



First Practitioner Of Turnkey Services For  
Submarine Cable Projects In China

EPC ONE-STOP SERVICE SUPPLIER

Owner Planning

Desktop Study & Route Design

System Design

Route Survey

Product Supply

Installation

Owner Acceptance

Maintenance

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**FiberHome Marine**  
Marine Network Solution Specialist

FiberHome(Stock code:sh600498)

# FiberHome

Affiliated Brands of the Birthplace of China's Optical communications

## FiberHome

**41** Global No. 4 in fibre optic cable production

**100** Business covering more than 100 countries and regions

**30** Global sales of more than RMB 30 billion

## FiberHome

FiberHome Marine Network Equipment Co., Ltd. (hereinafter referred to as "FiberHome Marine") is a wholly-owned subsidiary of China Information Communication Technologies Group (a central enterprise) and a subsidiary of the listed state-owned enterprise and Fortune Global 500 company "FiberHome Communication Technologies Co., Ltd.". Based in Zhuhai, FiberHome Marine is dedicated to submarine network technology and equipment. It provides a full range of products and solutions for marine network, including product supply, system design, construction and installation, and maintenance support. Meanwhile, FiberHome Marine is also the world's communication equipment supplier with completely independent intellectual property rights and the whole industry chain in the field of marine network.

## Asia's One-stop Submarine Cable Production Base

Total investment

**30** Billion Yuan

Land Occupation

**150000** M<sup>2</sup>

Construction of 20,000 tonne wharf

**20000** TON

Submarine Cable Annual capacity of submarine cables reaches 10,000KM

**10000** Km

Annual production capacity of 100+ repeater and wet-plant equipment

**100** Piece

Total area of the dust-free laboratory is nearly 2,000 square metres

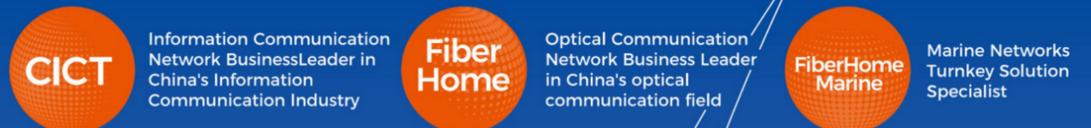
**2000** M<sup>2</sup>

Equipped with 350m extra-long plant

**350** M

# LEADING ASIA

FiberHome Marine: Asia's Leading Turnkey Marine Network Solution Provider



**2025**

Driving submarine cable technology innovation, delivering turnkey marine network solutions, and accelerating worldwide digital connectivity with China's expertise.

**2024**

Deployed advanced vessel FengHua 23, reinforcing deep-sea cable engineering capabilities.

**2021**

Launched proprietary cable-laying vessel FengHua 21, enabling unlimited navigation zones operations.

**2019**

Operationalized an integrated smart factory (design-manufacturing integration testing-storage) with annual capacity of 10,000km submarine optical cables and 100+ wet plant units (repeaters, etc.).

**2015**

Established "FiberHome Marine" in Zhuhai, China, initiating a marine network industrial base with full EPC capabilities.

**2005**

FiberHome produced its first submarine cable product.

**2000**

FiberHome initiated the research and development of submarine cable products focusing on the global marine scenario.



# Submarine Network Application Scenarios

FiberHome Fit Ocean © Turnkey Solution

The only global high-tech enterprise that has independently integrated the four core technological fields of chip device, dry plant and wet-plant equipment, optical preform-fiber-submarine cable, and marine engineering equipment



## Repeaterless Inter-Island Connections Solution

Flexible Network Architecture  
Cost-effective

## Offshore Platform Communications Solution

Safe and reliable data transmission  
High-Capacity Data Paths for Smart Manufacturing

## Repeated Trans-Oceanic Connections Solution

Long Distance Communication Security  
Qualified Device, High Reliability

## Real-time Safety Monitoring Solution

Long detection distance  
99 % Accuracy of Alarms

### Chip Device



Self-developed core chip

### Dry-plant And Wet-plant Equipment

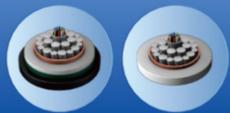


PFE SLM SLTE REPEATERS

### Optical Preform-Fiber-Submarine Cable



RA DA SA



LWP LW

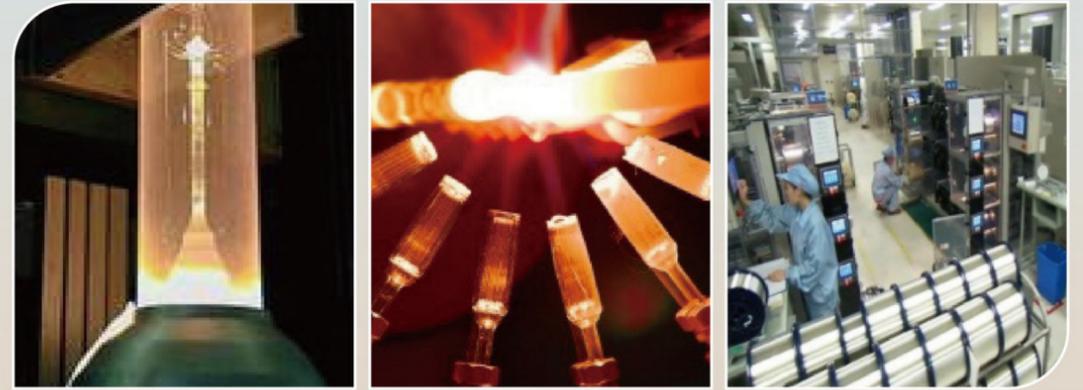
### Marine Engineering Vessels



FengHua23 FengHua21

# Integrated industrial chain of optic preform & optical fiber & submarine cable

## Independent developed PCVD+VAD+OVD fiber preform production



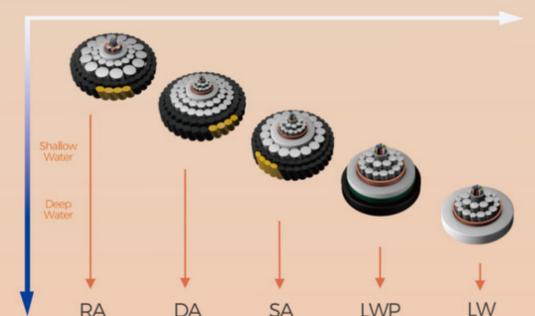
## Integrated Intelligent Factory



## Submarine Cable

A complete industrial chain of optical fiber preforms - submarine optical fiber - submarine optical cables, independently produces the full range of submarine optical cables.

- Low loss and low resistance
- High tensile strength with armored protective sheathing
- Engineered for 0-8,000m water depths, adaptable to diverse seabed terrains
- Certified by the International consortium



## Bipolar Submarine Cable

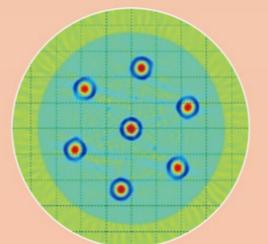
Bipolar submarine cable is a type of high-voltage direct current (HVDC) power transmission submarine cable that features a dual-layer conductor structure. It is designed to provide stable power supply to active underwater equipment.



## Multi-core Optical Fiber

A single cladding houses multiple independent signal-transmission cores, so the overall transmission capacity increases multiplicatively with the number of cores.

- Low crosstalk and low attenuation
- High capacity: each core can transmit signals independently



In 2020, FiberHome participated in building the world's first space-division-multiplexing demonstration network, selecting 7-core fiber as the cabling medium and achieving the first large-scale commercial deployment of multi-core fiber in submarine cables.



# Submarine Network Wet-Plant Equipment

## Submarine Cable Joint

Used for direct splicing between submarine cables, achieving mechanical connection, electrical connectivity, and fiber optic splicing.

- Fiber Splicing Capacity:  $\leq 96$  fibers
- Excellent insulation, sealing, mechanical strength, and high reliability
- Compact size and lightweight design for easy transportation and deployment

## Repeater

Optical amplification transmission equipment for submarine cable communication systems, supporting ultra-long-distance system transmission.

- Maximum support for 32-core submarine cables with large transmission capacity
- High-reliability design combining superior high-voltage insulation and heat dissipation performance

## ROPA

A repeaterless optical transmission device for submarine communication networks, directly amplifying submarine cable optical signals via erbium-doped fiber amplifiers.

- Maximally supports 96-core submarine cables with large transmission capacity
- Equipped with advanced fault location function
- Highly reliable with excellent sealing and high-pressure resistance

## Submarine Branch Unit

Applicable to both repeatered and repeaterless submarine systems, it connects the main trunk and branch routes in submarine networks. The repeatered passive branch enables mechanical, electrical connections and fiber splicing between the trunk and branch.

- Number of fiber optic fusion splices  $\leq 96$  fibers
- High reliability and large communication capacity

## Power Switch Branch Unit

A key device for long-distance branch submarine cable systems, integrating optical switches and electrical switching functions to support fault section isolation.

- Maximally supports 32-core optical fibers
- Ensures uninterrupted service operation for non-fault sections

## Reconfigurable Optical Add-Drop Multiplexer Unit

A crucial device for flexible submarine optical cable communication systems, dynamically adjusting optical wavelengths to meet service traffic demands.

- Used with BU to achieve optical add-drop multiplexing for branch sites
- Supports flexible service scheduling and wavelength reconfiguration

## Ocean Ground Bed

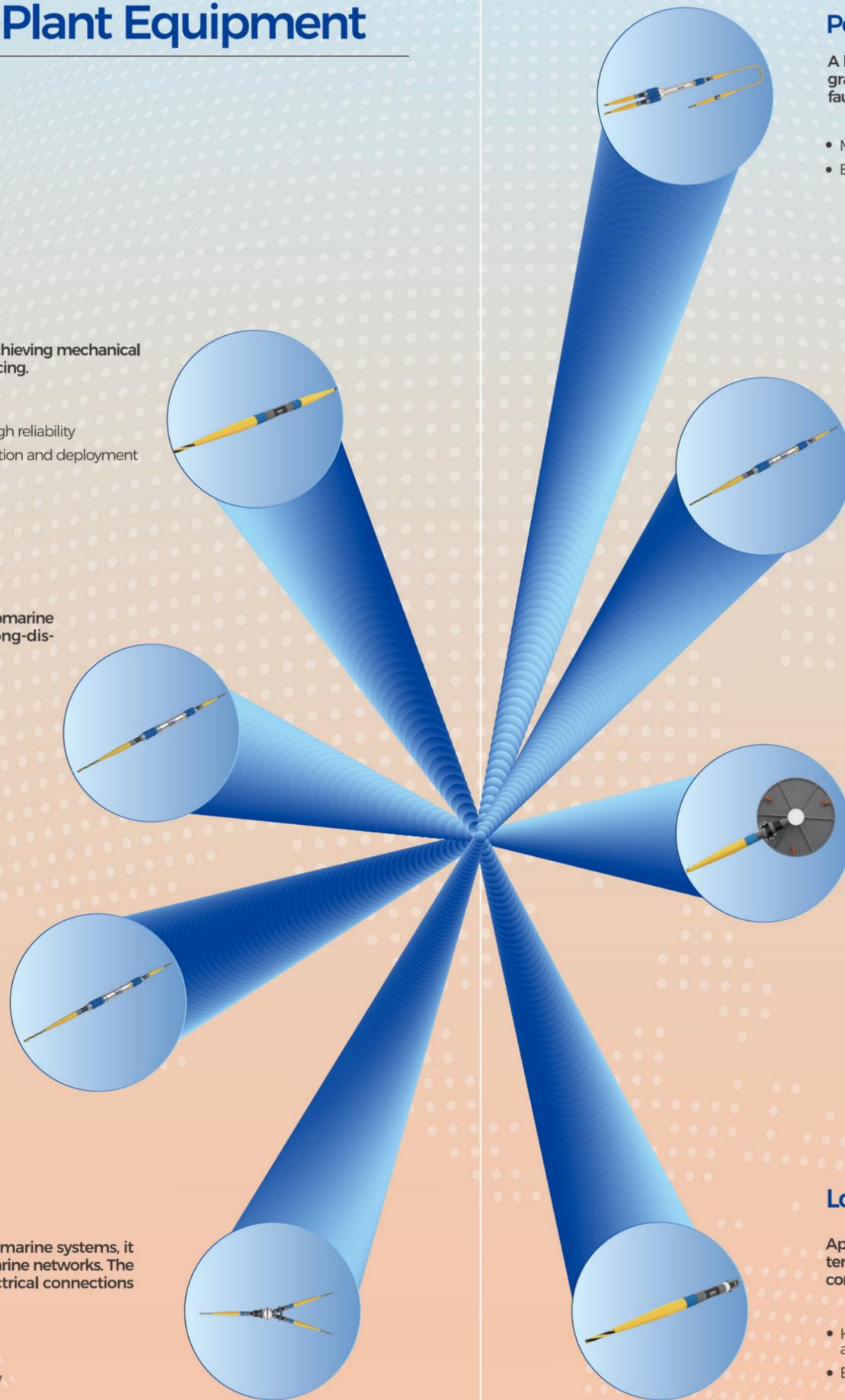
Applied in repeatered submarine cable systems, forming power supply loops through conductive layers contacting seawater.

- Disc-shaped electrode design ensures high stability after installation
- Made of corrosion-resistant high-silicon cast iron for long service life

## Loop Fiber Sea Earth

Applied in repeatered systems, implementing fiber loopback at system terminals and connecting cable power supply systems with seawater to complete current loops.

- Hybrid metal oxide coating provides superior anti-bacterial and corrosion-resistant properties
- Enhanced insulation, sealing, and reliability



# Marine Network Dry-plant Transmission Equipment

**Fiberhome Self-developed WDM-based Terminal Equipment, Providing Large-capacity, High-performance, And Highly Reliable Data Transmission.**

- Electrical cross-connect capacity: 24T-1024T
- Supports 100G/200G/400G/800G multi-rate line interfaces
- Visualized power consumption/bandwidth management

## Submarine Line Terminal Equipment



## Power Feeding Equipment



**High-precision constant-current high-voltage power supply for repeatered submarine cable systems, ensuring stable long-term operation of underwater active devices.**

- Modular architecture with maximum 18kV high-voltage output
- Multi-interlock protection & fault protection mechanisms
- N+1 hot redundancy for power conversion modules

**For submarine cable transmission scenarios, supports submarine cable line inspection, underwater equipment management, and flexible multi-vendor device access management (Open Cable).**

- Supports flexible third-party device access and automatic wavelength filling.
- Supports C - OTDR function and online/offline submarine cable monitoring.
- Supports remote monitoring and management of underwater branch apparatus.

## Submarine Line Monitoring Equipment



## UMC<sup>2</sup>



**FiberHome third-generation cloud-based NMS platform enabling full-domain optical cable monitoring and topology visualization.**

- Integrated management/control/analysis architecture
- standard northbound/southbound interfaces supporting multi-cloud deployment
- Precise underwater device location and fault traceability

**The system utilizes  $\Phi$ -OTDR to detect acoustic vibrations, providing real-time monitoring, alarms, and precise localization of subsea cable disturbances.**

- High spatial resolution with positioning accuracy options: 2m/5m/10m
- Dual-end monitoring architecture covers a range of up to 240 kilometers

## Fiber Optic Distributed Acoustic Sensing Equipment



# Submarine Cable Engineering Vessel

**"FengHua 21"** is a dedicated cable-laying vessel integrating advanced technologies and exceptional capabilities. With a length of 78 meters and beam of 18.4 meters, it offers a cable-loading capacity of 1,250 tons.

The vessel's DP2 dynamic positioning system and A-frame crane ensure precision in submarine cable installation and burial operations. Its plough achieves burial depths of 0.5-3.5 meters within water depths of 5-200 meters.



**"FengHua 23"** is a multi-role O&M support vessel with dimensions of 98m (L) × 22.8m (B) × 9m (D). Boasting a 3,000-ton cable capacity and 10,000+ nautical mile endurance, it supports deep-sea wind farm maintenance, submarine cable installation/repair, and complex offshore engineering tasks.

Equipped with DP2 positioning and A-frame crane, the vessel executes millimeter-accurate cable laying. Its plough system operates at depths up to 500 meters with 0-3.5 meter burial depth control.





# Benchmarking Cases

## 1 Zhuhai Mobile Multi-Core Fiber-Optic Submarine Cable Project

Integration of twelve seven-core fiber-optic submarine cable, marking the first scale application of multi-core fibers in submarine cable systems

RFS: 2024



## 2 Hainan-Hong Kong Crossing Protection Project

China pioneering polymer cushion block for oil and gas pipeline crossing protection, featuring high-precision crossing

RFS: 2024

## 3 Sanya, Hainan Submarine Cable Supply Project

China first delivery of a single continuous DA/SA submarine cable spanning 165km

RFS: 2021

## 4 Zhuhai Submarine Cable Turnkey Project

A 120km three-segment submarine cable route turnkey project

RFS: 2020

## 5 Xiamen Mobile Submarine Cable Turnkey Project

China first submarine cable turnkey project, with a 50% reduction in delivery time

RFS: 2019



## 1 BaSICS Pro Submarine System Upgrade Project

Two cable systems connection and upgrade, enabling seamless system upgrade from 100G to 400G.

RFS: 2025

## 3 BaSICS Submarine Cable Turnkey Project

An 800km long-distance transnational marine communication system

RFS: 2023

## 5 Philippine DFON System Turnkey Project

1,100km multi-island and multi-regional interconnection, forming a closed-loop southern communication network

RFS: 2022

## 2 Philippine Globe Festoon Submarine Cable Turnkey Project

An 800km multi-island submarine cable interconnection project

RFS: 2025

## 4 Malaysia CTSB Submarine Cable Turnkey Project

A short distance inter-island project

RFS: 2022

## 6 Malaysia SKRIM Submarine Cable Upgrade Project

Third-party submarine cable system upgrade, enabling smooth network upgrade

RFS: 2026



## 1 Chile SKYRING Submarine Cable Supply Project

A customized submarine cable supply project, with efficient submarine cable splicing

RFS: 2023

## 2 Brazil Cable Supply Project

A submarine cable underwater network pilot project

RFS: 2023

## 3 Turkey Cable Supply Project

Customized submarine cable supply with efficient product delivery

RFS: 2023

## 4 Chile SILICA Customized Submarine Cable Supply Project

Customized high-fiber-count submarine cables, with a tailored combined sea, and land transportation solution

RFS: 2021

## 5 Kenya BCS Submarine Cable Turnkey Project

A short distance inter-island project

RFS: 2021

## Global Partners

