Reliable Wireless & Mobile Communication over Harsh Environments

Selection Guide

	JetWave 3220 JetWave 3220-M12	JetWave 3320 JetWave 3320-M12	JetWave 3420 JetWave 3420-M12	JetWave 2311*	JetWave 2310
	802.11a/g/n	802.11a/g/n + 3G	802.11a/g/n + LTE	802.11g/n + 3G or LTE	3G Gateway
Interfaces					
10/100/1000-TX	2x RJ-45 (or M12)	2x RJ-45 (or M12)	2x RJ-45 (or M12)	2 x RJ-45	2 x RJ-45
Number of Radio	2x WIFI (2.4G/5G)	WIFI (2.4G/5G) + 3G	WIFI (2.4G) + LTE	WIFI (2.4G) + 3G or LTE	3G
WIFI Antenna	4 (2T2R MIMO)	2 (2T2R MIMO)	2 (2T2R MIMO)	Up to 3 (3T3R MIMO)	
Cellular Antenna		2x 3G	2x LTE	1x3G or 2xLTE	1x 3G
Max Transmission Distance	Default WIFI Antenna: 100m External WIFI Antenna: up to 15km 3G/LTE : Depends on ISP			Default WIFI: 50m 3G/LTE: Depends on ISP	3G: Depends on ISP
Serial	1x RS-232/422/485			1x RS-232/422/485	
DI/DO	1xDI + 1xDO	1xDI + 1xDO	1xDI + 1xDO	1xDO	1xDO
Power Input	802.3at PoE (Eth 1) DC24V(12-48V)	802.3at PoE (Eth 1) DC24V(12-48V)	802.3at PoE (Eth 1) DC24V(12-48V)	DC24V(12-48V)	DC24V(12-48V)
Protocols					
Operating Mode	AP, Client, WDS-AP/Client, Redundant AP/Client	AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client	Client WDS-Client	
		3G	LTE	3G or LTE	3G
Routing	LAN/WIFI to WAN	LAN/WIFI to 3G/WAN	LAN/WIFI to LTE/WAN	LAN to 3G or LTE	LAN to 3G
NAT	✔	✔	✔	✔	✔
Firewall	✔	✔	✔	✔	✔
Redundant AP/CPE	✔				
WAN Redundancy		WAN/3G	WAN/LTE	WAN/3G or LTE	WAN/3G
Link Fault Pass-Through	✔	✔	✔		
Client Based Fast Roaming	✔				
802.1x, MAC Access Control	✔	✔	✔	✔	
Encryption	WEP, WPA, WPA2	WEP, WPA, WPA2	WEP, WPA, WPA2	WEP, WPA, WPA2	CLI, Web, Utility, SNMP
Configuration	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	
Link Test Tools	✔	✔	✔	✔	
Auto IP Report	✔	✔	✔	✔	
Event Alarm	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap	DO, E-mail, Syslog, SNMP Trap
Mechanical					
Dimension (H x D x W mm)	149 x 120.6 x 74	149 x 120.6 x 74	149 x 120.6 x 74	140 x 110 x 33	140 x 110 x 33
Operating Temperature	-40~70°C	-40~70°C	-40~70°C	-25~60°C	-25~70°C
Housing	Aluminum (IP31)	Aluminum (IP31)	Aluminum (IP31)	Aluminum (IP31)	Aluminum (IP31)
Certification					
CE / FCC	✔	✔	✔	✔	✔
Radio	WIFI(2.4G/5G), 3G	WIFI(2.4G/5G), 3G	WIFI(2.4G/5G)	WIFI(2.4G), 3G	3G
EN50121-4			✔		

* Coming soon

Standard
WIFI   IEEE 802.11a/g/n
3G   3GPP Release 4,6,7
LTE   3GPP Release 8,9
Operating Frequency
2.4G WIFI   FCC : 2.412-2.462GHz; CE : 2.412-2.472GHz
5G WIFI   FCC: 5.170-5.250GHz and 5.735-5.835GHz; CE: 5.170-5.250GHz
3G   GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz, UMTS/HSPA+: Five band 800/850/900/1900/2100MHz
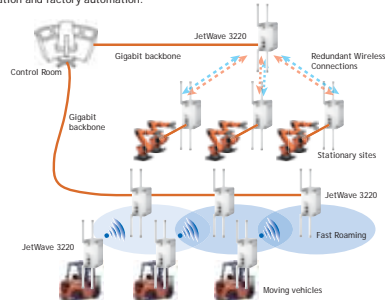LTE   LTE-EU: 800/900/1800/2600MHz, LTE-US: 700/850/1700/1900/2600MHz

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Applications
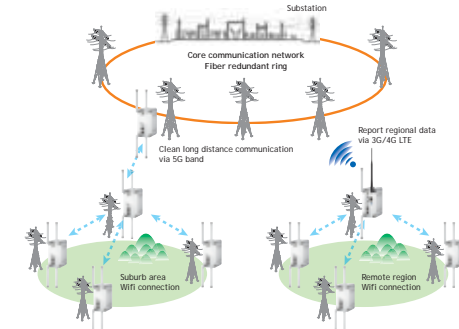
Industrial Automation

Provides high quality and reliable wireless communication between stationary sites, and fast roaming between moving vehicles and fixed networks. Typical applications are warehouse automation and factory automation.

- Dual radios for wireless redundancy between AP/CPE
- Client-based fast roaming for cost effective mobility solutions
- Link Fault Pass Through enhances system reliability and reduces system downtime

Power Electricity Transmission And Distribution

Extends power transmission and distribution networks to suburb areas and remote regions where physical networks are not reachable.
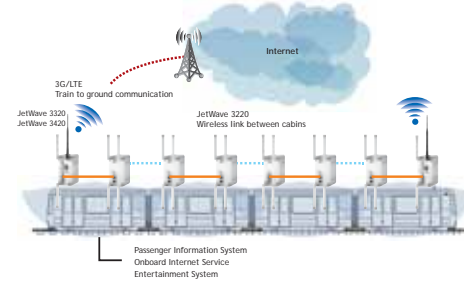

- Reliable wifi communication for suburb areas and remote regions
- High speed 3G/4G LTE and secure VPN remote control
- IP31 protection wide op temperature -40~70°C for harsh environments
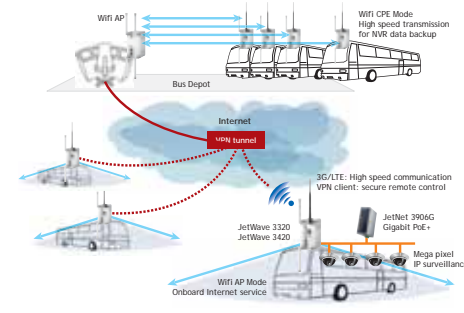
Applications

Railway

Provides high speed and reliable onboard Wifi data network for passenger information system, Internet service and entertainment systems. LTE speeds up the performance for train to ground communications.

- Ceiling mounting and high speed onboard Wifi connections in and between cabins
- High speed 4G LTE Internet service
- Anti-vibration/shock M12 connectors and EN50121-4 railway certificate
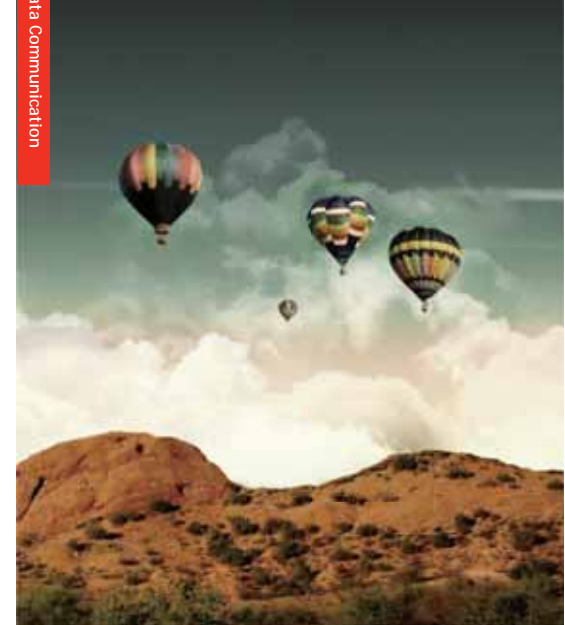
Bus

Provides high speed onboard Wifi service for passengers and secure remote control to each bus through VPN tunnels. NAT routing and DHCP server simplify IP management on the buses. Every bus has the same IP configuration internally.

- Ceiling mounting high speed onboard Wifi and 3G/LTE bus to ground communication
- Every bus shares the same IP configuration through NAT routing
- Anti-vibration/shock M12 connectors
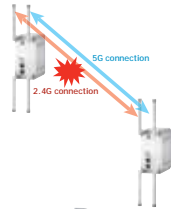
korenix
A Beijer Electronics Group Company

JetWave 3220 Series

- Dual Wifi, dual gigabit Ethernet (LAN and WAN)
- 802.11a/g/n and 2.4G/5G configurable
- 2T2R MIMO doubles data rate up to 300Mbps per radio
- High speed LAN/WAN/WIFI bridging and routing
- Client-based fast roaming
- Dual radios for wireless redundancy
- WAN/Wireless Link Fault Pass-Through
- Korenix View / Korenix NMS remote Management
- Support DC24V and Gigabit PoE+ power input
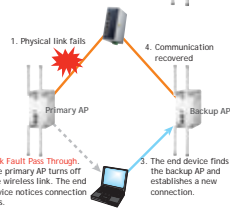- Rugged M12 connector for vehicle (-M12 model)

Dual Radios for Wireless Redundancy

JetWave 3220 supports two Wifi interfaces that can be configured as 802.11a/g/n and 2.4/5G band. By connecting the two Wifi interfaces to the same peer, the two links backup with each other. Users can assign primary link on one interface and backup link on the other.
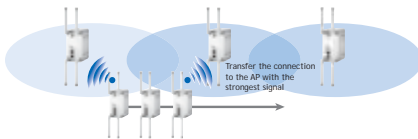
5G connection
2.4G connection

Bidirectional Link Fault Pass Through

The link loss condition of the physical link connection is detected and then shut down the corresponded end of the wireless interface. Link Fault Pass Through helps to notify the end devices and administrators to take actions to minimize the down time.

1. Physical link fails
4. Communication recovered
Primary AP
Backup AP
2. Link Fault Pass Through. The primary AP turns off the wireless link. The end device notices connection loss.
3. The end device finds the backup AP and establishes a new connection.

Client-Based Fast Roaming

Quickly detect the strengths of the signals from surrounding wireless APs and seamlessly handover to the strongest one within 100ms. The client-based roaming eliminates the complexity in AP controller architecture and is sufficient for moving vehicle applications.

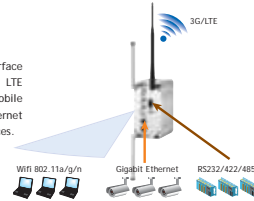Transfer the connection to the AP with the strongest signal

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JetWave 3320 and 3420 Series

- Support LAN, WLAN & Serial over 3G/LTE cellular network
- 802.11a/g/n and 2.4G/5G configurable
- 2T2R MIMO doubles data rate up to 300Mbps
- Dual gigabit Ethernet (LAN and WAN)
- High speed LAN to 3G/LTE routing, Wifi to 3G/LTE routing
- Cellular/WAN redundancy
- Support VPN client, NAT and firewall
- RS232/422/485 supports TCP server/client and UDP mode
- Korenix View / Korenix NMS remote Management
- Support DC24V and Gigabit PoE+ power input
- Rugged M12 connector for vehicle (-M12 model)

IP Gateway Routing for Wifi /LAN /Serial

The embedded 3G/LTE mobile interface offers high speed UTMS/HSPA+ or LTE connection which enables remote and mobile control over local Wifi, gigabit Ethernet networks and RS232/422/485 serial devices.

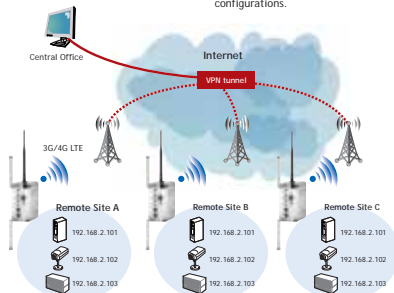3G/LTE
Wifi 802.11a/g/n   Gigabit Ethernet   RS232/422/485

VPN Client / Firewall Secure Remote Control

By enabling VPN on 3G, Wifi or LAN interfaces, JetWave acts as VPN client and provides encrypted communication tunnels among private networks via the public Internet.
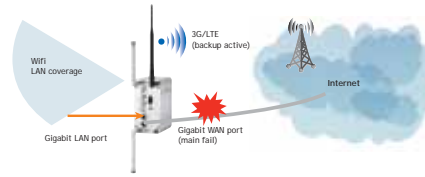
NAT Routing Simplifies IP Management

NAT translates the public IP address into the internal IP addresses hiding behind the firewall. Identical systems at all the remote sites can have identical internal network configurations.

Central Office
Internet
VPN tunnel
3G/4G LTE
Remote Site A   Remote Site B   Remote Site C
192.168.2.101   192.168.2.101   192.168.2.101
192.168.2.102   192.168.2.102   192.168.2.102
192.168.2.103   192.168.2.103   192.168.2.103

WAN Port and 3G/4G LTE Redundancy

Data is routed between LAN/Wifi interfaces to WAN/3G/LTE. Users can configure WAN and 3G/LTE to back up with each other. This provides high level redundancy via different uplinks. This also provides auto-offload 3G/LTE bandwidth and reduces cost.

Wifi LAN coverage
3G/LTE (backup active)
Internet
Gigabit LAN port
Gigabit WAN port (main fail)

EN50121-4 Superb EMC Protection for Railway

Exceeding the high level EMC requirements of railway EMC EN50121-4 and heavy industrial standards, JetWave is proven to provide reliable operation against field electronic affects and heavy interferences.

Ceiling-Mount Kit for Moving Vehicles

Various antennas and installation options are available. The ceiling-mount kit allows you to install the AP on the ceiling of a vehicle to have a wider coverage. The antenna mounting kit holds either N-type or SMA-type antennas and makes the installation flexible.

Anti-Vibration/Shock Gigabit M12 Connectors

RJ45 Ethernet connectors experience link loss in vibrating environments. Designed for moving vehicle applications such as trains and busses, JetWave 3220/3320/3420-M12 are equipped with two gigabit M12 rugged connectors for heavy vibration and shock.
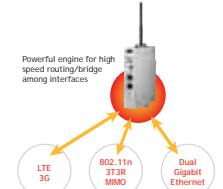
Anti-vibration/shock M12 Gigabit connector

JetWave 2310 Series (Comming Soon!)

- Slim size 3G Gateway (JetWave 2310)
- Slim size 3G/LTE + 802.11n WIFI Gateway (JetWave 2311)
- LTE, compatible with 3G/2G, up to 150M DL, 50M UL
- High speed 802.11n WIFI CPE, up to 3T3R, 450Mbps
- Dual SIM Standby for carrier provider redundant
- 3G/LTE & WIFI redundant/offload
- Dual Gigabit Ethernet routing/bridging
- Hardware based NAT routing
- VPN/Firewall for secure connectivity
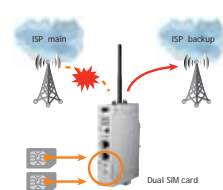- Web, SNMP, Auto IP Report
- Dual 24VDC (12~48V) power input

High Performance Secure M2M Gateway

The powerful CPU, up to 700MHz, speeds up the 802.11n wireless communication by 3 times and empowers an incomparable high speed routing/bridge among the WiFi, Gigabit Ethernet, and 3G/LTE interfaces.

Powerful engine for high speed routing/bridge among interfaces

LTE 3G   802.11n 3T3R MIMO   Dual Gigabit Ethernet

Dual SIM Standby

The JetWave 2310 Series supports Dual SIM Standby. While the primary connection fails, the second SIM recovers the communication to the other carrier provider.

ISP main   ISP backup
Dual SIM card

WIFI & 3G/LTE Offload

In addition to 3G/LTE, JetWave 2311 supports 802.11n WIFI Client mode. The loading of data traffic can be shared by 3G/LTE and WIFI to reduce the cellular cost. When the Wifi signal is poor or not available, the system automatically forwards traffic to the 3G/LTE interface.

3G/LTE   WIFI