Queclink | Networks

WR310FEU

Advanced 5G Industrial Cellular Router



- **5G SA/NSA**
- **Wi-Fi 6**
- **Multiple Interfaces**
- **Nebulink**

- **Industrial-grade Rugged Design**
- **5G SA/NSA Dual Mode**
- **Dual SIM Auto-failover Link Redundancy**
- **IEEE 802.11 a/b/g/n/ac/ax (Wi-Fi 6)**
- **4 GE Interfaces (1 WAN, 3 LAN)**
- **Embedded BLE 5.2**
- **RS232 and RS485 Serial Port**
- **Real-time GNSS Tracking**
- **Comprehensive VPN Suite (IPsec/ OpenVPN/GRE/L2TP)**

The WR310FEU 5G Industrial Router is an industrial-grade 5G networking platform designed to deliver reliable and persistent connectivity for industrial applications. Supporting both 5G SA and NSA network modes, and offering a full set of interfaces, including 1 RS232 port, 1 RS485 port, 1 Ethernet WAN port, 3 Ethernet LAN ports, and DI/DO signals, plus integrated Wi-Fi 6, GNSS and BLE functionality, this model is ideal for maintaining high-quality wireless communication for data transmission and other bandwidth-intensive applications across diverse industrial sectors. It features dual SIM support with intelligent switching capability, enabling automatic failover to ensure network redundancy and uninterrupted connectivity.

Industrial Automation



Public Transport

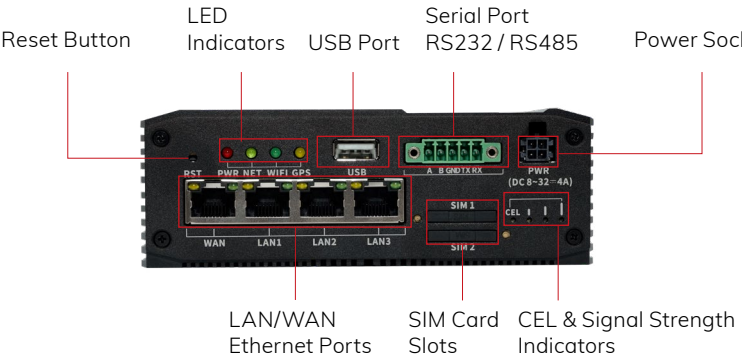


Smart Retail

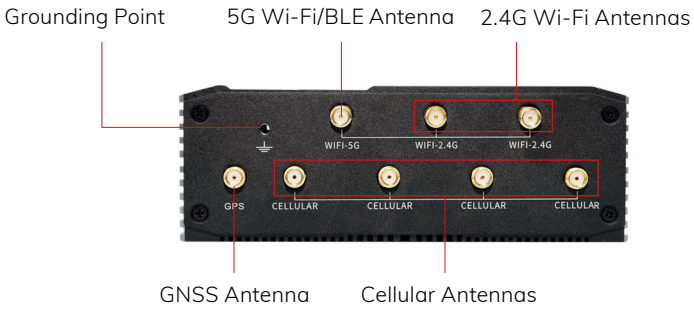


Interfaces

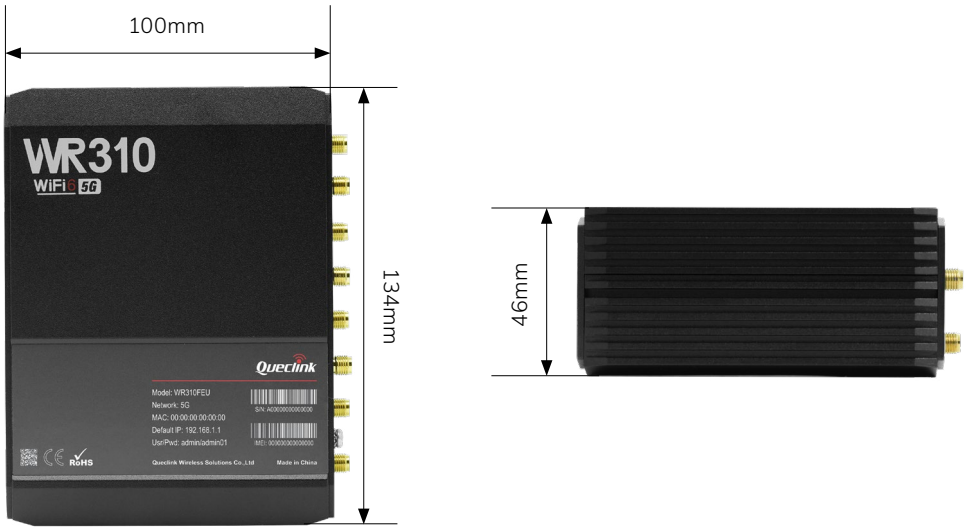
Front View



Rear View



Dimensions



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General Specifications

Casing Material	Anodized aluminium housing and panels
Dimensions	134(W) x 100(D) x 46(H) mm (Excluding antenna connectors and mounting bracket) (5.27" x 3.94" x 1.81")
Weight	552g(1.22 lb)
Mounting Options	DIN rail, wall, and surface mounting
Operating Voltage	8-32V DC, reverse polarity protection, voltage surge/transient protection
Power Consumption	Idle: < 6 W, Max: < 26 W
Operating Temperature	-30 °C to 70 °C
Operating Humidity	10% to 90% non-condensing
IP Rating	IP30
Region	EMEA

Hardware Specifications

System Characteristics	**CPU**	Dual-core ARM 64bit A53@1.0GHz
	RAM	256MB, DDR4
	Flash Memory	256MB
Interfaces	**Ethernet Ports**	WAN: 1 × RJ45 10/100/1000 Mbps LAN: 3 × RJ45 10/100/1000 Mbps
	Power & IO	4-PIN connector: 1 x PWR 1 x GND 1 x Digital input (0 - 3.3 VDC: low logic level/4.0-40 VDC: high logic level) 1 x Open collector output (30 VDC, 0.2 A)
	RS-232	1 x RS-232 (without RTS, CTS flow control)
	RS-485	1 x RS-485 Half Duplex (2 wires) . 300-115200 baud rate
	USB	1 x USB 2.0 Type A
	SIM	2 x SIM slots (Mini SIM - 2FF); optional eSIM (MFF2) support
	Antennas	4 x SMA for Cellular 1 x SMA for GNSS 3 x RP-SMA for Wi-Fi 2.4G/5.G/BLE antennas
	LED Indicators	1 x Power LED 1 x NET LED 1 x WIFI LED 1 x GPS LED 1 x Cellular connection status LED 3 x Signal strength LEDs 8 x LAN status LEDs
	Reset Button	Reboot/Factory reset
	Grounding Point	1 x Grounding screw

Connectivity Specifications

Cellular	**3GPP Release**	Release 16
	Cellular Bands	5G NR NSA: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n71/n75/n76/n77/n78 5G NR SA: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n71/n75/n76/n77/n78 LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32/B71 LTE-TDD: B38/B40/B41/B42/B43 WCDMA: B1/B5/B8
	MIMO	5G NR: DL 4*4 MIMO: n1/n3/n7/n38/n40/n41/n71/n77/n78 UL 2*2 MIMO: n38/n40/n41/n77/n78 4G LTE: DL 4*4 MIMO: B1/B3/B7/B38/B40/B41/B42/B43/B71
	Peak Rates	5G SA Sub-6GHz: 2.4 Gbps DL/900 Mbps UL 5G NSA Sub-6GHz: 3.4 Gbps DL/550 Mbps UL
		LTE: Cat 19 1.6 Gbps DL/Cat 18 200Mbps UL
		3G: 42 Mbps DL/5.76Mbps UL
WLAN	**Wireless Mode**	IEEE 802.11 a/b/g/n/ac/ax (Wi-Fi 6), AX1800
	Wi-Fi Data Rate	1.2 Gbps (5 GHz) and 573 Mbps (2.4 GHz) (MU-MIMO)
	Operating Mode	Access Point (AP), Station (STA)
	Wi-Fi Security	WPA2-PSK, WPA-PSK, WPA3-SAE, AES-CCMP, TKIP
	Wi-Fi Users	Up to 100 simultaneous connections
Ethernet	**WAN**	1 x WAN port 10/100/1000 Mbps, compliant with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
	LAN	3 x LAN ports, 10/100/1000 Mbps, compliant with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
BLE	**BLE Type**	BLE 5.2

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GNSS Specifications

GNSS Type	All-in-One GNSS receiver
Constellations & Frequency	GPS/GLONASS/BDS/Galileo/QZSS
Protocols	NMEA 0183
Sensitivity	Cold start: -147 dBm Reacquisition: -158 dBm Tracking: -158 dBm
Position Accuracy (CEP)	Autonomous: <2 m
TTFF (Open Sky)	Cold start: 30s average Warm start: 22s average Hot start: 0.78s average
Coordinates	Displays GNSS coordinates and provides map view via WebUI and Nebulink system
Server Software	Integrated with the Nebulink system

Firmware Features

Operating System	**Operating System**	OpenWRT (Linux based)
Cellular	**SIM Switch**	2 SIM cards, auto-switch cases: Weak signal, Data limit, Network fail, Data connection fail
	Idle SIM Protection	The inactive SIM of dual-SIM is maintained in an idle state without any data traffic until activated
	SMS	Reboot, Restore factory settings, Upgrade firmware; Switch SIM, Set APN, Set SSID; Get device status (hardware/software version, SN, MAC, Nebulink connection status, cellular status); Set/Get device output status
	APN	Auto APN
	Multiple PDN	Support different PDNs for multiple network access and services
	Bridge	Directly forwards the public WAN IP to a single connected device
	Passthrough	Shares the public WAN IP to a designated LAN client
Network	**Routing**	Static routing, Dynamic routing (RIP v1/v2)
	Network Protocols	TCP, UDP, IPv4, ICMP, NTP, DNS, HTTP, HTTPS, SFTP, FTP, SSL/TLS, ARP, PPP, PPPoE, SSH, DHCP, Telnet, SNMP, MQTT
	VLAN	Port and tag-based VLAN separation
	Connection Monitoring	Ping Reboot, Periodic Reboot, LCP and ICMP for link inspection
	DHCP	Static and dynamic IP allocation, DHCP server configuration, status, static leases
	QoS	Traffic priority queuing by source/destination, service, protocol or port
	DDNS	18 pre-defined service providers and manual configuration supported
	Link Management	Mobile, WAN, and WLAN options, each of which can be used as an automatic failover
	Load Balancing	Balance Internet traffic over multiple WAN connections
	Hotspot	Captive portal for Wi-Fi hotspot, Radius server authentication, landing page, walled garden, user management; SMS/e-mail/user account/open access authentication, customizable portal themes, remote configuration and management via Nebulink
	Traffic Management	Mobile traffic monitoring on a daily, weekly, and monthly basis

Firmware Features

VPN	**OpenVPN**	Client/Server instances, 12 encryption methods
	OpenVPN Encryption	DES-CBC 64, RC2-CBC 128, DES-EDE-CBC 128, DES-EDE3-CBC 192, DESX-CBC 192, BF-CBC 128, RC2-40-CBC 40, CAST5-CBC 128, RC2-64-CBC 64, AES-128-CBC 128, AES-192-CBC 192, AES-256-CBC 256
	IPsec	IKEv1, IKEv2, with 5 encryption methods for IPsec (DES, 3DES, AES128, AES192, AES256)
	GRE	GRE tunnel, GRE tunnel over IPsec support
	PPTP/L2TP	Client/Server instances, L2TP over IPsec support
Security	**Authentication**	Pre-shared key, digital certificates, Radius users authentication, IP & login attempts block
	Firewall	NAT, Domain filter, IP/MAC filter, DMZ, DDOS
	DDOS Prevention	SYN flood protection, Remote ICMP requests, SSH attack prevention, HTTP attack prevention
	Data Quota Mangement	Mobile data limit, customizable period, start time
	Domain Filter	Blacklist for blocking out unwanted websites, Whitelist for specifying allowed sites only
	Access Control	Access control for SSH and HTTPS
Data to Server	**Protocol**	HTTP(S), MQTT
Modbus	**Supported Modes**	Client
	Supported Connection Types	TCP, RTU
	Supported Data Formats	8-bit: INT, UINT; 16-bit: INT, UINT (MSB or LSB first); 32-bit: float, INT, UINT (ABCD (big-endian), DCBA (little-endian), CDAB, BADC), HEX, BOOL
MQTT Gateway	**Modbus MQTT Gateway**	Allows sending commands and receiving data from Modbus Server through MQTT broker
Serial	**Serial Types**	Console, Serial over IP, Modbus
Input / Output	**Events**	Supports I/O event reporting to the MQTT/TCP server
	I/O Control	Set I/O conditions to initiate event
USB	**Applications**	USB-to-serial
	External Devices	Supports external HDD and flash drive to expand USB storage
	Storage Formats	FAT, FAT32, ext2, ext3, ext4

Firmware Features

Device Monitoring & Management	**Web UI**	HTTP/HTTPS, status, configuration, firmware update notification, CLI, diagnostic, system log, kernel log, modem log
	SSH	SSH (v1, v2)
	SMS	SMS status, SMS configuration
	TR-069	EasyCwmp
	MQTT	MQTT publisher
	SNMP	SNMP (v1, v2), SNMP Trap, Brute force protection
	Remote Management Platform	Nebulink System
Firmware / Configuration	**WebUI Upgrade**	Update FW from file, check FW on server, configuration backup
	FOTA	Firmware update from server, automatic notification
	Nebulink	Update FW/configuration for multiple devices via Nebulink system
	Preserve Configuration	Update FW without losing current configuration
	Factory Default Restoration	A full factory reset restores all system settings, including the IP address, PIN, and user data to the default manufacturer's configuration

Compliance Specifications

EMC Emissions	**Standards**	EN 55032:2015 + A11:2020 + A1:2020 EN 55035:2017 + A11:2020 EN 61000-3-3:2013 + A1:2019 + A2:2021 EN IEC 61000-3-2:2019 + A1:2021 EN 301 489-1 V2.2.3 EN 301 489-3 V2.3.2 EN 301 489-17 V3.2.4 EN 301 489-19 V2.2.1 EN 301 489-52 V1.2.1
RF	**Standards**	EN 300 328 V2.2.2 EN 300 440 V2.2.1 EN 301 893 V2.1.1 EN 303 413 V1.2.1 EN 301 908-1 V15.2.1 EN 301 908-2 V13.1.1 EN 301 908-13 V13.2.1 Draft EN 301 908-25 V15.1.1_0.0.21
Reliability	**Standards**	Vibration: ISO16750-3 Shock: IEC 60068-2-27
Regulatory & Type Approvals	**Regulatory**	CE, EN 18031, RoHS