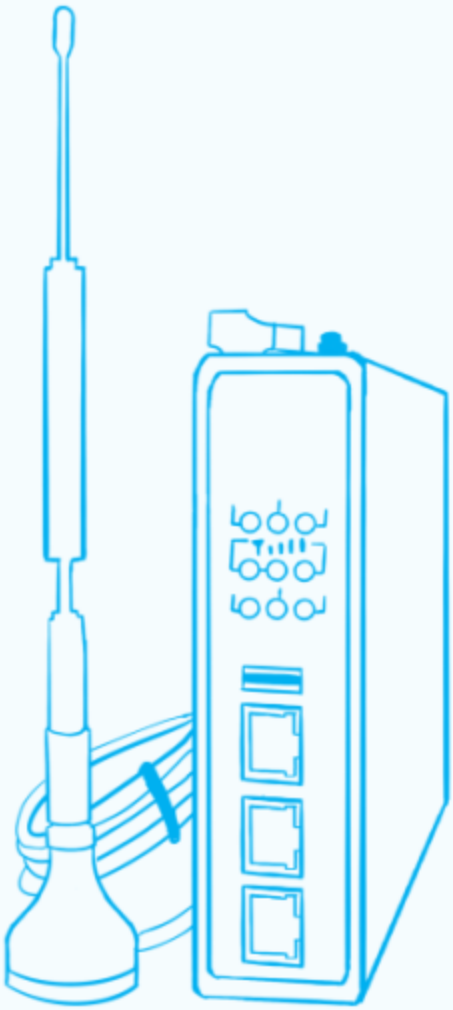
WidelOT

Industrial Router

（WR713）



SPECIFICATION

WidelOT • 2011

Product Introduction

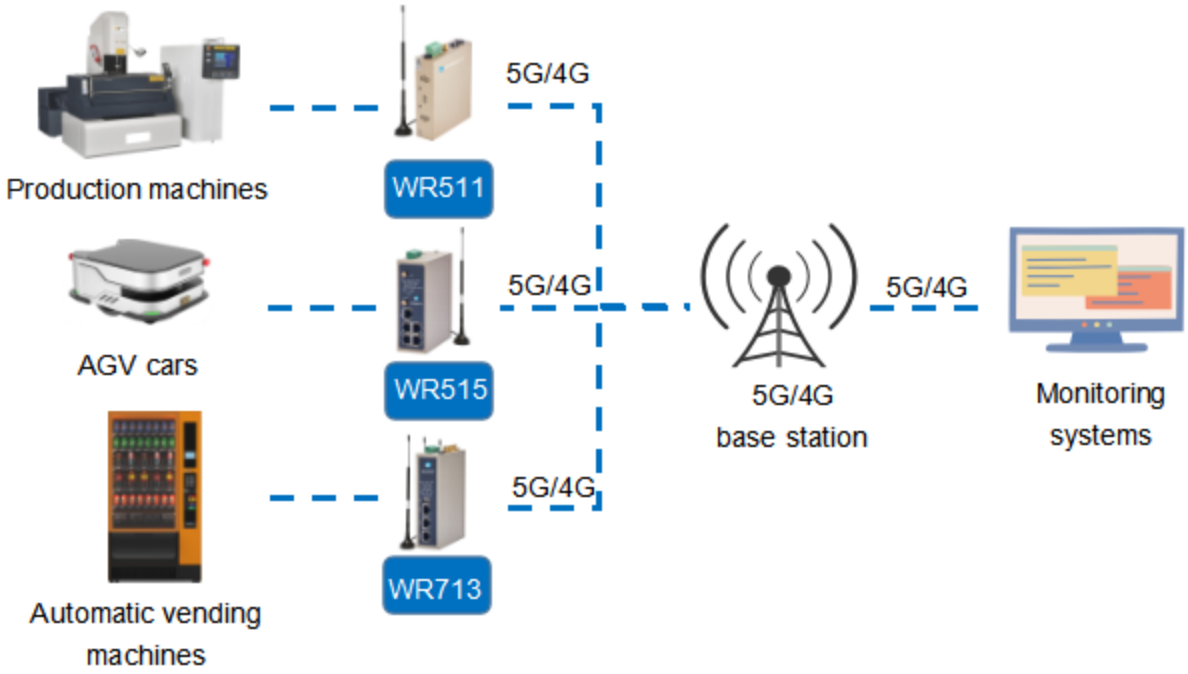
The WR713 series products are industrial IoT wireless routers with three Gigabit Ethernet ports and two serial ports. They integrate technologies such as 5G/4G/3G/WIFI/PPPOE networks, virtual VPN private networks, and wireless DTU data transmission. The 5G networking function supports high - bandwidth (up to 2.5Gbps), low - latency (up to 10 - ms level), and reliable access to 5G base stations, making it highly suitable for smart factories and industrial applications. The WIFI networking function is a 3*3MIMO wireless WIFI that supports the IEEE 802.11AC technology (compatible with 802.11a/b/g/n), with a data transfer rate of up to 1.3 Gbps. The high - speed and stable WIFI performance provides services for enterprises to build highly reliable WLAN solutions.

The WR713 series products are suitable for large - scale device networking and are widely used in wireless networking for smart factories, manufacturing machine networking, self - service vending machines, multimedia advertising devices, and networking of intelligent medical devices, as well as in industry informatization construction. Multiple network access methods, easy deployment, and comprehensive management functions contribute to the informatization construction and industrial upgrading of numerous industry customers and their projects.

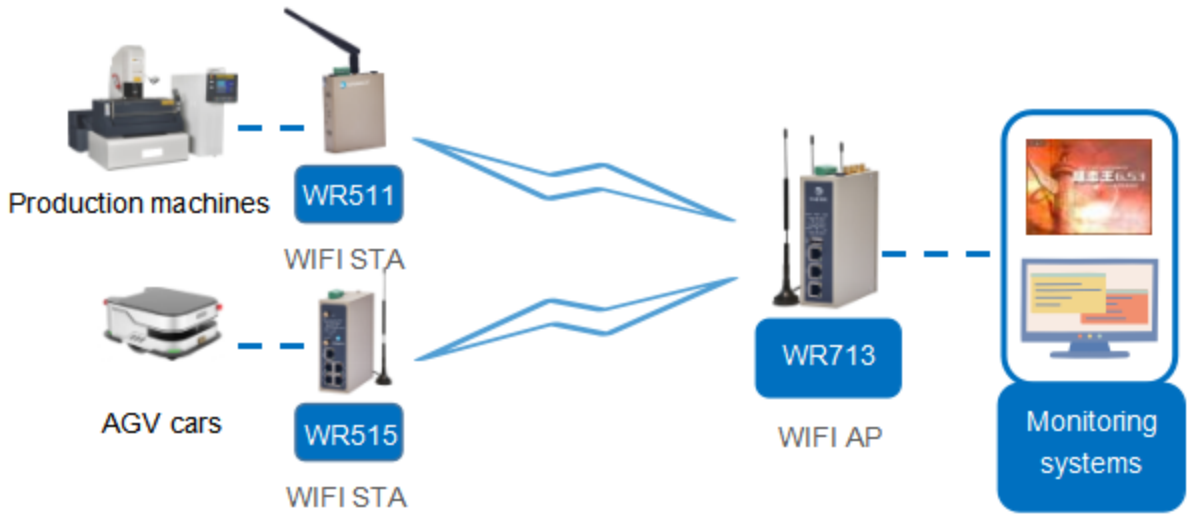
The WR713 industrial router, with its rich application functions and high - reliability features, is widely used in IoT application scenarios such as smart factories, smart cities, power, environmental protection, transportation, retail, agriculture, mining, oil and gas, and industrial automation, providing services for enterprises to build highly reliable networking solutions.

Topological Graph

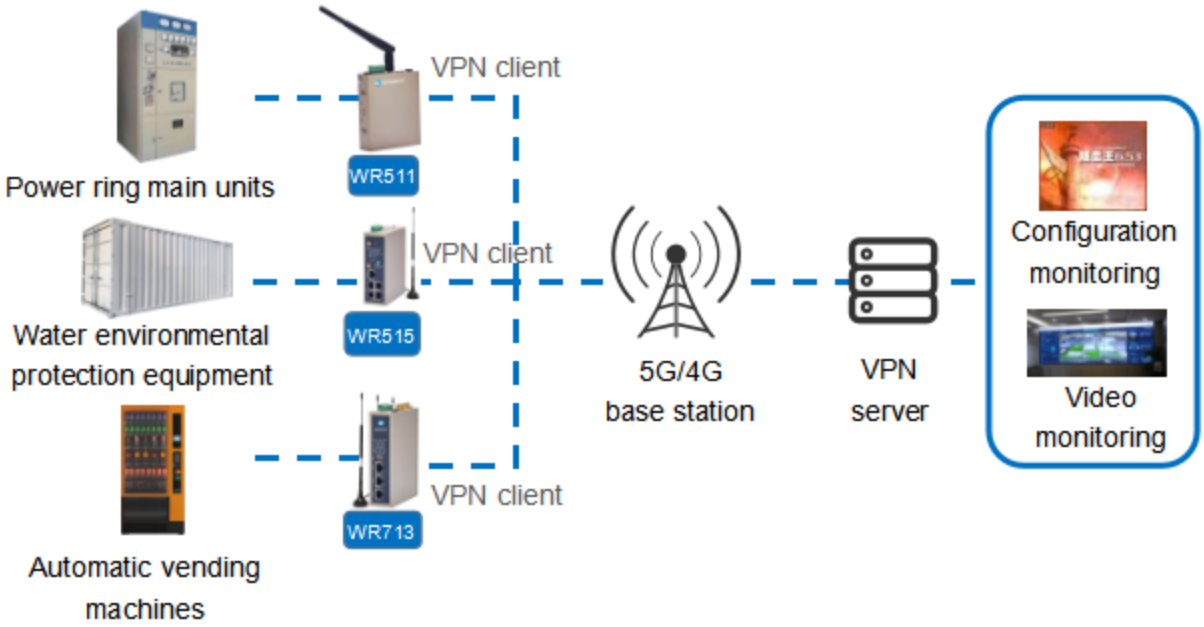
5G/4G Remote Wireless Networking



WIFI Local Wireless Networking



Remote VPN Networking



Topological Graph

Standard and User - friendly：

Multiple networks and interfaces support networking in different scenarios and for different devices. It is convenient and flexible to use, with multiple working modes available for free selection.

Unattended Operation：

The firewall function ensures network security. It supports multiple link backups and automatic reconnection after disconnection, ensuring that devices are always online and enabling unattended operation.

Powerful Functions:

It is embedded with various network tools, supports various VPN networking, and has functions such as DTU.

Safe and Reliable:

The all - industrial - grade design realizes a reliable, safe, and stable data transmission link.

Authoritative Certifications:

It has obtained certifications such as CE, EMC, high and low - temperature tests, and industrial security connection.

Product Features

Convenient and Easy to Deploy:

It supports 5G， 4G, 3G, PPPoE, Wi - Fi networks, digital IO input and output, and serial port terminal communication, providing different solutions for different application scenarios.

High - speed Access and Full - network Deployment:

It supports 5G (5G NSA, 5G SA), 4G (TDD LTE /FDD LTE), GPRS and other networks, covering all domestic and international 5G/4G network bands, and supports high - speed and low - latency network access.

It also supports communication standards of 802.11b/g/n/ac (2.4GHZ/5.8GHZ), meeting users' requirements for WLAN wireless access. It can easily build a wireless local area network with a rate of up to 300 - 1300Mbps. The WIFI can be used as a FAT AP (network segment isolation) and a FIT AP (non - cross - network segment), and supports WIFI wireless coverage. The WIFI also supports STA mode to access a WIFI network as a client, and supports WiFi - Relay for same - network - segment access. These modes enable arbitrary WIFI networking in industrial scenarios.

Industrial - grade Design:

It supports a wide voltage supply range of 6V - 35V and has an industrial - grade wide - temperature design of - 20℃ - 70℃, adapting to more application sites with specific power supply and temperature requirements. It has an IO control function, facilitating remote control. It also has built - in RS - 232/RS - 485 serial port wireless data terminal communication functions, which better meet the needs of industrial customers. In addition, it has the following features:

1）The metal shell has a protection level of IP30.

2）Each EMC grade index reaches level 3.

3）The Ethernet port supports 1.5KV isolation transformer protection.

4）The serial port supports 15KV ESD protection.

High - reliability Design:

1）Link detection design: It supports real - time link detection and realizes automatic redialing after disconnection to maintain a long - term connection.

2）Device failure self - healing design: It is embedded with hardware watchdog and software watchdog technologies. The device can self - repair when running into failures, ensuring high availability.

3）System security guard: Through the system security guard, it can detect the status of the system and applications in real - time, and prevent and restore insecure and unstable nodes in the system.

Powerful Security Functions:

1）Data transmission security: It supports L2TP, PPTP, IPSec VPN, Open VPN, and CA certificates to ensure secure data transmission.

2）Network protection security: With a powerful firewall function, it can customize comprehensive protection strategies according to customers' requirements. For example, it supports SPI full - state detection, Secure Shell (SSH), intrusion protection (Ping - prohibited), DDoS defense, attack defense, and IP - MAC binding to protect the network from external attacks.

Simple and User - friendly, Easy to Operate and Maintain:

The WEB interface has a user - friendly design with a clear logic, which greatly improves user configuration efficiency.

1）It supports local or remote log reading. Whether using the management platform, WEB, or CLI method, the read logs are easy to understand. Engineers can quickly locate problems through the logs, improving work efficiency.

2）It can query the status information of the device router, such as CPU load, memory usage, network status, and device port status, through remote or local access, which is of great importance for troubleshooting.

3）It supports the engineer's advanced diagnostic function, facilitating the rapid identification and repair of fault points during project construction.

Supports Serial Port DTU Transmission Function:

It supports DTU serial port transmission protocols such as WDTCP, WDUDP, TCP, and UDP, and can customize professional intelligent conversion protocols according to different industry requirements.

Open Platform and Customizable Development:

With a computing power of up to 580x1.6DMIPs, it can handle various complex calculations. Its rich system resources are suitable for developing various complex applications. Adopting the design concept of an open platform, customers can develop corresponding APPs by themselves or with the development team of WidelOT according to specific application scenarios and requirements, and then load them into the routing system.

Product Specifications

Software Specifications

Network Function	Network Access	Supports APN, VPDN
	Network Authentication	Supports CHAP/PAP authentication
	Network Modes:	GSM/GPRS/EDGE UMTS/HSPA+/CDMA2000 -EVDO/TD-SCDMA/ TDD - LTE/FDD LTE/NR 5G.（For specific frequency band information, please refer to the order information table）
	LAN Protocols	Supports ARP
	WAN Protocols	Supports PPP
	IP Application	Supports Ping, Tracer, DHCP Server, DHCP Relay, DHCP Client, DNS relay, DDNS, Telnet
	IP Routing	Support static routing
WLAN (optional)	Protocol Standard	Support IEEE 802.11b/g/n
	Working Mode	Supports FAT AP, FIT AP, STA, Relay, etc.
	Band Rate	Supports 2.4G/5.8G dual - bands, with optional rates of 300Mbps - 1300Mbps
	Safety Features	Supports open system, shared key, WPA/WPA2 authentication
		Supports WEP/TKIP/AES encryption
	Transmission Distance	100m (the actual transmission distance depends on the site environment)
Safety	Protection security	Supports full - state packet inspection (SPI), prevention of denial - of-service (DoS) attacks, filtering of multicast/Ping probe packets, source port mapping, destination port mapping, DMZ, access control function (ACL), IP - MAC binding
	Data Security	Supports L2TP VPN/PPTP VPN/OPEN VPN/IPSec VPN (optional)
Reliability	Link detection	Supports sending heartbeat detection packets for detection, and automatic reconnection after disconnection
	Watchdog	Supports device operation self - inspection technology, and device operation failure self - repair
	Safety guard	Monitors all functional modules in real - time, and predicts and handles possible errors

Intelligence	Integrated DTU	Supports various protocol transmissions such as WDTCP, WDUDP, transparent TCP, and transparent UDP
Service, management and maintenance	Traffic management	Supports bandwidth statistics, control, and IP speed limit
	Configuration method	Supports telnet, web, ssh, and remote platform configuration methods
	Upgrade mode	Supports web upgrade and remote upgrade methods
	Log function	Supports local system logs and remote logs. Important logs are saved during power failure
	Network management function	Supports the cloud network management platform for batch management
	Maintenance tools	Ping, DNS resolution, route tracking, network interface status display, AT command testing, etc.
	Status query	System status, module status, network connection status, route status, etc.

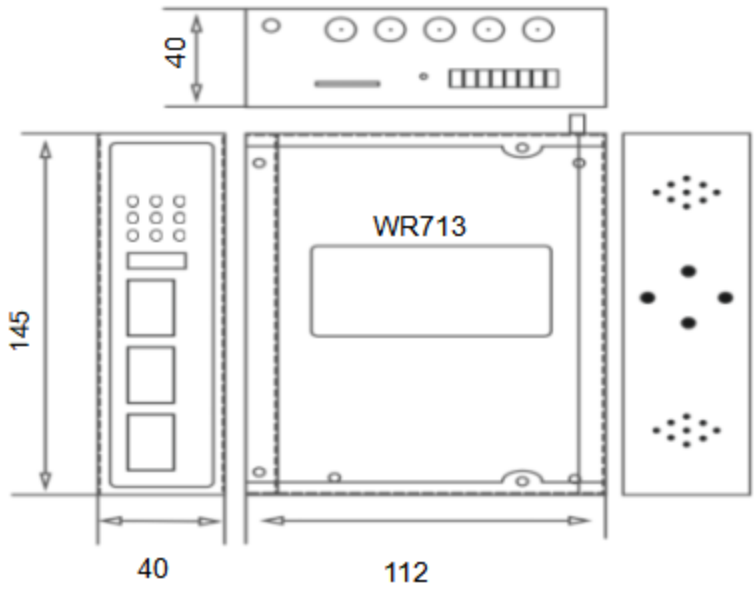
Hardware Specifications

Interface Characteristics	Power Interface	DC 6V - 35V (terminal block)
	Ethernet Port	3*10/100/1000BaseT(X), RJ45 connectors for WAN/LAN
	5G Network Standard (Choose one)	5G Sub-6 GHZ, supports 5G NSA and 5G SA modes 5G NSA: Downlink max 2.5Gbps, Uplink max 650Mbps 5G SA: Downlink max 2.1Gbps, Uplink max 900Mbps LTE: Downlink max 1.0Gbps, Uplink max 200Mbps WCDMA: Downlink max 42Mbps, Uplink max 5.76Mbps
	4G Network Standard (Choose one)	LTE Cat4, maximum downlink rate of 150Mbps, maximum uplink rate of 50Mbps. LTE - TDD/LTE - FDD/DC - HSDPA+/HSPA/ HSDPA / HSUPA /WCDMA/CDMA, etc.
	Antenna Connector	5G network: SMA x 4; 4G network: SMA x 2; WLAN: RP - SMA x 2 (5 in total)
	Serial Port	2 selectable RS - 232/485 interfaces (terminal blocks), 15KV ESD protection. Each 485 interface can support up to 31 slave stations at most (up to 6 serial ports and 6 IOs can be expanded)
	SIM Card Holder	Straight - insert card slot*1(mid - size card)
	Reset Button	Pin - hole - type reset button
	USB Port	USB2.0 port*1

Mechanical Characteristics	Dimensions	40x 145 x 112 mm (antenna connector height is 10mm)
	Installation Method	Rail - mounted
	Shell	Metal shell (gold - colored)
	Protection Level	IP30
	Heat - Dissipation Method	Fan-less heat dissipation
	Weight	608g
Environment Humidity	Environment Humidity	5% ~ 95% (no condensation)
	Storage Temperature	-40℃~ 85℃
	Operating Temperature	-20℃ ~ 70℃
Equipment power	Standby power	150mA - 250mA@12V
	Working power	250mA - 350mA@12V(4G)/250mA - 1200mA@12V(5G)
	Peak power	350mA@12V(4G)/625mA@12V(WIFI)/875mA@12V(WIFI+4G)/ 1200mA@12V(5G + WIFI)
Indicator light	indicator	Indicators: PWR, STATUS, WARN, ERROR, WIFI, and network port - built - in indicators
EMC Index	Electrostatic Discharge Immunity	GB/T17626.2 - 2018, level4
	Electrical Fast Transient Pulse Group Immunity	GB/T17626.4 - 2018, level4
	Oscillatory Wave Magnetic Field Immunity	GB/T17626.18 - 2016, level4
	Radio - Frequency Electromagnetic Field Radiation Immunity	GB/T17626.3 - 2016, level4
	Surge (Impact) Immunity	GB/T17626.5 - 2019, level4

	Power - Frequency Magnetic Field Immunity	GB/T17626.8 - 2006, level4
Physical Characteristics	Vibration	GB/T2423.10 - 2008
	Shock	GB/T2423.5 - 2019
	Drop	GB/T2423.8 - 1995

Product Size



Product Selection

Hardware Selection	
Order number	WR713 - <N> - <M> - <S>
N (Network Type)	N: NEW Radio (5G), L: LTE(4G), AP/STA: WiFi
M (Wireless Module)	F15: 5G (Qualcomm module, Overseas version) F65: 5G (ZTEsoft module, Chinese version) Q05: 4G CAT4 (TDD - LTE and FDD - LTE, etc.)
S (Serial Port Interface)	485: RS485 serial port; 232: RS232 serial port
Example	WR713 - LQ05 - 232 (Three network ports, 4G CAT4, 232 serial port) WR713 - NF15 - 485 (Three network ports, 5G Overseas module, 485 serial port) WR713 - NF65 - AP - 485 (Three network ports, 5G Chinese module, 2.4G/5.8G WIFI AP, 485 serial port) WR713 - AP - 485 (Three network ports, 2.4G/5.8G WIFI AP, 485 serial port) WR713 - STA - 485 (Three network ports, 2.4G/5.8G WIFI client, 485 serial port)

Company Introduction

Established in 2011, WidelOT is a leading provider of industrial Internet of Things products and industrial digital solutions. It focuses on offering products and solutions such as wireless data terminals, industrial intelligent gateways, equipment remote systems, and industrial application cloud platforms for equipment manufacturers, smart factories, and industry projects. It helps customers achieve digital operation management and tap new values in the industrial Internet.

The products of WidelOT are widely used in various industrial fields, including smart factories, equipment manufacturers, the environmental protection industry, the energy industry, municipal engineering, industrial automation, smart agriculture, and building intelligence. They are favored by top - tier domestic and foreign customers such as BOE, Foxconn, ASD, TCL, Schneider, Shanghai Electric, Shougang Group, Water Affairs Group, and Southern Power, as well as a large number of small and medium - sized enterprises.

Xiamen WidelOT Technology Co. Ltd.

Company Website： www.wideiot.com

Contact Phone: +86-0592-2031080

Contact Email:info@wideiot.com

Contact Address: Xiamen Software Park Phase III, China