4G Industrial Router

F-R100

GPS | Dual-SIM | VPN | 4G

RS232 | RS485 | WIFI | Din-Rail

Introduction

F-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 options make it easy to get connected. With DIN-rail mounting, wide operating temperature range, and IP30 metal housing, the F-R100 is a convenient yet reliable solution for any industrial wireless application.

Industrial-grade Design

- ▶ High-performance industrial-grade wireless module
- ▶ High-performance industrial-grade 32-bit communication processor
- ▶ Using metal shell, protection grade IP30.
- ▶ Wide power input range 5~36V

Stability & Reliability

- ▶ WDT Watchdog design
- ▶ Complete anti-dropping mechanism to ensure that the data terminal is always online
- ▶ Built-in 1.5KV electromagnetic isolation protection for Ethernet interface
- ▶ SIM/UIM card interface built-in 15KV ESD protection
- ▶ Built-in reverse phase protection and over voltage protection for power interfac

Standard & Convenience

- ▶ Standard RS232 or RS485/RS422 (Optional), Ethernet and WIFI Interface
- ▶ Provide standard wired WAN port (support standard PPPOE protocol)
- ▶ Plug and Play
- ▶ Multiple working mode options
- ▶ Configuration and maintenance interface
- ▶ Support DIN rail
- ▶ Support local and remote WEB mode or CLI mode

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High Performance

▶ Multiple WAN connection methods, include Static IP/DHCP/PPPOE/DHCP-4G
▶ Support 3G/4G and wired WAN dual link backup（Optional）
▶ VPN Tunnel: PPTP/L2TP/IPSEC/OPENVPN/GRE
▶ Remote management SYSLOG/SNMP/TELNET/SSH/HTTPS
▶ Support local upgrade and remote upgrade
▶ Import and export configuration files
▶ NTP / Build-in RTC
▶ Support DDNS
▶ Support VLAN, MAC address clone
▶ WIFI Support 802.11b/g/n. Support AP/AP Client/Bridge mode
▶ WIFI Support WEP, WPA, WPA2 and multiple SSID
▶ Support Private APN SIM card
▶ Support APN/VPDN
▶ Support DHCP server and DHCP client, NAT, DMZ, QOS
▶ Support TCP/IP, UDP, FTP (Optional), HTTP and other network protocols
▶ Support SPI firewall，VPN pass through, ACL, URL filter
▶ Support hardware encryption (Optional)
▶ Traffic statistics, real-time display of data transmission rate

Product Specification

Cellular Specification	
Items	**Contents**
Module	Industrial grade wireless module
Frequency	Support for FDD LTE: Band 1/3, Band 2/4/5/13/17/25 (Optional) Support CDMA 1XRTT/EVDO 800/1900MHz Support the whole network (Optional): TDD-LTE, FDD-LTE, EVDO, WCDMA, TD-SCDMA, CDMA1X, GPRS/EDGE
Bandwidth	FDD LTE (Downlink 100Mbps, Uplink 50Mbps) TDD LTE (Downlink 61Mbps, Uplink 18Mbps) CDMA2000 1X EVDO Rev A (Downlink 3.1Mbps, Uplink 1.8Mbps) WCDMA (Downlink 42Mbps, Uplink 5.76Mbps) TD-SCDMA (Downlink 4.2Mbps, Uplink 2.2Mbps)
Power	< 23dBm
Sensitivity	<-93.3dBm

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WIFI Specification	
Items	**Contents**
Frequency	Support IEEE802.11b/g/n
Bandwidth	IEEE802.11b/g：54Mbps IEEE802.11n：150Mbps
Security	Support WEP, WPA, WPA2 and other encryption methods, WPS (Optional)
Power	20dBm（11n），24dBm (11g)，26dBm (11b)
Sensitive	<-72dBm @ 54Mbps

Hardware System	
Items	**Contents**
CPU	Industrial-grade 32-bit communication processor
FLASH	16MB, Extensible to 32MB
DDR3	128MB

Interfaces	
Items	**Contents**
WAN	1 x 10/100M Ethernet (RJ45) Auto MDI/MDIX, Built-in 1.5KV electromagnetic isolation protection
LAN	4 x 10/100M Ethernet (RJ45) Auto MDI/MDIX, Built-in 1.5KV electromagnetic isolation protection
Serial	1 x RS232 (RS422/RS485), Built-in 1.5KV electromagnetic isolation protection Data bit：5, 6, 7, 8 Stop bit：1, 1.5 (Optional), 2 Calibration: null, even, odd, SPACE (Optional) and MARK (Optional) Baud rate：2400~115200bits/s
Indicators	"PWR", "SYS", "WIFI", "SIM", "Online", "Signal Strength"
I/O Port	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
Antenna	Cellular：2 standard SMA female antenna interfaces, characteristic impedance 50 ohms WIFI：1 standard SMA male antenna interfaces, characteristic impedance 50 ohms GPS: 1 calibrated SMA male antenna interface, characteristic impedance 50 ohms

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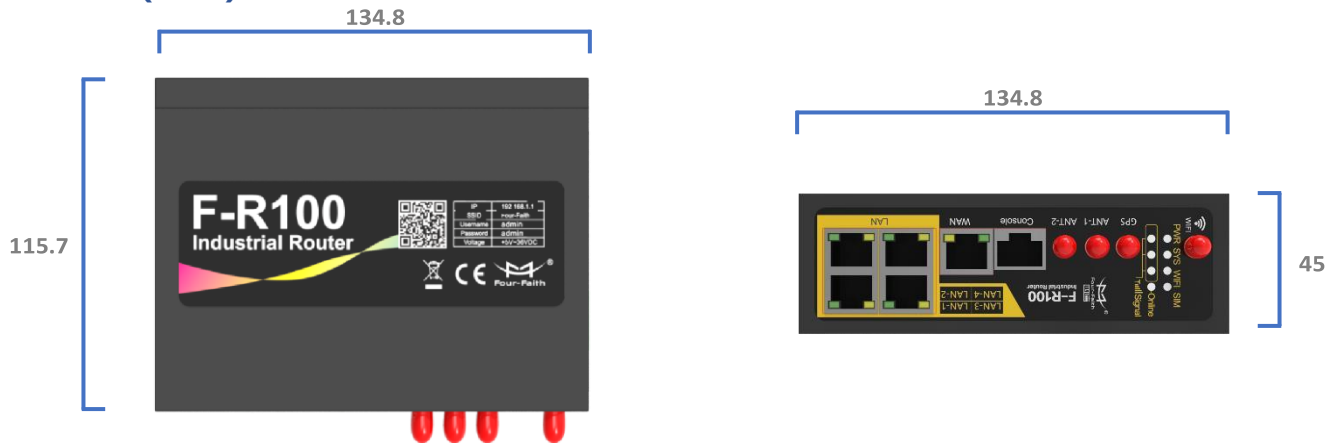|	
SIM/UIM	Standard drawer type user card interface Support 1.8V/3V SIM/UIM card, built-in 15KV ESD protection
Power	Terminal power socket
Reset button	2 bins terminal power socket, built-in power reverse protection and overvoltage protection

Power Supply	
Items	**Contents**
Standard	DC 12V/1.5A
Range	DC 5 ~36V
Consumption	<500mA (12V)

Physical Properties	
Items	**Contents**
Shell	Metal shell, protection grade IP30
Size	134.8 x 115.7 x 45mm (Does not include antenna and mounting parts)
Weight	520g

GPS (Optional)	
Items	**Contents**
Navigation	Support BDS/GPS/A-GNSS/GLONASS satellite navigation system
Cold Start Capture Sensitivity	-148dBm
Tracking Sensitivity	-162dBm
Positioning Accuracy	2.5 meters (CEP50)
Time to First Fix	32 seconds
Low Power Consumption	continuous operation <25mA (@3.3V)

Others	
Items	**Contents**
Operating Temperature	-35~+75ºC（-31~+167℉）
Storage Temperature	-40~+85ºC（-40~+185℉）
Relative Humidity	95% (No condensation)

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Dimension (mm)

134.8

115.7

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134.8

45

Order Information

Models	Description
F-R100-FL	Cellular (LTE/WCDMA), WIFI, SIM*1, I/O (2*DI, 1*DO, 1*Relay), GPS(Optional)
F-R100-FL/FL	Cellular (LTE/WCDMA, Dual-Module), WIFI, SIM*2, I/O (2*DI, 1*DO, 1*Relay), GPS(Optional)
F-R100-FL SIM*2	Cellular (LTE/WCDMA), WIFI, SIM*2, I/O (2*DI, 1*DO, 1*Relay), GPS(Optional)