

Industrial LTE plus 802.11n WIFI Wireless IP Gateway

JetWave 3420/3420-M12 Series



- Connect Ethernet, WLAN & Serial device over LTE network
- Next Generation Long Term Evolution (LTE) technology, 2x2 DL-MIMO, max. 100MDL/50M UL, Backward compatible with 3G UMTS/HSPA+
- Dual Gigabit Ethernet Port Bridging and Routing
- LAN/WIFI to LTE Cellular Routing
- LTE and Ethernet-WAN Redundant
- Reliable IEEE 802.11n 2T2R MIMO WIFI coverage
- Korenix View/NMS for Wire & Wireless Management
- Supports RS-232/422/485 Serial port
- Supports NAT/Firewall/DMZ, Secure VPN Connectivity
- Gigabit PoE+ power input
- Industrial IP31 Aluminum Housing
- Redundant DC24V(12-48V) power input, DI + DO Alarm
- EN50121-4 Railway EMC, -40-70°C Operating temperature
- JetWave 3420-LTE-E/U: Industrial LTE plus 802.11n 2x2 MIMO Wireless IP Gateway, LTE-E/U Band
- JetWave 3420-M12-LTE-E/U: Industrial LTE plus 802.11n 2x2 MIMO Wireless IP Gateway, 2G M12, LTE-E/U Band

Overview

The JetWave 3420 is an industrial grade Cellular LTE plus dual band 802.11n WIFI IP gateway which enables access to the Ethernet, WIFI and Serial port communication over the LTE network, also backward compatible with 3G UMTS/HSPA. The JetWave 3420 is equipped with next generation Long Term Evolution cellular communication module, 2 Gigabit Ethernet ports, 802.11n 2.4G/5G selectable WIFI radio and 1x RS232/422/485 Serial Port.

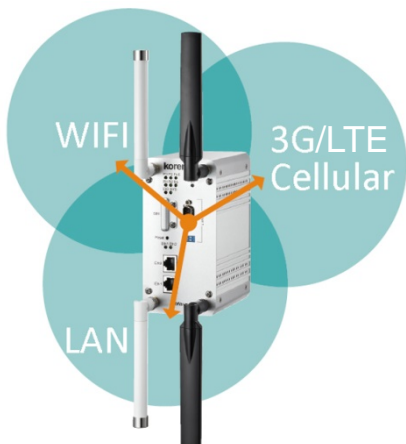
The embedded LTE cellular module supports LTE bands and backward support of UMTS/HSPA+. These bands are extremely popular applications in cellular network and which comfort for the requirements to setup a cellular network. The WIFI radio supports 2T2R, 300Mbps data rate, and the wireless mode supports Access Point, Client, WDS-AP, WDS- CPE modes. The JetWave 3420-M12 equips with dual Gigabit Ethernet M12 anti-vibration connector for vehicle installation.

The key feature of the JetWave 3400 series include IP Gateway features, such as the LAN/WIFI to LTE/3G Routing, WAN and LTE/3G Redundant, Firewall, VPN, high speed gigabit Ethernet transmission, abundant value-added software and the wireless access security request. The WIFI Radio of the JetWave 3420 series can function as an AP/CPE, WDS modes for different point to point or wide range WIFI coverage applications. The additional Auto IP Report feature allows to remote monitor and access the cellular interface, perform auto location positioning even without static IP address.

The JetWave 3420 series is an industrial grade design with the significant features of gigabit PoE+, dual 24V(12-48V)DC power input, IP31 Housing and Digital Input/Output. The design of the EN50121-4 approved and wide operation temperature design allows users to install the device under roadside, transportation, factory and harsh environmental conditions.

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.



IP Gateway Routing for WIFI, LAN and Serial Interfaces

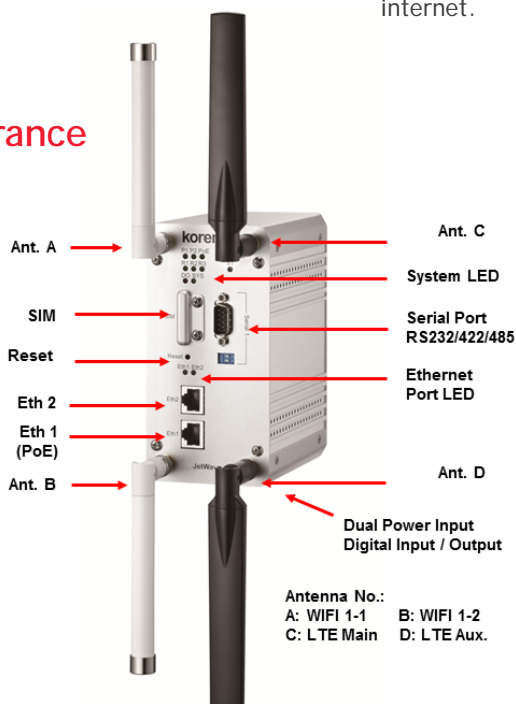
Set the LTE/3G as WAN, the Gigabit Ethernet and 802.11n WIFI as LAN, it performs perfectly the IP Gateway routing between LAN to LTE/3G and WIFI to LTE/3G. The 802.11n WIFI also provides high speed, greater user capacity and wide coverage access. The equipped RS-232/422/485 serial ports provides ideal industrial serial to cellular solution for remote serial operation and M2M connectivity.



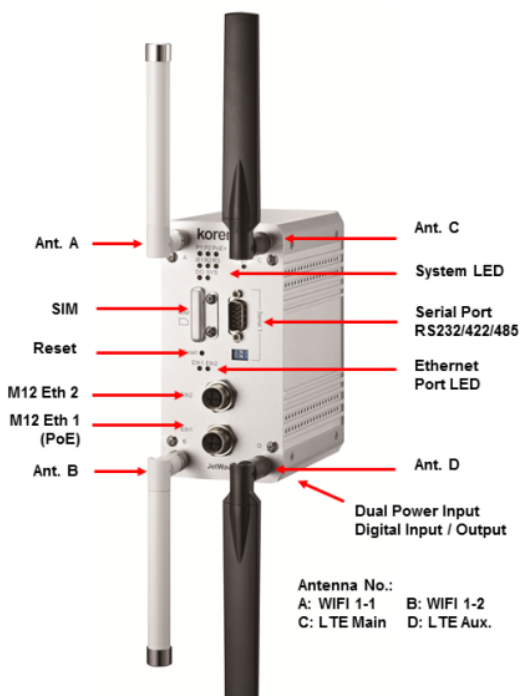
NAT, Firewall, VPN for Secure Remote Connectivity

The NAT translates the public IP address into the internal IP addresses hiding behind the firewall. The firewall protects the access from the public internet to the private industrial network. By enabling VPN, the device provides encrypted communication tunnel among the private network and public internet.

Appearance



JetWave 3420 Appearance



JetWave 3420-M12 Appearance

Specification

| Technology | |
|---|---|
| Standard | Wireless: IEEE 802.11a/g/n for Wireless LAN IEEE 802.11i Wireless Security Ethernet: IEEE 802.3 for 10BaseT IEEE 802.3u for 10/100Base-TX IEEE 802.3ab for 1000BaseT IEEE 802.3at for Power over Ethernet IEEE 802.1D Spanning Tree Protocol IEEE 802.1Q for VLAN Highest Data Rate: IEEE 802.11a, g: 54 Mbps IEEE 802.11n: 300Mbps @ 40MHz |
| Interface | |
| Ethernet Port | 2x 10/100/1000Base-T RJ-45 (JetWave 3420) 2x 10/100/1000Base-T M12 (JetWave 3420-M12) IEEE 802.3at PoE Compliant in Ethernet Port 1 |
| Power Input | 4-pin socket for Dual DC Input |
| Serial | 1x RS-232/422/485, 2-pin DIP for 120ohm long distance resistor for long distance RS485 |
| Digital Input/ Output | 1xDigital Input, 0: +3V max., 1: +11V~+30VDC 1xRelay Output, 1A@24VDC |
| Console | 3-pin Diag. socket for CLI |
| Reset | Reset device or Reset Factory Default (>7 sec.) |
| Antenna Socket: | 2x SMA Male Reverse for WIFI MIMO 2x SMA Male Reverse for LTE MIMO |
| Wireless LAN | |
| RF Modulation | 802.11a/n: OFDM (BPSK, QPSK, 16-QAM, 64QAM) 802.11g/n: OFDM (BPSK, QPSK, 16-QAM, 64QAM) |
| Operating Frequency | 5GHz Typical Band: (802.11n WIFI) FCC: 5.170-5.250GHz; 5.735-5.835GHz CE: 5.180-5.240GHz 2.4GHz Band: (802.11n WIFI) FCC : 2.412-2.462GHz; CE : 2.412-2.472GHz (Programmable for different country regulations) |
| Transmission Rate | 802.11b: 11/5.5/2/1.0Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps (Multiple Rates supported) |
| Number of Channel (Max.) | 2.4GHz: 802.11b/g/11n(20MHz):13, 802.11n(40MHz): 9 5.18-5.24GHz: 802.11a/11n(20MHz):4, 802.11n(40MHz): 2 *Controllable for different country regulations |
| WIFI EIRP Output Power (Measured Max. Average) | 5.8GHz Band: 20dB EIRP for ETSI 301 893 (Band 1) 2.4GHz Band: 19dB EIRP for ETSI 300 328 (Included Antenna: 5G 3.57dBi, 2.4G 2.63dBi gain) *Controllable for different country regulations |
| Sensitivity | 802.11a: -82dBm@6Mbps, 1Rx; -95/-91dBm@6Mbps, 2Rx; -65dBm@54Mbps, 1Rx; -79/-75dBm@54Mbps, 2Rx; 802.11g: -82dBm@6Mbps, 1Rx; -95/-91dBm@6Mbps, 2Rx; -65dBm@54Mbps, 1Rx; -80/-76dBm@54Mbps, 2Rx 802.11a/n HT20: -82dBm@MCS0, 1Rx; -95/-91dBm@MCS8, 2Rx; -64dBm@MCS7, 1Rx; -77/-73dBm@MCS15, 2Rx 802.11a/n HT40: -79dBm@MCS0, 1Rx; -91/-87dBm@MCS8, 2Rx; -61dBm@MCS7, 1Rx; -74/-70dBm@MCS15, 2Rx 802.11g/n HT20: -82dBm@MCS0, 1Rx; -95/-91dBm@MCS8, 2Rx; -64dBm@MCS7, 1Rx; -77/-73dBm@MCS15, 2Rx 802.11g/n HT40: -79dBm@MCS0, 1Rx; -90/-86dBm@MCS8, 2Rx; -61dBm@MCS7, 1Rx; -74/-71dBm@MCS15, 2Rx |

| LTE Cellular | |
|--------------------------------------|---|
| Standard | 3GPP Release 9 Long Term Evolution (LTE), 2x2 DL-MIMO, max. 100 Mbps DL, 50 Mbps UL |
| LTE-E Band | LTE: 800/900/1800/2600 MHz, FDD-Band (20, 8, 3, 7) UMTS(WCDMA): 900/1800/2100MHz GSM/GPRS/EDGE: 900/1800 MHz |
| LTE-U Band | LTE: 700/850/AWS(1700/2100)/1900 MHz, FDD-Band (17, 5, 4, 2) UMTS(WCDMA): 850/AWS(1700/2100)/1900 MHz, GSM/GPRS/EDGE: 850/900/1800/1900 MHz |
| Power Requirements | |
| Power | Ethernet 1: IEEE802.3at PoE+ compliant Cables: 2/4-pair UTP/STP Cat. 5E cable (100m) DC Input: Dual 24V (12-48VDC) input |
| Power Consumption | Max. 10 Watts @ DC 48V, depend on Radio TX power |
| Default WIFI Antenna Characteristics | |
| Gain | Default Antenna 5G 3.57dBi, 2.4G 2.63dBi, |
| Frequency | Available for 5G/2.4G band |
| Direction | Omni-Antenna |
| Material | Fiberglass |
| Management | |
| Management | Web GUI, Korenix View Utility, SNMP, IP Setup, DHCP Server/Client, Management VLAN, NTP, Configuration Backup/Restore, Reload Default |
| Operating Mode | System: Bridge or Router Wireless: Access Point, Client, WDS-AP, WDS-Client |
| Radio | Radio Bandwidth Control, Output power, Antenna number, Distance in Meter |
| WLAN Setup | Multiple SSID, Radio On/Off, SSID Broadcast, Frequency/Channel Select, Data Rate, VLAN ID, Advanced Settings, Client Based Fast Roaming, Maximum Client number |
| Link Integration | Wire and Wireless Link Fault Pass-Through |
| WMM | WMM QoS Traffic |
| Shaping | Incoming/Outgoing Traffic Limit |
| Router | Static, DHCP, LAN/WAN IP, IP/Port Filtering |
| STP | Support Spanning Tree Protocol |
| SNMP | Simple Network Management Protocol v1/v2c/v3, Function-based MIB |
| Status | Wireless Status, Associated client, Ping, Site Survey, Ping Watchdog |
| Link Test | Antenna Alignment Tool Data Rate Test |
| SNMP Trap | SNMP Trap to specific server |
| SMTP | E-mail Alert |
| System Log | System events log |
| Serial | Serial Mode RS-232/422/485 Selection, Baud Rate, Serial parameters settings, TCP Server, TCP Client, UDP mode |
| LTE GUI | |
| LTE | SIM Configuration, SIM Security, LTE Connect, Status, Auto IP report |
| Redundant | LTE/WAN Redundant LTE or WAN first |

| Security | |
|-----------------------|--|
| Security | Multi-SSID (up to 8x ESSID for each radio) |
| Secured Access | HTTPS, SSH, IEEE 802.1X, MAC Address ACL VPN Client |
| Firewall | Firewall Setting, DMZ, Port forwarding |
| Security Encryption | WEP 64/128 bits, WPA-PSK(TKIP), WPA2-PSK/EAP (IEEE 802.1x/RADIUS, TKIP and AES) |
| VPN | OpenVPN Client for Secure connectivity |
| Mechanical | |
| Enclosure | IP31 protection |
| Antenna connector | Reverse SMA Male |
| Mounting | Din-Rail, Wall-Mount, Ceiling-Mount(Optional) |
| Dimension | 149 mm(H) x 120.6 mm(D) x 74 mm(W) |
| Weight | 1.5 kg with package, without optional accessory |
| Environmental | |
| Operating Temperature | Temperature: -40 ~70°C Humidity: 5% ~ 95% (operating) |
| Storage | Temperature: -40 ~ 85°C |

| Regulatory Approvals | |
|----------------------|---|
| EMC | CE EN55022/24 FCC part 15B Class A |
| Railway | Railway Roadside EN50121-4 EMC Certification |
| Safety | EN60950-1 |
| Radio | EN 300 328 V1.8.1 EN 301 893 V1.7.1 EN301 489-1/17/24 |
| Warranty | 5 years |
| Note: | The WIFI and system certifications are the same as JetWave 3320 Series. |

| Option Accessory | |
|-------------------------------|---|
| Ceiling Mounting Kit | Ceiling Mounting Plate and screws. Used for Ceiling-/Wall-mounting Dimension: 156x117x22mm |
| External Antenna Mounting Kit | Antenna Mounting L Plate Extended Radio Cable: RG316 Cable, L=90cm, SMA Male Reverse to SMA Female Reverse |

| Ordering Information | |
|------------------------|---|
| JetWave 3420-LTE-E | Industrial LTE plus 802.11n 2.4G/5G WIFI IP Gateway, 2xGE, LTE 800(20)/900(8)/1800(3)/2600(7) |
| JetWave 3420-LTE-U | Industrial LTE plus 802.11n 2.4G/5G WIFI IP Gateway, 2xGE, LTE 700(17)/850(5)/AWS(4)/1900(2) |
| JetWave 3420-M12-LTE-E | Industrial LTE plus 802.11n 2.4G/5G WIFI IP Gateway, 2xGE M12, LTE 800(20)/900(8)/1800(3)/2600(7) |
| JetWave 3420-M12-LTE-U | Industrial LTE plus 802.11n 2.4G/5G WIFI IP Gateway, 2xGE M12, LTE 700(17)/850(5)/AWS(4)/1900(2) |
| Includes: | JetWave 3420/3420-M12 Embedded Cinterion LTE Wireless Module Mini PCI-e card 4x Default Antenna (2x WIFI, 2x LTE) Din-Rail Mounting Kit, Wall-mount plate, Power/DI+DO connector Quick Installation Guide |
| | Note: The embedded cellular Mini PCI-e card, driver and software are pre-installed for shipment. |

| Optional Accessory | |
|--|---|
| JetWave 3400/3300/3200 External SMA Antenna Mounting Kit | 4x Antenna Mounting L Plate 4x 90cm RG 316 Extended SMA Type Radio Cable 1x Ceiling-Mounting Plat |

| Power Source Equipment (PSE) | |
|---------------------------------|--|
| Gigabit Managed PoE+ Switch: | JetNet 5310G Industrial 8 PoE + 2 Gigabit Combo Managed High Power IEEE802.3at PoE Switch, -40~75°C JetNet 6710G-M12-HVDC Industrial 8PoE + 2G Managed M12 High Power IEEE802.3at PoE Switch, on-board HVDC power input JetNet 6710G-M12 Industrial 8 PoE + 2G Managed M12 High Power IEEE802.3at PoE Switch |
| Gigabit 24V Booster PoE+ Switch | JetNet 3906G Industrial 6-port Gigabit IEEE802.3af/at PoE Switch JetNet 3810Gf Industrial 8 FE PoE + 2 GbE SFP Booster PoE Switch JetNet 3810G Industrial 8 FE PoE + 2 GbE Booster PoE Switch |
| Gigabit PoE+ Injector | JetCon 1702-A Industrial 2-Port High Power PoE Injector, A-Mode, -40-75°C JetCon 1702-B Industrial 2-Port High Power PoE Injector, B-Mode, -40-75°C |