



4G Industrial Router

R100



Introduction

R100 is an intelligent cellular router designed for industrial applications requiring faultless connectivity. It provides a secure, reliable, real-time, remote connectivity for SCADA, distribution management systems, metering, etc. Software-defined, multi-carrier networking, dual SIM models, 802.11n and global 2.5G/3G/HSPA+/LTE/LTE-A options make it easy to get connected. With DIN-rail mounting, wide operating temperature range, and IP30 metal housing, the R100 is a convenient yet reliable solution for any industrial wireless application.



Industrial-grade Design



Stability & Reliability



Standard & Convenience

- ▶ High-performance industrial-grade CPU
- ▶ High-performance industrial-grade wireless communication module
- ▶ Support low-consumption mode, scheduled power-on/power-off mode (Optional)
- ▶ Metal casing, IP30 protection level, suitable for most industrial control applications.
- ▶ Wide range power input (DC 5~36V)
- ▶ SIM/UIM card slot with built-in 15KV ESD
- ▶ Ethernet interface with built-in 15KV ESD
- ▶ RS232/RS485 with built-in 15KV ESD
- ▶ Multiple protection mechanism to ensure system stability, always keeping online
- ▶ Auto recovery mechanism, including online detect and auto redial
- ▶ Hardware and software WDT Watchdog design
- ▶ Standard RS232 (or RS485/RS422), ethernet, I/O and WIFI for connecting diverse field assets.
- ▶ Provide standard wired WAN port (support standard PPPOE protocol)
- ▶ Intelligent data terminal, automatically enter transmission status after power-on
- ▶ Powerful central management software for easy device management (optional)
- ▶ Easy to use and flexible, has multiple working modes
- ▶ Convenient system configuration and maintenance interface (including local and remote WEB or CLI access)
- ▶ DIN-Rail mounting, wall mounting or desktop



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High Performance

- ▶ Support 3G/4G and wired WAN dual link backup (Optional) .
- ▶ Multiple WAN connection methods, include Static IP/DHCP/PPPOE/DHCP-4G
- ▶ Support Load Balancer and Load Shunt (Only for dual sim dual module version)
- ▶ Support APN/VPDN
- ▶ Support NTP, RTC embedded.
- ▶ Support multiple DDNS provider service
- ▶ Support multiple online trigger ways,including SMS, ring and data. Support link disconnection when timeout
- ▶ Support remote management, SYSLOG, SNMP, TELNET, SSHD, HTTPS, etc.
- ▶ Support upgrade software from the local and remote maintenance.
- ▶ Support SPI firewall, access control, URL filtering, etc.
- ▶ WIFI 802.11b/g/n. Support AP, client, Adhoc, Repeater, Repeater Bridge mode.
- ▶ VPN Tunnel: PPTP/L2TP/OPENVPN/IPSEC/GRE
- ▶ Support TCP/IP, UDP, FTP (Optional), HTTP and other network protocols
- ▶ Support DHCP server and DHCP client, NAT, DMZ, QOS.
- ▶ Schedule Reboot, Schedule Online and Offline, etc.
- ▶ Support GPS function (Optional)

Product Specification

Cellular Specification

Items	Contents
Standard and Band	LTE FDD: B1/B3/B5/B7/B8/B20/B28 B1/B2/B3/B4/B5/B7/B8/B12/B17/B28/B66 (Optional), B2/B4/B5/B12/B13/B17/B66/B71 (Optional)
	LTE TDD: B38/B40/B41
	HSPA+/HSUPA/HSDPA/WCDMA/UMTS 2100/1900/900/850MHz
	EV-DO: BC0
	CDMA 1x: BC0
Bandwidth	EDGE/GPRS/GSM 850/900/1800/1900MHz
	LTE CAT4: 150Mbps(DL), 50Mbps (UL)
	LTE CAT6: 300Mbps(DL), 50Mbps (UL)
	DC-HSPA+: 42Mbps(DL), 5.76 Mbps(UL)
	HSPA+: 21 Mbps(DL), 5.76 Mbps(UL)
Transmit Power	HSDPA: 7.2 Mbps(DL), HSUPA: 5.76 Mbps(UL)
	UMTS: 384Kbps
Transmit Power	< 23dBm
Sensitivity	< -93.3dBm

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WIFI Specification

Items	Contents
Standard and Band	IEEE802.11b/g/n
Bandwidth	IEEE802.11b/g: 54Mbps (Maximum) IEEE802.11n: 144Mbps (Maximum)
Security	Support WEP, WPA, WPA2 encrypt methods, optional WPS function
Transmit Power	15 ± 2dBm
Sensitivity	< -72dBm @ 54Mbps

Hardware System

Items	Contents
CPU	Industrial-grade 32-bit communication processor
Flash	16MB(Extendable to 64MB)
DDR3	128MB

Interfaces

Items	Contents
WAN Interface	1 x 10/100M RJ45 ethernet port, adaptive MDI/MDIX, built-in 15KV ESD
LAN Interface	4 x 10/100M RJ45 ethernet port, adaptive MDI/MDIX, built-in 15KV ESD
Serial	1 x RS232/RS485 serial interface with built-in 15KV ESD Data bits:5, 6, 7, 8 bits Stop bits:1, 1.5 (optional), 2 bits Error detection: none, even parity, odd parity, SPACE (optional) and MARK (optional) Serial Port Rate: 2400~115200bits/s
LED Indicators	"PWR", "SYS", "WIFI", "SIM", "Online", "Signal Strength"

6-pin 3.5mm wiring terminal,
2 inputs, 1 output, 1 relay; Controlled by Modbus protocol

Input high level: 5 to 30 VDC
Input low level: 0 to 3 VDC
Load current: 50mA @ 30VDC
Relay load 1A 250V AC/ 30V DC

I/O Ports

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Antenna Interface	Cellular: 2 * Standard SMA female antenna interface, characteristic impedance: 50 Ω WIFI: Standard SMA male antenna interface, characteristic impedance: 50 Ω
SIM/UIM Slot	Standard drawer type user card interface, support 1.8V/3V SIM/UIM card, built-in 15KV ESD, support dual-SIM card (optional)
Power Interface	Terminal power socket
Reset Button	Can reset router's configuration to default factory setting by this button

Power	
Items	Contents
Input Voltage	DC 12V/1.5A
Accepted Range	DC 5~36V
Consumption	<500mA (12V)

Physical Properties	
Items	Contents
Casing	Metal casing, IP30 protection level, suitable for most industrial control applications.
Dimensions	134.8 x 115.7 x 45 mm (excluding antennas and mountings)
Weight	520g

Others	
Items	Contents
Operating Temperature	-35~+75°C (-31~+167°F)
Storage Temperature	-40~+85°C (-40~+185°F)
Relative Humidity	95% (non-condensing)

GPS(Optional)	
Items	Contents
GPS Module	Industrial GPS module (Optional Beidou module)
Receiver Type	50 channels GPSL1 (1575.42MHz) C/A code Support WAAS and EGNOS, MSAS, GAGAN

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Maximum Update Rate

4Hz

Positioning Accuracy

Positioning: 2.5m CPE

SBAS: 2.0m CPE

Sensitivity

Tracking: -160 dBm

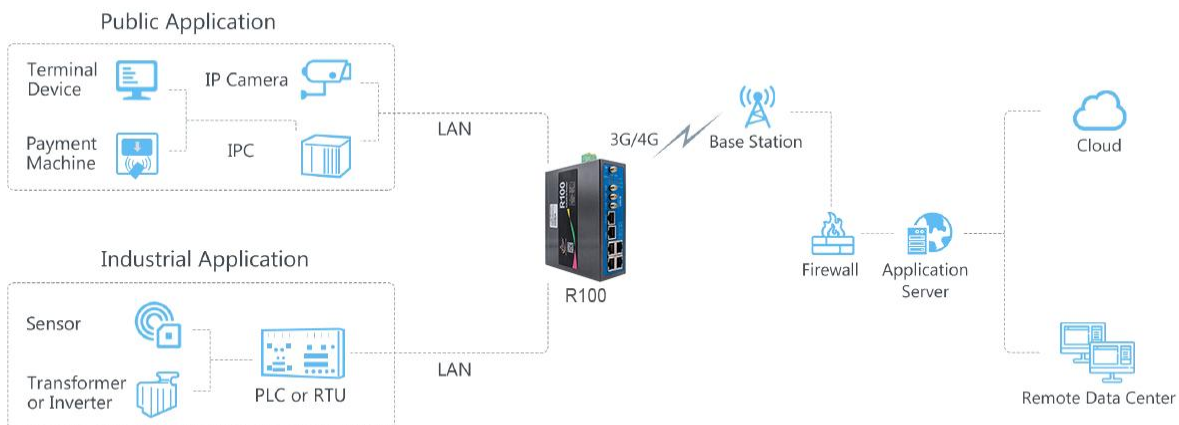
Re-capture: -160 dBm

Cold start: -146 dBm

Protocol

NMEA-0183 V2.3

Topology



Dimension



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Order Information

Models	Category	DL	UL	SIM/UIM	Built-in Module(s)	Description
R100-L	CAT4	150Mbps	50Mbps	1	1	Cellular (LTE), WIFI, SIM*1, I/O(2*DI, 1*DO, 1*Relay.) , GPS(Optional)
R100-L-SIM2	CAT4	150Mbps	50Mbps	2	1	Cellular (LTE), WIFI, SIM*2, I/O(2*DI, 1*DO, 1*Relay.) , GPS(Optional)
R100-L/L	CAT4	150Mbps	50Mbps	2	2	Cellular (LTE, Dual-Module), WIFI, SIM* 2), I/O(2*DI, 1*DO, 1*Relay.) , GPS(Optional)
R100-LA	CAT6	300Mbps	50Mbps	1	1	Cellular (LTE-A), WIFI, SIM*1, I/O(2*DI, 1*DO, 1*Relay.) , GPS(Optional)
R100-LA-SIM2	CAT6	300Mbps	50Mbps	2	1	Cellular (LTE-A), WIFI, SIM*2, I/O(2*DI, 1*DO, 1*Relay.) , GPS(Optional)
R100-LA/LA	CAT6	300Mbps	50Mbps	2	2	Cellular (LTE-A, Dual-Module), WIFI, SIM* 2), I/O(2*DI, 1*DO, 1*Relay.) , GPS(Optional)