

## Industrial UMTS/HSPA+ plus 802.11n 2T2R MIMO Wireless IP Gateway

# JetWave 3320 Series



EN50121-4



3G Gateway



WiFi AP

- Connect Ethernet, WLAN & Serial device over 3G network
- UMTS/HSPA+ bands, GSM/GPRS/EDGE quad-band support
- 802.11n 2x2 MIMO doubles data rate, 300Mbps
- Dual Gigabit Ethernet Ports
- LAN to 3G Routing, WIFI to 3G Routing
- 3G/WAN Redundant
- Korenix View for Wire & Wireless Management
- RS-232/422/485 Serial port supports Serial mode includes TCP Server/Client and UDP
- Gigabit PoE+ power input
- Industrial IP31 Aluminum Housing
- Redundant DC24V(12~48V) power input, DI + DO Alarm
- EN50121-4 Railway EMC, -40~70oC Operating temp.
- JetWave 3320: Industrial UMTS/HSPA+ plus 802.11n 2T2R MIMO Wireless IP Gateway
- JetWave 3320-M12: Industrial UMTS/HSPA+ plus 802.11n 2T2R MIMO Wireless IP Gateway with Dual Gigabit Ethernet M12 Connector

## Overview

The JetWave 3300 is an industrial grade Cellular IP gateway which enables access to the Ethernet, WIFI and Serial port communication over the 3G Cellular network. The JetWave 3320 is equipped with one embedded 3G module, 2 Gigabit Ethernet ports, 802.11n 2.4G/5G selectable WIFI radio and 1x RS232/422/485 Serial Port.

The embedded 3G cellular module supports UMTS/HSPA+ band and backward support of GSM/GPRS/EDGE quad-band. 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 3320-M12 equips with dual Gigabit Ethernet M12 anti-vibration connector for vehicle installation.

The key feature of the JetWave 3300 series include IP Gateway, such as the LAN/WIFI to 3G Routing and Redundant, high speed gigabit Ethernet transmission, abundant value-added software and the wireless security request. The WIFI Radio of the JetWave 3300 series can function as an AP/CPE, WDS modes for different point to point or point to multiple point network 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 3300 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 harsh environmental conditions.

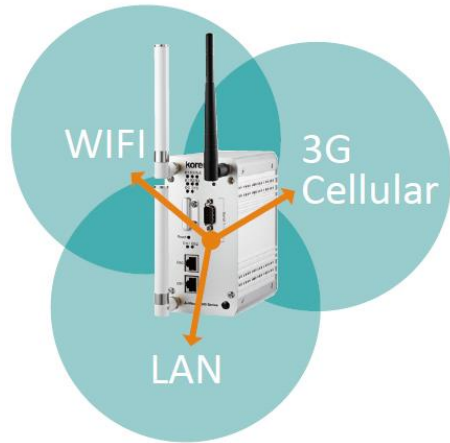
# Remote or Mobile Over 3G Network

The embedded 3G module offers high speed GSM/ GPRS/EDGE or UMTS/HSPA+ connection which enables remote and mobile control to the LAN and WIFI interfaces.



# IP Gateway Routing

Set the 3G as WAN and the Gigabit Ethernet and WIFI as LAN, it performs perfectly the IP Gateway routing between LAN to 3G and WIFI to 3G.

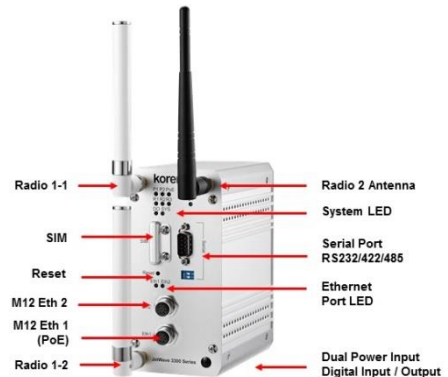
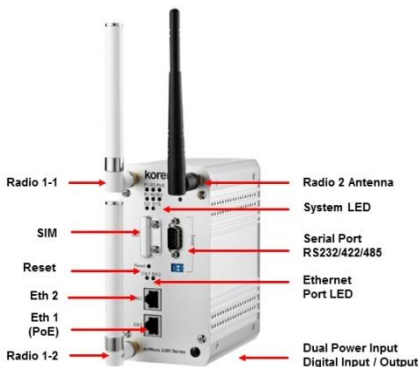


# Serial to Cellular

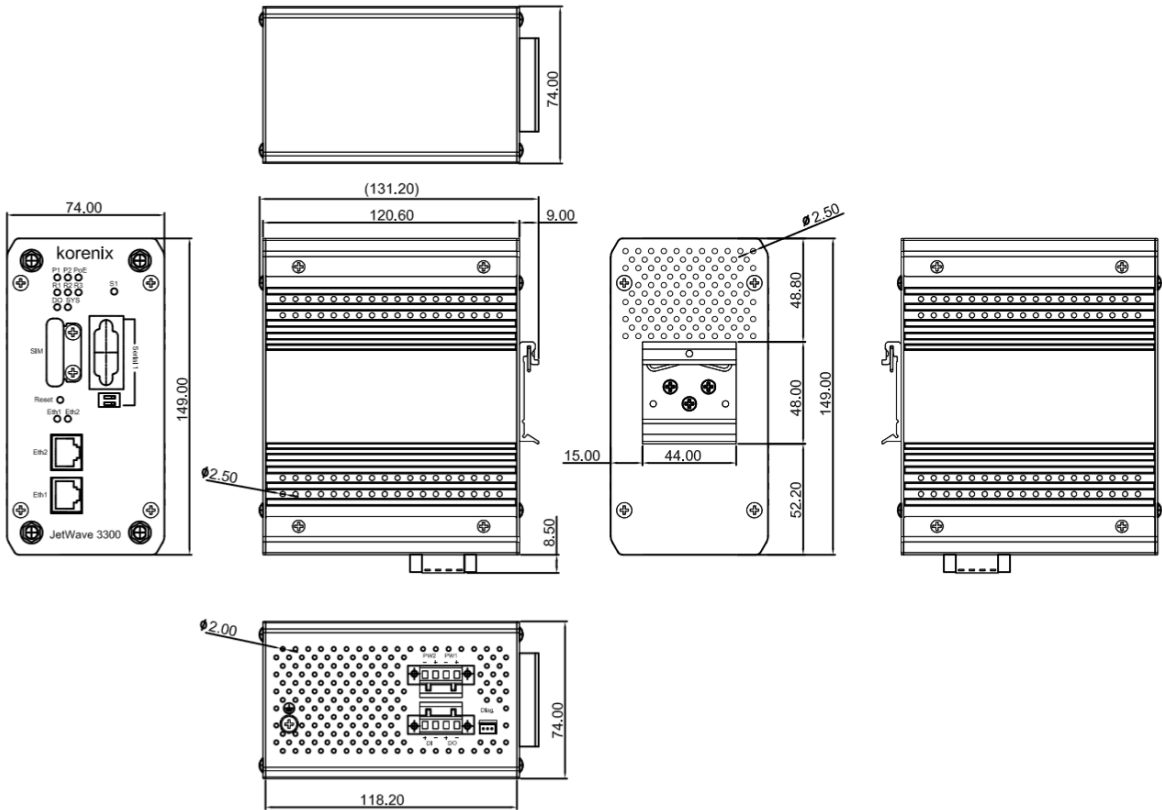
The device equips with one RS-232/422/485 serial port. It supports TCP Server, TCP Client and UDP service mode. It is ideal industrial serial to cellular solution for remote serial operation and M2M connectivity.



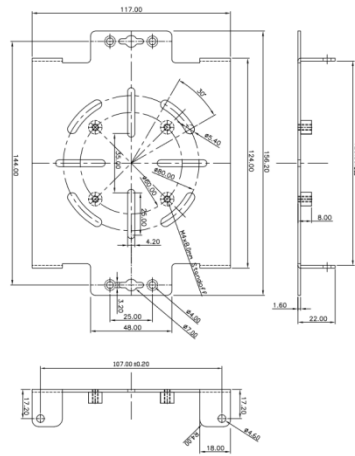
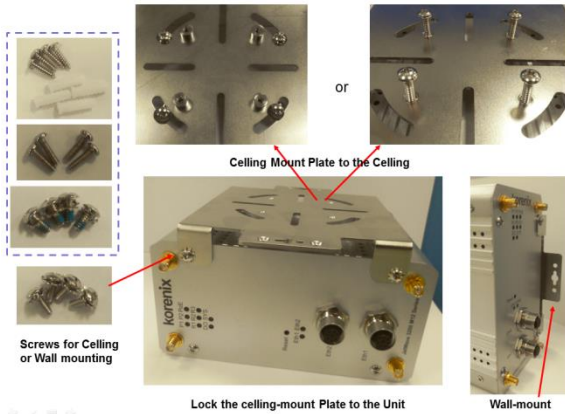
# Appearance



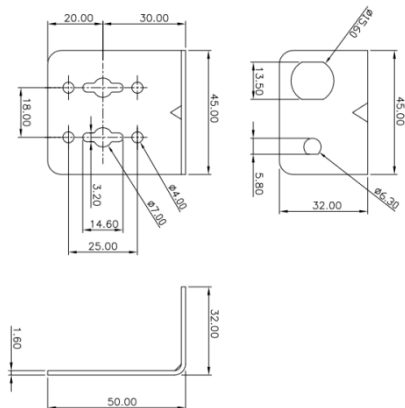
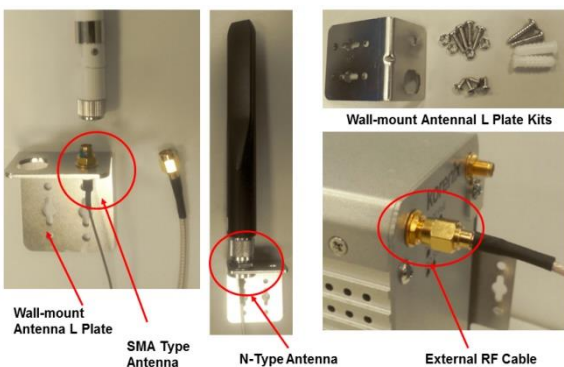
# Dimension



# Accessory - Ceiling Mounting Kit



# Accessory - Antenna Mounting Kit



# Specification

Technology	
<b>Standard</b>	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	
<b>Ethernet Port</b>	2x 10/100/1000Base-T RJ-45 (JetWave 3320) 2x 10/100/1000Base-T M12 (JetWave 3320-M12) IEEE 802.3at PoE Compliant in Ethernet Port 1
<b>Power Input</b>	4-pin socket for Dual DC Input
<b>Serial</b>	1x RS-232/422/485, 2-pin DIP for 120ohm long distance resistor for long distance RS485
<b>Digital Input/ Output</b>	1xDigital Input, 0: +3V max., 1: +11V-+30VDC 1xRelay Output, 1A@24VDC
<b>Console</b>	3-pin Diag. socket for engineer
<b>Reset</b>	Reset Factory Default after press 7 seconds
<b>Antenna Socket:</b>	SMA type for 3G/GPRS, WIFI
Performance	
<b>CPU</b>	680MHz
<b>Memory</b>	16MB Flash 64MB SDRAM
<b>Operating Frequency</b>	<b>5GHz Typical Band: (802.11n WIFI)</b> FCC: 5.170-5.250GHz, 5.735-5.835GHz CE: 5.170-5.250GHz (Programmable for other 5G Band) <b>2.4GHz Band: (802.11n WIFI)</b> FCC : 2.412-2.462GHz CE : 2.412-2.472GHz (Programmable for different country regulations)
<b>RF Modulation</b>	802.11a/n: OFDM (BPSK, QPSK, 16-QAM, 64QAM) 802.11g/n: OFDM (BPSK, QPSK, 16-QAM, 64QAM)
<b>RF Output Power (Max. of Avg.)</b>	<b>5.8GHz Band:</b> 21dBm@ 802.11a/n HT20 (MCS0/8, 5180MHz) for FCC 23dB EIRP for ETSI 301 893 (Band 1) 25dB EIRP for ETSI 301 893 (Band 4) <b>2.4GHz Band:</b> 21dBm at 802.11g/n HT40 (MCS0/8, 2422MHz) for FCC 20dB EIRP for CE (ETSI 300 328) (Controllable for different country regulations)
<b>Sensitivity</b>	<b>802.11a:</b> -82dBm@6Mbps,1Rx; -95/-91dBm@6Mbps,2Rx; -65dBm@54Mbps,1Rx; -79/-75dBm@54Mbps, 2Rx; <b>802.11g:</b> -82dBm@6Mbps,1Rx; -95/-91dBm@6Mbps,2Rx; -65dBm@54Mbps,1Rx; -80/-76dBm@54Mbps,2Rx <b>802.11a/n HT20:</b> -82dBm@MCS0,1Rx; -95/-91dBm@MCS8,2Rx; -64dBm@MCS7,1Rx; -77/-73dBm@MCS15,2Rx <b>802.11a/n HT40:</b> -79dBm@MCS0,1Rx; -91/-87dBm@MCS8,2Rx; -61dBm@MCS7,1Rx;-74/-70dBm@MCS15,2Rx <b>802.11g/n HT20:</b> -82dBm@MCS0,1Rx; -95/-91dBm@MCS8,2Rx; -64dBm@MCS7,1Rx;-77/-73dBm@MCS15,2Rx <b>802.11g/n HT40:</b> -79dBm@MCS0,1Rx; -90/-86dBm@MCS8,2Rx; -61dBm@MCS7,1Rx;-74/-71dBm@MCS15,2Rx

3G Cellular	
<b>Frequency Bands</b>	GSM/GPRS/EDGE: Quad band, 850/900/1800/1900MHz UMTS/HSPA+: Five band, 800/850/900/1900/2100MHz
<b>HSPA</b>	Standard: 3GPP Release 6/7 Data Rate: DL 14.4Mbps, UL 5.7Mbps
<b>UMTS</b>	Standard: 3GPP Release 4 Data Rate: PS 384kbps DL/ 384kbps UL *Check User manual for detail specification
Power Requirements	
<b>Power</b>	Ethernet 1: IEEE802.3at PoE+ compliant Cables: 2/4-pair UTP/STP Cat. 5E cable (100m) DC Input: Dual 24V (12-48VDC) input
<b>Power Consumption</b>	Max. 10 Watts @ DC 48V, depend on Radio TX power
Default WIFI Antenna Characteristics	
<b>Gain</b>	Default Antenna 5G 3.57dBi, 2.4G 2.63dBi,
<b>Frequency</b>	Available for 5G/2.4G band
<b>Direction</b>	Omni-Antenna
<b>Material</b>	Fiberglass
Management	
<b>Management</b>	Web GUI, Korenix View Utility, SNMP, IP Setup, DHCP Server/Client, Management VLAN, NTP, Configuration Backup/Restore, Reload Default
<b>Operating Mode</b>	System: Bridge or Router Wireless: Access Point, Client, WDS-AP, WDS-Client
<b>Radio</b>	Radio Bandwidth Control, Output power, Antenna number, Distance in Meter
<b>WLAN Setup</b>	Multiple SSID, Radio On/Off, SSID Broadcast, Frequency/Channel Select, Data Rate, VLAN ID, Advanced Settings, Client Based Fast Roaming, Maximum Client number
<b>Link Integration</b>	Wire and Wireless Link Fault Pass-Through
<b>WMM</b>	WMM QoS Traffic
<b>Shaping</b>	Incoming/Outgoing Traffic Limit
<b>Router</b>	Static, DHCP, LAN/WAN IP, IP/Port Filtering
<b>STP</b>	Support Spanning Tree Protocol
<b>SNMP</b>	Simple Network Management Protocol v1/v2c/v3, Function-based MIB
<b>Status</b>	Wireless Status, Associated client, Ping, Site Survey, Ping Watchdog
<b>Link Test</b>	Antenna Alignment Tool Data Rate Test
<b>SNMP Trap</b>	SNMP Trap to specific server
<b>SMTP</b>	E-mail Alert
<b>System Log</b>	System events log
<b>Serial</b>	Serial Mode RS-232/422/485 Selection, Baud Rate, Serial parameters settings, TCP Server, TCP Client, UDP mode
3G	
<b>3G</b>	3G Connect, 3G Status, Debug log download SIM Security, Auto IP report
<b>Redundant</b>	3G/WAN Redundant
<b>GPS</b>	GPS Positioning(Phase 2)

Security	
Security	Multi-SSID (up to 8x ESSID for each radio)
Secured Access	HTTPS, SSH, IEEE 802.1X, MAC Address ACL
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)
Mechanical	
Enclosure	IP31 protection
Antenna connector	Reverse SMA
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: -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	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(WIFI)/24(3G) EN301908-1
Warranty	5 years
Option Accessory	
Celling Mounting	Celling Mounting Plate, 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 3320	Industrial UMTS/HSPA+ plus 802.11n 2T2R MIMO Wireless IP Gateway
JetWave 3320-M12	Industrial UMTS/HSPA+ plus 802.11n 2T2R MIMO Wireless IP Gateway with Dual Gigabit Ethernet M12 Connector
Includes:	JetWave 3320/3320-M12 Embedded Cinterion 3G UMTS/HSPA+ Mini PCI-e Card 3x Default Antenna Din-Rail Mounting Kit, Wall-mount plate, Power/DI+DO connector Quick Installation Guide
	Notice: The embedded cellular Mini PCI-e card and driver 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