

Industrial Cellular Router/Gateway

# JetWave 2310/2311-HSPA/LTE Series



- Industrial Slim Size Cellular Router/IP Gateway
- Next Generation Long Term Evolution (LTE) technology, 2x2 DL-MIMO, max. 100MDL/50M UL, compatible with UMTS/HSPA+ (LTE Models)
- Five band UMTS/HSPA+ (3G HSPA models)
- Dual SIM for Carrier Provider Redundant
- Dual Gigabit Ethernet Port Routing/Bridging
- VPN/Firewall/DMZ and Secure VPN Connectivity
- IEEE 802.11n 2.4G WIFI, up to 3T3R MIMO, 450Mbps (2311 Series)
- LAN/WIFI to 3G/LTE Routing
- 3G/LTE and WIFI/WAN Redundant
- SMS Alarm for Ethernet Link up/down
- Auto-offload to reduce cellular communication cost
- OPC UA for Industrial M2M Communication
- Remote management by Web GUI, SNMP, Korenix View, Mobile Manager, Korenix NMS, DDNS
- Dual 24V(12-48V) DC Redundant
- Wide Temperature, Heavy Industrial Grade design



## Overview

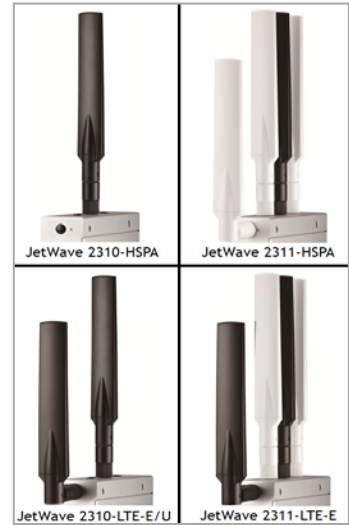
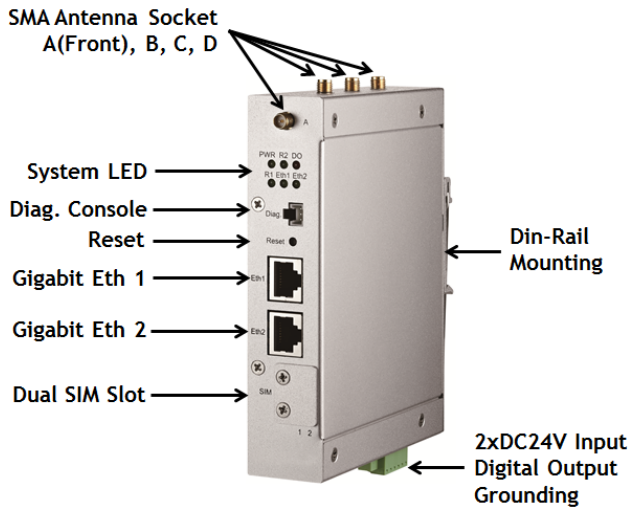
The JetWave 2310/2311 series is a slim size industrial grade secure Cellular Router/IP Gateway for the Ethernet to cellular machine-to-machine (M2M) communication market. The JetWave 2310/2311 Series equips with one embedded 3G or LTE module, dual SIM standby for carrier provider redundant, 2 Gigabit Ethernet ports for routing or switching. With the next generation Long Term Evolution (LTE) technology, it supports up to 100Mbps DL and 50Mbps UL high speed bandwidth for cellular communication.

JetWave 2311 series equips with one additional 802.11n 2.4G WIFI as cellular traffic offload and local access solution, it reduce a lot of connecting cost. The cellular router/gateway also supports remote management, secure connectivity, firewall/NAT features. The OPC UA is designed for industrial M2M communication, a popular protocol for industrial automation and M2M application. The industrial grade design supports dual 24V(12-48V)DC input, Digital Output, wide operating temperature and heavy industrial grade environment protection.

| Model Name         | 3G UMTS/HSPA+ | 4G LTE | WIFI      | Ethernet | DI/DO | SIM | Operating Temp. |
|--------------------|---------------|--------|-----------|----------|-------|-----|-----------------|
| JetWave 2310-HSPA  | V             | -      | -         | 2xGE     | 1xD0  | 2   | -25~70°C        |
| JetWave 2310-LTE-U | V             | LTE-U  | -         | 2xGE     | 1xD0  | 2   | -25~70°C        |
| JetWave 2310-LTE-E | V             | LTE-E  | -         | 2xGE     | 1xD0  | 2   | -25~70°C        |
| JetWave 2311-HSPA  | V             | -      | 2.4G WIFI | 2xGE     | 1xD0  | 2   | -25~70°C        |
| JetWave 2311-LTE-E | V             | LTE-E  | 2.4G WIFI | 2xGE     | 1xD0  | 2   | -25~70°C        |

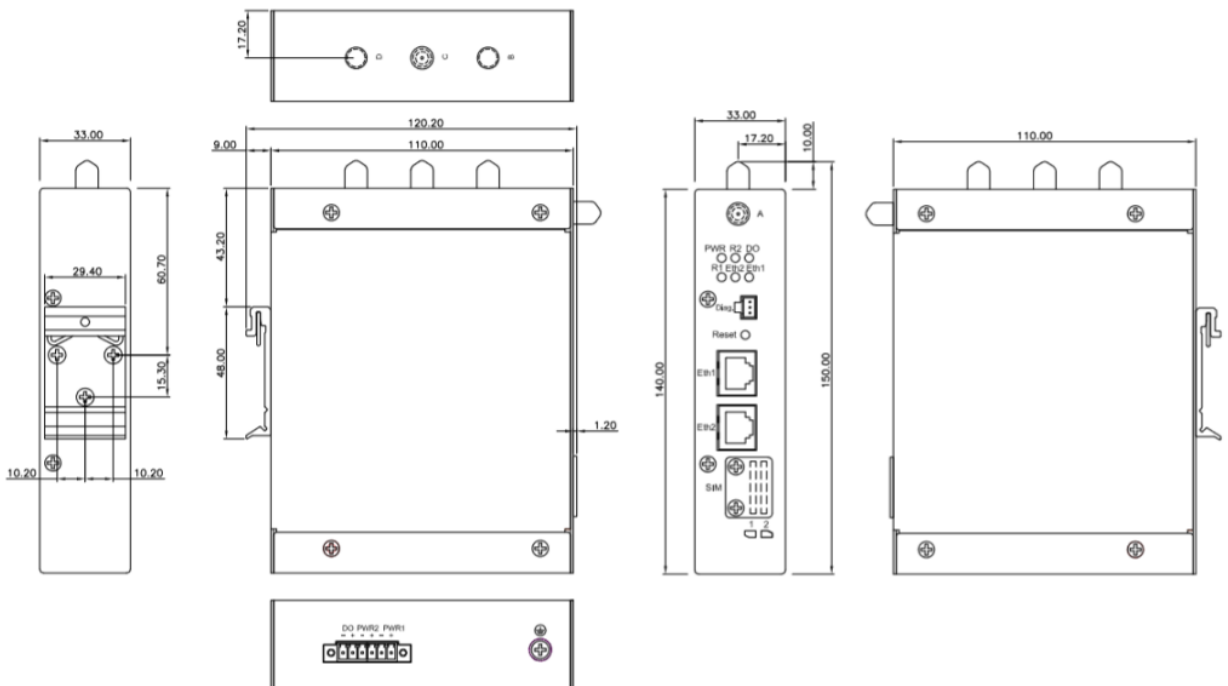
\*LTE-E: 800(20)/900(8)/1800(3)/2600(7)MHZ  
 \*LTE-U: 700(17)/850(5)/AWS(4)/1900(2)MHZ

# Appearance



| Antenna | 2310-HSPA | 2310-LTE-E/U | 2311-HSPA | 2311-LTE-E |
|---------|-----------|--------------|-----------|------------|
| A       | N.A.      | LTE-Aux      | WIFI 1-3  | LTE-Aux    |
| B       | -         | -            | WIFI 1-1  | WIFI 1-1   |
| C       | 3G        | LTE-Main     | 3G        | LTE-Main   |
| D       | -         | -            | WIFI 1-2  | WIFI 1-2   |

# Dimension



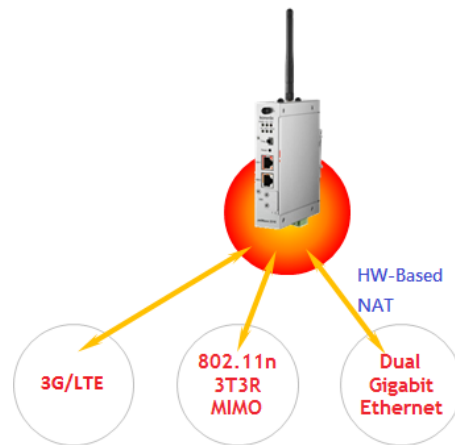
## Next Generation Long Term Evolution (LTE)

The product can support the next generation Long Term Evolution (LTE) 2x2 DL MIMO technology to reach up to 100M Downlink and 50M Uplink speed. The embedded LTE module also backward compatible with UMTS/HSPA connection which enables remote and mobile control to the LAN and WIFI interfaces.



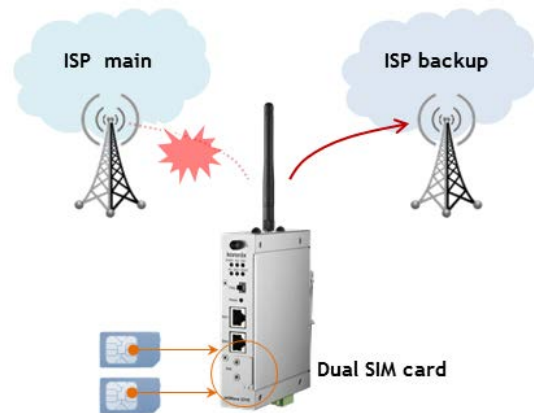
## HW NAT Routing

The processor supports 700MHZ speed and two Gigabit Ethernet ports support hardware-based NAT routing. The powerful engine speeds up the routing among the Gigabit Ethernet, Cellular and WIFI interfaces.



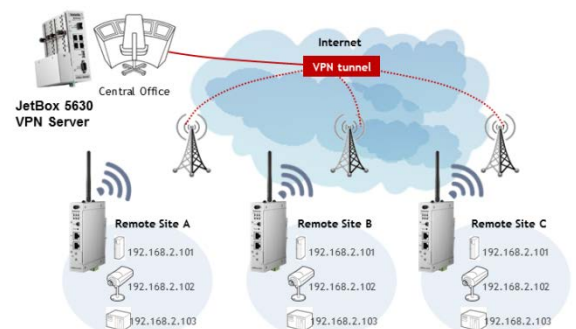
## Dual SIM Standby for 3G/LTE Redundancy

The product support dual SIM standby for 3G/LTE Redundant. While the primary SIM connection fails, the second SIM recovers to the other carrier provider.



## Secure Remote Connection

The product support VPN for secure remote connection. VPN provides secure communication between the central office and the remote sites through the public Internet. Choose the JetBox 5630 as VPN server, JetWave 2310 series as VPN client is the ideal secure remote connection solution.



# Specification

| Technology                      |  |
|---------------------------------|--|
| Standard                        | IEEE 802.3 for 10BaseT<br>IEEE 802.3u for 10/100Base-TX<br>IEEE 802.3ab for 1000BaseT<br>IEEE 802.11n/g Wireless LAN<br>IEEE 802.11i Wireless Security<br>3GPP Release 6,7,8 3G UMTS/HSDPA/HSUPA<br>3GPP Release 9 Long Term Evolution (LTE) |
| Interface                       |  |
| Ethernet Port                   | 2x 100/1000Base-T(X) RJ-45   |
| Cellular                        | 3G or LTE for the cellular machine-to-machine (M2M) communication  |
| WIFI                            | IEEE802.11n, 2.4G Band (JetWave 2311 Series)   |
| SIM Socket                      | 2 (Dual SIM Standby)   |
| Power Input                     | 2x 24VDC (12~48VDC) input  |
| Relay Output                    | 1xRelay Output, 1A@24VDC   |
| Console                         | 3-pin RS-232 Diagnostic console  |
| Reset                           | Reset Switch, Reset to Default over 7 seconds  |
| LED                             | PWR, Radio 1, Radio 2, DO, Eth 1, Eth 2  |
| SMA Antenna Socket              | 1 socket available (JetWave 2310-HSPA, 3G UMTS/HSPA)<br>2 sockets available (JetWave 2310-LTE-E/U, LTE-Main and LTE-Aux.)<br>4 sockets available (JetWave 2311 Series, 3G/LTE plus WIFI)   |
| WIFI (JetWave 2311 Series only) |  |
| CPU                             | Qualcomm Atheros 700MHz  |
| Operating Frequency             | FCC : 2.412-2.462GHz<br>CE : 2.412-2.472GHz (Programmable for different country regulations)   |
| MIMO                            | 3T3R (JetWave 2311-HSPA)<br>2T2R (JetWave 2311-LTE-E)  |
| RF Modulation                   | 802.11g/n: OFDM (BPSK,QPSK,16-QAM,64QAM)   |
| RF Output Power                 | 13dBm at 802.11g, 11dBm at 802.11n HT40 (MCS0/8, 2422MHz)<br><17dB EIRP for CE (ETSI 300 328, include 4dBi default antenna)  |
| RF Sensitivity                  | 802.11g: -82dBm@6Mbps,1Rx; -65dBm@54Mbps,1Rx<br>802.11n HT20: -82dBm@MCS0,1Rx; -64dBm@MCS7,1Rx<br>802.11n HT40: -79dBm@MCS0,1Rx; -61dBm@MCS7,1Rx   |
| Cellular                        |  |
| HSPA (2310/2311-HSPA)           | HSPA Band:<br>UMTS/HSPA+: Five band 800/850/900/1900/2100MHz<br>GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz  |
| LTE Standard                    | 3GPP Release 9 Long Term Evolution (LTE), 2x2 DL-MIMO<br>LTE category 3: max. 100 Mbps DL, 50 Mbps UL  |
| LTE-E Band (2310/2311-LTE-E)    | LTE: 800/900/1800/2600 MHz,<br>FDD-Band (20,8,3,7)<br>UMTS/HSPA+: 900/1800/2100 MHz,<br>FDD-Band (8,3,1)<br>GSM/GPRS/EDGE: 900/1800 MHz  |
| LTE-U Band (2310-LTE-U)         | LTE: 700/850/AWS(1700/2100)/1900 MHz,<br>FDD-Band (17,5,4,2)<br>UMTS/HSPA+: 850/AWS(1700/2100)/1900 MHz,<br>FDD-Band (5,4,2)<br>GSM/GRPS/EDGE: 850/900/1800/1900 MHz   |

|                                  |   |
|----------------------------------|---|
| <b>Management</b>                |   |
| Management                       | Web GUI, Telnet, SNMP, IP Setup, DDNS Setup, Management VLAN ID, Configuration Backup/Restore, Firmware Upgrade, Reload Default, Ping, DO Events, DO Alarms, SNTP   |
| WLAN Setup (JetWave 2311 Series) | Wireless Basic Settings, Multiple SSID, Radio on/off, SSID Broadcast, Frequency selection, VLAN ID, Advanced Settings; WIFI/Cellular Redundant, WIFI to Cellular Auto Offload   |
| 3G/4G LTE                        | 3G/LTE Configuration, SIM Security, Status, Debug Log, Auto IP Report, Watchdog, Mobile Management, Dual SIM Standby/Redundant, Cellular/Eth-WAN Redundant  |
| Router/Gateway                   | Hardware-based NAT Routing, DHCP Server/Client  |
| SNMP                             | Simple Network Management Protocol v1/v2c/v3, Function-based MIB, SNMP Trap   |
| SMS                              | Up to 5 received telephone numbers, Ethernet Link up/down Alarm   |
| OPC UA                           | OPC UA for Industrial M2M communication   |
| Status                           | System Information, Bridge Table, ARP Table, DHCP Client List   |
| System Log                       | System events log   |
| Utility/NMS                      | Korenix View Utility, Korenix Mobile Manager, Korenix NMS   |
| <b>Security</b>                  |   |
| Secured Access                   | HTTPS, SSH, IEEE 802.1X, Radius Server  |
| Firewall                         | Firewall Setting, DMZ, Port forwarding  |
| VPN                              | Open VPN Client, 1-1 Open VPN Server, L2TP Client, IPsec  |
| <b>Power Requirement</b>         |   |
| Power                            | Dual DC24V (12~48VDC) input   |
| Power Consumption                | Standby Mode: 2.64W (Power on only)<br>Full Load: Max. 6.24 Watts<br>*Suggest to reserve 15% tolerance power in practical installation.   |
| <b>Mechanical</b>                |   |
| Enclosure                        | Aluminum housing  |
| External Antenna                 | Reverse SMA Female connector  |
| Mounting                         | Din-Rail, Desktop   |
| Dimension                        | 140 mm(H) x 110 mm(D) x 33 mm(W)  |
| Weight                           | 600g with package   |
| <b>Environmental</b>             |   |
| Operating Temperature            | -25 ~ 70°C  |
| Operating Humidity               | 5% ~ 95% (operating)  |
| Storage Temperature              | -40 ~ 85 °C   |
| <b>Approvals</b>                 |   |
| Certification                    | R&TTE:<br>CE EN55022/55024<br>EN 61000-6-2/4 Industrial Environment<br>EN 301 489-1/17/24<br>EN 301 908-1<br>EN 300 328 V1.8.1<br>EN50385/EN62311 MPE assessment<br>Safety EN60950-1<br>FCC Part 15B (JetWave 2316-LTE-U) |
| Warranty                         | 5 years   |
| <b>Ordering Information</b>      |   |
| JetWave 2310-HSPA                | Industrial Cellular Router/Gateway, 2xGE, 3G UMTS/HSPA+ Five-Band   |
| JetWave 2310-LTE-E               | Industrial Cellular Router/Gateway, 2xGE, LTE 800(20)/900(8)/1800(3)/2600(7)  |
| JetWave 2310-LTE-U               | Industrial Cellular Router/Gateway, 2xGE, LTE 700(17)/850(5)/AWS(4)/1900(2)   |
| JetWave 2311-HSPA                | Industrial Cellular plus 802.11n 2.4G WIFI IP Gateway, 2xGE, UMTS/HSPA+ Five-Band   |
| JetWave 2311-LTE-E               | Industrial Cellular plus 802.11n 2.4G WIFI IP Gateway, 2xGE, LTE 800(20)/900(8)/1800(3)/2600(7)   |
| Includes                         | Product Unit, Quick Installation Guide<br>Default Antennas (Depends on model, HSPAx1, LTEx2, WIFIX2 or 3)<br>*Please download user manual from Korenix Web Site   |