光普森科 GPSENKE

Wind Energy Network Solution

Empowering your network for optimal performance and efficiency

GPSENKE NETWORK ICT

GPSENKE Main Industry

GPSENKE NETWORK ICT (referred to as GPSENKE) was founded in 2003 which is a comprehensive high-tech enterprise integrating technology research and development, production, sales, and service.

GPSENKE specializes in producing various communication equipment, including industrial wireless APs, industrial switches, 4G/5G routers, WiFi routers, edge computing gateways, and other devices. It provides comprehensive customized network solutions for a variety of different industrial sectors such as rail transit, coal mining, oil and petrochemicals, smart warehousing, factory automation, wind power new energy, electric power, smart cities, and military industry.

Oil and Petrochemical

Wind& Solar New Energy

Mining&Pipeline

Metallurgical Industry

Automation Factory

Warehouing AGV&AMR

Smart Transportation

Railways&Rail Train

Smart City

Main Cooperator

On-Site Project

Wind Turbine Tower Inside WiFi Coverage

Wind Farm Ring Network build by Ethernet Switch (Staff Positioning & Manage System)

Wind Turbine Cabin Network Build

Pain Points

Traditional Wind Farm

- Wind farms in remote areas like mountains and deserts face weak carrier signals and harsh weather, challenging network hardware durability.
- Inspections and work permits are hindered by poor signals.
- Network construction is limited by scarce fiber resources.

On-site Work

- Complex wind farm environments hinder safety.
- Scattered locations reduce management efficiency.
- Distance from booster stations causes disconnection.
- Lack of signal in turbines complicates worker location.

Network Management

- Invisible Network: Slower repairs, higher costs.
- Device Surge: Data increase strains processing.
- Security Risks: Many devices, complex security.
- Tech Updates: Essential for improved network and safety.

Solution

The Smart Wind Energy Networking Solution is an integrated network architecture that combines both wireless and wired networks to meet the communication and data transmission needs of Wind Energys.

It is designed to facilitate the intelligent and efficient management of Wind Energys, enhance power generation efficiency, reduce operational costs, and ensure reliability and safety. The solution encompasses the following features:

Wired Connections:

Utilizes industrial network management Ethernet switches for high-speed wired connections to critical equipment and data centers, ensuring reliable data transmission and low latency.

Wireless Coverage:

Employs wireless communication technologies and industrial wireless APs to cover the entire Wind Energy within the network, including wireless connections for devices such as wireless terminal equipment or wireless cameras for data transmission.

Real-time Monitoring and Data Analysis with GPSENKE Cloud System

Through a combination of wired and wireless networking, maintenance personnel can monitor the operational status and performance of communication equipment such as ring network switches, wireless APs, terminal devices, and 4G/5G gateways in real-time via the GPSENKE Cloud System. This aids in timely problem identification and resolution, enhancing the reliability and availability of the Smart Wind Energy network. Additionally, the GPSENKE Cloud System analyzes collected data to optimize the network operation strategy for the entire Smart Wind Energy, ensuring the stable implementation of the solution and contributing to improved power generation efficiency of Smart Wind Energys.

Smart Wind Farm Network Solution

GPSENKE Cloud System

AC Access Controller

LAY-3 Core 10G Switch

Distribution Switch

Seamless WiFi Coverage

Effectively solving the signal issues across the wind farm

LAY-2 Managed Fiber Ring Ethernet Switch

Ethernet Fiber WiFi

Wind Turbine WiFi Solution

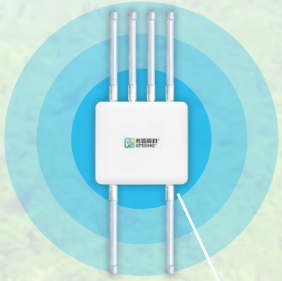
Wireless Access Point

WiFi Connection

Fiber Ring

Wireless Access Point

Implementing solution to accuratelytrack personnel within tower nacelles for enhanced safety & efficiency.



Maintenance staff can easily connectand upload data by approaching theturbine, improving efficiency andsimplifying operations.

LAY-2 Managed Fiber Ring Connect Ethernet Switch

GPSENKE Main Device

Industrial Wireless Access Point


320M AP

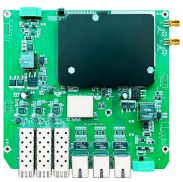

1200M AP

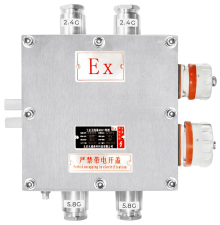

1800M AP


3000M AP


5400M AP

Industrial Sepcifiy Wireless


Mining


Oil&Gas


Warehousing

Wireless Bridge


1~10Km


20/30/50Km

Industrial 4G5G


4G Router


5G Router

Power Panel


Power Supply

WiFi Modular



WiFi Modular Device

Industrial Wired Product (SW/Serial Server/PoE)


L2 SW


L3/M12 SW


POE SW


Serial Server


Conventer

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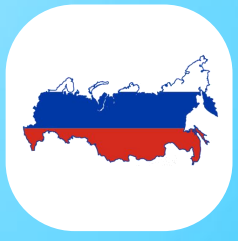

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