



Wireless Industrial Router

*High-performance industrial-grade wireless router
All-in-one architecture of WIFI/4G LTE/WAN
High reliability and rich functionalities*

The R100/R200/X300 series is an Internet of Things wireless communication router that provides users with wireless remote data transmission capabilities by using a public LTE/WCDMA/TD-SCDMA/EVDO network. With high-performance industrial 32-bit communication processor and industrial-grade wireless module, R200 adopts an embedded real-time operating system platform. And it also integrates 1* RS232 (RS485), 4* Ethernet LANs, 1*Ethernet WAN, and 1*WIFI interface to connect with serial device (like sensor), Ethernet, and WIFI devices for transparent data transmission and routing.

The R200 has been widely used in the M2M industry in the Internet of Things industry, such as smart grid, intelligent transportation, smart home, finance, mobile POS terminals, supply chain automation, industrial automation, intelligent buildings, fire protection, public safety, environmental protection, meteorology, digital medical, remote sensing survey, military, space exploration, agriculture, forestry, water, coal, petrochemical and other fields.

Key Features:

Industrial-grade architecture

- High-performance industrial-grade wireless modules
- High-performance, industrial-grade 32-bit communication processor
- All-in-one design of WIFI/4G/WAN to ensure the stability and reliability
- Multiple ways to lower power consumption and increase efficiency
- Metal shell, protection class IP30 and system safety isolation for industrial applications
- Wide power input (DC 7 to 36V)

High reliability and versatility

- WDT watchdog design to ensure system stability
- Adopt multiple line-off protection mechanism to make data terminal online 24x7
- Ethernet interface with built-in 1.5KV electromagnetic isolation protection
- RS232/RS485 interface with built-in 15KV ESD protection
- SIM/UIM card interface with built-in 15KV ESD protection
- Power interface with built-in inverted protection and overvoltage protection
- Antenna with lightning protection (optional)

User-Friendly

- Standard RS232 (or RS485), Ethernet and WIFI interfaces are available for connection to serial port, Ethernet and WIFI devices
- Provides standard wired WAN port (supports standard PPPOE protocol) and can be directly connected to ADSL devices
- As smart data terminal, R200 can be power-on on the data transmission state
- Provides powerful centralized management software for easy device management
- Easy to use, flexible, a variety of working modes with convenient system configuration and maintenance interfaces (including local and remote WEB and CLI methods)



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Powerful Functions

- Support intelligent switching backup among 4G module, WIFI and wired WAN functions
- Support a variety of WAN connections, including static IP, DHCP, L2TP, PPTP, PPPOE, 3G/4G
- Support VPN client (PPTP, L2TP, OPENVPN and GRE) (Note: VPN only)
- Support VPN sever (PPTP, L2TP, OPENVPN and GRE) (Note: VPN only)
- Support remote management, SYSLOG, SNMP, TELNET, SSHD, HTTPS and other functions
- Support local and remote online upgrade, import and export profiles
- NTP support, built-in RTC
- Support a variety of DDNS worldwide
- Support VLAN, MAC address cloning, PPPoE server (on-demand)
- WIFI supports 802.11b/g/n, WIFI AP, AP Client and other operational modes
- WIFI supports WEP, WPA, WPA2 and other encryption methods and MAC address filtering, etc., RADIUS authentication (optional)
- Supports a variety of online-and-offline trigger modes, including SMS, phone ringing, serial data, network data trigger mode (optional)
- Support APN/VPDN (optional)
- Support multiplex DHCP server and DHCP client, DHCP bundled MAC address, DDNS, firewall, NAT, DMZ host, QoS, traffic statistics, real-time display of data transfer rate and other functions
- Support IP v4, UDP/TCP, PPPoE, DHCP, FTP/TFTP ARP, RARP, NTP, HTTP, Telnet and other network protocols
- Support for firewall, VPN crossing, access control, URL filtering and more
- Time-based online and offline function (optional)

Product Specifications

Product models:

R100: 1*SIM port, 1*WAN, 1*LAN

R200: 1*SIM port, 1*WAN, 4*LAN, 1*Serial Port(RS232 or RS485)

R200S: 2*SIM ports, 1*WAN, 4*LAN, 1*Serial Port(RS232 or RS485)

X300: 1*SIM port, 1*WAN(LAN), 1*Serial Port(RS232 or RS485)

Wireless parameters:

Support FDD-LTE 2600/2100/850/900MHz Band 1/3/5/8

Support TDD-LTE 2600/1900/2300/2496 MHz (Band 38/39/40/41)

Support DC-HSPA/HSPA/HSDPA/HSUPA/WCDMA/UMTS 2100/800MHz (Band 1/8)

Support TD-SCDMA 2010/1900MHz (A/F band, Band 34/39)

Support CDMA BCO

Support EDGE/GPRS/GSM900/1800MHz

Theoretical bandwidth

LTE features:

Maximum support non-CA CAT4, Support 14-20MHz RF bandwidth, Downlink support multi-user MIMO

FDD: Maximum uplink rate of 50Mbps, maximum downlink rate of 150Mbps.

TDD: Maximum uplink rate 35Mbps, maximum downlink rate of 130Mbps

WCDMA features:

Support 3GPP R8 DC-HSPA; Support 16-QAM, 64-QAM and QPSK modulation

3GPP R6 CAT6 HSUPA: Maximum upstream rate of 5.76Mbps

3GPP R8 CAT24 DC-HSPA: Maximum downlink rate 42Mbps

ID-SCDMA features:

Support CCSA Release 3

Maximum upstream rate 2.2Mbps, maximum downlink rate 4.2Mbps

CDMA features:

Support CDMA 1X Advanced, 1XEV-DO/-DOA

Maximum upstream rate 1.8Mbps, maximum downlink rate 3.1Mbps

GSM features:

R99: and CSD transfer rate: 9.6kbps, 14.4kbps

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Product Specifications

Transmitting Power:

Class 4 (33dBm ± 2dB) for GSM900

Class 1 (30dBm ± 2dB) for DCS1800

Class E2 (27dBm ± 3dB) for GSM900 8-PSK

Class E2 (26dBm ± 3dB) for DCS1800 8-PSK

Class 3 (24dBm ± 1dB) for CDMA BCO

Class 3 (24dBm 1/±3dB) for WCDMA bands

Class 2 (24dBm 1/±3dB) for TD-SCDMA bands

Class 3 (23dBm ± 2dB) for LTE FDD Bands

Class 3 (23dBm ± 2dB) for LTE TDD bands

WiFi Parameters

Standard and band support IEEE802.11b/g/n standards.

Theoretical bandwidth IEEE802.11b/g: up to 54Mbps

IEEE802.11n: Up to 150Mbps

Secure encryptions include WPA, WPA2 and other encryption methods, with optional WPS functions

Transmitting power: 20dBm (11n), 24dBm (11g), 26dBm (11b)

Reception sensitivity, 72dBm@54Mbps

Hardware systems

CPU industrial 32-bit communication processor

FLASH 32MB (Expandable)

SDRAM 512MB

Interface type

WAN interface: 1*1000M Ethernet port (RJ45 socket), adaptive MDI/MDIX, built-in 1.5KV electromagnetic isolation protection

LAN interface: 4*1000M Ethernet ports (RJ45 socket), adaptive MDI/MDIX, built-in 1.5KV electromagnetic isolation protection

1*RS232 serial port (or RS485), MINI-USB, built-in 15KV ESD protection; serial parameters: stop bit: 1, 2 bits; Check: optional; Serial rate: 2400 to 115200bits/s

Indicators: POWER, SYSTEM, 4G LTE, SIM, WAN, WIFI 2.4G, WIFI 5.8G, DATA, etc.

Antenna interface(cellular): 2*standard SMA negative antenna interfaces, 50Ω impedance

WiFi: Standard SMA head antenna interface, 50Ω impedance

SIM/UIM card interface: standard drawer-type user card interface, support 1.8V/3V SIM/UIM card, built-in 15KV ESD protection

Power interface: standard 2-core power outlet, built-in power inverter protection and overvoltage protection

Reset button: This button allows the parameter configuration of the ROUTER to be restored to factory values

Physical characteristics

Metal shell, protected by class IP30. Shell is isolated from and system, suitable for industrial on-field applications

Size: 176x134x45 (L x W x H, without antennas and mountings)

Net weight: approx. 0.75kg

Other parameters

Operating temperature: -20 to 70°C (-4 to 158 degrees F)

Storage temperature: -40 to 85°C (-40 to 185 degrees F)

Relative humidity: 8 to 95% (no condensation)

Storage humidity: 8 to 95% (no condensation)

Supply voltage range: 7 to 36V

About Synway

As a major manufacturer and supplier of communication products and solutions, Synway specializes in providing superior Multimedia Gateway, Integrated Multimedia Switch, Telephony Hardware in use for Telecom communications. www.synway.net

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