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5G AIoT
Commercialized Products Handbook
Shaping the 5G AIoT Future Across All Market Sectors

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Telecom Operators

According to a GSA report, by mid-August 2021,
461 operators in 137 countries/regions were investing in 5G.
There are now 1060 announced 5G devices, an increase of 21.4% in the last quarter.
China's 5G roll-out is leading the world. With an early deployment of 5G technology,
the country has built 916,000 5G base stations, accounting for 70% of the world,
and has had over 365 billion 5G connections, accounting for 80% of the world.

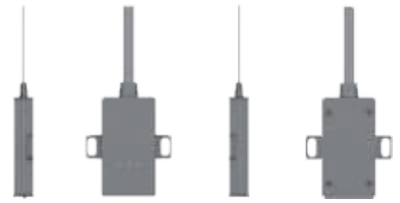
China Mobile

China Mobile is a mobile communications operator based on GSM, TDD-LTE, FDD-LTE, and 5G networks. Its business mainly includes mobile voice, data, broadband, VoIP, and multimedia services. China Mobile has the right to operate Internet services for international networking units and international communications gateway services.China Mobile has built more than 410,000 5G base stations, accounting for more than half of China's total. www.chinamobileltd.com

China Mobile's DMU

Embedded with Fibocom LTE Cat 1 module: MC615

China Mobile's DMU-F is a customized OEM product targeting electric motorcycle manufacturers. The DMU family adopt Fibocom's small-size 4G Cat 1 module MC615, offering customized management platforms and solutions for a variety of motorcycle manufacturers.



POC Terminal (CM15)

Embedded with Fibocom LTE Cat 1 module: L610-CN

China Mobile, one of the three leading operators in China, launched its Push to Talk over Cellular (POC) product.. Relying on China Mobile's superior 5G network, the product offers 4K UHD video POC and visualized cluster dispatch capabilities. It provides 5G cloud-based law enforcement, market supervision, security dispatch, and convergence dispatch solutions, offering all-in-one "Network + Cloud + DICT" smart services to government and enterprise customers.

China Mobile’ s POC has been actively pursuing the LTE Cat 1 market with its partners since 2019.Its LTE Cat 1 terminal enriches the portfolio of terminal products with a more high-performance option and provides quality voice POC services for customers from small- and medium-sized enterprises across the hotel, restaurant, and security industries.Fibocom has launched various LTE Cat 1 modules that provide comprehensive support for China Mobile's POC, allowing downstream partners to bring high-performance POC terminals, such as CM15, to the market.

The Marketing Reference Design (MRD)

Embedded with Fibocom LTE Cat 1 module: L610-CN

Global Navigation Satellite System (GNSS) positioning is a traditional way to obtain precise coordinates. GNSS includes China's BeiDou Satellite Navigation System (BDS), the USA's Global Positioning System (GPS), etc.Like electromagnetic signals, satellite radio waves are susceptible to interference from geographical features and other radio waves.In this regard, a high-precision positioning system is introduced to remove the accuracy error caused by the interference.China Mobile's high-precision positioning system mainly offers centimeter-level RTK (real-time kinematic), sub-meter-level RTK, and sub-meter-level RTD (real-time differential) positioning services.The marketing reference design (MRD) is built on Allystar's dual-frequency chip solution and Fibocom's L610, which integrates China Mobile's high-precision positioning capabilities. The MRD has been tested in the first half of 2011 to provide customers with guidance on MRD.Fibocom's 4G Cat 1 module and 5G module have also been tested and validated with China Mobile in shared mobility and well-known automobile manufacturers' projects.

China Telecom

Founded on April 27, 1995, China Telecom is an extra-large state-owned telecommunications enterprise in China and a global partner of Shanghai World Expo, and has been ranked among the "Fortune Global 500 " for many consecutive years. It mainly provides integrated information services including fixed-line telephone, mobile communications, satellite communications, Internet access, and application services.China Telecom and China Unicom have signed a 5G Network Co-Construction and Sharing Cooperation Agreement. By the end of April 2021, they have accumulatively built about 400,000 5G base stations. www.chinatelecom.com.cn

5G DTU

Embedded with Fibocom 5G module: FM650/FG650

China Telecom Research Institute and Fibocom have cooperated extensively in the development of 5G modules and launched the high-performance 5G DTU built on the FM650 5G module. They also introduced customized high-performance 5G terminals based on the Open CPU capability of the FG650 5G module, hoping to make 5G applications and solutions widely accessible.Operators and module manufacturers are working together intensively to accelerate the large-scale development of 5G applications.

4G Camera Communication Board

Embedded with Fibocom LTE Cat 1 module: L610

China Telecom's IoT Open Platform Enablement Service (Application Enablement Platform or AEP)provides IoT application developers with comprehensive capabilities such as terminal access, terminal management, data parsing, data analysis, rule engine, and capability assembly,helping them quickly develop IoT applications at a lower cost. AEP's camera communication board offers data transmission capability and can be integrated with the SDKs of the Skywing IoT platform.The communication board utilizes Fibocom's LTE Cat 1 wireless communication module as the underlying bearer network hardware, providing data interfaces, power interfaces, control interfaces, reset interfaces, and debugging interfaces. It performs data acquisition and transmission via hardware and software logic and implements specific business functions for a wide range of industries including hydrology, environmental protection, meteorology, electric power, in-vehicle, industrial control, finance, and security sectors.

China Unicom

China Unicom mainly operates GSM, WCDMA, and FDD-LTE mobile network services, fixed communication services, domestic and international communication facilities services, satellite international private line services, data communication services, network access services and various value-added telecommunication services, and system integration services related to communication and information services.China Unicom and China Telecom have signed a 5G Network Co-Construction and Sharing Cooperation Agreement. By the end of April 2021, they have accumulatively built about 400,000 5G base stations. www.chinaunicom.com

China Unicom Yanfei 5G Module

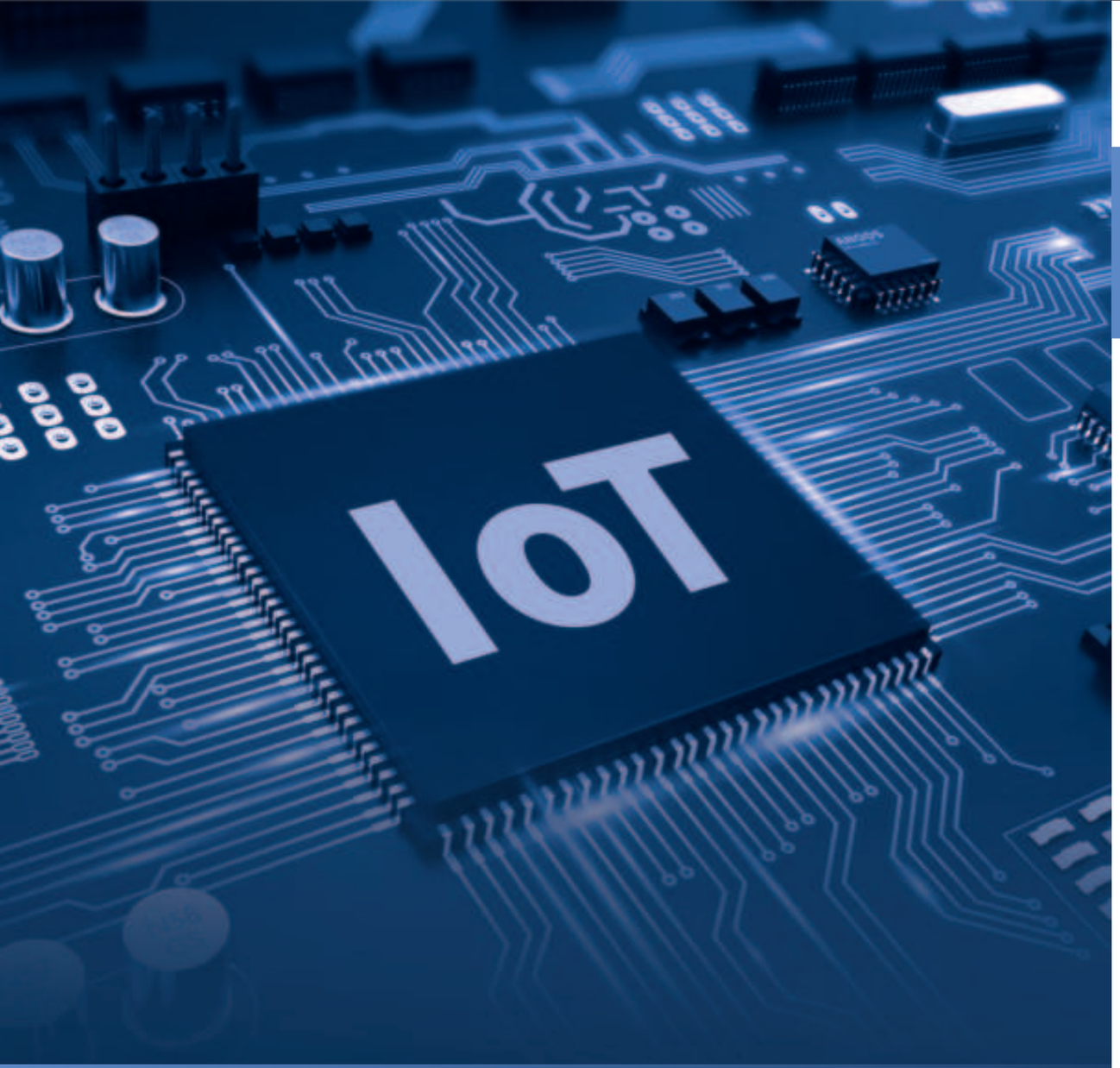
With its technical advantages of high performance, high integration, and low power consumption, Fibocom 5G module was shortlisted for China Unicom's 5G module tender with the largest share.In response to the sluggish development of the overall 5G industry due to the high module cost, Fibocom has introduced differentiated and customized 5G modules through in-depth optimization and tailoring.

5G+Smart Oilfield

In November 2019, China Unicom Dongying Branch, together with Huawei and Gudong Oil Production Plant, proposed the "5G + Private MEC" solution.They completed the small-scale experimental validation of the SA (standalone) + private line mode in March 2020 and the business validation under 5G SA(Standalone) + MEC mode on July 31, 2020. The solution tackles the problems arising in monitoring display transmission and production control data transmission in oil wells through traditional wireless bridges, optical fiber, and 4G network. Moreover, it provides reliable bandwidth and latency to support the rapid launch of services. By Q4 2020, 438 oil wells have transformed their networks.Meanwhile, China Unicom's industrial-grade 5G DTU "Pioneer 2" is deployed in the Oil & Gas project. The DTU is equipped with an external antenna and applies to a variety of industrial scenarios, allowing users to quickly access 5G networks. Leveraging China Unicom's 5G industrial terminal management and service platform, it provides convenient, flexible, and efficient terminal management and service capabilities for 5G terminals.

The project is developed and designed with the advantages of 5G communication technology, including:

- 3.5 GHz band with strong penetration in open areas and less influence by obstacles;
- Higher 5G transmission bandwidth, enabling round-the-clock video and data transmission;
- Low latency and stable signal for high reliability;
- 5G terminals installed in communication boxes, making them less affected by adverse weather and allowing longer maintenance-free operating period. The base stations are maintained by operators;
- GNSS positioning feature, offering a one-stop solution to customers.



Chipset

Qualcomm

Qualcomm

Qualcomm is the world’ s leading wireless technology innovator and the driving force behind the development, launch, and expansion of 5G. When we connected the phone to the internet, the mobile revolution was born. Today, our foundational technologies enable the mobile ecosystem and are found in every 3G, 4G and 5G smartphone. We bring the benefits of mobile to new industries, including automotive, the internet of things, and computing, and are leading the way to a world where everything and everyone can communicate and interact seamlessly. www.qualcomm.com

Wireless Module

- Fibocom 5G module FM160 is powered by Qualcomm® Snapdragon™ X62 5G Modem-RF System
- Fibocom 5G module FG150/FM150 series are powered by Qualcomm® Snapdragon™ X55 5G Modem-RF System
- Fibocom 5G Smart Module SC161 is powered by Qualcomm® SM6350 5G SoC platform
- Fiboocm LTE Cat 6 module FG101/FM101 series are powered by Qualcomm® Snapdragon™ X12 LTE Modem
- Fibocom LTE Cat 1 module MC116 is powered by Qualcomm® 9207 LTE Modem

MediaTek

MediaTek is the world’ s 4th largest global fabless semiconductor company and powers more than 2 billion devices a year. MediaTek’ s core businesses include Mobile, Home and Automotive. We ensure our chipsets share core technologies across these platforms – so every market segment benefits from a single piece of our intellectual property. MediaTek is known for advances in multimedia, AI and expertise delivering the most power possible – when and where needed. Plus our chipsets are optimized to run cool and super power-efficient to extend battery life. Always a perfect balance of high performance, power-efficiency, and connectivity. www.mediatek.com

Wireless Module

- Fibocom 5G module FM350 is powered by MediaTek Dimensity 700 5G-integrated SoC chipset platform
- Fibocom 5G module FG360 is powered by MediaTek 750 chipset platform

UNISOC

UNISOC is one of the worldwide handful chip design companies that have all-scenarios communication technologies supporting 2G/3G/4G/5G, Wi-Fi, Bluetooth, TV and satellite communication etc. It boasts comprehensive chip design technologies. Its products cover mobile communication application processor, baseband, AI, RF, RFFE and other communication, computing, and control chipset platform. www.unisoc.com

Wireless Module

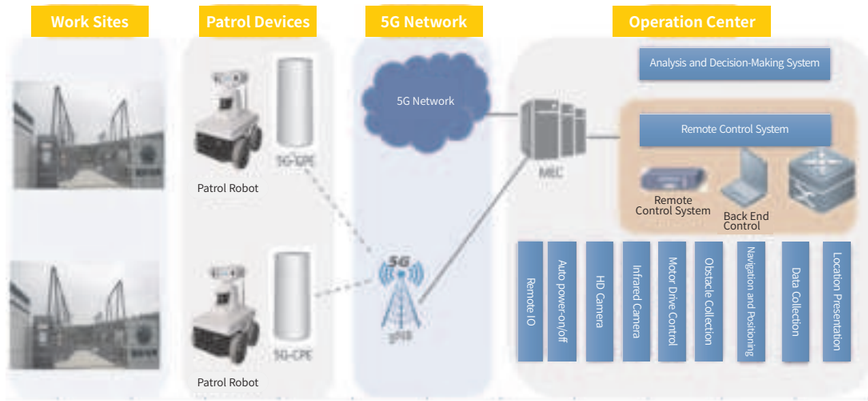
- Fibocom 5G module FG650/FM650 is powered by Unisoc Makalu V510 chipset platform
- Fibocom LTE Cat 1 module L610 series are powered by Unisoc Unisoc 8910DM Cat 1bis chipset platform

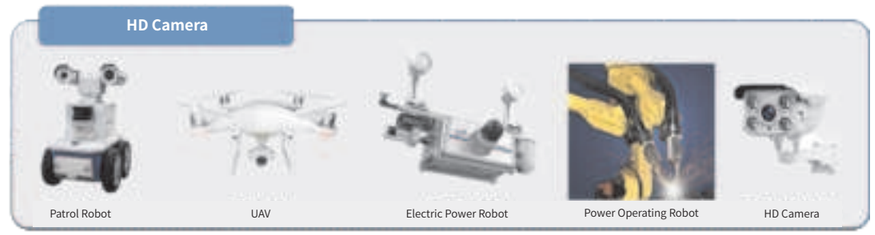
Smart Energy

Smart Grid

Power Lines Inspection and Monitoring Terminal

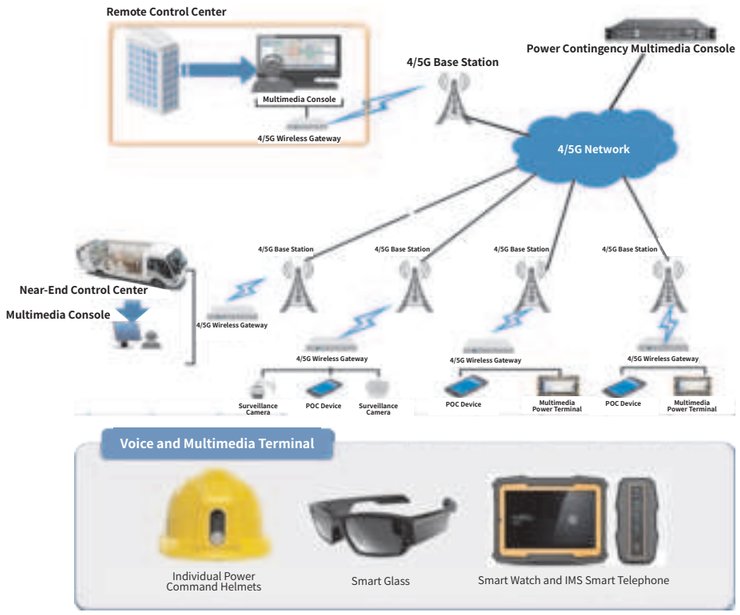
Leveraging 5G wireless network, the video collected on site can be transmitted to the analysis center in real time, replacing the manual collection of information on the power grid in dangerous areas. Furthermore, it may mitigate risks through comprehensive analysis, improving efficiency and the reliability of the power grid. Robots and drones with HD cameras or specialized devices can be employed in high-voltage distribution substations, high-voltage transmission lines, dangerous areas, and those not easily accessible to personnel in the power grid.





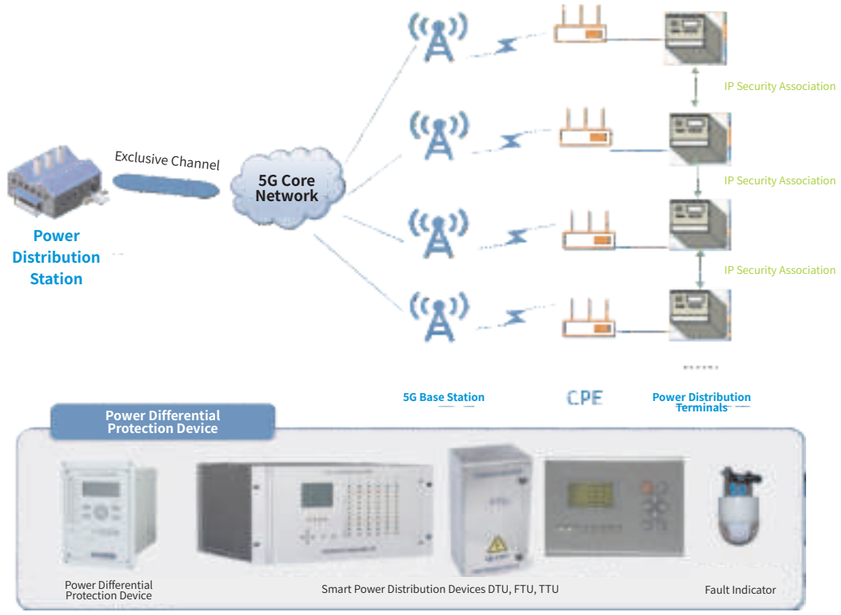
Power Lines Inspection and Monitoring

Thanks to wireless gateways and 5G emergency communication vehicles, the devices take advantage of 5G wireless public network with large bandwidth and edge computing capabilities and real-time HD video transmission at emergency sites such as substations to implement remote consultation and efficient monitoring of the site conditions, thus paving the way for better decision-making. 5G provides high-bandwidth transmission capability for a variety of high-bandwidth multimedia devices at emergency communication sites. It supports HD video communication, voice communication, trunk communication, multimedia command and dispatch services at power emergency sites.



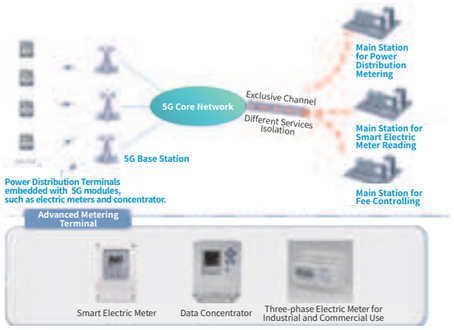
5G Power Distribution Protection Device

5G edge computing technology enables construction of a horizontal distribution network at both ends or multiple ends and a vertical network from the terminal to the main station. 5G base stations may achieve time synchronization when authorized, and data can be delivered to smart protection devices for real-time processing and fault isolation, reducing latency and eliminating the problem in grid-connected consumption of new energy. As the need for reliable power supply grows, the power supply area requires uninterrupted power supply. As a result, the accident isolation time must be reduced to milliseconds.



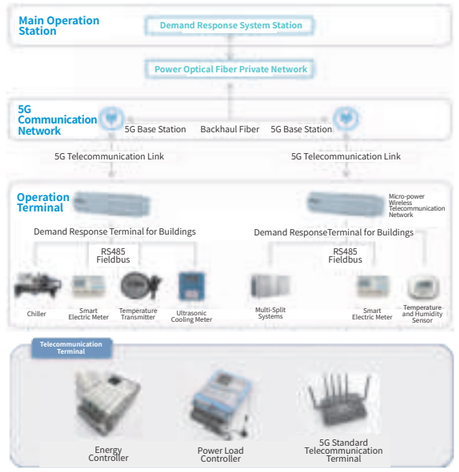
Advanced Metering

It realizes automatic collection of electricity consumption information, abnormal metering monitoring, power quality monitoring, electricity consumption analysis and management, information release, intelligent electricity consumption information interaction, etc. The future metering interval will be upgraded from the current hourly level to the minute level, and the data volume of each terminal will reach Mbps, so as to achieve quasi-real-time data information feedback. Meanwhile, driven by industrial technology, future smart meters, smart sockets and other direct harvesting methods will be gradually promoted, and the number of terminal connections will increased by 50 to 100 times compared with current ones.



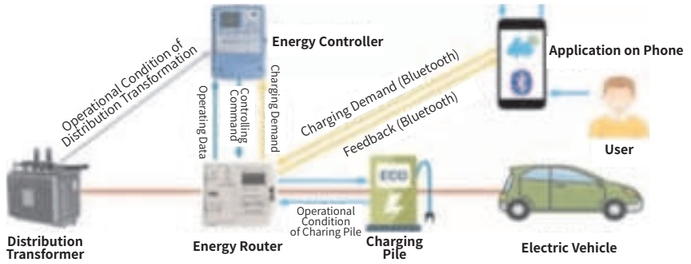
Power Distribution & Loads Control

The load information of the power distribution link grid can be quickly fed back to the control center through 5G with its low latency and high reliability transmission. Fast load switching can be realized according to the importance of the electricity-using customers to improve power supply reliability. Normally, due to the lack of communication network support, the traditional distribution network has to remove the whole distribution line. Through precise control, priority removal can interrupt non-critical loads, such as electric vehicle charging stations, power supply for non-continuous production within a factory, etc.



5G Charging Pile

5G charging pile set has the functions of overload protection, anti-shock protection, lightning protection, overcharge protection, over-temperature protection, unplug power off and etc. It is convenient for users to see the real-time charging status in the cell phone terminal. With the influence of the energy saving and emission reduction concept and the gradual popularization of new energy transportation, the demand for electric bicycle travel is increasing day by day. Electric bicycles bring everyone the convenience of transportation, but also brings a safety hazard that cannot be ignored. Such as, fires caused by overcharging; serious congestion caused by indiscriminate parking in evacuation routes; and private connections affecting the beauty and tidiness of the community.



Shenzhen Northmeter

北电仪表 Meter & master!

Founded in 2006, Shenzhen Northmeter Co.,Ltd. is a company focused on Energy IoT, and a high-tech enterprise with core AIoT chip product definition, Energy IoT connectivity, Energy Cloud SAAS business and big data processing capabilities. There are R&D centers in Shenzhen, Hefei and Guangzhou, and a communication company in Wuxi. The company specializes in AI chip, energy big data, the mode of energy IoT, and through smart energy to participate in smart communities, smart campuses and smart cities. Since its establishment, the Company and its holding subsidiaries have owned 14 national invention patents and dozens of computer software copyrights. And participated in the formulation of 2 national industrial standards. The founders were both angel investors in two A.I. Chip companies (Energy metering IC and Communication IC) www.northmeter.com

Smart Gateway

Embedded with Fibocom LTE Cat 1 module: L610-CN

Application scenarios: buildings, offices, schools, hospitals, enterprises and institutions
Product description: Energy IoT provides a full range of technical services from cloud, pipe and terminal.
Product Advantages:
• Uplink 4G/ WIFI 3761 protocol
• Downlink 470/LORA, ZIGBEE,485
• Easy to maintain and expand, provide local 485 interface, USB interface, and support 4G remote/USB local batch upgrade, and support mobile phone to configure parameters through Bluetooth.

Controller for Split Air Conditioner

Embedded with Fibocom LTE Cat 1 module: L610-CN

Application scenarios: school classrooms, offices, apartments, hospitals, government authorities
Product description: Energy IoT provides a full range of technical services from cloud to end users.
Product Advantages:
• Remote control • Automatic timing switch • Device diagnostics
• Pre-alert the high energy consumption of Air conditioners
• De-energized during air conditioner deactivation • Electricity consumption data statistics

Water Meter with Camera

Embedded with Fibocom NB-IoT module: N700

Application scenario: water affairs, old community and industrial park
Product description: Energy IoT provides a full range of technical services from cloud to end users.
Product Advantages:
• AI camera recognition • Smart meter reading
• Data visualization • Base meter replaceable
• Adapt to various mechanical water meters

Smart Charging Pile

Embedded with Fibocom LTE Cat 1 module: L610-CN

Application scenario: Residential area, community, school, urban village, enterprise and public institution
Product description: Energy IoT provides a full range of technical services from cloud to end users.
Product Advantages:
• Auto shutdown after full charge • Overload protection
• Timing charging • Remote leakage protection
• Remote monitoring • Bluetooth local emergency maintenance

WLLFAR

Weisheng Information Technology Co., Ltd. focuses on the field of Internet of Things, and its main business is to provide comprehensive application solutions of Internet of Things in smart grid, smart energy (water/gas/heat), smart street lamp, smart security/civil air defense, etc. The products can be applied in the perception, network and application sectors of IoT. www.willfar.com

Data Concentrator

Embedded with Fibocom LTE Cat 4 module: NL668

Application scenario: Interaction of power consumption information of power equipment
Product description: The solution based on Fibocom NL668 module provides rich interfaces, which are easy for customers to develop; regarding the electric power industry, it provides corresponding software versions, which are less difficult for customers to further develop.
Product advantages: high integration, flexible function expansion and cost advantages

HUAFU

成都华富科技有限公司

Chengdu Huafu Technology Co., Ltd. is a professional company specializing in the development of intelligent IoT platform system for urban intelligent lighting, as well as the development and production of intelligent monitoring terminal equipment. It is established in cooperation with Chengdu Urban Lighting Management Office and the Institute of Optoelectronic Technology of the Chinese Academy of Sciences, with the southwest region as its target market. After more than 10 years of experience in serving streetlights and luminous lighting industry users, the company has developed and produced a series of high, medium and low-end intelligent monitoring terminal devices relying on 4G/5G digital communication networks provided by China Mobile and China Telecom.

Intelligent Lighting Terminal

Embedded with Fibocom LTE Cat 1 module: MC615-CN

Application scenario: Intelligent control of street lamps in urban roads, campuses, parks and factory areas

TelChina

Taihua Smart Industry Group Co., Ltd. is a leading provider of overall solutions for new smart cities in China. It is a leading enterprise in intelligent lighting engineering technology, a research center of Shandong Province, a Gazelle enterprises and artificial intelligence leading force in Shandong Province. With 5G, Internet of Things and big data as technical support, it focuses on urban infrastructure and environment, urban precise governance and service, providing comprehensive and independent overall solutions and products for new smart cities in the fields of comprehensive municipal administration, smart lighting, underground space, smart water and urban grid management. www.telchina.com.cn

Single Lamp Energy-saving Controller

Embedded with Fibocom LTE Cat 1 module: L610

Product Description:

• Small and compact, with various interfaces such as NEMA and Zhaga, plug-in installation, easy installation and operation, can realize the rapid installation of street lamp and single lamp controller, and easy maintenance in later stage;
• With parameters acquisition functions such as voltage, electric current, power factor, electric energy, frequency and light intensity;
• 0-100% Brightness adjustment, supporting 0-10V/PWM/DALI dimming mode, realizing stepless dimming and improving the service life of light source;
• Any combination of dimming methods can be used as required to achieve on-demand lighting;
• Lamp fault diagnosis and uploads it to the monitoring center in real time;
• With power-on self-test, overvoltage protection and other functions, the system can automatically return to the normal working state in abnormal cases; at the same time, it also has the functions of periodic self-test, automatic reconnection after line drop, etc

Product advantages: Taihua Smart keeps up with the development trend of Internet of Things communication, innovates intelligent lighting mode, and introduces LTE Cat 1 single lamp energy-saving controller, which has rich functions, stable operation, reliable hardware, simple operation and convenient maintenance. It can realize remote real-time monitoring, fine control and intelligent dimming of street lamps, greatly reduces the work pressure of street lamp management department, improves work efficiency, and provides powerful solutions for comprehensive analysis, maintenance and on-demand energy saving of public lighting industry.

Goldcard

Founded in 1997 as a smart utility solution service provider, Goldcard Smart Group Co., Ltd. has become one of the leading metrology digitization solution provider.Goldcard intelligent services over 40+ countries，3500+ public utility enterprises and over 60 million+ urban family users in more than 2000+ cities. In 2012, Goldcard was listed on the Shenzhen Stock Exchange with stock code 300349, as the first public listed company in the industry. Goldcard not only catches up with the IoT and Internet trend, but also devotes to build a brand-new public utility industry ecosystem. With new technologies, products, and services expanded, Goldcard brings great synergistic effect in smart terminal, smart communication, big data, cloud computing, and mobile application to provide high-value and high-performance products and end-to-end solutions including smart devices, communication networks, application management software and Internet cloud services for public utility customers. Goldcard also builds long-term strategic cooperation relationships with various gas enterprises, Huawei, and Alibaba. www.jinka.cn

NB-IoT Smart Water Meter

Embedded with Fibocom 5G module: N700

Application scenario: Smart Water
Product description: NB-IoT Smart Water Solution： The consumption data, remaining power, signal strength, abnormality, etc of the smart water meter can be transmitted by the built-in NB-IoT communication module, through the NB-IoT network, to the IoT connection management platform, then uploaded to the backend acquisition and business operation platforms.The backend system platform parses the data package, and the parsed user consumption data is settled in the user account, and pushed to the user through the relevant new media channel of the customer service system, so that the user can get his own water bill in real time and complete the account recharge remotely.
Product advantages:
• Solve the problems of the water company's difficulty in meter reading and user's difficulty in payment and recharging
• Help water company responds to government's decision on water tariff adjustment and set the block water tariffs remotely
• The backend business system can remotely monitor the fault and alarm status of the smart water meter and feed back to the user
• By analyzing the water flow data of each node, the problems of pipeline l eakage and pilferage can be monitored and further investigated, realizing zoned measurement, so as to reduce the supply and sales gap and improve the benefits of water companies
• By analyzing the user's water consumption data, we can know the user's water use habits, so that we can mine out other value-added services and new business models

Changde Water Meter

Founded in 1965, Hunan Changde Water Meter Manufacture Co., Ltd. is one of the most powerful manufacturers in the water meter industry in South Central China.The company has always been committed to the development, manufacturing, sales, and services of mechanical water meters, smart water meters, smart terminal collectors, and the smart meter reading system, as well as to the construction of a comprehensive smart water management cloud platform powered by IoT and big data technologies.Changde Water Meter has invested RMB 480 million in the construction of a modern large-scale water meter manufacturing base in Changde. The manufacturing base covers a total area of 200,000 square meters, of which the plant occupies 51,000 square meters. Supported by the present large-scale automatic production lines, automatic inspection production lines, and many industry-leading manufacturing devices, it strives to be a modern and smart R&D and manufacturing base with a production capacity of more than 3,000,000 smart water meters and smart collection terminals each year.www. changdewm.com

NB-IoT Water Meter

Embedded with Fibocom LPWA module: N700-58

Application Scenarios: Smart meter reading

Product Description: The NB-IoT (Narrowband Internet of Things) water meter is a wireless remote water meter powered by the NB-IoT wireless communication technology. It transmits the collected data including flow rate, temperature, and signal strength to the meter reading platform through the carrier's base station to support data collection, remote control, and fault alarm.

Benefits: The mechanical & electrical separation structure of the NB-IoT water meter allows for modular production and assembly of electronic components and base meters. It adopts a dual waterproof design of structural seal + gummed seal with the IP68 rating. Besides, NB-IoT enables such reporting modes as button press report, timed report, interval report, and discrete report and its metering module supports non-magnetic, Hall, ultrasonic, and photoelectric sampling techniques.

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GoldCard

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ADVANTECH

Industrial IoT

Founded in 1983, Advantech is a leader in providing trusted, innovative products, services, and solutions. Advantech offers comprehensive system integration, hardware, software, customer-centric design services, embedded systems, automation products, and global logistics support. We cooperate closely with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries. Our mission is to enable an intelligent planet with Automation and Embedded Computing products and solutions that empower the development of smarter working and living. With Advantech, there is no limit to the applications and innovations our products make possible. www.advantech.com

FWA(1112VC)/FWA(1212VC)

Embedded with Fibocom 5G module: FM150-AE

Application scenario: Advantech 5G uCPE

Product description: Advantech’ s FWA-1112VC and FWA-1212VC edge network appliances introduce a series of innovative key features, in order to meet the requirements of the widely adopted SD-WAN and universal Customer Premises Equipment (uCPE). Embedded with Fibocom’ s high-performance 5G module FM150, Advantech’ s FWA-1112VC and FWA-1212VC edge network appliances accelerate the time to cloud access, and help enterprises to realize the integration of cloud and network deployment. Stores and branches can build secure and reliable encrypted links in a short time with headquarters’ IDC and the cloud through uCPE, and can easily achieve zero-configuration networking through 5G networks without deploying wired networks. The deployment cycle can be shortened to a few hours and save more than 40% of WAN operating costs. Advantech has been deeply involved in the Industrial Internet of Thing (IIoT) for many years, and its successful experience in 5G SD-WAN solutions will expanded from enterprises to the fields of smart cities.

Four-Faith

Four-Faith is a national high-tech enterprise and a leading technology giant. It is one of the world’ s leading Internet of Things communication equipment and solution service provider. With technological innovation as the core, it revolves around wireless communication technology, 5G, AI, etc. Provide IoT products and solutions for government departments, enterprises, and public institutions, industry users, system integrators, and operators. At present, the company provides complete solutions for the Internet of Things communication, industrial Internet, intelligent environmental protection, intelligent power, intelligent fire protection, intelligent water conservancy, intelligent geological disaster, intelligent water utilities, intelligent irrigation area, and other fields. Focus on IoT to provide open cooperation concept for the industry customers and committed to making everything smarter vision. www.four-faith.com

5G Industrial Router F-NR100

Embedded with Fibocom 5G module: FM150-AE/FM650-CN

Application scenario: Smart Industry, Smart Medical, Smart Port, New Media Video Transmission, etc.
Product description: With the embedded real-time operating system as a software support platform, it also provides one RS232 (or RS485), four Ethernet LANs, one Ethernet WAN, and two WIFI interfaces, which can connect serial port device, Ethernet device, and WIFI device at the same time to achieve transparent data transmission and routing functions. Internal integrate the private protocol of smart devices.
Product benefits:
- Support NSA and SA network, compatible with various communication operators
- Full industrial design, high and low temperature resistance, stable and reliable
- Using complete anti-drop mechanism to ensure stable data transmission
- Support dual band WiFi（2.4GHz and 5.8GHz）
- Support intelligent switch between 5G/4G and Ethernet
- Support IPV4/IPV6
- Support various VPN methods（PPTP, L2TP, GRE, IPSEC, OPENVPN）
- Have CCC certificate, SSRC certificate, CTA certificate
- Pass Huawei Cloud Open Labs compatibility test

5G Industrial Router F-NR120

Embedded with Fibocom 5G module: FM150-AE/FM650-CN

Application scenario: Smart Industry, Smart Medical, Smart Port, Inspection Robot, New Media Video Transmission, etc.
Product description: Based on the embedded real-time operating system as the software support platform, it provides one RS232 (or RS485), one Ethernet LAN, and one Ethernet WAN (or LAN). It can connect with serial ports devices, CAN port devices, Ethernet devices, and WIFI devices at the same time to achieve transparent data transmission and routing functions.
Product benefits:
- Support NSA and SA network, compatible with various communication operators
- Support intelligent switch between 5G/4G and Ethernet
- Support dual band WiFi（2.4GHz and 5.8GHz）
- Support IPV6/IPV4, dual SIM card
- Support locate feature（Beidou, GPS）, PPS
- Support hardware encryption
- Support various VPN methods（PPTP, L2TP, GRE, IPSEC, OPENVPN）
- Pass Huawei Cloud Open Labs compatibility test

5G Industrial CPE F-NR200

Embedded with Fibocom 5G module: FM150-AE/FM650-CN

Application scenario: Smart Industry, Smart Transportation, Smart Port, Smart Mining, New Media Video Transmission, etc.
Product description: Based on the embedded real-time operating system as the software support platform, it also provides one RS232, one RS485, one Gigabit Ethernet LAN, one Gigabit Ethernet WAN, one Gigabit optical fiber interface and supports WiFi function, achieve data transparent transmission and routing function.
Product benefits:
- Support NSA and SA network, compatible with various communication operators
- Support intelligent switch between 5G/4G and cable network(WAN and optical fiber)
- Support POE（802.3af）power supply
- Support dual band WiFi（2.4GHz and 5.8GHz）
- Support local data storage to ensure the data never loss
- Fully industrial-grade design, IP68 protection level
- Support IPV6/IPV4
- Support various VPN methods（PPTP, L2TP, GRE, IPSEC, OPENVPN）
- Pass Huawei Cloud Open Labs compatibility test

Hongdian

Hongdian Corporation is a leading global provider of machine-to-machine (M2M) and Internet of Things (IoT) connectivity products and services. Founded in 1997, Hongdian has been focusing on providing Cellular Router ,Cellular serial modem ,Media Wi-Fi router , LPWAN ,Mobile DVR , Industrial Android Computer, IoT Cloud Platform, etc. We help our customers create smarter connected products with high quality , 24*7 connectivity , rock-solid stability performance. www.hongdian.com

Z1 5G Industrial Gateway/CPE、H7910 5G DTU、H8922 5G Industrial Wireless Router

Embedded with Fibocom 5G module: FM150/FM650

Application scenario: Smart Factories, C-V2X, Smart Cities, Telemedicine.

Smart coal mine mesh network solution:

Hongdian's small size and ultra-low power consumption 5G industrial DTU with only 2.5W minimum power consumption can be perfect embedded in key underground sensor acquisition equipment, providing 5G private network deployment, real-time transmission of underground mining equipment, ventilation, transportation and other data to the operation and maintenance center; Realizing the real-time monitoring of the underground production environment, the underground automation equipment and the real-time return of information data; improve the communication conditions of underground workers.

Unmanned transformation of underground mining trucks:

Aiming at the problems of open-air scenes in mines and low transportation efficiency of mining trucks, unmanned transformation of trucks is carried out. Hongdian 5G industrial gateways are connected to high-definition cameras, laser radars, control terminals and other equipment; through 5G private network transmits high-definition video data and truck transportation data to the operation and maintenance background in real time, providing remote operators with a panoramic high-definition operation vision, effectively reducing the incidence of safety accidents in dangerous operation areas.

Smart factory 5G+WiFi Mesh network solution:

By deploying Hongdian's 5G industrial CPE as the key master node and sub-node (strong AP) of wireless networking, it provides 5G to WiFi and Mesh network, so as to achieve access to existing terminals and seamless roaming services, and all devices in the factory are connected 5G private network, real-time upload of data to the platform, realizing the overall replacement and low-cost transformation of the "wired WiFi" network

Solution Advantages:

Safe, stable and reliable mesh networking & 5G private network construction: get rid of the wired dilemma, and the production can be flexibly adjusted

WiFi seamless roaming: The terminal can switch without perception during the movement.

Multi-node networking: Each sub-node is independently connected via 5G to maximize the advantages of 5G, allowing users to fully experience the ability of high-speed Internet access.

APP unified management: Hongdian MESH operation and maintenance APP can realize access equipment, network structure topology view, network quality analysis, internal network speed measurement and other functions, providing support for MESH network troubleshooting and network optimization.

Z1 5G Industrial CPE/
Industrial Gateway

H7910
5G Industrial DTU

H8922 5G Industrial
Wireless Router

Datang

Datang Mobile Communications Equipment Co., Ltd. is a core subsidiary of China Information and Communication Technology Group. Datang Mobile helped pioneer the international TD-SCDMA and TD-LTE standards and fueled up the industrialization of mobile communication. The company have accumulated numerous key TD-SCDMA and TD-LTE IPRs and became a leader of the equipment market. As one of the main participants and promoters of the international 5G standards as well as its technology, Datang Mobile keeps leading the industrialization of wireless mobile communication and the evolution of its ecosystem. The 5G base station products developed by Datang Mobile have successfully won the bids of three major operators in China. By actively promoting C-V2X (cellular vehicle-to-everything), Industrial Internet and IoT applications, Datang Mobile provides strong support for China's new 5G infrastructure and enables end-to-end solutions for operators and industrial customers. www.datangmobile.cn

5G Smart Industrial Gateway

Embedded with Fibocom 5G module: FM150

Application scenario: The gateway can be widely used in intelligent manufacturing, smart parks, public safety, intelligent inspection and other intelligent visual recognition scenarios.
Product description: The gateway is equipped with high-performance and AI-powered domain controller. It supports multi-sensor access and sensor fusion. It offers SDK development kit for custom development.
Product benefits: he gateway is suitable for production environment and security monitoring applications. It enables image recognition at the edge by bringing computation closer to the sources to reduce latency and network load and improve reliability and processing efficiency.It also offers large computing power with low energy consumption.

INNOGENCE

Founded in 1996, Troy Information Technology Co., Ltd. (SHE: 300366) is a leading provider of full-stack software and solutions and a pioneer of new information technology, committed to becoming the best partner for digital transformation. As a subsidiary of Troy Information and a pioneer of new-generation communication technology, Inno-gence Technology provides competitive and differentiated access network products, technology products and solutions with core 5G technology. Focusing on industry application and technology market, it devotes itself to becoming the most reliable partner for industrial upgrading. Inno-gence has 5G intelligent industrial gateways, 5G small base station products, MEC and 5G physical layer full-stack products. It is the only manufacturer in China that provides full-stack solutions with self-developed physical layer software and hardware technology. It also offers one-stop solutions for 5G smart factory, smart mine, smart park, etc. www.inno-gence.com

5G Smart Industrial Gateway

Embedded with Fibocom 5G module: FG650-CN

Application scenario: Smart factory, smart mine, smart park, smart government and other related scenarios.
Product Description: Based on the Linux system and combined with Fibocom FG650-CN 5G module, Inno-gence developed the 5G/4G/3G/2G all-network data collection and transmission device, 5G intelligent industrial gateway. It is designed with open software architecture, providing fast and flexible customization. It is small in size with a wide choice of interfaces, including RS232/RS485 serial port, WAN/LAN port and Wi-Fi, supporting edge computing and local real-time data analysis and processing features.It is designed with industrial-grade standards and supports industrial Internet application scenarios to satisfy the needs of different customers.
Product benefits:
• Small and stylish: Compatible with a wide range of industrial equipment.
• Flexible customization: Designed with open software architecture, offering fast and flexible customization to meet different customer needs.
• Powerful features: Intelligent data collection, protocol conversion, data processing and 5G/4G/3G/2G/Wi-Fi all-network wireless network.
• Low power consumption: Innovative software architecture to optimize resource consumption, and excellent cooling design to achieve the lowest power consumption.

USR IoT

有人物联网
可信赖的智慧工业物联网伙伴

With the goal to be "a trusted intelligent IIoT partner" and the mission of "connecting values", Shandong USR IoT Technology Limited has been focusing on the research and development, production and sales of industrial network communication products for a long time. USR is the industry-leading provider of IIoT software and hardware solutions. USR has four wholly-owned subsidiaries, including Jinan USR IoT, Shanghai Mokuai Technology, Jinan Zhi Ze Trading, and Shandong USR Intelligent Technology.From 2018 to 2020, USR has received nearly RMB 100 million of strategic financing from Fortune Capital, Shenzhen Capital, and Red Bridge Capital. The company is determined to become an evolutionary IIoT enterprise. www.usr.cn

Router

Embedded with Fibocom 5G module: FM150-AE

Application Scenario: The router can be widely used in smart factory, smart healthcare, smart port, new media video transmission, smart city, smart transportation, smart mine, inspection robot, AGV cart, automated driving, intelligent robot and other fields to provide a transmission network with high speed rate, low latency, wide coverage and high stability.
Product description: The product adopts a high-performance industrial-grade dual-core 32-bit communication processor. It is also equipped with Fibocom 5G module to support 5G SA/NSA architectures, with embedded real-time operating system as the software support platform.
• 1 gigabit Ethernet WAN and 3 gigabit Ethernet LAN.
• Dual-band Wi-Fi and VPN.
• 5G high-speed access and secure transmission
Product benefits:
• 5G enables ultra-high speed, low latency and high stability. The product supports all the 5G networks of China Mobile, China Telecom and China Unicom, and SA (standalone) and NSA (non-standalone) architectures.
• The product enables dual-band Wi-Fi with the new 802.11ac standard to achieve a transmission distance of up to 200 meters and transmission rate of up to 867 Mbps.
• VPN + APN/VPDN: The product has 5 types of VPN transmission methods to improve data security, including PPTP, L2TP, OpenVPN, IPSec, and GRE.
• Support APN/VPDN private network channels.
• Link backup: The device can select 4G or wired channel according to the link condition, effectively preventing packet loss from single link failure.
• Hardware protection: ESD level 4, EFT level 4, electrical surge level 4, temperature -20 to +70 °C, wide voltage 9-36 V, hardware watchdog.
• Remote management platform: remote monitoring and remote upgrade.

5G Router

Embedded with Fibocom 5G module: FM650-CN

Application scenario: It can be widely used in smart factories, HVAC industry, secondary water supply industry, environmental protection, boilers, heating industry, electric power industry, mechanical equipment, intelligent agriculture, etc.
Product description: The product adopts a high-performance industrial-grade Cortex-A7 processor, and is equipped with Fibocom 5G module, supporting 5G SA/NSA architecture, with Linux operating system as the software support platform. It also offers 2 serial ports (RS232/RS485/RS422), 3 Ethernet ports and Wi-Fi feature. Hundreds of built-in industrial protocols enable real-time data collection and remote programming for PLC, CNC, HMI inverter and other devices.
• The gateway supports OPC/OPCUA for remote monitoring of the SCADA system.
• Serial port extension is available for the serial ports of the gateway to collect data using both the HMI system and gateway.
• The gateway has 2 USB ports and 1 SD card interface, enabling offline data caching and local export.
• The gateway has 4x DI and 4x DO for remote control.
• The gateway also supports GPS and BeiDou real-time positioning.
• Routing features are available to connect network devices such as multichannel cameras.
Product description:
• The product can be connected to the USR Cloud Platform for remote monitoring and debugging.
• The product supports all the 5G networks of China Mobile, China Telecom and China Unicom, and SA (standalone) and NSA (non-standalone) architectures.
• 5G enables ultra-high speed, low latency and high stability.
• Automatically switch between 5G/4G and wired connection.
• Offer local data storage to prevent data loss.
• Support hundreds of industrial protocols such as PLC protocols.
• Enable python scripting for edge computing.
• The product can be connected to third-party platforms for flexible applications.

LB-Link

LB-Link is the brand of the Shenzhen Bilian Electronic Co.,Ltd, a global communications technology company.LB-Link was founded in 1997 in Shenzhen,China.The focus of the company is the production and sale of wireless networking devices and Wi-Fi modules.Shenzhen Bilian Electronic Co,Ltd.is a large company with more than 1,000 employees and sales agents in more than 40 countries. The company has won many awards in China for their high quality products.The company has created costume hardware and software for large clients. partnering with companies like Realtek,Marvell,MTK,Cypress,Qualcomm and others.
www.b-link.net.cn

5G LTE AX1800M WIFI6 Dual Band Wireless Router

Embedded with Fibocom 5G module: FM150/FM650/FG150/FG650

Application scenario: Smart Home, Smart Game, Smart Office, Smart Building, etc.
Product description: 5G chipset, dual band 1800M（2.4G 574M+5G 1201M） Full gigabit port MU-MIMO+FODMA WPA3 High Security IPTV/VLAN Hardware accelerate TWT(Reduced power consumption
Product benefits:
5G Switch to wi-fi,multiple devices share the 5G signal anytime:
Just need to insert the 5G SIM card, all of non-5G communication module of mobile phone, tablet PC,laptop, and other portable devices can infinitely access 5G high speed Internet, also support with access to 1000Mbps Ethernet port by cable.
Dual Mode 5G,covering global universal bands:
Support with 5G/4G network standards, even in limited spectrum area, and can make full use of network resources, to be compatible with SA and NSA pattern. The product can also be flexibly adapted under the different operators network deployment.
Support wi-fi 6 mode,Multi-device share the internet simultaneously:
Wi-Fi 6 is the new generation of Wi-Fi standard, which can provide higher transmission rate, lower network latency and wider coverage for devices.

Aumiwalker

Aumiwalker provides product design, R&D, manufacturing and services for equipment and terminal manufacturers and system integrators,including one-stop industrial Internet solutions such as signal detection and control, data ingestion and transmission, and development and customization of automation equipment. With 17 years of experience in communication technology, we uphold the product strategy of software and hardware synergy to keep making efforts in technology development, product innovation and system integration and contribute to the Internet of Things.
www.aumiwalker.com

Industrial-grade Data Transmission Gateway

Embedded with Fibocom 5G module: FM650

Application scenario: Steel industry, port, manufacturing, cement industry, power grid, healthcare.
Product description: Based on FM650 module, R511\T501 forwards 5G NR data to the multi-core CPU via USB 3.0, and outputs the processed data from the network port and the serial port.
Product benefits: R511 is a small and cost-effective general-purpose 5G industrial-grade data transmission terminal. It integrates the features of mainstream gateway products, including gateway protocols and interfaces, with 12-36 V wide voltage and 1 RS-485 port. Wi-Fi and IRIG-B time syncing are available. The product can operate stably in a variety of harsh industrial environments.

eTung

Beijing Beike Etung Technology Co., Ltd. is a strong high-tech company incubated by Beijing Institute of Science and Technology and Beijing Computing Center, focusing on M2M wireless communication and Internet of Things. Etung is a qualified high and new technology enterprise and software enterprise, and has the ISO 9001:2000 quality management certification. Etung owns a powerful talent team including overseas returnees, foreign enterprise managers, and professionals with doctoral and master's degree, and has obtained more than 10 patents and nearly 100 software copyrights. Yitang has developed a number of leading innovative technologies and products, such as a full series of 4G/5G DTU, routers, industrial PLC routers, BeiDou positioning RTK communication terminal, mServer communication server, Yiyun IoT Terminal Management Platform, and industrial cloud platform for industrial PLC routers. Etung's advanced technology has been successfully applied in various industries including smart power, smart city, intelligent transportation, automated driving, intelligent manufacturing, environmental protection, meteorology, and energy. It has won the praise of customers and partners at home and abroad. www.etungtech.com.cn

5G Industrial PLC Router

Embedded with Fibocom 5G module:

Application scenario: 5G Intelligent Inspection Robot

Product description: Intelligent inspection robots require high-speed, efficient and stable communication. Etung PLC-508 industrial 5G PLC router can be installed in the explosion-proof wheeled inspection robot. With its rich interfaces, customers can transfer all data and videos of the robot wirelessly. PLC-508 also offers 5G high-speed Internet access to provide Internet access surrounding personnel or devices through Wi-Fi hotspot.The intelligent inspection robot can automatically build a navigation map during inspection and upload real-time inspection data through 5G transmission. The data is traceable and can be combined with big data expert system to assist in decision-making and centralized remote management.

Product benefits: The product offers high-speed transmission of robot data and video, multiple interfaces to adapt to the robot's connection requirements (USB, network port, serial port), and high-speed Wi-Fi Internet access for surrounding personnel and devices.

Fixed Wireless Access

SEEFREE

Established in 2010, Shenzhen Ruilian Zhixiang Technology Development Co., Ltd. is an independent research and development-oriented production enterprise specializing in wireless communication products. Company products include a variety of high, medium and low grade 4G/5G CPE, 4G/5G modules, industrial LTE modules, wireless routers, wireless modules and smart home and other industrial and consumer Wi-Fi products. We are innovative and flexible and have many years of experience in network communication technology. Our valuable experience in putting design into production is what differentiate us from other design companies. The company is located in Bantian, Shenzhen, with its own factory of 6000 square meters. These advantages help us shorten the time for products to enter the market and enhance our competitiveness in the OEM/ODM market. We value "sincerity, trustworthiness, and win-win cooperation". As of today, we have completed over 1000 customer projects, which are extremely valuable assets and experiences for us.
www.seefree-smart.com

5G Outdoor CPE(SF-5G Outdoor)

Embedded with Fibocom 5G module: FM150/ FG650

Application scenario: Network coverage for indoor and outdoor environments.
Product description: 5G CPE products are based on FM150/FG650 modules, supporting NSA and SA network architectures, 5G NR Sub 6, long-distance communication standards including FDD-LTE, TDD-LTE, and WCDMA, and 3GPP release 15. Used with Mesh AP products, the product can meet indoor and outdoor network access requirements, satisfying the network access needs of rural area, campus, factory and other scenarios. It is widely used in industries including smart factory, smart healthcare, self-driving cars, smart city, rural areas.
Product benefits: Leveraging the high-speed network access capability of the FM150/FG650 module and the networking capability of Mesh AP, the product offers the simplest network coverage option. It greatly reduces the construction/maintenance cycle and cost, and helps improve network engineering efficiency.

HUALUO

Zhejiang Hualuo Communication Equipment Co., Ltd.(Hualuo Communications), established in March 2003, is headquartered in China's Silicon Valley, Hangzhou. Hualuo Communications is a high and new technology enterprise focusing on the innovation and development of industry communication and dispatching products. In addition to product research and development, it also provides production, sales and customization services. Hualuo Communications has obtained the ISO9001 Quality Management System Certificate, ISO14001 Environmental Management System Certificate, OHSAS18001 Occupational Health and Safety Management System Certificate, ISO/IEC 27001 system certificate and AAA Corporate Credit Rating System Certificate. www.hzhl.net

Intrinsically safe signal converter for mine

Embedded with Fibocom 5G module: FM650-CN

Application scenario: Underground coal mine.
Product description: 5G explosion-proof and intrinsically safe signal converter for mines KT579-FC (explosion-proof and intrinsically safe signal converter) is a all-network explosion-proof and intrinsically safe signal converter for mines. It utilizes the exchange and transmission resources of the existing mobile communication network to provide a wireless communication station via wireless connection.
The explosion-proof and intrinsically safe signal converter is suitable for underground coal mines.
Product benefits: With the 5G/4G/Wi-Fi mine signal converters, Hualuo Communications integrates wired, wireless, video and audio dispatching, and provides intelligent dispatching and integrated communication solutions for VoLTE/Sip wireless mobile phones. The product support features such as call whispering, call barging, group calls, broadcast, call monitoring, call recording, voice and video calls, unread SMS notifications, missed voice call notifications.

TIANYI

Sichuan Tianyi Comheart Telecom Co., Ltd. (SHE: 300504) was established in 2001 and its parent company was founded in 1985. The company has a registered capital of RMB 267 million and about 2500 employees, including more than 400 R&D personnel. It has 3 wholly-owned subsidiaries, 2 branches and 1 wholly-owned sub-subsidiary. Tianyi is a professional backbone manufacturer and high and new technology enterprise of communication equipment in China. The company specializes in optical communication and mobile communication. It focuses on the R&D, production, sales and service of home/enterprise broadband solutions and intelligent network devices, mobile signal coverage products, smart vision devices and fiber optic communication wiring and connection products. www.tianyisc.com

CPE(TY-FWA01)

Embedded with Fibocom 5G module: FG650-CN

Application scenario: Home, office, retail shop, etc.
Product description: Broadcom BCM67SDA845 + UDX710
Product benefits: The product offers large computing power, AI engine, high bandwidth, and low latency, supplementing and replacing some of the traditional optical fiber products.

FAIOT

FAIOT was established in December 2019 as a wholly-owned subsidiary of Fibocom Group. FAIOT focuses on product research and development in the fields of intelligence and networking, and gathers many elites in the mobile communications industry to provide high-end ODM services to global customers in sectors such as 5G hotspot, AR/VR/MR, edge computing, AI, smart payment, industrial tablets, etc. www.faiot.com

5G CPE

Embedded with Fibocom 5G module: FG150-AE

•Embedded with Fibocom 5G module FG150, the FAIOT ODU (Outdoor Unit) supports SA and NSA network architectures. The protective shell is anti-static, anti-lightning, waterproof, anti-ultraviolet, etc., equipped with a POE power adapter, and Gigabit LAN port.
•The bandwidth of FAIOT IDU (Indoor Unit) can reach the 3Gbps Max DL, 300 Mbps Max UL, support dual-band Wi-Fi 2.4G/5G, equipped with 4 high-gain antennas, dual-core 880MHz CPU, and dual Gigabit Ethernet ports.

5G Edge Computing Unit

Embedded with Fibocom 5G module: FM150-AE

Application scenario: Smart education, Media, IIoT, live stream
Product description: Qualcomm SDA845 + SDX55
Product benefits: Powerful CPU, AI engine, high bandwidth, low latency, rich multimedia and industrial interfaces.

C-V2X

BYD

BYD Company Ltd. is one of China’ s largest privately owned enterprises. Since its inception in 1995, the company quickly developed solid expertise in rechargeable batteries and became a relentless advocate of sustainable development, successfully expanding its renewable energy solutions globally with operations in over 50 countries and regions.Its creation of a Zero Emissions Energy Ecosystem – comprising affordable solar power generation, reliable energy storage and cutting-edge electrified transportation – has made it an industry leader in the energy and transportation sectors.

4G C-V2X T-box

Embedded with Fibocom Automotive-grade module: AL640-AE

Application scenario: 4G T-box for OEM project of factory A

Neusoft

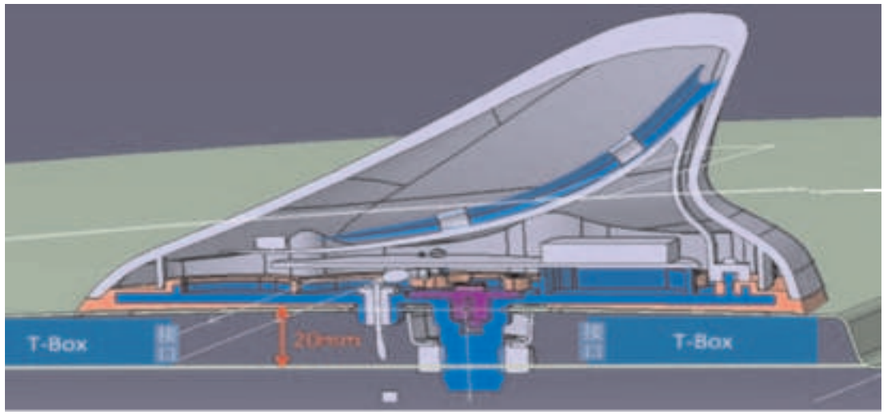
Neusoft

Founded in 1991, Neusoft is the first listed software company in China, and it has been committed to creating better life and promoting social development by leveraging software innovation. Today, Neusoft has nearly 20,000 employees worldwide, and has established a R&D, sales and service network covering more than 60 cities in China, with subsidiaries in the United States, Japan, Europe and other countries. Focusing on software technology, Neusoft’ s businesses cover the fields of smart city, healthcare, intelligent vehicles connectivity, software product and service. www.neusoft.com

T-Box

Embedded with Fibocom Automotive-grade module: AN958T-AE

Application scenario: 5G + C-V2X T-Box for OEM project of factory A



JMC

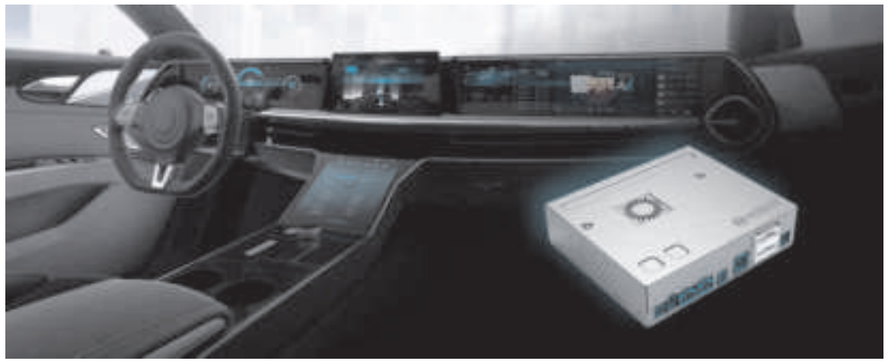
JMC

Jiangling Motors Co., Ltd. (JMC), one of the largest automobile enterprises in China, has been ranked among the top 100 listed companies in China for five consecutive years. JMC was the first to introduce advanced international technology to manufacture light trucks and became a major light truck manufacturer in China in the mid 1980s. In November 1993, JMC successfully listed A shares in Shenzhen Stock Exchange, becoming the first listed company in Jiangxi Province. JMC was the first in China to introduce a foreign strategic partner in the form of B shares issued by ADRs in 1995. The Ford Motor Company (Ford) is now the second largest shareholder of JMC. www.jmc.com.cn

Intelligent Automobile Core Board

Embedded with Fibocom Automotive-grade module: AL656S-AE

Application scenario: Automobile intelligent dashboard for OEM project of factory A
Product benefits: Centralized computing power and cost-effective



Genvict

Established in 2004, Shenzhen Genvict Technologies Co., Ltd. (Genvict) is a publicly-listed (stock code: 002869) high-tech company in intelligent transportation. Genvict is the leading smart transportation and IoT equipment and solutions provider in China. Its core businesses are electronic toll collection (ETC), RFID, and V2X, providing end-to-end solutions that covers vehicles, roads, city, and parking lots for operators, enterprises, and end users. Driven by the mission of "smarter mobility, simpler life", Genvict continues to build a green, efficient and safe smart transportation ecosystem through continuous innovation and continuous development of cutting-edge smart transportation technology. www.genvict.com

5G C-V2X OBU(CB-LS20C)

Embedded with Fibocom 5G module: FG650-CN

Application scenario: C-V2X applications that enable direct real-time "conversation" between vehicles, people and transportation facilitie

Product Description: CB-LS20C is a vehicle-mounted device that incorporates cutting-edge C-V2X and 5G technologies; using a Datang chipset, C-V2X communication operates in the microwave frequency band of 5.905-5.925GHz, supporting V2V, V2I, V2P, and V2C communications based on 3GPP R14 specifications; 5G communication uses Fibocom's FG-650CN module and 5G NR/LTE, FDD/LTE, DD/HSPA+ modes, supporting C-V2X Uu communications and 5G mobile communications based on 3GPP R15 specifications. To make things easier for drivers, CB-LS20C has also been equipped with the Electronic Toll Collection (ETC) feature.

Benefits: The CB-LS20C is equipped with a high-performance ARM processor and the latest GNSS+IMU combined navigation module in collaboration with RTK to enable centimeter-level positioning. Moreover, it utilizes deep coupling algorithm to continuously provide accurate location, speed, and posture information for vehicles in complex scenarios such as tunnels and bridges. Aside from C-V2X and 5G communications, it can also offer 1 channel Gigabit Ethernet and 1 channel vehicle-mounted Gigabit Ethernet, completely fulfilling various communication needs using other interfaces such as RS232, CAN/FD, WiFi, and BT.

BSJ

Huizhou Boshijie Technology Co., Ltd. (BSJ) is a high-tech business that develops, produces, and distributes software and hardware solutions in the IoT area. It is committed to the domains of communications, positioning, control technology, delivering multi-scenario solutions, such as smart Internet of Vehicles (IoV), shared mobility, smart logistics, financial payment, asset tracking, and in-vehicle video surveillance. www.bsjkj.com

In-vehicle Video Surveillance Terminal

Embedded with Fibocom 5G module: FG650

Application Scenarios: Vehicles for three special purposes (tourist charter buses, passenger buses on Class 3 or higher transport routes, and special road vehicles delivering hazardous chemicals, fireworks and firecrackers, as well as civil explosives), freight vehicles, taxis, online car-hailing service, school buses, and escort vehicles that require surveillance in the vehicle industry

Product Description: GF06R is an image recognition-based Smart Driver Assistant System device developed independently by BSJ.

Product positioning: 5G vehicle-mounted DVR with an active security system.
It includes a GPS module, a 5G module, and an audio and video coder and decoder SOC. Video channels enable 8 channel 1080P and SD card and magnetic-disc recording capacity; audio and video data may be transmitted to the platform in real time through 5G network, allowing users to learn about vehicle conditions.

Benefits:

• An 8GEMMC memory is reserved; if the memory is not inserted or all external memory fails, the equipment can switch to EMMC to record and store up to 6 hours of emergency footage (for channels 1-3).

• An NPU neural network is added to the 2T HashRate, resulting in higher computational efficiency and lower power consumption.

• Rockchip's RV1126 chip solution is used, allowing for an 8 channel 1080P + 4 channel algorithm. The frame rate is 10 when connecting to 8 channels, and 15 when connecting to 6 channels.

• A built-in 5G module

Chelutong

Chelutong Technology (Chengdu) Co., Ltd. was founded on February 1, 2021, with a registered capital of RMB 10.53 million yuan, aspiring to "become a global leading supplier of intelligent transportation and Intelligent Connected Vehicle solutions." As part of its efforts to "enable perfect mobility", the company delves into the application needs of vehicle-end and road-end customers to develop a systematic solution based on technologies such as 5G, V2X, high-precision positioning, and MEC edge computing. By providing great customer service, the company has grown its presence and achieved win-win outcomes. www.cv2x.com.cn

T-BOX(VRC-NE01-01)

Embedded with Fibocom 5G module: FG650

Application Scenarios: Cooperative Vehicle Infrastructure System (CVIS), remote control, information uploading, and other T-BOX applications
Product Description: FG650+MIMX8QXP+UMV9150
Benefits: High maturity, stability, and flexibility

Tiamaes

Zhengzhou Tiamaes Technology Co., Ltd. (300807) specializes in integrated intelligent transportation and charging solutions. It has always followed the operational concept of "serving public transportation via scientific and technical innovation," with a focus on "intelligent transportation." With innovative products and service approach, it provides services and technical support to 400+ cities globally, 680+ transportation businesses, and industry management departments. With cutting-edge and industry-leading core technologies and products that are well-known and trusted by domestic customers, it has now embarked on a glorious path of innovation and development. www.tiamaes.com

Smart Dispatch Monitoring Terminal

Embedded with Fibocom 5G module: FG650

Application Scenario: Buses
Product Description: As a general network technology, 5G+ high-precision positioning-based vehicle-mounted smart dispatch terminal can realize full connection between human, vehicle, machine, and other factors and make public transportation industry more digitized, network-based, and smartized by reshaping development models of traditional industries. As a key infrastructure in the development of digital transformation of bus companies, 5G is deeply fused with cloud computing, big data, AI and other technologies and will assist bus companies in decision-making, optimization management, and optimization service and facilitate their structure optimization and quality and efficiency improvement. High-precision positioning services can correctly gather vehicle location data, and perception accuracy has increased from 10-meter levels to centimeter levels. Overall improvements in perception accuracy, analytical precision, fine management, and thoughtful services have given substantial assistance to fine-grained vehicle management.
Benefits: Due to 5G networks' massive data access, fast throughput, and low latency, it is now possible for buses to preview and replay HD videos in real time, as well as stream HD TV shows, and distribute HD advertising at top speed. 5G network slicing technology helps categorize the bus industry, allocating resources based on business priority. One network slice can constitute an end-to-end logic network that can deliver one or more network services depending on the demand side's requirements. It can establish uniformity in parking space and vehicle speed; shorten wait times; better detect zebra crossings, intersections, main/auxiliary roads, and other scenarios; alert drivers to pay attention to pedestrians; improve bus social image; and overcome positioning difficulties in such blind spots as tunnels, viaducts, and shelters. Based on high-precision positioning, it can monitor vehicles in real time, precisely detect electronic fences, provide early warnings on high-risk road sections (railways, rivers, and bridges), and oversee important regions (governments, schools, and hospitals).

TSINGLINK

Anhui Tsinglink Information Technology Co., Ltd. is an intelligent video technology firm that specializes in the development of intelligent and ultra-high definition (UHD) wireless transmission solutions. As a big-data-driven high-tech enterprise with double soft certification, the company has established R&D collaboration with USTC (the University of Science and Technology of China). It holds more than 150 national patents (including more than 90 for inventions), which cover a wide range of technologies, from face/vehicle identification to vehicle/pedestrian feature video structuring, behavior analysis, object recognition, uniform detection, and skeleton analysis.
The company provides 5G UHD intelligent products, platform software programs, as well as professional audio and video communication solutions to emergency response and emergency command for public security organs, emergency management offices, fire stations, armed police, power systems, and the construction sector. www.tsinglink.com

Wireless Smart Rear-view Mirror

Embedded with Fibocom LTE Cat 4 module: NL668

Application Scenarios: It is widely applied to public security, road administration, urban management, industry and commerce, passenger transport, public transportation, school buses, online car-hailing service, and other scenarios.
Product Description: The wireless smart vehicle-mounted rearview mirror is a smart device that includes features such as front and rear dual lens car cameras, 4G wireless transmission, BeiDou/GPS positioning, cluster calls, two-way radio communication, infrared night vision, and local storage. It enables front license plate identification and facial recognition for law enforcement vehicles in order to gather surrounding human face and vehicle information during patrol. It may also be utilized in driver identification verification to improve vehicle and driver monitoring.
Benefits:
• Voice command, anti-glare and blue light
• Front and rear dual lens car cameras for recording in-car and out-of-car scenes at the same time;
• License plate identification and facial recognition
• Cluster calls, cluster dispatch, and command issuance

Securenet

Shenzhen Secure net Technology Co., Ltd. is a high-tech company with the underlying technology of mobile communications to develop and manufacture Internet of Things (IoT) products. The company aspires to become one of China's leading professional and specialized wireless communication application companies. Its primary business is IOT software and hardware solutions, with products spanning intelligent transportation, smart cities, shared mobility, unmanned service, artificial intelligence, and other sectors. www.skynetm2m.com

In-vehicle Smart Surveillance Terminal

Embedded with Fibocom LTE Cat 1 module: L610

Application Scenarios: Shared e-bikes, e-bike lease for food delivery, battery lease and swap, battery security monitoring management, enterprise fleet management, and centralized management of unsold vehicles.
Product Description:
B50 OBD positioning diagnosis terminal: It has integrated 4G network, GPS positioning, acceleration sensor, and OBD diagnosis;
G50 BMS battery monitoring positioning terminal: Specially designed for lithium battery pack, it is a built-in terminal which can read battery data in real time;
BG53 BMS battery monitoring smart handle: It is easy to install and can check battery data remotely, as well as provide real-time location for food delivery e-bikes that use lithium batteries.
G55 e-bike smart central control: Specially designed for smart e-bikes, it can remotely control the bicycles, seat locks, handlebar locks, and other peripherals, enabling different unlocking control methods, such as network, bluetooth, and card swipe.
Benefits:
• Network-wide real-time online support: LTE Cat 1, downward compatibility with 2G, and minimal network blind spots
• High-precision positioning: High-precision BeiDou/GPS dual-mode positioning and compatibility with LBS/AGPS assisted positioning;
• Custom shell antenna design: Smooth communication and stable positioning signals;
• The OBD position sensor consumes very little power, accurately detects all failures, and quickly sends out a warning upon detection of equipment disassembly;
• The e-bike 4G smart central control is a smart control device designed specifically for high-end e-bikes that meets all vehicle control standards.

VODOFO

Shenzhen Vodofo Science and Technology Co., Ltd. is a national high-tech enterprise specializing in R&D, production, sales, and operation of Internet of Things (IoT) location services. It is primarily involved in the development of Internet of Things (IoT) location service hardware collection terminals and big data platform analysis, as well as other cutting-edge technologies. It provides location services for vehicles, objects (such containers), smart warehouses, big data platforms, and other areas of business. It is committed to delivering one-stop software and hardware services and solutions to worldwide satellite positioning system application operators. www.vodofo.com

4G C-V2X Smart Terminal

Embedded with Fibocom LTE Cat 1 module: MC615

Application Scenarios: Logistics fleet management, remote e-bike monitoring, and BMS communication

Product Description: It employs the MC615 integrated open module in conjunction with the BeiDou dual mode chip, which provides up to 100V power input, multi-channel I/O, AD, serial interface, and Bluetooth communication.

Benefits: The product completely leverages extensive MC615 resources, has a high integration level, robust extensibility, numerous interfaces, and a cost advantage.

Smart Retail

PAX

PAX Global Technology Limited is a leading international supplier of secure electronic payment terminal hardware and transactional software services. PAX was founded in 2000 and was initially a subsidiary of Hi Sun Group (listed on the Hong Kong Stock Exchange with stock code 818). After spun off, PAX went listed on the Hong Kong Stock Exchange in December 2010.
Headquartered in Hong Kong, PAX runs Research and Development and operational center mainly in Shenzhen, China. Also, PAX has its subsidiaries in Florida - the USA, Milan - Italy, Japan and India. Approximately 50% of the employees are research & development engineers. To date, the total shipment volume of PAX E-payment Terminal products reached over 60 million units. The company has worked with nearly 90 distributors or partners worldwide and has sold products to over 100 countries and regions (forming a strong "Global Presence"). www.pax.com.cn

Android Unattended Payment Solution (IM30)

Embedded with Fibocom LTE Cat 4 module: NL668

Application Scenarios： Smart Payment
Product Description： Running Android 7.1 OS, the IM30 is an all-in-one payment device providing payment acceptance and value-added business applications. The IM30 meetins EVA standard, which means it can be integrated easily with your existing infrastructure. IM30 provides a full set of connectivity and connections including 4G,Wi-Fi, LAN, MDB, Bluetooth, USB and RS232, perfectly covering most vending system requirements.

LANDI

Fujian LANDI Commercial Equipment Co., Ltd. (hereinafter referred to as LANDI) is ranked the first in the secure electronic payments industry in China, over 40% of the market share (report from CCIDC consulting) and Selected by all of the top 10 banks (Industrial And Commercial Bank Of China, Bank Of China, Agricultural Bank Of China, China Construction Bank and so on).
LANDI’ s products mainly cover traditional POS terminal, Mobile POS terminal, Smart POS terminal, financial unattended terminal and payment-related software.
LANDI has built up the direct sales service platform, 9 regional sales subsidiaries, 46 sales offices, 9 technical support centers, 46 service networks around China.
LANDI has built close cooperation with our international partners. www.landicorp.com

Smart POS Terminal (APOS A8)

Embedded With Fibocom Smart Module: SC808

Application Scenarios: Smart Payment
Product Description: APOS A8 smart POS terminal has strong performance using Qualcomm 4G solutions that support for all modes. It not only supports for all 4G, 3G, and 2G communication provided by 3 major carriers, but also runs Android 5.1 Security OS operating system smoothly, excellently combining mobile system experience with communication compatibility. This product has 5.5 inch 720P high-resolution capacitive screen, and integrates magnetic stripe card, IC card, thermal printing, camera, 1D / 2D bar code scanning, Wi-Fi, Bluetooth, and other functional modules. It fully supports for bank cards, NFC, acoustic waves, scanning code, and other payment methods to meet various demands in mobile internet, such as group purchases and takeout, mobile cashier register, and membership marketing, etc., expanding the value-added application services of POS terminal.

NPT

Fujian Newland Payment Technology Co., Ltd. ("NPT") is a member company of Newland Technology Group, and a wholly-owned subsidiary of Newland Digital Technology Co., Ltd. (SZE-000997). NPT is the 2nd largest POS supplier worldwide according to The Nilson Report 2018. Founded in 1994 in Fuzhou, China, NPT has been offering a complete, flexible, and adaptable suite of POS products, solutions and services whilst maintaining security and future-proofing its offerings to its valued customers and partners around the world.
NPT has increased its geographical footprint significantly in recent years. Building upon its heritage of innovation and value-added solutions, NPT aims to strengthen its position as a true global leader within the secure payment world, through the network of channel partners in over 60 countries, as well as its established offices in France (Europe), Brazil (Latin America), Mainland China and Hong Kong China (Asia-Pacific). NPT is the fastest growing payment industry supplier with innovative R&D capabilities, world-class services and a rapidly growing global network of sales and channel partners.
As a leading brand in global payment ecosystem, NPT strives to build a digital payment ecosystem that incorporates diversity, services and society in the IoT era through global cooperation and multi industry integration to increase the values of the stakeholders within the ecosystem.
www.newlandpayment.com

Mobile POS Terminal (SP620)

Embedded with Fibocom LTE Cat 1 module: LC610

Application Scenarios: Smart Payment
Product Description: SP620 is an innovative new generation wireless mobile terminal facilitating improved payment fluidity at the point of sale, with stylish design and lightweight makes it easy to carry. Equipped with High-speed thermal printer fits 30mm, 35mm and 40mm paper roll, supports multiple payment methods such as ID card, QR code, alongs with e-signature function. It provides you with an intuitive interactive user interface and frictionless payment experience.

NEXGO

After 20 years of development, NEXGO now is a worldwide influential technology company providing payment terminals and comprehensive associated technical services for electronic payment (stock code: 300130). For now, NEXGO has sold more than 38,000,000 POS terminals around the world, covering over 100 countries and regions.
“Sustainable and Eternal NEXGO” is our ambitious and far-sighted vision, it drives us forward to embrace change, keep innovating, keep providing consumers with intuitive, secure, convenient and fast payment technologies. www.xinguodu.com

Smart POS Terminal (N5)

Embedded with Fibocom LTE Cat 4 module: SC800

Application Scenarios： Smart Payment
Product Description： N5 is the flagship product of NEXGO smart POS series with the most comprehensive configuration. 5.5 " HD touchscreen delivers the best display and operation experience. The operation system of N5 is powered by Android 7.X, it can be customized and meet the needs of various industries because of its compatible ability in software and hardware. Each NEXGO smart POS terminal is equipped with a quad-core processor with four independent units and a security chip, quad-core processor brings better performance as more tasks will be accomplished simultaneously by it, at the same time, security chip improves the security level of these POS terminals.
N5 supports multiple payment methods such as magnetic stripe card, IC card, contactless/NFC, etc.; built-in professional scanner Code module, front and rear dual camera configuration, easy to realize WeChat payment, Alipay payment and other one-dimensional, two-dimensional code payment; support 4G full Netcom, Wi-Fi, Bluetooth and other network environments and GPS network positioning functions, complete transactions anytime, anywhere.You can also choose fingerprint identification module to support fingerprint payment.

AISINO

Founded in 2007, Vanstone Electronic (Beijing) Co., Ltd is a Chinese leading terminal manufacturer in payment industry. As a core subsidiary of AISINO corporation (stock code: 600271, SH), we are committed to offering secure, reliable and cost-effective payment terminal solutions to customers. As one of the top 3 terminal vendors in China, our business covers each and every branch of payment industry. With our 4 major product lines -- Smart POS, Traditional POS, Mobile POS and QRCode Terminals, we are able to satisfy the complicated and evolving electronic payment demands in markets including but not limited to hotel, catering, retail, transportation, logistic, communication, financial and government.
Our products are widely used in the top 5 Chinese banks (ICBC, CCB, BOC, ABC and BOCOM), and also amongst various NBFCs and third-party PSPs. Meanwhile we have won extensive recognition in 60+ countries and regions worldwide. Vanstone is devoted to becoming the world's leading electronic payment terminal vendor and your reliable payment partner. www.vanstone.com.cn

Sound box (Q181)

Embedded with Fibocom LTE Cat 1 module: L610

Application Scenarios： Smart Payment
Product Description：

- Large capacity battery, with 2000mAh built-in large capacity rechargeable lithium battery, supporting 1000+ transactions to meet the full-day use requirements
- Large QR code display supports customization, the display panel can be customized to meet your needs
- Integrated design, simple and compact
- Wi-Fi/GPRS/4G wireless connections bring ubiquitous coverage
- Higher volume broadcast, easier checkout
- Li-polymer ensures 3000+ transactions broadcast

TIANYU

WUHAN TIANYU INFORMATION INDUSTRY CO., LTD was founded in August 1999, which is a high-tech enterprise who is dedicated to providing excellent products and services in data security and smart education, etc. In April 2011, Tianyu was listed on the Shenzhen Stock Market.
After years of development, Tianyu Information has become a leading solution provider in the field of data security and a leading enterprise among Chinese smart card industries. Tianyu support customers with respect to data security, offering an extensive range of products ,solutions and smart card , system and terminal. For these products Tianyu has the copyrights, and this is the Tianyu’s essential strength. Tianyu’s smart card portfolio expand to financial IC card, financial social security card, resident health card, communication smart card, traffic smart card, eSE mode, IOT card, etc. The terminal portfolio covered mPOS, smart POS, mobile credit card equipment, tax control disk, smart wearable device, etc. Tianyu also implemented thousands of industry application projects with state of the art solutions. The related business of Tianyu has expanded to more than 30 countries around the world. www.whty.com.cn

Smart Handheld POS Terminal (TP20)

Embedded with Fibocom LTE Cat 1 module: MG616

Product Description： Smart Payment
Product Description： TP20 is a stylish and compact wireless POS terminal with exquisite appearance, portable and easy to use. It is compatible with all leading intelligent technology, which using 4G, GPRS, Wi-Fi and various kinds of communication technologies, Realize all financial payment and consumption functions such as magnetic stripe card, smart IC card, contactless card, two-dimensional code drawing, and payment, etc., truly achieve one machine at hand, any payment is the flagship of the current financial payment field product.

Yunshang IoT

Founded by Haier, Haier Yunshang IoT Technology Co., Ltd. is a holding company that is in charge of the Haier washing machine Internet of Clothing (IoC) ecosystem. By integrating Haier and related industry resources, the company creates an ecological alliance and comprehensive clothing life cycle management platform from purchase to washing, care, management, and try-on, in a bid to deliver "smart clothing butler services of good life" to the users. Wuxi Yunshang IoC Technology Co., Ltd., with headquarters at E2-205, China Sensor Network International Innovation Park, No. 200 Linghu Avenue, constantly cares about its customers and operates with the principle of trust and integrity.

Intelligent Cloud Mirror

Embedded with Fibocom 5G module: FM150-AE

Application Scenarios: Energy transportation, smart healthcare, smart ports, intelligent manufacturing, smart logistics, smart water conservancy, patrol robots, etc.
Product Description: The intelligent cloud mirror is a smart Black Tech developed by Haier IoC sub-brand Yunshang Wuyu as a dressing guide.
With the use of AI and big data, the mirror brings consumers integrated smart life services like as virtual try-on, smart outfit recommendations, fitness, wardrobe storage, and leisure and entertainment. As a new product, it changes the way people try on, dress, and buy clothes, and it will be a required "second screen" in a smart house.
Benefits:
• 3D body measurement: 3D scanning takes only 5 seconds from "size measurement" to "real try on," and a live 3D model is created to correctly get 14 body figure characteristics such as height, arm length, chest circumference, and leg length.
• Virtual try-on: The users can try on an infinite number of outfits, change clothes in 1s, try various styles quickly, and do the shopping at home;
• AI somatosensory game: The users can enjoy family interactions, play numerous built-in single-player and two-player games, participate in exciting activities at home as if they were in a gym or gaming room, and spend pleasant time caring for their children.

Internet of Everything

Hello

哈啰出行

As a local shared mobility and life service platform in China, Hello leverages digital technology to provide people with more convenient mobility and inclusive local services of higher quality.
After starting out as a well known bike-sharing business startup in Shanghai in September 2016, the company has evolved into a versatile mobility and life service platform, offering services such as two-wheeled bike sharing (Hello bikes, Hello e-bikes, Hello e-scooters, Hello battery swap), four-wheeled mobility (Hello carpooling, whole network online car hailing, Hello hailing), as well as hotel and in-store services. www.hello-inc.com

Shared E-bike

Embedded with Fibocom LTE Cat 1 module: L610

Application Scenario: Shared mobility
Product Description: The Hello e-bikes powered by the 4G network have better coverage and less latency than typical two-wheelers that use the 2G network. By utilizing the Fibocom L610 4G Cat 1 module, locking and unlocking times may be reduced by over 30% on average. The locking and unlocking process has been considerably streamlined for the user. Furthermore, the faster network will enable Hello e-bikes to deliver more diversified services to customers, such as providing LBS-based dynamic weather prompts and pushing commercial advertising. In mobile situations, the Fibocom L610 LTE Cat 1 module fully exploits its functional advantages of high rate, stability, dependability, low latency, and low power consumption, allowing Hello to provide enhanced smart voice interaction and push advertising and other convenient mobility services to its users. Hello e-bikes equipped with the Fibocom L610 LTE Cat 1 module have already seen extensive commercial use.

Leyaoyao

Guangzhou Leyaoyao Information Technology Co., Ltd. ("Leyaoyao") specializes in mobile payment solutions and self-service equipment smart platforms. Leyaoyao offers mobile payment solutions that integrate smart communication hardware + SaaS system, as well as the Internet of Things (IoT) open platform and assists millions of offline self-service devices in achieving "+IoT and SaaS cloud platform management", as well as operators and factories in improving business performance and management efficiency. In addition to providing operators with smart payment boxes and SaaS systems, Leyaoyao also produces such products as mainboard smart integrated chips, B-scan-C payment and face-scanning payment technologies, allowing the whole self-service equipment sector to accomplish a win-win aim. Furthermore, Leyaoyao has a strong foothold in AI smart operation and SaaS system, empowering enterprises continuously. As a technological empowerment platform in the manufacturing sector, the company intends to help upgrade and smartize the whole self-service equipment industry using IoT technology and AI smart operation. www.leyaoyao.com

Leyaoyao Smart Payment Box

Embedded with Fibocom LTE Cat 1 module: L610/MC615

Product Description: Leyaoyao smart payment boxes are installed on offline self-service equipment to enable IoT and online payment, helping customers improve digital business performance and management efficiency.

Benefits:

• Built-in 2G/4G/WIFI wireless data transmission modules and multi-encryption technologies that safeguard the data in the communication link;
• Mobile payment (via WeChat or Alipay, or a single QR code that works with various payment apps);
• Real-time device status monitoring, remote management and maintenance, lower transport and maintenance costs, and higher efficiency

Smart Self-service Vending Machine

Solution Description: Leyaoyao offers one-stop smart equipment system solutions for the management, marketing, and services of vending machines (including unmanned vending cabinet, adult products vending machine, coffee machine, ice cream machine, freezer, etc.). Based on its unique mobile payment equipment, the solution is built with IoT genes in every process and uses administration and operation methods that significantly transcend traditional ones. It is an ingeniously designed SaaS platform utilizing cutting-edge operating system and technology. Additionally, Leyaoyao's solutions may assist new equipment retailers in improving advertising profitability and replacing systems for free or at a reduced cost; in addition, Leyaoyao will voice the concerns of market stakeholders to optimize the resource sharing mechanism.

Sharing Economy Solution

Solution Description: Leyaoyao links its payment box to shared massage chairs, washing machines, and charging piles by using IoT technology in the sharing economy mode based on market demand analysis. Thus, the equipment is connected to network, compatible with mobile payment, and equipped with a robust SaaS management system.
Leyaoyao seeks to deal with concerns like customer experience and advertising issuance for sharing economy service providers.

Kiddie Ride

Solution Description: A kiddie ride, also known as a kids' ride, a kiddie swing ride, a coin-operated kiddie ride machine, an electric cradle swing, and so on, is an entertainment machine.
Most kiddie rides on the market are now still coin operated, while Leyaoyao's smart payment box and integrated mainboard chips have already enabled machine networking and online payment on the rides. In addition, Leyaoyao provides the SaaS system to operators at no cost.Kiddie rides can be activated via mobile payment after scanning the QR code, allowing the kids to have a happy time swinging in it. They are excellent pals for the kids.

XIAOAN

Wuhan Xiaoan Technology Co., Ltd. is a high and new technology enterprise specialized in smart IoT technology development and application for electric scooters. Xiaoan is also a leading electric scooter standard management solution provider in China. The company has strong R&D capabilities, with more than 80% of its core personnel graduated from project 985 universities in China, such as Huazhong University of Science and Technology and Wuhan University, with work experience in renowned enterprises, including Baidu, Alibaba, Tencent (BAT) and Huawei. The company offers specialized product services, including shared e-bike solution, delivery scooter + battery + station integrated solution, e-bike smart solutions and e-bike standard management solution. Xiaoan is committed to being a leading provider in smart scooter solutions. www.xiaoantech.com

4G Electronic Control Unit for Shared E-Scooter

Embedded with Fibocom LTE Cat 1 module: L610

Application scenarios: Smart electric scooters
Product description: Based on 4G LTE Cat 1 technology, the product is made available in a stable network communication system, achieving real-time monitoring and control on electric scooters.
The product also adopts GPS + BeiDou + base station triple positioning, Bluetooth geofencing, and RFID automatic identification technology for IoT-based shared e-bike parking scenarios.
Product benefits:
• Waterproof design
• Detection for speeding, red light violation, and driving in the wrong way
• RFID-based parking management
• Digital image-based parking
• GPS and BeiDou-based geofencing
• Accurate mileage prediction
• Helmet detection

ECOMLIMIT

Beijing AVSolution Technology Co., Ltd, which is versed in the research, development, sales and service of ultra-high definition video communication products, has obvious advantages in 5G+UHD video broadcasting. Its deep learning-based video coding algorithms and heterogeneous multi-link fusion communication technology are industrial-leading. Through independently developed hardware and cloud-based full-stack product line, it can provide with 5G + 8K + AI full-scenario solutions with strong customization capabilities, to governments, enterprises, finance, radio and television, justice, education, medical, communications, industrial, and other industry users. www.avsolutiontech.com

UHD Video Communication Terminal

Embedded with Fibocom 5G module: FM150-AE

Solution Description: The AUST 5G + 4K video communication terminal is embedded with Fibocom’ s 5G modules FG150 (W) and FM150 (W), to ensure the safety of industrial inspection and make a breakthrough in realizing real-time visualized command, which enable the overall control of the situation and a timely response to unexpected situations.
Product description: Based on special hardware, the AUST 5G ultra-high-definition video communication system will further build visual connection between people in the existing leading and medium markets, including broadcasting/education/medical care, realizing ultra-high-definition, mobile, and site-based video communication. Meanwhile, it will build connection between machine vision and human vision, as well as between machine vision and artificial intelligence (arithmetic capability) in the largest industrial IoT market, an promote and pioneer a trillion-scale emerging market. It can be widely used in telemedicine, emergency communication, machine visual, industrial inspection, MEC, etc.

Sumavision

Sumavision Technologies Co.,Ltd. was founded by Tsinghua Science Park and the company's core team in 2000 and later listed at Shenzhen stock exchange market in 2010. Sumavision is committed to the research and development of video, encryption, 5G, AI technology and other fields. The company has served operators, enterprises, governments, finance customers from more than 110 countries and regions around the world with high-quality and precise service, and is committed to making global users enjoy smarter, safer and better digital life. Sumavision has participated in the formulation and application of video coding in China (AVS), ChinaDRM, DCAS, TVOS, C-DOCSIS, emergency broadcast and China’ s National Radio and Television Administration (NRTA) 5G broadcast. The company constantly pushes the implementation of video technology and solution in China from both theoretical and practical levels. The company has established multiple R&D bases in Beijing, Shenzhen, Wuhan and Xi’ an and other cities. In the year of its 20th anniversary, Sumavision won the 2nd prize of the 2020 National Science and Technology Progress Award. With the expansion of business scope and scale, Sumavision has served more than 20 nation-level customers, 34 province-level customers, over 200 city-level customers. www.sumavision.com

5G 4K UHD Live Stream Backpack

Embedded with Fibocom 5G module: FM150-AE

Product description:

• Sumavision 5G + 4K live broadcast transmission solution takes 5G + 4K backpack as its core, and comprises supporting devices, including 4K aggregated gateway, 4K video matrix, 4K decoder, integrated backpack network management system.
• The product supports dual-stream encoding to output H.265 4K and H.264 HD video stream simultaneously for program production and preview.
• The product adopts an embedded coding chip to meet production-level coding quality requirements. The shooting content can be used as the program's footage.
• The product supports multiple transmission methods. Programs can be transmitted through private and public networks, and cloud platforms, offering an optimal ultra-low latency of 200 ms.
• The solution is mature and reliable with lots of deployment experiences. The product is used to provide live broadcast service for major events, such as 70th Anniversary of the Founding of The People's Republic of China.

CloudMinds

CloudMinds was founded in 2015 with the three elements of many successful start-ups: a bold vision, creative people, and encouraging financial support. The CloudMinds vision is that by 2025, helpful humanoid robots will be affordable for the average household. The vision also includes creating a new kind of venture with the unique international character that earns and keeps the trust of people and markets everywhere. The company founder is serial entrepreneur Bill Huang, who has a record of turning technology visions into reality. The team consists of world-class scientists, engineers, business leaders and other professionals. CloudMinds has critical functions distributed across its primary locations in Silicon Valley, Tokyo, and Beijing. www.cloudminds.com

Intelligent Service Robot (XR-1)

Embedded with Fibocom 5G module: FG150/FM150

Application scenarios: Receptionist, business guide, elderly care assistant, sales promoter or, staff for VIP services, etc.
Product description: Powered by two ground breaking technologies, the Smart Compliant Actuator (SCA) and Human Augmented Robotics Intelligence with eXtreme Reality (HARIX), XR-1 is the first commercial humanoid service robot. XR-1 is capable of vision-controlled robotic manipulations such as grabbing objects, opening doors, and threading a needle, as a receptionist, business guide, or VIP service staff under different scenarios.
Product benefits:

• Deep learning capabilities using cloud brain (HARIX)·
• NLP, CV for face/ object/ posture/ emotion recognition, Visual Simultaneous Location and Mapping (VSLAM)
• Visual feedback manipulation for precise grasping/motion/pressing movements
• 3D semantic map for grasping/motion
• Vertical domain knowledge & AI services·Accesses cloud brain technology via RCU (Robot Control Unit)

ZHIXIANG

Founded in 2017, Beijing Zhixiang Technology Co., Ltd. has subsidiaries in Qinghai and Jiangsu. Zhixiang is an innovative enterprise specialized in modern education technology. With voice interaction, semantic recognition, smart evaluation, OCR and other advanced AI technology, the company provides products and services for K12 classroom teaching, including human-machine collaboration AI smart teaching assistant robot, Future Classroom, advanced evaluation for teaching and learning and big data analysis in combination with K12 teaching materials, courseware and resources. www.mega-see.cn

AI Teaching Assistant Robot

Embedded with Fibocom 5G module: FM650

Application scenarios: The product focuses on classroom teaching to improve teaching quality. It enriches after-school services, reduces teacher workloads, and promotes all-round development of each student. Product description: Based on high-speed 5G technology, Daxiang AI Intelligent Robot is used in the classroom environment to better integrate smart classroom applications. It also features seamless data flow and low latency to support special classes such as dual-teacher class. The integration of Daxiang Robot and 5G can fix the problem of outdated campus network.

Product benefits:

• The product facilitates efficient smart class based on the high-speed feature of 5G. Teachers can upload and download smart courseware from the cloud platform faster to improve efficiency and reduce teacher workloads.

• The product solves school network problems including slow network, cable degradation and small bandwidth, efficiently improving teaching quality.

• Based on low-latency 5G network, the product provides synchronous online courses for students in remote rural areas, facilitating equal edu cation and sharing of quality teaching resources.

yarward

Established in 1998, Yarward Electronics Co., Ltd. is a main provider of integrated solutions of smart communication interactive system software and hardware for hospitals in China, with a registered capital of RMB 78,150,000. Yarward has more than 160 members in its R&D team and 4 R&D centers in Beijing, Shenzhen, Qingdao and Zibo, with 10% of its annual revenue put into R&D. The company owns a CMA-approved professional laboratory. Yarward was qualified as a innovative "Little Giant Company" by the Ministry of Industry and Information Technology of China, selected in the first list of hidden champions in Shandong Province and the first list of China's "Smart Healthcare and Elderly Care Application Pilot Model Enterprise". Yarward's customers include Peking Union Medical College Hospital, Chinese PLA General Hospital, West China Hospital of Sichuan University and Qilu Hospital of Shandong University and so on. As of the end of 2020, Yarward has provided services for nearly 3.8 million medical bed terminals and 7500 hospitals. www.yarward.com

Intelligent Interaction Terminal for Hospital

Embedded with Fibocom 5G module: FM150

Application scenarios: High-quality multi information interaction for supporting patients and their family, nurses, nursing workers, and doctors in the smart ward area.

Solution description: Powered by the Fibocom 5G module, the product can easily connect to the hospital’ s 5G network, incorporating into the 5G smart hospital ecosystem. The product also supports a series of important real scenarios for smart ward 5G applications to empower more useful process optimization and feature upgrade. It offers highly targeted solutions for various hospitals, especially for those having construction problems in old ward transformation.

Solution benefits:

• No wiring required, saving almost RMB 60,000 for the transformation of each ward area.

• Saves wiring work hour 10 days/ward area.

• Supports standard IoT interface and secondary adaptation development.

• Provides multi-system bedside data display and interaction.

• Medical-grade Android with comprehensive industrial-grade hardware performance

TSINGLINK

Anhui Tsinglink Information Technology Co., Ltd. is a intelligent video technology company, which mainly engages in the research of intelligent and Ultra High Definition (UHD) wireless transmission. The company is a high-tech enterprise with double soft certification and big data enterprise and has established collaboration with USTC (University of Science and Technology of China) in research and development. More than 150 national patents (over 90 invention patents) are owned by the company, covering technologies ranging from face/vehicle identification, vehicle/pedestrian feature video structuring, behavior analysis, object recognition, uniform detection and skeleton analysis.
The company offers 5G UHD intelligent products and platform softwares, as well as professional audio and video communication solution for emergency response and emergency command in public security system, emergency management office, fire protection, armed police, power system and construction. www.tsinglink.com

5G Intelligent Emergency PTZ Camera

Embedded with Fibocom 5G module: FG150/ FM150

Application scenarios: The product is widely used in public security, transportation, courts, urban management, emergency, fire protection, armed police, power and other scenarios.
Product description: 5G/4G Intelligent Emergency PTZ Camera (D) is a portable terminal built for wireless ultra-high-definition monitoring needs, which supports 5G/4G/ad hoc network transmission, remote video, intercom, positioning, intelligent analysis and other functions. The product supports intelligent applications such as face recognition, license plate recognition, safety helmet recognition, smoking detection, uniform detection, insulating gloves detection, insulating boots detection, etc., and assists users in daily visual inspection, mobile law enforcement monitoring, emergency command and dispatch, intelligent application of safe production and other business management.
Product benefits:
• Optional 4K image transmission.
• Two-way voice communication and trunked communication.
• 5G/4G remote wireless video transmission, with real-time image free from lagging
• Face detection and recognition, license plate recognition, safety helmet detection and uniform detection.

5G Intelligent Emergency Command Suitcase

Embedded with Fibocom 5G module: FG150/ FM150

Application scenarios: The product is widely used in public security, transportation, courts, emergency management offices, fire protection, armed police, border defense, power and other scenarios.
Product description: 5G Intelligent Emergency Command Suitcase is a comprehensive and portable multi-network intelligent communication product with a built-in command and dispatch platform. It can connect to ad Hoc network terminal for audio and video dispatch, sending front-end videos to back-end command center via 5G/4G/satellite wireless transmission. The product also has such features as trunked dispatch, face recognition, license plate recognition, safety helmet detection, smoking detection and uniform detection.
Product benefits:
• Supports all network operator options and 4G/Wi-Fi/AP/LTE.
• Supports front end face/license plate recognition, safety production and other smart features.
• Offers trunked calling, trunked dispatch, dispatch command issuance.
• Integrates BeiDou/GPS positioning, with high positioning speed and accuracy.

Wireless Video Edge Computing Terminal

Embedded with Fibocom 5G module: FG150/ FM150

Application scenarios: The product is widely used in public security, traffic police, procuratorate, court, national security, armed police, customs, road administration and other scenarios.
Product description: Wireless Video Edge Computing Terminal (5G Intelligent Mobile DVR) is a mobile video surveillance product designed for users with HD and UHD requirements. Combining with H.264/H.265 video compression/decompression technology, 5G/4G/3G network technology, AI technology, BeiDou/GPS positioning technology, Wi-Fi technology, the product can record HD videos and vehicle driving information and upload videos remotely. With the platform software, features such as remote video surveillance, voice intercom, smart vehicle dispatch management, alarm linkage, and intelligent data analysis (face detection, face recognition and license plate recognition) are also available.
Product benefits:
• Supports all network operator options for 5G/4G/3G.
• Provides 4 channel 1080P (or 4K) network HD video input.
• Dual-stream: one for HD local storage, the other for bandwidth adaptive bitrate image transmission.
• Offers 4 channel face detection/license plate and face recognition.

TSINGLINK

Anhui Tsinglink Information Technology Co., Ltd. is a intelligent video technology company, which mainly engages in the research of intelligent and Ultra High Definition (UHD) wireless transmission. The company is a high-tech enterprise with double soft certification and big data enterprise and has established collaboration with USTC (University of Science and Technology of China) in research and development. More than 150 national patents (over 90 invention patents) are owned by the company, covering technologies ranging from face/vehicle identification, vehicle/pedestrian feature video structuring, behavior analysis, object recognition, uniform detection and skeleton analysis. The company offers 5G UHD intelligent products and platform softwares, as well as professional audio and video communication solution for emergency response and emergency command in public security system, emergency management office, fire protection, armed police, power system and construction. www.tsinglink.com

Wireless Law Enforcement Recorder

Embedded with Fibocom LTE Cat 4 module: NL668

Application scenarios: The product is widely used in public security, traffic police, courts, fire protection, armed police, civil defense emergency, urban management, power and other scenarios.
Product description: The Wireless Law Enforcement Recorder (Wireless Intelligent Body Cam) is an integrated police law enforcement communication terminal developed in accordance with Public Safety Industry Standard GA-T 947.4-2015 Video/Audio Recording Systems for the Individual Enforcing Policeman. The product can improve transparency in law enforcement of front-end officers, enhance real-time communication and management between the command center and law enforcement officers. It features HD video storage, wireless transmission, BeiDou/GPS/base station positioning, trunked intercom, infrared night vision, intelligent detection and recognition, one-button alarm and business inquiry.

Product benefits:
• 4G all-network transmission.
• Trunked intercom, real-time video command, and two-way video intercom.
• Face detection, license plate recognition and other intelligent algorithms.
• NFC for ID card reading.

Wireless Handheld Terminal

Embedded with Fibocom 5G module: FG150/ FM150

Application scenarios: The product is widely used in public security, traffic police, emergency, armed police, fire protection, civil defense, border defense, power and other scenarios.
Product description: The Wireless Handheld Terminal is a high-performance portable intelligent video terminal. It can improve transparency in law enforcement of front-end officers and enhance real-time communication between law enforcement officers and the command center. The product features HD wireless video transmission, BeiDou/GPS positioning, emergency dispatch, trunked calling, intelligent recognition, mobile office and business inquiry.

Product benefits:
• 5G/4G all-network.
• Ad Hoc network transmission.
• Two-way intercom, trunked calling, trunked dispatch.
• External HDMI camera.
• Optional 1080P/720P real-time transmission and HD capturing
• Optional face recognition, license plate recognition and other application extension.

Intelligent Video Helmet

Embedded with Fibocom 5G module: FG150/ FM150

Application scenarios: The product is widely used in scenarios such as electric power, construction sites, tower operations, road construction, railway construction, mining, blasting, emergency rescue and disaster relief.
Product description: The Intelligent Video Helmet adopts a high-speed processor and integrates HD video, audio, 5G/4G and Wi-Fi wireless communication, positioning, storage, and alarm modules. With 5G/4G and Wi-Fi wireless network, the product features real-time audio and video transmission, voice intercom, and intelligent recognition to help record site conditions, collect evidence and regulate construction in real time. Remote dispatch and command of outdoor mobile individuals is also available in the back-end monitoring and dispatch platform.

Product benefits:
• 1080P dual-stream real-time HD video and local recording.
• Collision alarm, dynamic helmet wearing detection and safety helmet detection.
• Face recognition and other AI extensions.
• Two-way voice communication, with a built-in microphone and speaker.

SENTER

Shandong Senter Electronic Co.,Ltd. is a high and new technology enterprise providing IoT solutions for industries including telecommunications and electric power. Founded in 1996, Senter has more than 500 employees, registered capital of RMB 117 million, and covers an area of 40,000 square meters. Headquartered in Zibo high-tech industrial development zone, Senter has R&D centers in Jinan, Qingdao and Shenzhen, and branch offices in Beijing and Guangzhou. For over 20 years, Senter has adhered to a development strategy of professionalization and industrialization; focused on technology innovation and constantly increase investment in new product development and always followed the customer demand. In the field of communications and electric power industries, we have formed our own core technology and have a wide variety of independent intellectual property products, and have gradually became a pacemaker of niche market of industry such as communication and electric power technology. www.senter.com.cn

5G Visualization Smart Terminal

Embedded with Fibocom smart module: SC182-CN/ SU806-CN/ SC161

Application scenarios: The product can be widely used in scenarios such as smart transmission lines, oil and gas pipelines, and railway security.
Solution description: Powered by the Fibocom 5G high computing power smart module, the product supports SA/NSA architectures and can achieve UHD real-time video surveillance. With the low latency feature of 5G, it can also transmit potential hazard alarm information in milliseconds to send out alarm immediately, eliminating external hazards before they occur and ensuring pipeline operation safety.
Solution benefits:
• Data transmission security
• UHD Blu-ray video
• Ultra-low alarm latency
• Multi-scene monitoring

FAIOT

FAIOT was established in December 2019 as a wholly-owned subsidiary of Fibocom Group.FAIOT focuses on product research and development in the fields of intelligence and networking, and gathers many elites in the mobile communications industry to provide high-end ODM services to global customers in sectors such as 5G hotspot, AR/VR/MR, edge computing, AI, smart payment, industrial tablets, etc. www.faiot.com

5G X-Reality Box

Embedded with Fibocom 5G module: FG150-AE

Application scenarios: AR power line inspection
Product description: Grid operation and maintenance is an important guarantee for reliable power supply and power quality. In the daily manual inspection process, it is necessary to find hidden dangers and troubleshoot problems in a timely and efficient manner. Embedded with Fibocom FG150 module, the AR glasses + 5G computing box help to build a smart grid operation and security maintenance system. The product is able to grasp the situation in real time, transfer the information back to the command center, helping to realize remote real-time recording and inspection, as well as improving work efficiency.
Product benefits:
• Qualcomm 5G Platform · WiFi5 +BT5.0
• One USB3.1 port, One USB3.1/DP port
• Removeable battery 8000 mAH · Touch pad · Reset buttons · 9-Axis Sensor
• IP68 protection

YANZHI

研智科技
YANZHI TECHNOLOGY

Hangzhou Yanzhi Technology Co., Ltd. is a high and new technology enterprise and a Gazelle Enterprise in Hangzhou, China. Yanzhi Technology is committed to the independent development and technological innovation of solutions in industrial computers and relevant fields, especially technological development and applications of 5G network related products. Based on ARM, X86, FPGA, DSP, MIPS, AI, LoongArch chips and other platforms, Yanzhi Technology has developed mature solutions of featured products, including: 1) industrial motherboards/core boards; 2) industrial computers/tablets; 3) IoT gateways (including the 5G edge computing gateway co-developed with Fibocom); 4) AI-BOX. The products are widely applied to a variety of fields, such as industrial automation and control, industrial Internet, AI, intelligent robot, rail transportation, energy, electric power, environmental protection and 3D printing. www.rt-ics.com

Industrial Computer

Embedded with Fibocom 5G module: FM150

Application scenarios: The product is suitable for various comprehensive application scenarios involving "AI + edge computing + IoT", such as face recognition and real time processing, online product detection, real time AR/VR, and security.
Product description: Using the Nvidia Jetson Xavier NX with powerful AI performance as the main processor, the product is competent in a variety of AI application scenarios. The product is equipped with a 5G module for large-volume and low-latency data transmission.
Product benefits: The product has a processor with up to 21 TOPs AI performance and supports 5G wireless network.

Industrial Computer

Embedded with Fibocom 5G module: FM150

Application scenarios: IoT, Industrial Internet, industrial automation and control, rail transportation, etc.
Product description: With the high-performance and low-power consumption NXP LS1021 as the main processor, the product is competent in a variety of application scenarios. The product is equipped with a 5G module for large-volume and low-latency data transmission.
Product benefits: Strong CPU performance and 5G wireless network.

Industrial Computer

Embedded with Fibocom 5G module: FM150

Application scenarios: The product can be widely used in IoT, Industry of Internet, industrial automation and control, rail transportation, power industry, etc.
Product Description: With the high-performance and low-power consumption NXP LS1046 as the main processor, the product is competent in a variety of application scenarios. The product is equipped with two 5G module for large-volume and low-latency data transmission. The two 5G networks can back up each other, ensuring data transmission security.
Product benefits: The product supports two 5G networks with multiple serial ports and network ports and a strong CPU performance.

Inspur

Inspur group is China's leading cloud computing, big data service provider with four listed companies: Inspur Information, Inspur Software, Inspur International and Inspur Huaguang, covering four large industry groups of cloud data center, cloud services & big data, smart city, and smart enterprises. Inspur offers IT products and services that satisfy the information needs of governments and enterprises in more than 100 countries and regions. In 2018, Inspur identified a data-first strategy to build a platform-type ecosystem of enterprises based on the world’ s leading cloud data center and cloud service platforms. Working hand in hand with partners, Inspur will facilitate socialization of data and accelerate its pace in transforming into a “new operator” of cloud service, big data, and smart city. The goal is to become a new Internet company that integrates “cloud and data”.
www.inspur.com

Edge Microserver (EIS200)

Embedded with Fibocom module: FM150/ NL668

Application scenarios: smart energy, ITS, smart healthcare, industry 4.0, logistics, patrol robots, etc.

Product description:

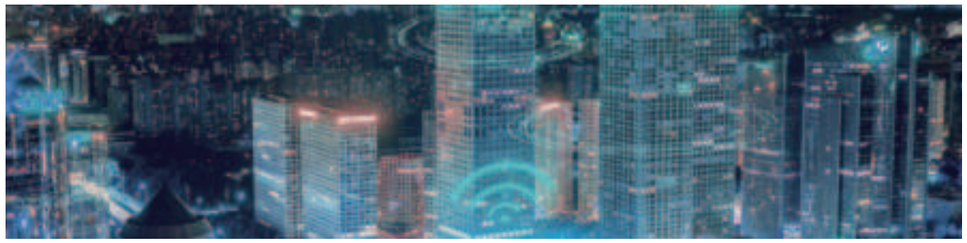
• Support the Inspur edge device management platform, realize large-scale deployment, operation and maintenance monitoring;
• Three types of power supply, 4pin Phoenix terminal, DC-Jack, POE network port for internal power supply;
•0.5T-21TOPS computing power to satisfy different edge scenarios;
• Support 5G/4G, wired, WIFI, Zigbee multiple communication methods;
• POE (802.3at) power supply;
• Ambient temperature -40-65°C;
•Support NV's algorithm development ecology, which can realize rapid algorithm transplantation.

Industry Partners

ERICSSON

ERICSSON

Ericsson is one of the leading providers of Information and Communication Technology (ICT) to service providers. We enable the full value of connectivity by creating game-changing technology and services that are easy to use, adopt, and scale, making our customers successful in a fully connected world. Our comprehensive portfolio ranges across Networks, Digital Services, Managed Services and Emerging Business; powered by 5G and IoT platforms. www.ericsson.com



Ericsson Device Hub

Ericsson Device Network Testing (DNT) provides global network testing, global certification, and testing lab building service to device vendors to ensure the compatibility and interoperability between network and device. The device can be chips, modules, and terminals and the network may be NB-IoT, 2G, 3G, 4G, and rapidly evolving 5G. The solution can strengthen the worldwide cooperation of global device manufacturers, operators, test houses, and industrial manufacturing enterprises in the information and communication field.

Ericsson Device Hub is a one-stop-shop portal for device verification led by key stakeholders in the industry. Ericsson Device Hub can reduce or eliminate the cost of ownership for creating own internal device database. Fibocom’ s 5G C-V2X module AN958 has been added to the global device ecosystem and successfully passed the verification in 2021.

Tencent Cloud

Tencent Cloud is a cloud computing brand built by Tencent. It provides world leading products and services in cloud computing, big data, and AI technology to government agencies, organizations, and individual developers in various countries and regions around the world. It offers diverse industrial solutions with outstanding technological capabilities and an open and win-win cloud ecosystem to promote the construction of industry Internet and facilitate digital transformation. cloud.tencent.com

Tencent LLink

Powered by Tencent Cloud IoT Explorer, Tencent LLink provides features including communication protocol development, device connection, data sending and receiving as well as virtual device debugging. Developers can release products in 3 to 5 days and customize the product according to customer requirements. Tencent LLink further reduces 4G IoT equipment cost, helping industry customers quickly deploy hardware at a low cost. Fibocom has worked together with Tencent Cloud IoT and jointly launched the low-cost and high-performance 4G Cat 1 L610 module based on Tencent LLink application development framework. Combined with Fibocom L610, Tencent Cloud IoT Explorer enables users to develop intelligent device applications directly on the module with higher level of integration and lower cost. It also supports hot update. Developers can push the application scripts to run them on the device with one click. This feature makes debugging easier and allows more efficient and convenient online device operation and maintenance. The product is listed in the Tencent 5G Ecosystem Application White Paper. As an important partner in Tencent 5G Ecosystem Plan, Fibocom has worked with Tencent and built the 5G IoT development kit covering "cloud-edge-terminal" and promoted the release of Tencent's 5G AIoT edge gateway. The gateway has a built-in Fibocom 5G module with high performance and high computing power, leveraging the low latency, large bandwidth and wide coverage advantages of 5G network to accelerate intelligent industry transformation.

ST

At ST, we are 46,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An independent device manufacturer, we work with more than 100,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of the Internet of Things and 5G technology. Further information can be found at www.st.com

STM32

The Chinese Institute of Electronics, ST, Fibocom, and RT-Thread jointly initiated the embedded talent certification project, formulated the embedded talent standard, and jointly developed the embedded system course. The elementary course will be launched soon.
ST and Fibocom jointly supported the "Microcontrol System Project Design" course of XiDian University, and provided professional technical support to nearly 700 sophomores. Both parties jointly supported summer teacher training in dozens of Universities.

RT-Thread

RT-Thread is a technology platform integrating real-time operating system (RTOS) kernel, middleware component and developer community. It is founded by Xiong Puxiang and developed by the open source community. RT-Thread is also an easy-to-use, highly scalable and secure IoT operating system with complete and rich components and ultra-low power consumption. RT-Thread has all key components required by an IoT OS platform, such as GUI, network protocol stack, secure transmission, and low-power consumption components. After 11 years of development, RT-Thread has the biggest embedded system open source community in China, and is widely used in a variety of industries, such as energy, automotive, healthcare and consumer electronics. It has become the most mature and stable self-developed open source RTOS with the largest number of installs in China. It has been installed on over 800 million devices. RT-Thread has an excellent software ecosystem, supporting all mainstream compilation tools, such as GCC, Keil and IAR. It offers a complete and user-friendly tool chain, as well as various standard interfaces, such as POSIX, CMSIS, C++ application environment, Javascript execution environment, for developers to migrate various applications. RT-Thread supports all mainstream commercial MCU architectures, such as ARM Cortex-M/R/A, MIPS, X86, Xtensa, C-Sky, RISC-V, and almost all mainstream MCU and Wi-Fi chips. www.rt-thread.org

RT-Thread IoT Operating System

The Chinese Institute of Electronics, ST, Fibocom, and RT-Thread jointly initiated the Embedded Talent Certification project, formulated the embedded talent standard, and jointly developed the embedded system course. The elementary course will be launched soon.
RTOS and cellular communication modules are deeply connected, which makes their providers the perfect partners in the ecosystem. The R&D of RTOS and cellular communication modules can be jointly conducted in the co-built university laboratory.

Tuya

Tuya Smart is a global IoT platform that builds interconnectivity standards to bridge the intelligent needs of brands, OEMs, developers, and retail chains across a broad range of smart devices and industries. Based on the global public cloud, Tuya connects different intelligent scenarios and smart devices by providing hardware development tools, integrating public cloud services, and offering an intelligent business development platform. Tuya provides comprehensive smart empowerment from technology to marketing to foster a neutral, open and accessible developer ecosystem. By the end of June 30, 2021, Tuya IoT Development Platform has accumulated over 384,000 registered developers from over 200 countries and regions around the world. Over 410,000 SKUs have been powered by Tuya, covering 100,000 online and offline sales channels around the world. www.tuya.com

Tuya IoT One-stop Smart Solution

Application scenarios: Based on bottom-layer IoT Paas technological support, Tuya Smart has developed one-stop smart solutions for different industries, including community, hotel, security, apartment, commercial lighting, self-service device SaaS, and smart industry solutions for smart industry, smart agriculture, smart hotel and travel, smart elderly care, smart healthcare, smart real estate park, smart retail, smart energy and smart transportation and mobility, facilitating the implementation of smart scenarios for different industries.
Solution description: Tuya Smart provides Fibocom with IoT development tools, connecting Cat 1 L610 series, Cat 4 NL668 series, Cat M MA510-GL and 2G G510-GL modules to Tuya IoT development platform for targeted solution development. Cat M MA510-GL will be the backbone tool for Tuya and Fibocom to enter the North America two-wheeler market. Cat 1 L610 series and Cat 4 NL668 series will be the featured modules of Tuya's IPC solutions. In addition, the Tuya cloud service provided by Tuya Smart will help Fibocom connect to Tuya Smart’ s open ecosystem and overseas mainstream ecosystems, such as Google Assistant and Amazon Alexa, to enable interconnectivity of a large number of smart devices.
Solution description:
• Fibocom modules meet Tuya’ s overseas business requirements, including authentication and communication protocols.
• The modules can extend communication protocols for Tuya's outdoor product line, including 2G/Cat M/Cat 1/Cat 4.
• More communication applications are available, such as OpenCPU AT commands;
• Combining Fibocom modules and Tuya's general connection method, the solution reduces coding workload for customers to connect devices to Tuya's platform faster.

AITOS

aitos.io is focused on the integrated innovation of IoT+Blockchain and has raised the standard for an open-source blockchain application framework BoAT (Blockchain of AI Things) with delivered via IoT chipset and module to enable IoT devices quickly implement trusted data on-chain and access the blockchain services. At the end of 2019, aitos.io and nine mainstream cellular wireless module manufacturers jointly initiated the Blockchain IoT Module Alliance, and successively released their own brands of BoAT blockchain module products. This resulted in hundreds of millions of IoT devices equipped with the capability of blockchain services access as a trusted entry of IoT+Blockchain application. aitos.io’s vision is to leverage an alliance of global IoT vendors to empower them to tap the value of applications and data. At the beginning of the project launch in the end of 2018, aitos.io received angel investment from the IoT industry expert group and strategic investment from Wanxiang Blockchain. In December 2018, aitos.io was awarded membership into ARM Accelerator Camp. In June 2019, aitos.io emerged as the founding member of China Unicom IoT and Wanxiang Blockchain IoT+Blockchain Joint Innovation Center. In November, aitos.io became an empowerment partner of Microsoft's AI and IoT Lab . In August 2020, aitos.io transitioned into Tencent’s Blockchain Accelerator program as the first member. In February 2021, aitos.io joined RISC-V International as strategic member and initiated to form new Blockchain SIG (special interest group). In April, aitos.io initiated 1st China technical requirements standards for trusted blockchain access of IoT terminals.
www.aitos.io

Blockchain Wireless Module

When two tech partners combine forces to fuse distinctive technologies, powerful efforts bring positive innovative results. Both aitos.io and Fibocom are fixated on integrating and innovating Blockchain and Internet of Things technologies together to build a defacto standard known as a Blockchain IoT Module. Blockchain modules then become the starting point of mobility to enable IoT devices to directly access efficient blockchain services through a digital transformation process. This integration then enables IoT devices to securely upload the data to a Cloud service, thus accomplishing trusted data On-Chain and creating the pathway to opening and exchanging important data. This strategic cooperation between aitos.io and Fibocom will help propel "5G Smart Manufacturing" for ecological partners, will empower business innovation in application scenarios, and finally build a credible digital base for all walks of life to promote a true closed loop value for data.

Wanxiang Blockchain

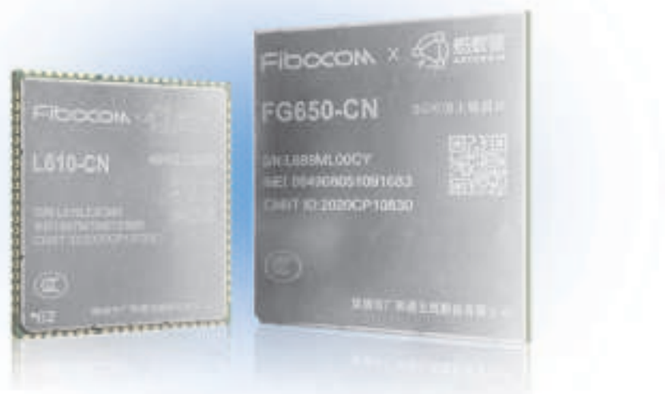
China Wanxiang Holdings Co., Ltd. has been deeply engaged in the nascent blockchain ecosystem since 2015, when Wanxiang Blockchain Labs was founded, with Vitalik Buterin, founder of Ethereum, as the Chief Scientist. In 2017, Wanxiang consolidated its leadership in China’s blockchain industry with the creation of Shanghai Wanxiang Blockchain Inc., which has since grown to be a major presence in blockchain innovations that empower digital transformations. Wanxiang Blockchain aims to build a vibrant blockchain ecosystem with investment and entrepreneurship empowerment on the one hand, and provide technology and innovative solutions on the other, to promote the continued development and industry applications of blockchain. Wanxiang Blockchain’s paid-in investment in blockchain has exceeded 1 billion RMB to date, through over 200 world-class projects globally. Leveraging its technological capabilities and its leadership in the by now vibrant ecosystem, Wanxiang Blockchain has been able to offer a broad range of blockchain solutions to multiple industries, including supply chain finance, smart urban infrastructure, renewable energy, biological assets, among many others, bridging the gaps between the digital and the brick-and-mortar economy. www.wxblockchain.com

Solution: Product Life Cycle Management System for New Energy Batteries

By collecting real-time data from various stages of new energy batteries, this solution helps record massive battery data and users' carbon footprints safely and credibly onto the cloud, thereby creating a trusted digital pedestal for multi-party collaborations and asset evaluation. With the trusted on-chain data, power batteries can be better digitalized and capitalized, and it is possible to evaluate the residual value of the battery to truly promote the healthy and sustainable development of the electric vehicle used car market. Even if the battery is worn out, it will still be of use for the cascade utilization scheme according to the actual situation of the SOH. Plus, financial institutions can also provide new energy battery financing or rental services based upon the on-chain data, while the government can formulate carbon credit incentive measures based on the user's carbon footprint data recorded on the blockchain.
In addition, Wanxiang Blockchain is working collaboratively with Fibocom on the industrial machinery and equipment networking and assetization enabled by blockchain and IoT.

ANTCHAIN

The first-batch AntChain MaaS (AntChain-Module-as-a-Service) solutions include high-rate 5G and medium-rate 4G modules. They are developed in collaboration with industry veterans UNISOC and Fibocom based on UNISOC's 5G baseband chip platform V510 and LTE Cat 1 chip platform 8910DM to cater to different scenarios and rate requirements. Wireless communication chips and modules provide underlying access to IoT data. Fibocom FG650 5G and L610 LTE Cat 1 modules are deeply integrated with blockchain technology, allowing wide-range data flow and trusted coordination over 5G/4G network and "linkage to blockchain at power-on". An electronic device is automatically and reliably linked to the blockchain via a trusted root based on the unique device feature, with all IoT data encrypted throughout the process. AIoT and blockchain technologies facilitate the establishment of trusted links between IoT devices and blockchain networks, enabling convenient, efficient, and secure access to trusted data sources. They have resolved trust concerns that arise amid industrial digitization, and their applications will be seen in new energy terminals and a variety of other scenarios.

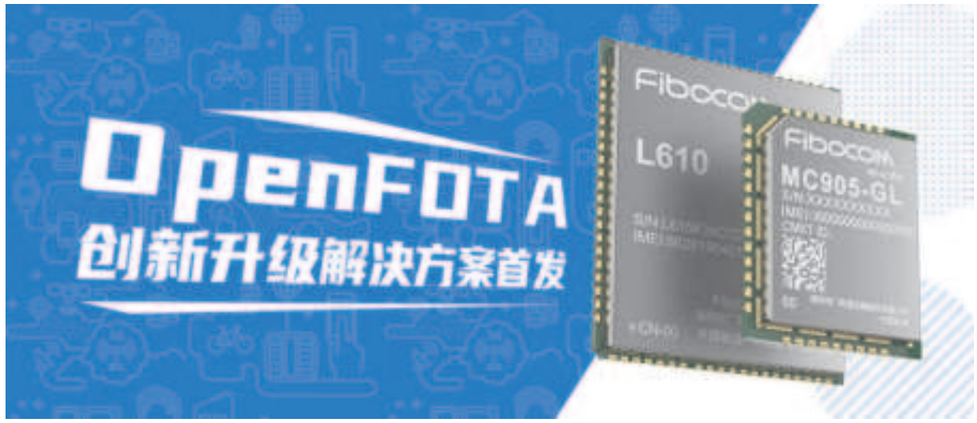


4G/5G AntChain MaaS

The high-rate 5G and medium-rate 4G AntChain MaaS solutions launched by Fibocom and AntChain are tailored to various scenarios and rate requirements, linking various IoT devices quickly to blockchain upon power on and ensuring more secure identity authentication and better privacy protection through full-link encryption of terminal data.

ABUP

ABUP is the world's leading provider of OTA solutions for automobiles and IoT, which is committed to empowering everything with sustainable evolution ability through OTA technology. ABUP provides customers with OTA products and solutions leading to AI smart world, such as firmware upgrades (FOTA), software upgrades (SOTA), Automobile cloud diagnosis (DOTA), and IoT upgrade solutions (IOTA). In the meanwhile, OTA cloud platform services provide customers and users with big data services. We help our customers' products keep pace with the times through AI+Big Data, allowing users to enjoy the ultimate customized experience and continuous innovative services.
www.abupdate.com



Open FOTA Solution

ABUP provides professional OTA capabilities for Fibocom communication modules, offers a one-stop solution of software and hardware with the OTA (over-the-air) ability. It helps end-customers to upgrade their smart terminals quickly, and enables IoT and IoV customers to achieve innovation in the digital wave.

DBAPPSecurity

Founded in 2007, DBAPPSecurity Ltd. was listed on the Science and Technology Innovation Board in 2019 and was the fastest-growing listed IT enterprise in 2020. As an industry leader, DBAPPSecurity has developed a product portfolio that covers full cybersecurity lifecycle. It has participated in cybersecurity projects of almost all major national events with zero mistakes as the national core security organization in China. www.dbappsecurity.com.cn

Data Encryption, Intelligent Perception, Trustworthy Control

"Core Security" Security Module Solution

DBAPPSecurity and Fibocom jointly launched the IoT "Core Security" security module solution in 2020, which is based on drive-layer security monitoring protection technology and uses a self-learning network process security strategy. Supported by DBAPPSecurity's IoT Core Security software platform, Fibocom modules can encrypt and audit IoT data in real time. The platform enables intelligent analysis through IoT situational awareness and control center to achieve secure situation awareness and trusted control on IoT terminals. Fibocom and DBAPPSecurity are continuously exploring 5G IoT terminal security solutions to support the development of IoT terminals.

Xidian University

Directly under the Ministry of Education, Xidian University (XDU) is a national key university featuring electronic and information science. XDU has 17 colleges, more than 36,000 students, and around 2300 faculty. XDU is characterized by its electronic and information science disciplines. According to the latest report of ESI, the engineering and computer science disciplines are listed among top 1 ‰ in the world. In the Fourth National Assessment of First-level disciplines, 3 disciplines at Xidian University have been rated A. Electronic Science and Technology is rated A+, ranking #1 nationwide, Information and Communication Engineering A, and Computer Science and Technology A-. XDU also focuses on comprehensive development of disciplines like economics, management, humanities and sciences. It has established the School of Economics and Management, School of Foreign Languages, School of Humanities and School of Life Sciences, Physics and Mathematics. www.xidian.edu.cn

Cooperation between University and Enterprise to Cultivate Future Graduates

As a benchmark university among electronic universities, Xidian university has a very large demonstration effect and has a great influence on the Northwest and even the whole country. force. Xidian’ s is a great incubation for the talents in embedded system sectors, which can help Fibocom to foster fresh graduates.

Resources

5G Network Slicing Empowering Vertical Industries

5G to Turbocharge IoT Growth

Case Studies

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