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℃ 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.

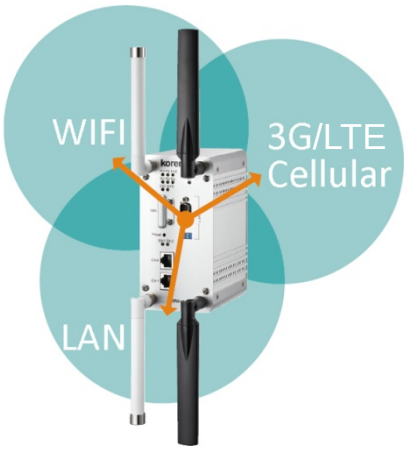
The embedded LTE cellular module supports LTE bands and backward support of UMTS/HSPA+. These bands are extremely popular applications in cellular network and which comfort for the requirements to setup a cellular network. The WIFI radio supports 2T2R, 300Mbps data rate, and the wireless mode supports 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.

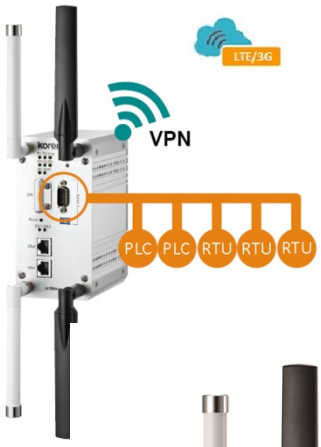
Next Generation Long Term Evolution (LTE)

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

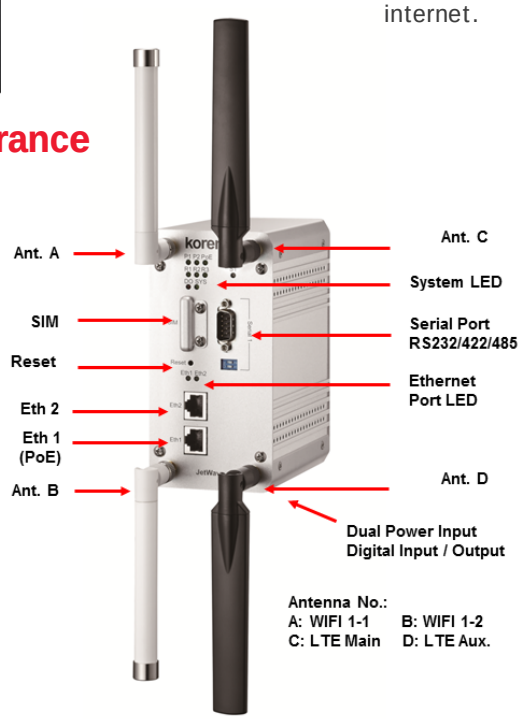
Set the LTE/3G as WAN, the Gigabit Ethernet and 802.11n WIFI as LAN, it performs perfectly the IP Gateway routing between LAN to LTE/3G and WIFI to LTE/3G. The 802.11n WIFI also provides high speed, greater user capacity and wide coverage access. The equipped RS-232/422/485 serial ports provides ideal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



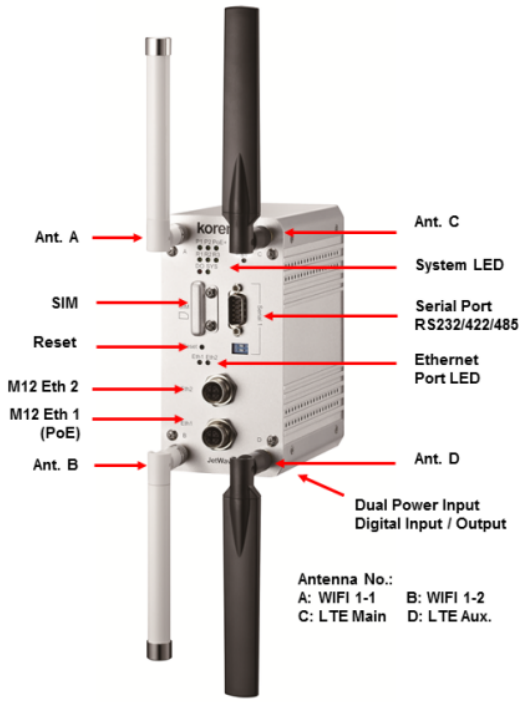
NAT, Firewall, VPN for Secure Remote Connectivity

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

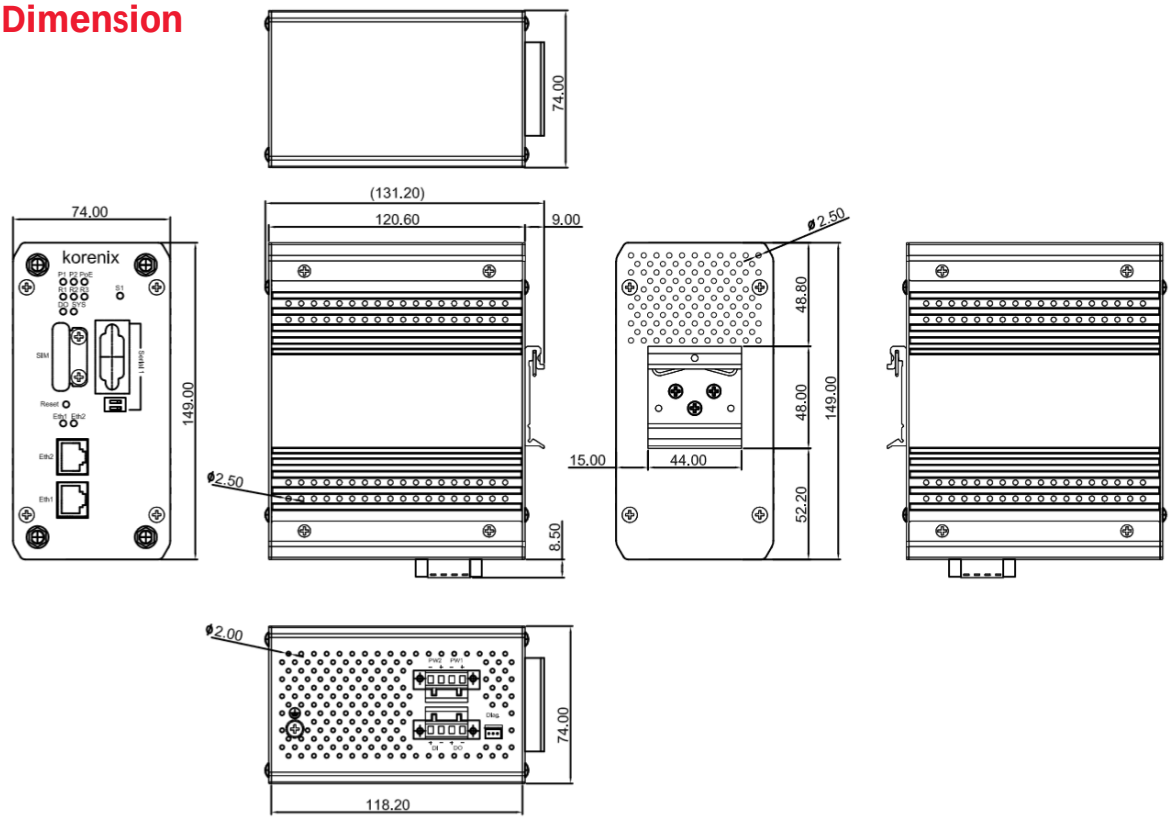


JetWave 3420 Appearance

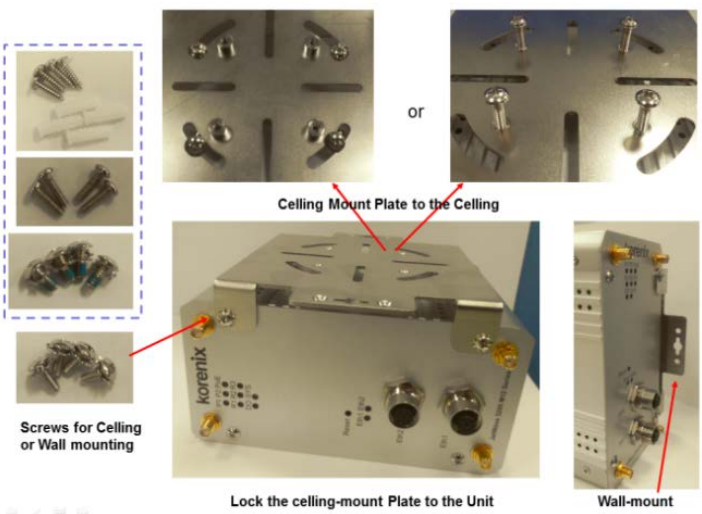


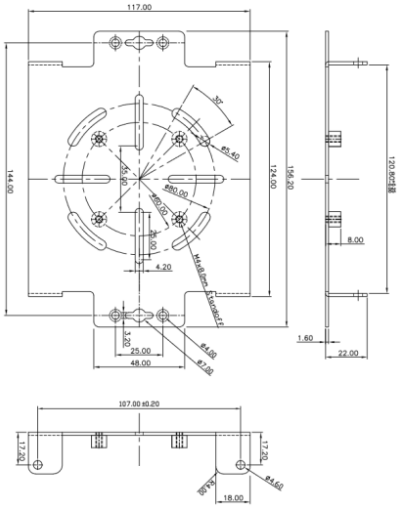
JetWave 3420-M12 Appearance

Dimension

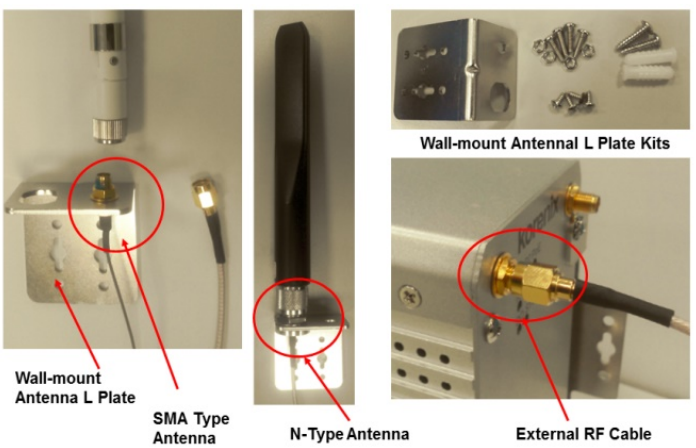


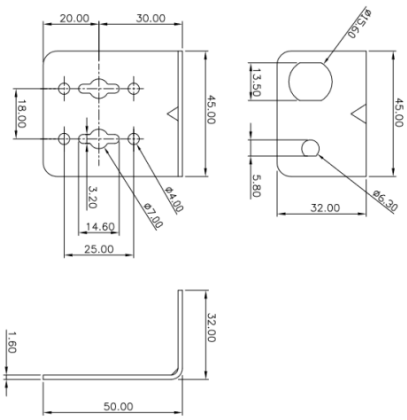
Accessory - Celling Mounting Kit





Accessory - Antenna Mounting Kit





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 Complaint 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/GRPS/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, Celling-Mount(Option)
Dimension	149 mm(H) x 120.6 mm(D) x 74 mm(W)
Weight	1.5 kg with package, without optional accessary
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	
Celling Mounting Kit	Celling Mounting Plate and screws. Used for Celling-/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 Celling-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