



Key Features

- Compact design with DIN-Rail Mounting
- Global 5G NR, 4G LTE to choose¹
- 2-RJ45(GbE), 1-RS232(Debug), 2-RS485, 2.4G WIFI(Optional), GNSS(Optional)
- Dual SIM for failover
- OpenWRT based Linux OS, Python, C/C++ programmable²
- Wide operating temperature: -35~+75 °C
- Modbus RTU/TCP, MQTT, JSON, TCP/UDP, OPC UA and customized industrial protocols
- VPN, SNMP, BGP, HTTP, Telnet, SSH, CLI, SPI firewall

Introduction

The W5GR-1122 Series is a compact industrial 5G NR IoT router designed for IoT, M2M, and eMBB applications requiring high-speed, low-latency data transmission. It provides an OpenWrt-based embedded Linux environment that allows IoT developers and engineers to write and install custom applications using Python or C/C++ directly on the hardware.

The W5GR-1122 router has 2 Gigabit Ethernet ports, 1 RS232 (debug) port, and 2 RS485 ports to connect to Ethernet and serial controllers and sensors, transferring data to the cloud server via a 5G/4G LTE cellular network. It comes with industrial protocols—such as MQTT, Modbus RTU/TCP, JSON, TCP/UDP, OPC UA, and VPN — to provide efficient and secure IoT data connectivity between field devices and the cloud server.

The W5GR-1122 router supports dual SIM cards for failover, providing robust and reliable wireless and wired connectivity for your mission-critical industrial applications. It also includes GNSS to track remote assets, such as EV charging stations, solar power installations, smart poles, smart city infrastructure, smart offices, smart buildings, smart traffic lights, digital signage, vending machines, and ATMs.

Applications



Specifications

System

- CPU32-bit, dual core
- Flash32MB
- RAM256MB

Cellular Interfaces

- Antenna Connector4 × 50 Ω SMA Female(W5GR-1122)
2 × 50 Ω SMA Female(W4GR-1122)
- SIM Slot2 × Micro SIM³
- ESD Protection15KV

Ethernet Interface

- Ports2-RJ45 (1-WAN, 1-LAN or 2-LAN configurable)
- Data Rates10/100/1000 Mbps (Auto-Sensing), Auto MDI/MDIX
- ESD Protection1.5KV

Serial Interfaces

- ConnectorTerminal block, 3.5 mm female socket
- Ports1-RS232(Debug), 2-RS485
- Baud Rate300bps to 230400bps
- ESD protection8KV for RS232, 15KV for RS485

Wi-Fi(Optional)

- Antenna Connector1 × 50 Ω RP-SMA Female
- StandardIEEE 802.11b/g/n, AP and Client modes
- Transmission RateIEEE802.11b/g: Up to 54Mbps
IEEE802.11n: Up to 300Mbps
- SecurityOpen, WPA, WPA2, WPA/WPA2 Enterprise, Radius

GNSS (Option)

- ModuleGNSS from cellular module
- Antenna Connector1 × 50 Ω SMA Female

Power Supply and Consumption

- ConnectorTerminal block, 3.5 mm female socket
- Standard PowerDC 12V/1.5A
- Input Voltage5-35 VDC
- Idle Mode200 ~ 230mA@12VDC
- Working Mode360 ~ 430mA@12VDC

Software

- Network ProtocolsPPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, BGP, DNS, DDNS, HTTP, ARP, QoS, SNTP, Telnet, SSH
- Serial PortMQTT, Transparent (TCP/UDP Client/Server), Modbus RTU/Modbus TCP
- VPN TunnelIPsec/PPTP/L2TP/GRE/OpenVPN
- FirewallACL/DMZ/Port Mapping/MAC Binding
- ManagementWeb, CLI, SMS, Cloud DMP (Device Management Platform)⁴
- ReliabilityDual SIM, WWAN and WAN Failover, Hardware & Software Watchdog
- Secondary DevelopmentOpenWrt based Linux OS, C/C++, Python, LUA and SDK

Physical Characteristics

- Ingress ProtectionIP30
- Housing & WeightMetal, 268g(0.59lbs), without accessories
- Dimensions103.50x78.20x24.10mm (4.09 x 3.07 x 0.94in)
- MountingDesktop, DIN-Rail

Environmental

- Operating Temperature-35°C to +75°C (-31°F to +167°F)
- Storage Temperature-40°C to +80°C (-40°F to +176°F)
- Relative Humidity5% to 95% (non-condensing)
- Ethernet Isolation1.5 kV RMS

Others

- Reset Button1
- LED IndicatorsSystem, Online, Power, Alarm
- Built-inWatchdog, RTC, Timer
- Approvals⁵CE*, RCM*, FCC*
- Warranty Period⁶Standard: 12 Months
Extended: 2-5 Years

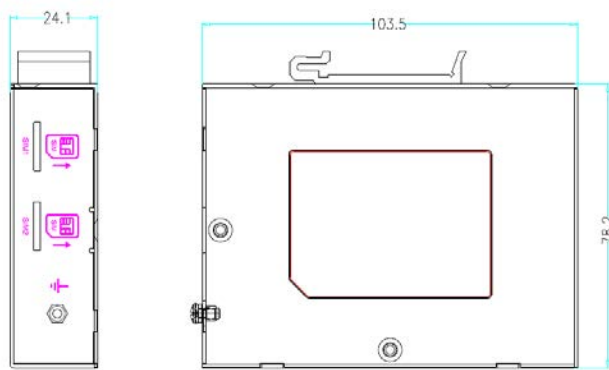
Standard Package Content

- | | |
|--|---------------|
| 1. W5GR-1122 Router | 1 PCS |
| 2. Power Adapter DC 12V/1.5A
(EU/US/UK/AU plug optional) | 0 PCS |
| 3. Mag-mount Cellular Antenna (SMA Male)
(Polelength 36CM with 2M LMR195 Cable) | 4 PCS |
| 4. RS232 Cable (DB9 Female, 1 meter) | 1 PCS / ORDER |
| 5. Ethernet Cable(1 meter) | 1 PCS |
| 6. 8-Pin Terminal Block | 1 PCS |
| 7. DIN-Rail Mount Kits | 1 PCS |

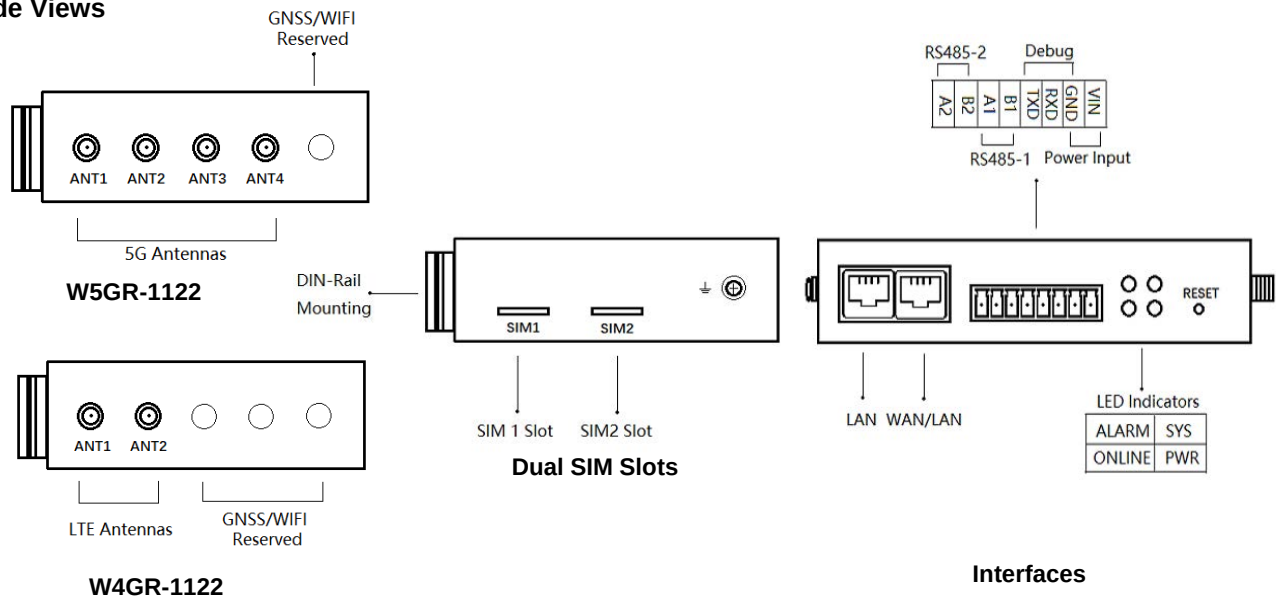
Order Information

Model	Part Number	Description	Frequency Band ⁷
W5GR-1122	W5GR-1122 - N <1><2> - <3>	5G Router With RS232 x 1, RS485 x 2, 2.4G WIFI(option=No), GNSS(Option=No)	5G NR Sub-6 n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n75/n76/n77/n78 MIMO: DL 4×4 (n1/3/5/7/20/28/38/40/41/75/76/77/78), UL 2×2 (n41/77/78) LTE FDD: B1/B3/B5/B7/B8/B20/B28/B32 MIMO: DL 4×4 (B1/3/5/7/20/28/32/38/40/41/42/43) LTE TDD: B38/B40/B41/B42/B43
W4GR-1122	W4GR-1122 - N <1><2> - <3>	4G Router, 1-RS232, 2-RS485, 2.4G WIFI(option), or GNSS(Option)	4G LTE CAT 4 • EMEA/Asia: B1/B3/B5/B7/B8/B20/B38/B40/B41 • ANZ/LATAM: B1/B3/B5/B7/B8/B28 • NA: B2/B4/B5/B12/B13/B14
<1>: 5G or 4G module for different countries and regions <2>: DS=dual SIM on single module, failover only <3>: W=2.4G Single band WIFI GN=GNSS from cellular module			

Dimensions(103.5x78.2x24.1mm)



Side Views



Interfaces

Success Cases



Note:

1. There are different modules for different regions to choose.
2. We provides complier and SDK for customers to do their second development, and Python, LUA is a customized firmware.
3. DSSIM=dual sim on single module, supports failover.
4. There has a license fee for DMP .
5. * Under progress
6. Price of the extended warranty will be different.
7. If you couldn't find the frequency band for your regions or have any questions, please contact contact Qualitech sales and representatives for more information