Queclink | Networks

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# WR220LEU Lite

## LTE Cat-4 Industrial Cellular Router




- **Dual SIM**
- **Quick Deploy**
- **Nebulink**

- **Industrial-grade Rugged Design**
- **4G LTE Cat 4**
- **Dual SIM Auto-failover Link Redundancy**
- **IEEE 802.11 b/g/n (Wi-Fi 4)**
- **4 Ethernet Interfaces (1 WAN, 3 LAN)**
- **VPN Services for Secure Connections**

The WR220LEU Lite Industrial Cellular Router is an industrial-grade LTE networking platform engineered to provide reliable and persistent connectivity for essential industrial applications. Designed to deliver core performance at a highly competitive cost, it supports dual SIM cards with automatic failover to ensure continuous operation. It features 4 Ethernet ports (1 WAN and 3 LAN) and reliable Wi-Fi for local area networking. It offers robust support for multiple VPN services and routing protocols, guaranteeing stable and secure data transmission. By focusing on connectivity and streamlined functionality, the WR220LEU Lite delivers exceptional value, making it the ideal cost-effective solution for basic industrial networking and equipment communication needs.

### Public Transportation



### Smart Surveillance



### Smart Retail

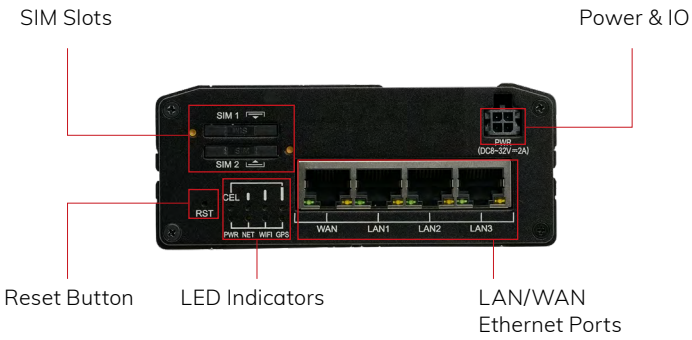


### SMB Network Deployment

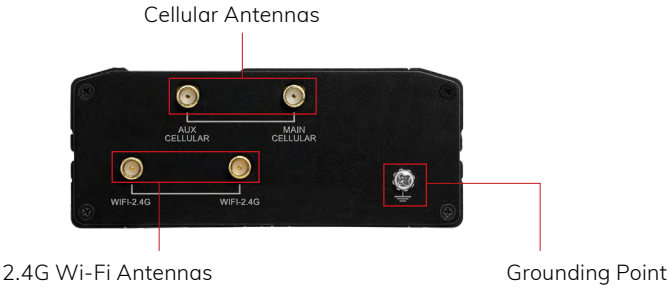


## Interfaces

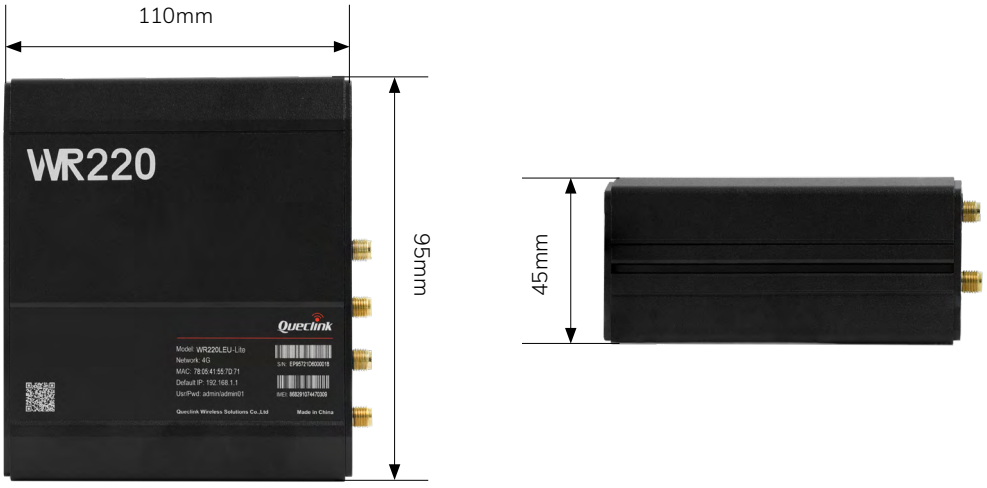
**Front View**




**Rear View**




## Dimensions



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## General Specifications

| | |
|---|---|
| **Casing Material** | Anodized aluminium housing and panels |
| **Dimensions** | 110 (W) x 95 (D) x 45 (H) mm<br>(4.33" x 3.74" x 1.77") (Excluding antenna connectors and mounting bracket) |
| **Weight** | 388g<br>(0.86 lb) |
| **Mounting Options** | DIN rail, wall, and surface mounting |
| **Operating Voltage** | 8-32V DC, reverse polarity protection, voltage surge/transient protection |
| **Power Consumption** | Idle: < 4 W, Max: < 10 W |
| **Operating Temperature** | -30 °C to 75 °C |
| **Operating Humidity** | 10% to 90% non-condensing |
| **IP Rating** | IP30 |

## Hardware Specifications

| | | |
|---|---|---|
| **System Characteristics** | **CPU** | Qualcomm, 650 MHz |
| | **RAM** | 128MB, DDR2 |
| | **FLASH Memory** | 16MB |
| **Interfaces** | **Ethernet Ports** | WAN: 1 × RJ45 10/100 Mbps<br>LAN: 3 × RJ45 10/100 Mbps |
| | **Power & IO** | 4-PIN connector:<br>1 x PWR<br>1 x GND<br>1 x Digital input (0 - 3.3 VDC: low logic level/4.0-40 VDC: high logic level)<br>1 x Open collector output (30 VDC, 0.2 A) |
| | **SIM** | 2 x SIM slots (Mini SIM - 2FF); optional eSIM (MFF2) support |
| | **Antennas** | 2 x SMA for cellular<br>2 x RP-SMA for Wi-Fi 2.4G antenna |
| | **LED Indicators** | 1 x Power LED<br>1 x NET LED<br>1 x WIFI LED<br>1 x Cellular connection status LED<br>3 x Signal strength LEDs<br>8 x LAN status LEDs |
| | **Reset Button** | Reboot/Factory reset |
| | **Grounding Point** | 1 x Grounding screw |

## **Connectivity** Specifications

| | | |
|---|---|---|
| **Cellular** | **3GPP Release** | Release 9 |
| | **Cellular Bands** | LTE-FDD:<br>B1/B3/B5/B7/B8/B20/B28<br><br>LTE-TDD:<br>B38/B40/B41<br><br>WCDMA:<br>B1/B5/B8<br><br>GSM/EDGE:<br>B3/B8 |
| | **Peak Rates** | LTE-FDD: 150 Mbps DL/50 Mbps UL<br>LTE-TDD: 130 Mbps DL/30 Mbps UL |
| | | DC-HSPA+: 21 Mbps DL/5.76 Mbps UL<br>WCDMA: 384 Kbps DL/384 Kbps UL |
| | | EDGE: 236.8 Kbps DL/236.8 Kbps UL<br>GPRS: 85.6 Kbps DL/85.6 Kbps UL |
| **WLAN** | **Wireless Mode** | IEEE 802.11 b/g/n (Wi-Fi 4) |
| | **Wi-Fi Data Rate** | 300 Mbps (2.4 GHz) |
| | **Operating Mode** | Access Point (AP), Station (STA) |
| | **Wi-Fi Security** | WPA2-PSK, WPA-PSK, AES-CCMP, TKIP |
| | **Wi-Fi Users** | Up to 45 simultaneous connections |
| **Ethernet** | **WAN** | 1 x WAN port 10/100 Mbps, compliant with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX crossover |
| | **LAN** | 3 x LAN ports, 10/100 Mbps, compliant with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX crossover |

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## Firmware Features

| | | |
|---|---|---|
| **Operating System** | | OpenWRT (Linux based) |
| **Cellular** | **SIM Switch** | 2 SIM cards, auto-switch cases:<br>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;<br>Switch SIM, Set APN, Set SSID;<br>Get device status (hardware/software version, SN, MAC, Nebulink connection status, cellular status);<br>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;<br>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 |
| **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 |

## Firmware Features

| | | |
|---|---|---|
| **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 |
| | **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 |
| **Input / Output** | **Events** | Supports I/O event reporting to the MQTT/TCP server |
| | **I/O Control** | Set I/O conditions to initiate event |
| **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 firmware from file, check firmware on server, configuration backup |
| | **FOTA** | Firmware update from server, automatic notification |
| | **Nebulink** | Update firmware/configuration for multiple devices via Nebulink system |
| | **Preserve Configuration** | Update firmware without losing current configuration |
| | **Factory Default Restoration** | A factory reset restores all system settings, including IP address, PIN, and user data to the manufacturer's default configuration |

## Compliance Specifications

| | | |
|---|---|---|
| **Reliability** | **Standards** | Vibration: ISO16750-3<br>Shock: IEC 60068-2-27 |
| **Regulatory & Type Approvals** | **Regulatory** | CE*, RED EN18031*, RoHS* |
| **Safety** | **Standards** | EN IEC 62368-1:2020 + A11:2020<br>EN IEC 62311:2020 |

** Certification in progress*