE INDUSTRY SOLUTIONS

EDUCATION & RESEARCH SOLUTIONS

▸ Integrated Teaching & Practice System

Leveraging years of practical experience, Namin Technology provides teaching materials, sonar equipment, and real-world application scenario data, helping schools build an integrated acoustics teaching system linking theoretical knowledge, experimental equipment, and application cases. This enhances teaching completeness and practicality, strengthens the connection between knowledge acquisition and practice, and helps students build a comprehensive cognitive framework for acoustic technology.

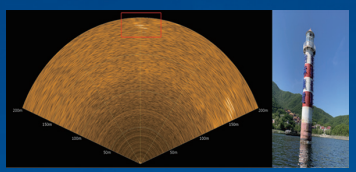
▸ Professional Research Capability Support

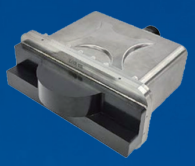
Namin Technology delivers high-resolution imaging and supports flexible secondary development, adapting to the data acquisition needs of image recognition and algorithm research. This empowers research teams to conduct customized in-depth analysis based on target scenarios, promoting technological breakthroughs in acoustics and hydroacoustic engineering research.

UNDERWATER SECURITY SOLUTIONS

▸ Imaging Sonar C400H

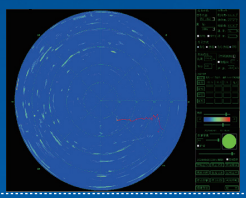
Offers a wide detection range with a maximum distance of 200 meters and a 136° horizontal beam width. Achieves a range resolution of 125 mm at 100 meters. Features a deep-water titanium alloy housing, resistant to seawater corrosion. Effective detection range for typical targets (naval mine) is up to 120 meters.





▸ Intruder Detection Sonar

Primarily deployed on surface vessels or offshore platforms to detect, track, and locate underwater small moving targets like divers. In shallow water environments ⩾15m depth, under moderate to good hydrological conditions with a clay-silt seabed, the detection range for diver targets is not less than 500 meters.





MARINE ENGINEERING SOLUTIONS

▸ C750D Offshore Engineering Edition

Based on the standard C750D series, this version uses more durable, higher-grade waterproof connectors and enhances the shock resistance of connection parts, further meeting the usage requirements of large ROVs and other underwater construction equipment. It maintains the consistent high-definition resolution of the C750D series, making subsea pipeline burial, cable laying, and similar tasks more convenient and efficient.



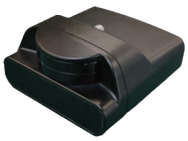


SURFACE & UNDERWATER PLATFORM DEPLOYMENT SCENARIOS

Surface Deployment Scenario: Unmanned Surface Vessel (USV) + C750D Imaging Sonar

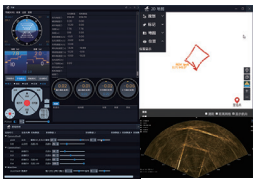
The USV hull is equipped with high-speed thrusters and carries the C750D imaging sonar. Combined with proprietary autonomous attitude control and image recognition technologies, it is applied for underwater target search, emergency underwater topographic mapping, water emergency rescue, and structural inspection of bridges and dams in the water conservancy industry.



Underwater Deployment Scenario: Underwater Robot (ROV) + C750D Imaging Sonar

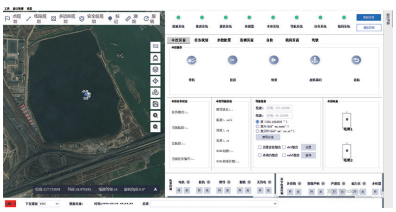
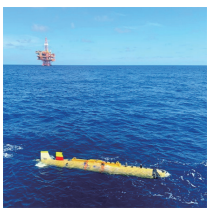
The Underwater Robot is high-performance equipment specifically designed for underwater operations. It features high mobility, operational precision, and strong environmental adaptability. Utilizing a modular design, it carries HD cameras, the C750D imaging sonar, manipulator arms, and environmental monitoring equipment. It is capable of performing diverse tasks including underwater inspection, surveying, salvage, maintenance, and scientific research. Equipped with a stable attitude control system and efficient propulsion, it maintains reliable operation in complex sea conditions and high-pressure deep-sea environments.





Underwater Deployment Scenario: AUV with C750D Imaging Sonar + Side-Scan Sonar

This refers to an intelligent platform capable of performing underwater missions without human intervention. It integrates advanced navigation, control, and communication technologies, enabling autonomous route planning and stable navigation in complex underwater environments. Characterized by autonomous intelligent navigation, high-precision positioning, long endurance, and modular design, it carries the C750D sonar, side-scan sonar, cameras, and environmental sensors. It enables multi-domain applications such as marine mapping, resource exploration, environmental monitoring, underwater inspection, and military reconnaissance.


DEDICATED TO INTELLIGENT UNDERWATER DETECTION

PUSHING THE BOUNDARIES OF HUMAN EXPLORATION OF THE OCEAN

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