



## **About Us**

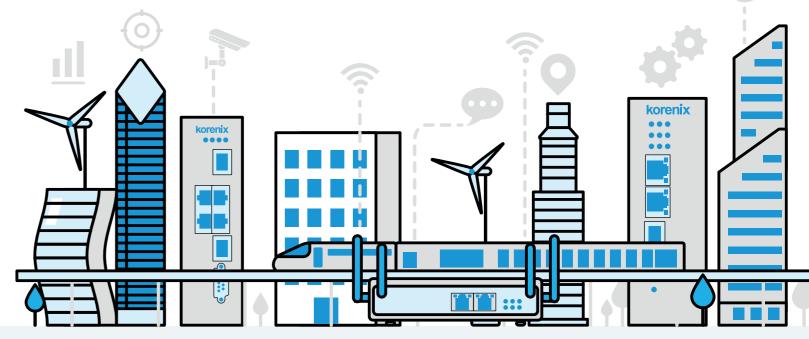
#### Delivering Connectivity • Empowering Industries





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Digitalization is a driver for business across most industries, but it can be challenging. Together with you, we want to make it easier. To achieve this, Korenix and Beijer Electronics have joined forces combining our expertise and competence. As one company, connecting people and technology, we help you drive success.

With decades of expertise in the automation and networking field, we have accumulated abundant experience in wired and wireless network communications industries all around the world and has achieved reliable network solutions for mission-critical applications. Beijer Electronics also establishes seamlessly converged OT/IT connectivity for the industrial digital transformation, and to achieve a connected IIoT future, we deploy robust and designed wire and wireless network backbone in industrial automation, vehicle, power substations, smart city, smart manufacturing, and etc.

#### **Enabling connectivity in automation network and critical environment**

Network connections in factories and smart cities are crucial. A reliable network system requires collecting data from the OT side transferring to the control room or even the cloud seamlessly. Allowing cross- system collaboration and integration with open standards and technologies is also important, for networks and connection in automation are getting complex.

Our industrial data communication provides secure and reliable networks that connects different standard, machinery and improves the cybersecurity, productivity and efficiency in various industries. Out target markets include automation network, Surveillance/IT, Vehicle/ITS/ smart city, power & energy and wireless IoT.

#### Our industrial network infrastructure

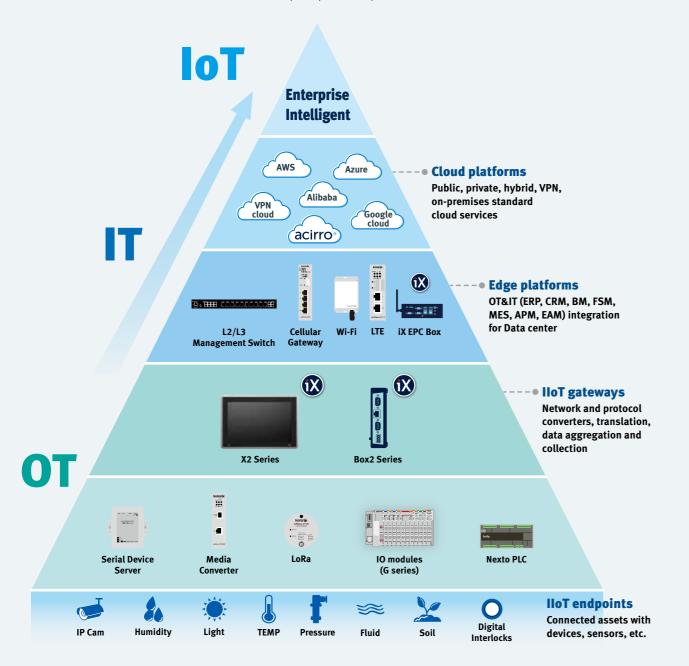
- Industrial Ethernet/ Power-over-Ethernet Switch: Rackmount, Wall-mount, Din-Rail, Managed, Unmanaged
- Industrial Wireless & Cellular Solution: LAN Access Point, WLAN Controller, Mobile Cellular Router/Gateway
- Industrial Media Converter: Ethernet, Serial, Fiber, PoE Injector
- Comprehensive cyber security functionality including TACACS+, IEEE802.1X, IP source guard, ACL etc
- Ethernet SFP/SFP+ Fiber Transceiver: 100M, 1000M, 10G

# **About Industrial Communication & Digitalization**

#### Providing secure connectivity and integrated solutions for cross industry application

We provide a full range of industrial data communications products, including Industrial Ethernet/ Power-over-Ethernet Switch, Wireless & Cellular Solution, media converters, Industrial Computer, modbus gateway and network management software. The machineries allow secure data transmission, remote monitoring and while our software allows remote controlling network services on PC and mobile, providing in-time management and improving efficiency. Meeting different standards, such as EN 50155, IEC 61850-3, E-Mark certificate, our industrial data communications solutions can fit in different applications.

We have completed IoT construction across different protocols through IT, edge gateway, OT and cloud to fulfill the digitalization and visualization in the industries, so as to enhance efficiency and productivity.



## **Our Technologies**

Reliable data communication is critical for device connection in machine to machine (M2M) and information transmission. With decades of experience in the industrial network industry, We have successful applications in different segments. For manufacturing, we have various solutions in automation and wireless solutions for facility and environment. While in in the infrastructure and building segment, we have also achieved worldwide solutions in surveillance and IT; vehicle, intelligent transportation system (ITS) and smart city; power & energy and smart grid.

## High Flexibility with open network and protocol standardg

To provide open and flexible solutions, all our devices follow the network and protocols open standard. Compliant with open standard protocol, our solutions have the advantages of fewer limitations, higher interoperability and more choices and variety. Our devices helps users to not fix in a specific technology or vendor and therefore creating applications that are more functional and interoperable.

#### Modular design for speedy customization

We design, develop and manufacture our hardware and software, all of which have a modular design. Thus, they are designed with high flexibility for on demand customization. Quality and speedy software customization reduces engineering time for our system integrators and OEMs in time to market purpose. The hardware design is industrial grade, it is able to operate in extreme conditions such as extreme temperatures, high levels of shock and vibration.

# Surveillance/ Track Board ENSO155 ENSO121-2-3/-4 On Vehicle Ind. EMC E-Mark ITXPT

Petrochemical

**IEEE1613** 

#### Complete and rich wire and wireless product line

In system architecture, our product lines cover both of wired and wireless solutions. For industrial ethernet switch, we provide solution from unmanaged, L2 to L3; Din-Rail to Rackmount; PoE up to 90W; certifications for different applications. For wireless solution, a rich solution including 5G, 4G/LTE, Wi-Fi and LoRa is provided. Our total solutions in the data communications area can fulfill the users' requirement in typical industrial communications and wireless IoT network connectivity.

Beijer Electronics offers rich technology competence for communication and digitalization in our group. There are many successful experiences of real applications with our effective solutions. We wish to work together with our partners to share our knowledge and use cases for business development and and create innovative and reliable solutions for our customers.

#### Our main segments



#### Manufacturing

Match the requirements of machine builders and plant owners with flexible solutions on new machines or retrofit of existing ones.



#### Energy

Support the ongoing transition to sustainable energy sources with new open technologies, products and software.



#### Infrastructure

Provide secure technological solutions for critical infrastructure assets and public transport.



#### Marine

Create fully certified solutions with dedicated marine features, great iX graphics and integrated CODESYS PLC functionality.

3 www.beijerelectronics.com

## **Key Features – Cyber Security**

The trends of Internet of things (IoT) and Industrial 4.0 brings more devices to be connected to networks. Security issues and hack attacks become even more critical nowadays. Our developed "Cyber Security" provides the features below.



#### **Network Level Defense**

- DHCP Snooping
- Dynamic ARP Inspection
- IP Source Guard

#### **Traffic Level Defense**

• L3/L4 ACL block untrusted traffic from a trusted device

#### **Device Level Defense**

- L2 ACL identifies and authorizes a device
- · Only trusted devices can access the network

Function	Application	Benefits
DHCP Snooping	Ensure clients obtain IP from authorized server	Preventing unauthorized DHCP attack
Dynamic ARP Inspection (DAI)	Binding IP + MAC on devices	Only authorized devices can access into the network
IP Source Guard (IPSG)	Validates incoming packets	Prevents IP address spoofing
Multi-Level Authentication	Different levels users' authentication	Different privileges according to different levels
TACACS+	Remote authentication for network access control	One-time authentication on devices, higher security

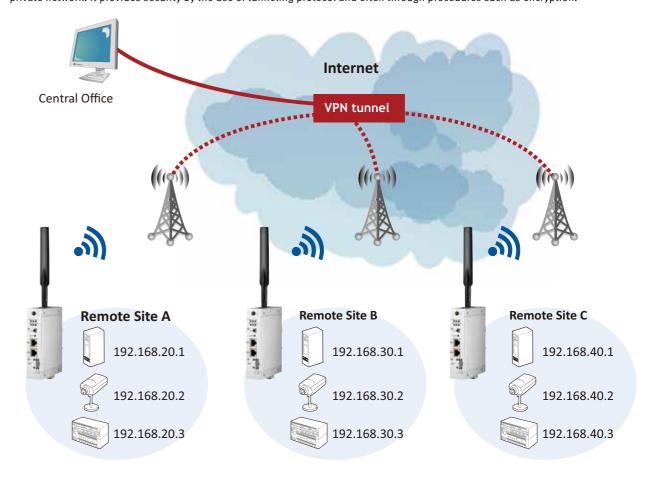
## **Key Features – Dual Radio Connectivity**

#### **Dual Radios for Wireless Connectivity**

JetWave 3220 supports two Wifi interfaces that can be configured as 802.11a/b/g/n/ac and 2.4G/5G band. By connecting the two Wifi interfaces at the same time, it enhances the flexible connection quantity and supports more bandwidth and data flow for the user application.



**VPN (Virtual Private Network)** extends a private network across a public network as if it were directly connected to the private network. It provides security by the use of tunneling protocol and often through procedures such as encryption.





## **Automation** Network

Increasing automation in the process industry is producing considerably more data and necessitating end-to-end communication down to the field level. As a result, secure and reliable industrial communication networks are essential. Our variable ethernet switch series provides flexible solutions from Din rail in control cabinet to managed switch for critical network, our robust solution fulfills the special requirements of the process industry.

#### Form Factor

- DIN rail mounting type for control cabinet installation
- Heavy Industrial EMC certified

#### **Solution Requirement**

- Industrial Ethernet for control network JetNet DIN Rail series
- » Unmanaged Switch for general purpose controller network
- » Managed Switch for critical network (primary control network & control redundant network infrastructure)
- Device Server for Serial to Ethernet JetPort



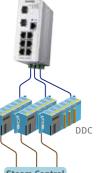


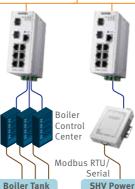


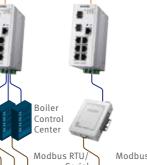
#### **Optimized Automation Solution**

Enhance industry 4.0, manufacturer is integrating HMI, SCADA and other machine data into acquisition systems. The customer also need to convert serial data into the ethernet frame in order to integration the data into control room so they could have more efficient way to managed the production line.

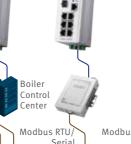


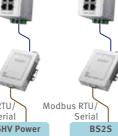






Optical Fiber Network









etNet 5208G-2F

#### Why Beijer Electronics

- Various robust product for harsh industrial environment.
- Fiber Transmission to meet long distance between stations over 10KM.

#### **Our Products**

**TBM Process** 



JetNet 7628X-4F

Industrial 28G Full Gigabit with 4\*10G SFP L3 Managed Ethernet Switch



JetNet 5208G-2F Industrial Managed **Ethernet Switch** 

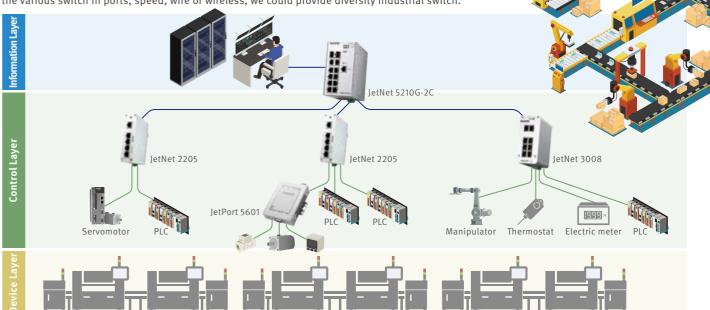


1-port RS-232/422/485 Serial Device Server

#### Control Room & Network Backbone System

More digital management in factory each function such as quality, equipment life cycle, alarm management, the more requirement in acquisition the machine data.

To achieve the above goal, the related machine data will be collected and transfer to the control room. With the various switch in ports, speed, wire or wireless, we could provide diversity industrial switch.



#### Why Beijer Electronics

- Various robust product for harsh industrial environment
- Fiber Transmission to meet long distance between stations over 10KM

#### **Our Products**











JetNet 5210G-2C Industrial 8G RJ-45 + 2G Combo Managed Ethernet Switch



etPort 5601

1-port RS-232/422/485 Serial Device Server

#### Control Room & Network Backbone System

With the increased adoption of Industry 4.0, more devices in the control cabinet require ethernet-based communication. This resulted in the rise in numbers of network switches being installed in control cabinets.

Due to the nature of the devices that are usually present in the control cabinets, such as Programmable Logic Controller(s) (PLCs) or Variable Frequency Drive(s) (VFDs), switches that are installed in such cabinets are required to have high electronic magnetic immunity (EMI).

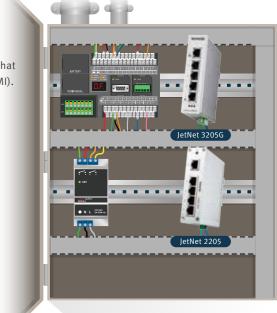
#### Why Beijer Electronics

- Compact size to fit in the limited space on the cabinet.
- Meeting heavy industrial standard: IEC61000-6-2/-6-4 which allows the switch to work smoothly in the harsh environment.





JetNet 2205 Industrial 5-port Compact Fast Ethernet Switch





## Surveillance & IT

The central monitoring system integrates real-time video with notification systems. These technologies can enhance environmental safety, reduce residents' complaints, and improve living quality effectively.

The Data Center needs the high bandwidth for the video and data transmissions. The backup and the minimize of the downtime are the key points of the reliability and stability in data translation.

#### Form Factor

- Rack in main control room & IT backend infrastructure: 19" rackmount type switch
- Surveillance camera connection: DIN rail or rackmout with PoE solution







#### **Solution Requirement**

- Surveillance/IT ethernet infrastructure: JetNet rackmount, PoE series
- JetNet rackmount for IT/main control room
- PoE solution for camera connection
- High speed: Up to 10G for IT backbone solution

#### Fast Recovery within Surveillance Monitoring

Our surveillance solution can provide outdoor and long-distance surveillance data transmission. With the Multiple Super Ring (MSR), network recovery time is less than 50ms, securing real-time and unstoppable data. Also, the multiple SFP ports can support massive video and long-distance data transmission from the camera, providing a reliable surveillance system.

#### Why Beijer Electronics

- Provides multiple ports for uplink solution to support massive video and data transmissions.
- ITU-T G.8032 ERPS to minimize network downtime (recovery time < 50ms)
- Supports IGMP snooping and tagged VLAN for more efficient bandwidth usage.



#### JetNet 6228G-4F

Industrial 28G Full Gigabit with 4\* SFP L2 Managed Ethernet Switch



#### JetNet 5212GP-2C2F

Industrial 8G RJ45 + 2G Combo + 2G SFP Managed PoE Switch



#### **JetNet 5212G-2C2F**

Industrial 8G RJ45 + 2G Combo + 2G SFP Managed Ethernet Switch



#### letCon 3701GP-U

Industrial IEEE 802.3bt Gigabit PoE Media Converter









#### Simultaneous Data Uplink and Multiple PoE Ports for IP Surveillance Camera

The JetNet 7628XP-4F are equipped with up to 24 PoE + ports and 4 10G SFP ports. The multiple PoE ports can provide power to large number of IP surveillance cameras. Moreover, the 10G SFP port allows large amounts of video and data to be transferred quickly across the network.

#### Why Beijer Electronics

- L3 Full Gigabit Industrial PoE Plus switch and is specially designed for surveillance application that operate in extremely harsh environments.
- With full Gigabit capability, the JetNet 7628XP-4F to provide high performance and the ability to quickly transfer large amounts of video, voice, and data across a network.





Industrial 28G Full Gigabit with 4\*10G SFP L3 Managed PoE Plus Ethernet Switch.



#### Data Center and Data Transmission Network

The JetNet 7628X-4F provides up to 4 10G SFP+ ports for redundant ring and uplink solution to support massive video and data transmissions. With less than 5oms downtime recovery, our surveillance solution ensures reliable and stable network for data center and data transmission network.

#### Why Beijer Electronics

• Provides 4 10G SFP+ ports for redundant ring and uplink solution to support massive video and data transmissions.

• ITU-T G.8032 ERPS to minimize network downtime (recovery time < 50ms)

• Supports IGMP snooping and tagged VLAN for more efficient bandwidth usage.

## **Our Products** \*\*\*\* \*\*\*\* \*\*\*\* \* \*

#### JetNet 7628X-4F

Industrial 28G Full Gigabit with 4\*10G SFP L3 Managed Ethernet Switch



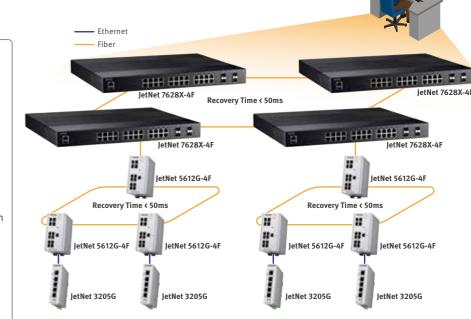
#### letNet 5612G-4F

Industrial 8 ports RJ-45, 4 ports Gigabit SFP Managed Ethernet Switch



#### JetNet 3205G

Industrial Unmanaged Gigabit Ethernet Switch





## Intelligent Bus

Bus transportation foundation is to provide efficient and convenient transportation services. A company with IoT (Internet of things) trend, will transform traditional bus to intelligent bus. The key of intelligent bus is network implementation to enable data transition, location positioning, entertainment service and so on. We provide a great variety of wired and wireless solutions to produce intelligent buses.

**Solution Requirement** 

#### Form Factor

- Wall Mounting and Din-rail for on-vehicle installation









• E-Mark certification

• PoE Port for camera connection





Real-time Video Surveillance

As the public safety is getting more and more important nowadays, real-time video surveillance is critical to enhance passengers and vehicle safety. Given that high vibrations are produced when the bus is moving, an anti-vibration design M12 connector is needed to take into consideration.

#### Why Beijer Electronics

- M12 PoE switch enable efficient connection to IP cameras without power cable.
- E-Mark and ITxPT certified products

#### Passengers Wi-Fi Access

Onboard Wi-Fi access is key to increase the satisfaction of travelling. The bandwidth is crucial to provide service to many passengers in the same time. This can ensure passengers to keep productive and entertained while onboard.

#### Why Beijer Electronics

- High-bandwidth wireless solution serve many users simultaneously.
- M12 connector Wi-Fi solution of high anti-vibration.

#### Our Products ransportation Data

Real-time transportation data is the fundamental for fleet management. It can help companies improve efficiency and reduce costs. Besides, real-time transportation data can provide information for bus operators to analyze vehicle health to reduce risks.

#### Why Beijer Electronics

- Cellular and Wi-Fi integrated solution
- Dual-sim to enhance redundancy
- Serial to ethernet seamless transition



#### Multimedia Bus Entertainment System

Video streaming is a popular way to provide entertainment for passengers especially for long ride tours. Usually this will require high-port industrial ethernet switch to connect industrial PC and passengers' display.

#### Why Beijer Electronics

- Gigabit Ethernet port to achieve high-speed data transmission
- High-port switch to realize connection to multiple entertainment systems

#### **Our Products**



#### JetWave 3420 V3

- Industrial LTE plus 802.11ac Wi-Fi Wireless IP Gateway
- Gigabit PoE+ power input



#### JetNet 3808G-M12

- Industrial Unmanaged Booster PoE Switch
- Rugged M12 Ethernet



#### JetPort 5601

- RS-232/422/485 Serial Device Server
- Dual Ethernet Ports for Daisy Chain or RTTD

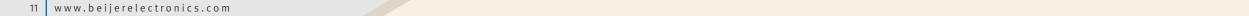








RS-232/422/485 Dual Ethernet



## Intelligent Transportation **System & Smart City**

All countries are striving to provide citizens convenience and quality of living. Intelligent transportation systems & smart cities are indispensable factors. There are a great variety of applications that can make people experience new technology benefits such as highway and airports. With leading technology and features, we provide various efficient solutions.

#### Form Factor

Din Rail mounting











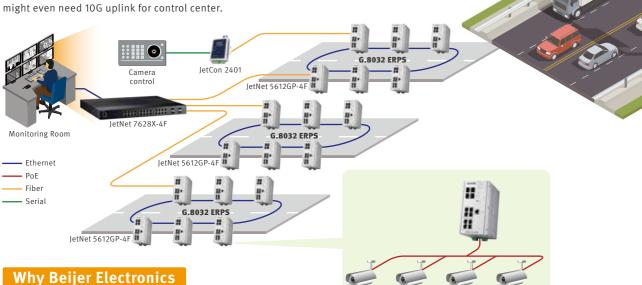
#### **Solution Requirement**

- Industrial Ethernet for control network -JetNet DIN Rail Mount for cabinet installation
- \* Fiber: for long distance network transmission
- \* PoE port: for street/traffic camera connection
- Media converter for serial/Ethernet to Fiber for long distance network - JetCon



#### **ETC Highway**

Infrastructure is a fundamental for cities especially highway infrastructures. There are many ethernet based applications such as traffic monitoring, Electronic Toll Collection and real-time information transmission. All applications need high speed transmission, some



• Slim size PoE switch

• 10G uplink L3

• Easy to use serial to fiber converter

#### **Our Products**



#### letNet 7628X-4F

Industrial 28G Full Gigabit with 4\*10G SFP L3 Managed Ethernet Switch



#### JetNet 5612GP-4F

Industrial 12 ports Gigabit Managed PoE Switch



#### letCon 2401

Industrial Serial to Fiber Media Converter

#### **Tunnel Surveillance**

Surveillance is widely implemented in different areas. Tunnel surveillance requires high video resolution for the insufficient light in the environment. It is common to apply high power PoE to enable infrared cameras. Furthermore, wired & wireless combined solutions for achieving network redundancy is highly recommended, benefiting users to transmit data in different ways simultaneously.



#### Why Beijer Electronics

- High throughput cellular Gateway
- High ports PoE switch
- The latest ring standard ITU-T G.8032 ERPS

#### **Our Products**



#### JetNet 6628X-4F

Industrial 28G Full Gigabit with 4\*10G SFP L2 Managed Ethernet Switch



#### JetNet 5212GP-2C2F-U

Industrial 90W 8G RJ-45 + 2G Combo + 2G SFP Managed PoE Switch



#### letWave 3420 V3

Industrial LTE plus 802.11ac Wi-Fi Wireless IP Gateway

#### Airport - Self Check-in and Luggage Control

Ethernet transmission solutions are highly required in airports. From check-in to terminal and PIS to runway surveillance, all applications demand flexible products installation, wired to wireless mixed solution. Some applications even demand 90W PoE to provide power to multiple power devices (PD) such as smart lighting or digital signage.



• L3 Ethernet switch to collect data to data center from various stations

#### **Our Products**



#### JetNet 7628X-4F

Industrial 28G Full Gigabit with 4\*10G SFP L3 Managed Ethernet Switch



#### JetNet 5208GP-2F-U

Industrial Managed PoE Switch



#### letPort 5601

1-port RS-232/422/485 Serial Device Server



Wayside Network

Reliable and tailored wayside solution can ensure passenger security. Our devices meet multiple railway certificates such as EN 50155, EN 50121-4, EN 50121-3-2. Furthermore, it provides fast and easy configurations, abundant power supply and rugged outer design, which can endure extreme operating temperatures, M12 ports, waterproof ability, all fundamental aspects to keep your projects safe and secure.

#### Form Factor

- On-board
- » M12 connector for vibration and shock application
- » Wall Mounting for on-board installation

In-Vehicle Surveillance

so the device can operate well in the vibrating environment.





- Trackside
- » DIN-rail and rack mounting
- » Long distance fiber transmission
- » Easy installation with PoE







## EN50155

#### EN50155 EN50121-4

#### Passenger Information System //

Passenger Information system (PIS) includes in-time and accurate public transportation information and on-board Wi-Fi to passengers. It is an essential part of modern public transportation service nowadays, we provides reliable passenger information for the entire solution.

#### Why Beijer Electronics

- PoE budget reaches to 90 watt.
- Switch, Cellular & Wireless Gateway to link last mile data connection.
- HMI constructed for indoor and outdoor use to provide a degree of protection to personnel against access to hazardous parts with NEMA4.



#### Our Products



#### JetNet 7628X-4F

28G Full Gigabit with 4\*10G SFP L3 Managed Ethernet Switch



#### JetCon 1701GP-U

IEEE 802.3bt Gigabit PoE Injector



#### JetWave 3420 V3 Cellular +Wi-Fi+ Gigabit Switch IP Gateway



X2 base
HMI with iX runtime

## Why Beijer Electronics

• DC-to-DC power booster technology. Power input range from 9 to 36V and boost to 54V to the powered devices.

Surveillance in public transportation ensures the safety of passengers and

PoE switch equipped with rugged, plug-and-play and robust M12 connector,

drivers. PoE camera is commonly used on bus transportation. Our E-Mark

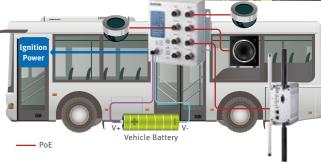
- **Power ignition.** The feature will set the switch to power off automatically after a certain time to prevent the battery from running out.
- Certifications. Includes EN 50155, E-Mark and EN 50121-4 to ensure high availability and wide usage particularly for bus, train and track side.



**Solution Requirement** 

• Railway On-board: JetNet with EN50155

• Railway Trackside: JetNet with EN50121-4



JetWave 3420 V3

#### **Our Products**



JetNet 3808G-M12 Unmanaged PoE Booster Switch



JetNet 3908G-M12
Full Gigabit Unmanaged
PoE Booster Switch



JetNet 3508-LVDC
Unmanaged Switch



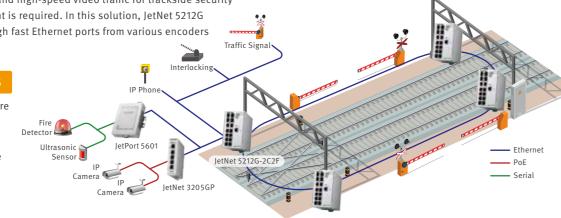
JetNet 3508G-LVDC Full Gigabit Unmanaged Switch

#### Trackside Surveillance

To fulfill the needs of high quality and high-speed video traffic for trackside security staff, a reliable network deployment is required. In this solution, JetNet 5212G collects recorded video data through fast Ethernet ports from various encoders located in the control rooms.

#### Why Beijer Electronics

- Full GbE high speed solution ensure high bandwidth traffic
- Up to 25W per port for High Power solution by Forced powering mode
- Up to 80W for total power budget



#### Our Products



#### JetNet 5212G-2C2F

Industrial 8G RJ-45 + 2G Combo + 2G SFP Managed Ethernet Switch



#### JetNet 3205GP

Industrial Unmanaged Gigabit PoE Ethernet Switch



JetPort 5601

1-port RS-232/422/485 Serial Device Server

#### **Rail Electrification**

Railway electrification system allows transmitting power status from RTU in each sub-station to the control center. To provide reliable and secure travel experience, the network system from each substation should be integrated and transmitted through long distance to the main control station.

#### Why Beijer Electronics

- High fiber ports availability for long-term connection application
- IEC 61850-3, IEEE 1613, EN50121-4 compliance
- $\bullet$  Industrial design to overcome harsh environment, operating temperature ranges from -40 to 75°C

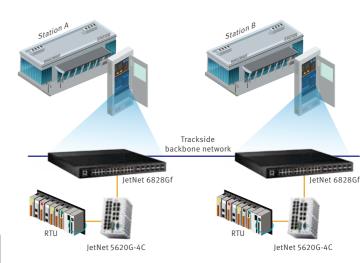
#### **Our Products**



JetNet 6828Gf 28G L3 Full Gigabit Managed Ethernet Switch



JetNet 5620G-4C L2 Full Gigabit Ethernet Switch





## Power Energy

The Substation is the Critical Link Between Transmission, Distribution and Customers. Among the power substation standard, IEC 61850 is most popular.

IEC 61850 allows devices from different vendors to talk to one another directly over an Ethernet connection that operates in a similar way to a local area network (LAN)

#### Form Factor

• Substation/Wind Power











#### **Solution Requirement**

- IEC 61850: Substation automation
- IEEE 1613: Standard detailing environmental and testing requirements for communications networking devices in electric power substations

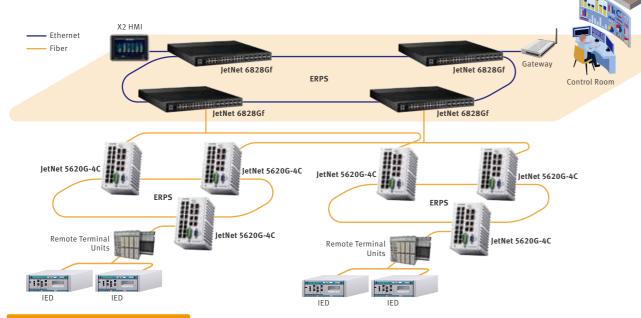




#### Substation - SCADA

The SCADA improves the overall efficiency of the system for optimizing, supervising and controlling the generation and transmission systems.

SCADA function in the power system network provides greater system reliability and stability for integrated grid operation.



#### Why Beijer Electronics

- Support ERPS (ITU-T G.8032) ring for fast recovery less than 50ms
- IEC 61850-3 certificate for power substation

#### **Our Products**



Industrial 28G L3 Full Gigabit Managed Ethernet Switch



JetNet 5620G-4C

Industrial Full Gigabit Ethernet L2 Switch

#### **Offshore Wind Power**

Offshore wind power is the use of wind farms constructed in bodies of water, usually in the ocean, to harvest wind energy to generate electricity. Higher wind speed is available offshore compared to on land, so offshore wind power's electricity generation is higher per amount of capacity installed.

#### Why Beijer Electronics

• Advanced Cyber Network Security – MAC security, IEEE 802.1x Port Based access control, IEEE 802.1x Radius Server authentication, 802.1x MAB, Distributed Denial of Service (DDoS), IP Source Guard, Denial of ARP Inspection.

## **Our Products**

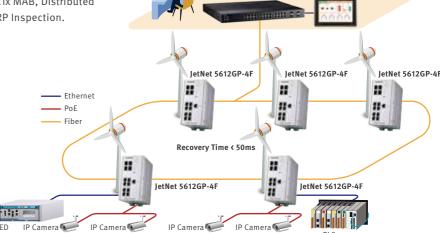
#### JetNet 7628X-4F

Industrial 28G Full Gigabit with 4\*10G SFP L3 Managed Ethernet Switch



JetNet 5612GP-4F

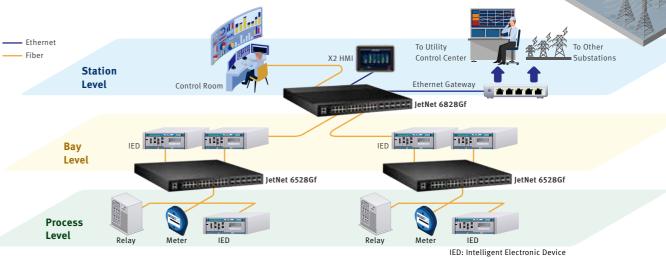
Industrial 12 ports Gigabit Managed



#### Substation - Station & Process Bus

Architecture of IEC 61850 Substation Automation System with Station Bus and Process Bus shows the conceptual architecture of a complete IEC 61850 substation automation system.

The figure illustrates physically separate networks for Station Bus and Process Bus IED's are connected to both networks via independent network interfaces.



#### Why Beijer Electronics

- Support multiple protocol transparent such as GOOSE, SMV.
- L3 JetNet 6828Gf support routing function.
- High-port density to interconnect with abundant devices.

## **Our Products** JetNet 6528Gf



Industrial 28G Full Gigabit Managed Ethernet Switch Industrial 28G L3 Full Gigabit Managed Ethernet Switch



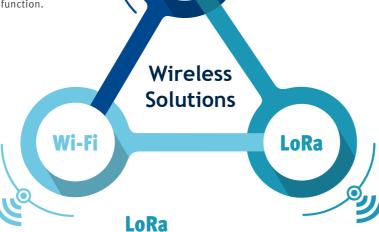




## **Wireless Solutions**

#### Cellular

Our Industrial Cellular Gateways help facilitate a wide range of network technologies from Fast Ethernet ports to 3G/4G LTE and 5G cellular communication. We provide a device with a ruggedized enclosure and internal components built to extreme temperatures, moisture and dust. Which allows establish for a smooth installation and function.



Cellular

#### Wi-Fi

Wi-Fi technology is extensively used in today's industrial networks as it offers easy wireless installation and simple manageability features. Our range of industrial wireless local area network (WLAN) devices has been designed to ensure reliable, continuous, high-speed data communications in extreme operational environments, with 3 in 1 (AP/Client/Bridge) design JetWave Wi-Fi series offering better resiliency. They can be configured for building a reciprocal network to reduce network downtime.

LoRa stands for Long Range Radio and is mainly targeted at M2M and IoT networks. Which is Low-Power and Long-Range transmission protocol and features good anti-interference performance to prevent electronic jamming. Our LoRa gateway provides RS-485 MODBUS RTU's industrial interface is available that can connect to the existing industrial control host (ex. PLC).



#### Power & Energy 4G Cellular Monitoring

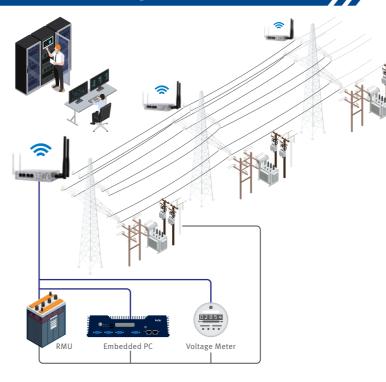
Existing competitor's router failed to endure extreme temperature in field site, thus our partner introduced the JetWave 2424 as the perfect alternative.

Wireless data communication & monitoring is a fundamental application for outdoor devices in electricity network, this kind of success can be easily duplicated into another project.

#### Why Beijer Electronics

- Flexible design with Cellular 4G LTE and Wi-Fi function build in.
- Industrial grade temperature -40 ~ 70°C.
- Wan to Cellular failover redundant.

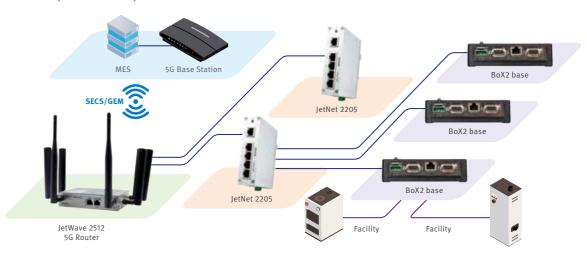






#### Real-time Dry Pump Monitoring Inside The Semiconductor Fab.

In this application, there're around 3,500 dry pumps in each of four foundries, with a mix of different models (including Japanese brands) with different specs. The customer uses our BoX2 base to read data from dry pumps by C# script then transfer it into SECS (Semiconductor Equipment Communication Standard) for MES and Modbus TCP for SCADA, then submit it through our 5G router and Ethernet switch to the customer's IT and shop floor control system.



#### Why Beijer Electronics

- SECS driver and most popular IT protocol supported.
- C# script for develop specific dry pump protocol.
- 5G reliable data transmit solution.





#### Wi-Fi Solution for Taipei Intersection

The impetus for this project hoped to facilitate the wireless transfer of CCTV imagery on intersections in Taipei city to a central control center via a wireless solution, as it is difficult to connect wiring on intersections.



#### Why Beijer Electronics

- Products are industrial grade and could work under inclement weather conditions while providing reliable wireless solution.
- Wider frequency support range, including both 2.4GHz and 5GHz frequencies.
- Has in-built Auto Channel Survey (ACS) functions allowing the device to be on the "best" Wi-Fi frequency.

# JetWave 2460E Industrial 802.11 a/b/g/n 2.4G/5G 2T2R MIMO Outdoor Wireless AP/Client

External



#### **Automatic Warehouse**

Automated storage system is the main trend of warehouse management now. In an automated warehouse, goods can be moved by robots, along with conveyorsand overhead pulley systems, known as AS/RS system. And also integrate with control by local or remote computer.

A warehouse premises are usually physically separated but need operate as one. Pursuit of space utilization ratio, access efficiency and scalability is the main goal. In view of this, it's common way to construct AS/RS system is through wireless network to offer many advantages.



#### Why Beijer Electronics

- Less AP's (Access Point) to cover the complete factory. Our competitor requires more AP quantity to achieve the same Wi-Fi performance.
- Our AP/Client support stable fast roaming to fulfill uninterrupted communication.
- Our JSM provides a simple and easy way to set up an Wi-Fi environment.

#### **Our Products**



letNet 5212G-2C2F Industrial 8G RJ-45 + 2G Combo +

JetWave 2211C Industrial 802.11a/b/g/n 2.4G/5G Wireless Access Point 2T2R MIMO Wireless Client

JetWave 2212G



etNet 3205G Industrial 5-port Gigabit Ethernet Switch



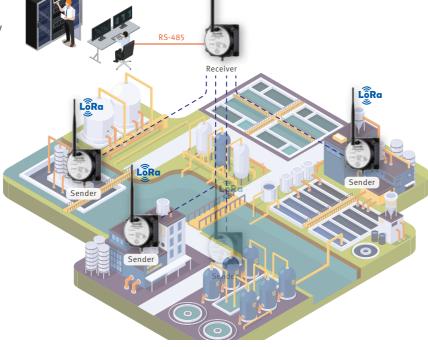
#### **Water Treatment**

Smart treatment transition requires control and management of all equipment and area. It is for sure a complex task that requires thousands of measurement devices to provide constant data to various locations. Lots of buildings and heavy machines in this area may cause high interference risk. It will require an anti-interference wireless technology network product for its implementation.

#### Why Beijer Electronics

- Anti-interference performance.
- Wireless Long range distance cover (over 10km).





#### **Industrial Managed Ethernet Switch**

#### **Rackmount Gigabit Core Switches**

#### **Rackmount Ethernet Switches**



	JetNet 7628X-4F	JetNet 6828Gf (-AC/2AC/2DC24/2DC48/ AC-DC24)	JetNet 6628X-4F	JetNet 6528Gf (-AC/2AC/2DC242DC48/ AC-DC24)	JetNet 6228G (AC-2DC/AC/2DC)
		Interface			
Total Port Number	28	28	28	28	28
10/100/1000TX Ports	24	16	24	16	24
100/1000M Combo		8		8	
SFP Ports	4 x 10GbE/1G	4 x 1000M	4 x 10GbE/1G	4 x 1000M	4 x 100/1000M
Console/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB	RS-232/USB
DC Power Input	2 x 44-57VDC	DC24 (18-36V) DC48 (36-75V)	2x44-57VDC	DC24 (18-36V) DC48 (36-75V)	2 x 18-75VDC
AC Power Input	1x 90-264VAC	AC110/220 (90-264V)	1x90-264VAC	AC110/220 (90-264V)	1 x 100-240VAC
·		Features	;		
MSR, MultiRing, TrunkRing, RDH, SuperChain, ERPS	•	•	•	•	•
Broadcast Storm/Loop Protection	•	•	•	•	•
L2+ Security (L2/3/4 ACL)	•	•	•	•	•
DHCP Server (Opt82, Port Based)	•	•	•	•	•
		L3 Protoco	ls		
L3 Routing	IPv4/IPv6 routing, RIPv1/ v2, OSFP v2	static/Dynamic Routing/ VLAN routing RIP, OSFP v2			
Multicast Routing	IGMP, Mroute	IGMP, Mroute			
VRRP Gateway Redundancy	•	•			
		SW/Protoc	ols		
IPv6 Management	•	•	•	•	•
Traffic Priority (QoS)	8 Queues/port	8 Queues/port	8 Queues/port	8 Queues/port	8 Queues/port
VLAN, P-VLAN, QinQ, GVRP	4k VLANs	4k VLANs	4k VLANs	4k VLANs	4k VLANs
IGMP Query, Snooping, GMRP	•	•	•	•	•
IEEE 802.1AB LLDP Network Discovery	•	•	•	•	•
IEEE 802.3ad LACP, Static Trunk	•	•	•	•	•
IEEE 1588 PTP v1/v2	•	•	•	•	
Jumbo Frame/MAC Address	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K	9.2Kbytes/16K
Port Mirroring	•	•	•	•	•
DDM SFP	•	•	•	•	•
IEEE 802.1x, IP/Port SecuritySSL/HTTPS, SSH/ Telnet	•	•	•	•	•
TACACS+, Radius	•	•	•	•	•
SNMP/RMON/Trap	•	•	•	•	•
CLI/Web/Telnet	•	•	•	•	•
		HW/ME			
Housing Protection (IP)	IP40	IP40	IP40	IP40	IP40
Dimension (H x W x D mm)	44 x 440 x 378.5	44 x 440 x 378.5	44 x 440 x 378.5	44 x 438 x 375	43.6 x 431 x 375
Mounting	Rackmount	Rackmount	Rackmount	Rackmount	Rackmount
Operating Temperature	-40~75°C	-40~85°C	-40~75°C	-40~75°C	-40~75°C
MTBF (hrs)	> 202,000	>445,000	>202,000	>445,000	>234,000
		Certificatio	ns	CE IECC	
Regulatory/Approval	CE/FCC	CE/FCC IEEE1613/IEC61850-3	CE/FCC	CE/FCC IEEE1613/IEC61850-3	CE/FCC/EN 62368-
Railway	EN50121-4	EN50121-4	EN50121-4	EN50121-4	EN50121-4

Supported

#### **Industrial Managed Ethernet Switch**

#### **DIN-Rail Managed Ethernet Switches**



JetNet 5620G-4C



JetNet 5612G-4F





	_
JetNet 4508f / JetNet 4508f-w	JetNet 4508 / JetNet 4508
JetNet 4508if / JetNet 4508if-w	JetNet 4508i / JetNet 4508i

			JetNet 4508if / JetNet 4508if-w	JetNet 4508i / JetNet 4508i-w	
		Interface			
Total Port Number	20	12	8	8	
10/100TX Ports			6	8	
10/100/1000TX Ports	16	8			
100/1000M Combo	4				
SFP Ports		4 x 100/1000M	2 x 100M(SC)		
DI/DO (Dry Relay)	1 DI, 1 DO	1 DI, 1 DO	1 DI,	1D0	
DC Power Input	2 x DC24V (10-60V)	2 x DC24V (10-36V)	2 x DC24\		
Console	RS-232	RS-232		232	
		Features			
Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, ERPS, RSTP, MSTP, LACP)	•	•	•	•	
Broadcast Storm/ Loop Protection	•	•	•	•	
Advanced Security (L2/3/4 ACL) DHCP Snooping, IP Source Guard, DAI	•	•			
DHCP Server (Opt82, Port Based)	•	•	•	•	
		SW/Protocols			
IPv6 Management	•	•			
Traffic Priority (QoS)	•	•	•	•	
VLAN, P-VLAN, QinQ, GVRP	•	•	•	•	
IGMP Query, Snooping, GMRP	•	•	IGMP Query, Snooping		
IEEE802.1AB LLDP Network Discovery	•	•	•	•	
IEEE802.3ad LACP, Static Trunk	•	•	•	•	
IEEE 1588 PTP v1/v2	•	•	•	•	
Jumbo Frame	•	•			
Port Mirroring	•	•	•	•	
DDM SFP	•	•	•	•	
IP Security/Port Security/SSL/ HTTPS/SSH/Telnet	•	•	•	•	
User Security	•	•	•	•	
SNMP/RMON/Trap	•	•	•	•	
CLI/Web/Telnet	•	•	•	•	
		HW/ME			
Housing Protection (IP)	IP30 (total 44 models)/Aluminum	IP30 (total 44 models)/Aluminum	IP30 (total 44 mo	odels)/Aluminum	
Dimension (H x W x D mm)	147 x 98 x 126	160 x 84 x 136	149 x 5	55 x 131	
Mounting	DIN Rail	DIN Rail	DIN Rail		
Operating Temperature	-40~75°C	-40~75°C	-10~70°C /-40~75°C(-w)		
MTBF (hrs)	308,000	578,000	425,	000	
		Certifications			
Regulatory/Approval	CE/FCC/IEEE1613/IEC61850-3	CE/FCC/ EN50121-4		98if Series: 513/IEC61850-3	
Safety	UL 62328-1	UL 62328-1			
Railway	EN50121-4		EN50121-4	EN50121-4	
	·				

Supported

#### **Industrial Managed Ethernet Switch**

#### **DIN-Rail Managed Switchs**











JetNet 5208G

JetNet 5208G-2F

JetNet 5210G-2C

JetNet 5212G-2C2F

JetNet 5216G-4C4F

	,	Jennet 32000 21	,	•	,
		Interfa	ice		
Total Port Number	8	8	10	12	16
10/100/1000TX Ports	8	6	8	8	8
100/1000M Combo			2	2	4
SFP Ports		2 x 100/1000M		2 x 100/1000M	4 x 100/1000M
DI/DO (Dry Relay)	1 DI, 1 DO				
DC Power Input	2 x DC24V (10-60V)				
Console	RS-232	RS-232	RS-232	RS-232	RS-232
		Featur	es		
Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, RSTP, MSTP, LACP)	•	•	•	•	•
Broadcast Storm/ Loop Protection	•	•	•	•	•
Advanced Security (L2/3/4 ACL) DHCP Snooping, IP Source Guard, DAI	•	•	•	•	•
DHCP Server (Opt82, Port Based)	•	•	•	•	•
		SW/Prote	ocols		
Traffic Priority (QoS)	•	•	•	•	•
/LAN, P-VLAN, QinQ, GVRP	•	•	•	•	•
GMP Query, Snooping, GMRP	•	•	•	•	•
EEE802.1AB LLDP Network Discovery	•	•	•	•	•
EEE802.3ad LACP, Static Trunk	•	•	•	•	•
umbo Frame	•	•	•	•	•
Port Mirroring	•	•	•	•	•
DDM SFP*	•	•	•	•	•
IP Security/Port Security/SSL/ HTTPS/SSH/Telnet	•	•	•	•	•
User Security	•	•	•	•	•
SNMP/RMON/ Trap	•	•	•	•	•
CLI/Web/Telnet	•	•	•	•	•
		HW/N	NE .		
Housing Protection (IP)	IP30 (total 44 models)/ Aluminum				
Dimension (H x W x D mm)	135 x 54 x 120	135 x 54 x 120	135 x 74 x 132	135 x 74 x 132	189 x 74 x 132
Mounting	DIN Rail				
Operating Temperature	-40~75°C	-40~75°C	-40~75°C	-40~75°C	-40~75°C
MTBF (hrs)	734,700 hrs	734,700 hrs	832,875 hrs	832,875 hrs	1,252,145 hrs.
		Certificat	tions		
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Railway	EN50121-4	EN50121-4	EN50121-4	EN50121-4	EN50121-4

Supported

<sup>\*</sup> Coming Soon

#### Industrial Unmanaged Ethernet Switch

#### **Unmanaged Ethernet Switchs**











	JetNet 3212G-2C2F	JetNet 2205	JetNet 2205f	JetNet 3205G JetNet 3205G-1F	JetNet 3018G
		Interfa	ice		
Total Port Number	12	5	5	5	18
10/100TX Ports		5	4		16
10/100/1000TX Ports	8			5 (3205G) 4 (3205G-1F)	
100/1000M Combo	2 x 1000M				2
SFP Ports	2 x 1000M		1 x 100M(SC)	1 X1000M (3205G-1F)	
DI/DO (Dry Relay)	1 DO			1 DO	2 DO
DC Power input	2 x DC 24 (10-60V)	1 x DC 24 (12-40V)	1 x DC 24 (12-40V)	2 x DC 24 (10-60V)	2 x DC 24 (10-60V)
		Featu	res		
Qos Traffic Priority	4 Queues	•	•		4 Queues
Broadcast Storm filtering	•	•	•		• (DIP Switch)
Port/Power Event Alarm	Power Alarm			Power Alarm	Port 17, 18 Alarm Power Alarm
Jumbo Frame	10K Bytes			9K Bytes	9K Bytes
		HW/N	ΛE		
Housing Protection (IP)	IP30 (total 44 models)/ Metal	IP30/Aluminum	IP30/Aluminum	IP30 (total 44 models)/ Metal	IP30 (total 44 models)/ Aluminum
Dimension (H x W x D mm)	135 x 74 x 141	111.8 x 30 x 89.4	111.8 x 30 x 89.4	120 x 30 x 108	136.5 x 96 x 149.2
Mounting	DIN Rail	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Operating Temperature	-40~75°C	-40~75°C(-w)	-40~75°C	-40~75°C	-40~75°C (-w)
MTBF (hrs)				380,000	>200,000
		Certifica	tions		
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Safety				UL62328-1	
Railway	EN50121-4			EN50121-4	

Supported

#### **Industrial Unmanaged Ethernet Switch**

#### **Unmanaged Ethernet Switchs**











	JetNet 3008G V2	JetNet 3008 JetNet 3008-w	JetNet 3008f JetNet 3008f-w	JetNet 3508G-LVDC	JetNet 3508-LVDC
		Interfa	ice		
Total Port Number	8	8	8	8	8
10/100TX Ports		8	6		7 x M12-D
10/100/1000TX Ports	8			8 x M12-X	1 x M12-X
100/1000M Combo					
SFP Ports			2 x 100M(SC)		
DI/DO (Dry Relay)	1 DO	1 DO	1 DO		
DC Power input	2 x DC24 (9-60VDC)	2 x DC 24 (10-60V)	2 x DC 24 (10-60V)	2 x DC 12-24V	2 x DC 12-24V
		Featu	res		
Qos Traffic Priority	4 Queues	2 Queues	2 Queues	•	•
Broadcast Storm filtering	•	•	•		
Port/Power Event Alarm	•	•	•		
Jumbo Frame	10K Bytes			10K Bytes	10K Bytes
		HW/N	NE		
Housing Protection (IP)	IP30 (total 44 models)/ Aluminum	IP30 (total 44 models)/ Aluminum	IP30 (total 44 models)/ Aluminum		eel Metal etal by request
Dimension (H x W x D mm)	120 x 55 x 112	120 x 55 x 108	120 x 55 x 108	116 x 5	8 x 146
Mounting	DIN Rail	DIN Rail	DIN Rail	Wall	Mount
Operating Temperature	-40~70°C	-20~70°C/ -40~75°C(-w)	-20~70°C/ -40~75°C(-w)	-40~	-75°C
MTBF (hrs)	382,000	400,000	400,000	379	,940
		Certifica	tions		
Regulatory/Approval	CE/FCC	CE/FCC/ UL C1D2 (3008-w)	CE/FCC/ UL C1D2 (3008f-w)	CE/FCC/EN50155/EN5012	1-4/EN50121-3-2/E-Mark 13
Safety		UL62328-1 EN62328-1	UL62328-1		
Railway	EN50121-4				

Supported

#### **Industrial PoE Switch**

#### M12 Managed Industrial PoE Switch











	JetNet 7520P-HVDC JetNet 7520P-LVDC	JetNet 7516P-HVDC JetNet 7516P-LVDC	JetNet 7512P-HVDC JetNet 7512P-LVDC	JetNet 7714G	JetNet 6910G-M12 HVDC JetNet 6910G-M12 LVDC
		Interfa	ice		
Total Port Number	20	16	12	14	10
100/1000TX Ports	2 x M12-X 2 x M12-X (w/Bypass)	2 x M12-X 2 x M12-X(w/Bypass)	2 x M12-X 2 x M12-X(w/Bypass)	4 x M12-A	1 x M12-X(PoE+) 2 M12-X (w/Bypass)
10/100TX Ports	16 x M12-D	12 x M12-D	8 x M12-D	10 X M12-D	7 x M12-D
DI/DO (Dry Relay)	1 DO	1 DO	1 DO		
Console	M12-A RS-232, USB	M12-A RS-232, USB	M12-A RS-232, USB	M12-A RS-232, USB	M12-A RS-232, USB
Power Input	2	2 x DC 110V (77-137.5V)(-HVDC) 2 x DC 24V (10-57V)(-LVDC)	<u> </u>	2 x DC 110V (77-137.5V)	2 x DC 110V (77-137.5V)(HVDC) 2 x DC 24V (16.8-30V)(LVDC)
		Featur	es		
Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, ERPS, RSTP, MSTP,LACP)	•	•	•	•	MSR, RSTP/MSTP,LACP
IP Security/Port Security/SSL/ HTTPS/SSH/Telnet	•	•	•	Port, IEEE 802.1x Port w / Radius Server, SSL/HTTPs, SSH/Telnet	Port, IEEE 802.1x Port w / Radius Server, SSL/HTTPs, SSH/Telnet
Advanced Security (L2/3/4 ACL) DHCP Snooping, IP Source Guard, DAI	•	•	•	•	
		Power over I	Ethernet		
PoE Ports	16	12	8	8	8
Power Feeding Mode	M12-D: V+(1,3), V-(2,4)	M12-D: V+(1,3), V-(2,4)	M12-D: V+(1,3), V-(2,4)	M12-D: V+(1,3), V-(2,4)	M12-X: V+(1,2), V-(3,4) M12-D: V+(1,3), V-(2,4)
PoE Mode	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at
PoE Scheduling	•	•	•	•	•
System PoE Budget		120W/70°C (-HVDC) 100W/70°C (-LVDC)		100W/70°C	100W/70°C
		L3 Protocols			
L3 Routing	•	•	•	•	
Multicast Routing	•	•	•	•	
VRRP Gateway Redundancy	•	•	•	•	
		SW/Prote	ocols		
Management (SNMP V1/2c/3, CLI, Web, Trap, RMON)	•	•	•	•	•
Traffic Priority (QoS)	•	•	•	•	•
VLAN, P-VLAN, QinQ, GVRP	•	•	•	•	•
IGMP Query, Snooping, GMRP	•	•	•	•	•
IEEE 802.1AB LLDP	•	•	•	•	•
IEEE 1588 PTP v1/v2	•	•	•	IEEE 1588 PTP V2	IEEE 1588 PTP V1
Jumbo Frame	9.2Kbytes	9.2Kbytes	9.2Kbytes	9.2Kbytes	9.2Kbytes
DHCP (Server, Client, Opt 82, Port Based Server)	•	•	•	•	•
		HW/N	NE .		
Housing Protection (IP)	IP41 Ste	el Metal/IP54 Steel Metal by	request	IP30	IP30
Dimension (H x W x D mm)		162.2 x 206 x 70		145.2 x 198 x 120	145.2 x 198 x 120
Mounting		Wall Mount/ DaiRail		Wall Mount	Wall Mount
Operating Temperature		-40~70°C		-40~70°C	-40~70°C
MTBF (hrs)		426,523		>375,000	>365,000
		Certifica	tion		
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Safety	IEC62236-4	IEC62236-4	IEC62236-4		
Railway	EN50155/EN50121-4	EN50155/EN50121-4	EN50155/EN50121-4	EN50155	EN50155

Supported

#### **Industrial PoE Switch**

#### M12 Giga Managed Industrial PoE Switch

#### **Managed Industrial PoE Switch**













	Interfa	ice
JetNet 5520P-HVDC JetNet 5520P-LVDC	JetNet 5516P-HVDC JetNet 5516P-LVDC	JetN JetN
	1999	

Net 5512P-HVDC

JetNet 5612GP-4F

	JetNet 5520P-HVDC JetNet 5520P-LVDC	JetNet 5516P-HVDC JetNet 5516P-LVDC	JetNet 5512P-HVDC JetNet 5512P-LVDC	JetNet 7310G V2	JetNet 5612GP-4F
		Interfa	ice		
Total Port Number	20	12	12	10	12
100/1000TX Ports	2 x M12-X 2 x M12-X (w/Bypass)	2 x M12-X 2 x M12-X (w/Bypass)	2 x M12-X 2 x M12-X (w/Bypass)	8	8
10/100TX Ports	16 x M12-D	12 x M12-D	8 x M12-D		
SFP Ports				2 x 100/1000M	4 x 100/1000M
DI/DO (Dry Relay)	1 DO	1 DO	1 DO	1 DI, 1 DO	1 DI, 1 DO
Console	M12-A RS-232, USB	M12-A RS-232, USB	M12-A RS-232, USB	RS-232	RS-232
Power Input	2	2 x DC 110V (77-137.5V)(-HVDC 2 x DC 24V (10-57V)(-LVDC)		2 x DC 48V (46-57V)	2 x DC 48V (46-57V)
		Featur	es		
Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, ERPS, RSTP, MSTP,LACP)	•	•	•	•	•
IP Security/Port Security/SSL/ HTTPS/SSH/Telnet	•	•	•	•	•
Advanced Security (L2/3/4 ACL) DHCP Snooping, IP Source Guard, DAI	•	•	•	•	•
		Power over I	Ethernet		
PoE Ports	16	8	8	8	8
Power Feeding Mode	M12-D: V+(1,3), V-(2,4)	M12-D: V+(1,3), V-(2,4)	M12-D: V+(1,3), V-(2,4)	1,2,3,6 (A)	1,2,3,6 (A)
PoE Mode	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at
oE Scheduling	•	•	•	•	•
System PoE Budget	120W/70°C (-HVDC) 100W/70°C (-LVDC)		°C (-HVDC) °C (-LVDC)	240W/75°C	240W/75°C
		L3 Proto	cols		
.3 Routing				•	
Multicast Routing				•	
VRRP Gateway Redundancy				•	
		SW/Proto	ocols		
Management (SNMP V1/2c/3, CLI, Web, Trap, RMON)	•	•	•	•	•
Traffic Priority (QoS)	•	•	•	•	•
/LAN, P-VLAN, QinQ, GVRP	•	•	•	•	•
GMP Query, Snooping, GMRP	•	•	•	•	•
EEE 802.1AB LLDP	•	•	•	•	•
EEE 1588 PTP v1/v2	•	•	•	•	•
umbo Frame	9.2Kbytes	9.2Kbytes	9.2Kbytes	9Kbytes	9Kbytes
OHCP (Server, Client, Opt 82, Port Based Server)	•	•	•	•	•
		HW/M	1E		
Housing Protection (IP)	IP41 Ste	el Metal/IP54 Steel Metal by	request	IP30	IP30
Dimension (H x W x D mm)	162.2 x 206 x 70	162.2 x 2	206 x 70	160 x 108 x 136	160 x 84 x 136
Mounting	Wall Mount/ DaiRail	Wall Mour	nt/ DaiRail	DIN Rail	DIN Rail
Operating Temperature	-40~70°C	-40~	70°C	-40~75°C	-40~75°C
MTBF (hrs)	426,523	426	,523	499,000	605,279
		Certifica	tion		
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Safety	IEC62236-4	IEC62236-4	IEC62236-4		
Railway	EN50155/EN50121-4	EN50155/EN50121-4	EN50155/EN50121-4	EN50121-4	EN50121-4

Supported

#### **Industrial PoE Switch**

#### Managed Industrial PoE Switch











	JetNet 5208GP	JetNet 5208GP-2F	JetNet 5208GP-U	JetNet 5208GP-2F-U	JetNet 5210GP-2C
		Interfa	ce		
Total Ports Number	8	8	8	8	10
100/1000TX Ports	8	6	8	6	8
100/1000M Combo					2
SFP Ports		2 x 100/1000M		2 x 100/1000M	
DI/DO (Dry Relay)	1 x DI, 1 x DO	1 x DI, 1 x DO	1 x DI, 1 x DO	1x DI, 1x DO	1 x DI, 1 x DO
Console	RS-232	RS-232	RS-232	RS-232	RS-232
Power Input	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)
	, ,	Featur		, ,	, ,
Network Redundancy (MSR, RDH, TrunkRing, MultiRing, SuperChain, ERPS, RSTP, MSTP, LACP)	•	•	•	•	•
IP Security/Port Security/SSL/ HTTPS/SSH/Telnet	•	•	•	•	•
Advanced Security (L2/3/4 ACL) DHCP Snooping, IP Source Guard, DAI	•	•	•	•	•
		Power over I	Ethernet		
PoE Ports	8	8	8	8	8
Power Feeding Mode	1,2,3,6 (A)	1,2,3,6 (A)	1,2,3,6 (A) 1,2,3,4,5, 6,7,8 (bt)	1,2,3,6 (A) 1,2,3,4,5, 6,7,8 (bt)	1,2,3,6 (A)
PoE Mode	IEEE 802.3af/at	IEEE 802.3af/at	IEEE 802.3af/at/bt	IEEE 802.3af/at/bt	IEEE 802.3af/at
PoE Scheduling	•	•	•	•	•
System PoE Budget	180W/75°C	180W/75°C	180W/75°C	180W/75°C	240W/75°C
		SW/Prote	ocols		
Management (SNMP V1/2c/3, CLI, Web, Trap, RMON)	•	•	•	•	•
Traffic Priority (QoS)	•	•	•	•	•
VLAN, P-VLAN, QinQ, GVRP	•	•	•	•	•
IGMP Query, Snooping, GMRP	•	•	•	•	•
IEEE 802.1AB LLDP	•	•	•	•	•
Jumbo Frame	9Kbytes	9Kbytes	9Kbytes	9Kbytes	9Kbytes
DHCP (Server, Client, Opt 82, Port Based Server)	•	•	•	•	•
		HW/N	IE .		
Housing Protection (IP)	IP30 (total 44 models)	IP30 (total 44 models)	IP30 (total 44 models)	IP30 (total 44 models)	IP30 (total 44 models)
Dimension (H x W x D mm)	135 x 54 x 120	135 x 54 x 120	135 x 54 x 120	135 x 54 x 120	135 x 96 x 132
Mounting	DIN Rail	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Operating Temperature	-40~75°C	-40~75°C	-40~75°C	-40~75°C	-40~75°C
MTBF (hrs)	730,941 hrs	730,941 hrs	730,941 hrs	730,941 hrs	551,403 hrs
		Certifica	tion		
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Railway	EN50121-4	EN50121-4	EN50121-4	EN50121-4	EN50121-4

<sup>•</sup> Supported

#### **Industrial PoE Switch**

#### Managed Industrial PoE Switch











10	100	10		-
JetNet 5210GP-2C-U	JetNet 5212GP-2C2F	JetNet 5212GP-2C2F-U	JetNet 5216GP-4F	JetNet 5216GP-4F-U
	Interfa	ice		
10	12	12	16	16
8	8	8	12	12
2	2	2		
	2 x 100/1000M	2 x 100/1000M	4 x 100/1000M	4 x 100/1000M
1 x DI, 1 x DO	1 x DI, 1 x DO	1 x DI, 1 x DO	1 x DI, 1 x DO	1 x DI, 1 x DO
RS-232	RS-232	RS-232	RS-232	RS-232
2 x DC 48V (46-57V)	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)	2 x DC 48V (46-57V)
	Featur	res		
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
	Power over	Ethernet		
8	8	8	8	8
1,2,3,6 (A) 1,2,3,4,5, 6,7,8 (bt)	1,2,3,6 (A)	1,2,3,6 (A) 1,2,3,4,5, 6,7,8 (bt)	1,2,3,6 (A)	1,2,3,6 (A) 1,2,3,4,5, 6,7,8 (bt)
IEEE 802.3af/at/bt	IEEE 802.3af/at	IEEE 802.3af/at/bt	IEEE 802.3af/at	IEEE 802.3af/at/bt
•	•	•	•	•
480W/75°C	240W/75°C	480W/75°C	360W/75°C	480W/75°C
	SW/Prot	ocols		
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
9Kbytes	9Kbytes	9Kbytes	9Kbytes	9Kbytes
•	•	•	•	•
	HW/N	ME .		
IP30 (total 44 models)	IP30 (total 44 models)	IP30 (total 44 models)	IP30 (total 44 models)	IP30 (total 44 models)
135 x 96 x 132	135 x 96 x 132	135 x 96 x 132	189 x 96 x 132	189 x 96 x 132
DIN Rail	DIN Rail	DIN Rail	DIN Rail	DIN Rail
-40~75°C	-40~75°C	-40~75°C	-40~75°C	-40~75°C
551,403 hrs	551,403 hrs	551,403 hrs	1,243,697 hrs.	1,243,697 hrs.
	Certifica	ition		
				1
CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
	10 8 2  1x DI, 1x DO RS-232 2 x DC 48V (46-57V)	Interference	10	Interface

Supported

#### **Industrial PoE Switch**

#### **Rackmount Managed PoE Switch**

	to mimmer	10 mmm m 22	a mamma	B 400 000 000 212
	JetNet 7628XP-4F	JetNet 6628XP-4F	JetNet 5728G V2	JetNet 6728G
	,	Interface	,	,
Total Ports Number	28	28	28	28
10/100/1000TX Ports	24(PoE+)	24(PoE+)	4(PoE+)	24(PoE+)
10/100TX Ports	24(1 021)	24(1021)	20(PoE+)	24(1021)
SFP Ports	4 x 10GbE/1G	4 x 10GbE/1G	4 x 1000M	4 x 1000M
DI/DO (Dry Relay)	· · · · · · · · · · · · · · · · · · ·	0	DO	DO
Console/USB		2/USB	RS-232/USB	RS-232/USB
Collisote/OSB		(IEEE 802.3af)	2 x 44-57VDC (IEEE 802.3af)	2 x 44-57VDC (IEEE 802.3af)
DC Power input		(IEEE 802.3at)	2 x 50-57VDC (IEEE 802.3at)	2 x 50-57VDC (IEEE 802.3at)
AC Power input	1x 90-2	264VAC	1 x 90-264VAC	1 x 90-264VAC
		Features		
Cyber Redundancy+ (MSR, MultiRing, TrunkRing, RDH, SuperChain, ITU-T G.8032 ERPS)	•	•	•	•
Cyber Security+ (DHCP Snooping, IP Source Guard, DAI, DOS)	•	•	•	•
IPv4/IPv6 ACL (L2/L3/L4) Security	•	•	•	•
EEE Energy Saving	•	•	•	•
		PoE Features		
PoE Wiring	1,2,	3,6	1,2,3,6	1,2,3,6
PoE Specification	IEEE802.3af,	IEEE802.3at	IEEE802.3af, IEEE802.3at	IEEE802.3af, IEEE802.3at
PoE Technology	PoE Priority Control, PD keep a	alive checking, PoE Scheduling	PoE Priority Control, PD keep alive checking, PoE Scheduling	PoE Priority Control, PD keep alive checking, PoE Scheduling
Embedded AC power	30	OW	300W	300W
Total Power Budget	230W@AC (75°C), 300W@AC (-40~60°C), 720W@DC (-40~75°C)	230W@AC (75°C), 300W@AC (-40~60°C), 480W@DC (-40~75°C)	230W@AC (75°C), 300W@AC (-40~60°C), 720W@DC (-40~75°C)	180W@AC (75°C), 270W@AC (-40~60°C), 650W@DC (-40~75°C)
		SW/Protocols		
IPv6 Management	•	•	•	•
Traffic Priority (QoS)	8 Queu	es/port	8 Queues/port	8 Queues/port
VLAN,P-VLAN, QinQ, GVRP	4k V	LANs	4k VLANs	4k VLANs
IGMP Query, Snooping, GMRP	•	•	•	•
IEEE 802.1AB LLDP Network Discovery	•	•	•	•
IEEE 802.3ad LACP	•	•	•	•
IEEE 1588 PTP v1/v2	HW time	stamping	HW time stamping	SW based
Jumbo Frame/MAC Address	9.2Kby	tes/16K	9.2Kbytes/16K	9.2Kbytes/16K
Broadcast Storm Protection	•	•	•	•
DDM SFP	•	•	•	•
IEEE 802.1x, IP/Port Security SSL/HTTPS, SSH/Telnet	•	•	•	•
TACACS+, Radius	•	•	•	•
SNMP/RMON/Trap	•	•	•	•
CLI/Web/Telnet	•	•	•	•
		HW/ME		
Ingress Protection/Housing	IP	40	IP40	IP40
Dimension (H x W x D mm)	44 x 440	0 x 378.5	44 x 440 x 378.5	44 x 431 x 375
Mounting	Rackr	nount	Rackmount	Rackmount
Operating Temperature	-40~75°C	(fanless)	-40~75°C (fanless)	-40~75°C (fanless)
MTBF (hrs)	>202	,000	>202,000	>202,000
		Certification		
Regulatory/Approval	CE/	FCC	CE/FCC	CE/FCC
Safety			UL60950-1	UL60950-1
Railway	EN50	121-4	EN50121-4	EN50121-4

## Industrial PoE Switch

#### **Unmanaged Industrial PoE Switch**













JetNet 3810G V2/ 3806G/3810Gf/

JetNet 3710G JetNet 3210GP-2C JetNet 3205GP JetNet 3205GP-1F

	JetNet 3908G- M12	JetNet 3808G- M12	JetNet 3906G	JetNet 3810G V2/ 3806G/3810Gf/ 3810f	JetNet 3710G	JetNet 3210GP-2C	JetNet 3205GP JetNet 3205GP-1F
			Interface				
Total Ports Number	8	8	6	10/6	10	10	5
100/1000TX Ports	8 x M12-X	1 x M12-X	4 x 100/1000M 1 x 1000M	2 x RJ-45 (3810G/3806G)	2	8	4 (3205GP-1F) 5 (3205GP)
10/100 TX Ports		7 x M12-D		8 x (3810G)/ 4 (3806G)	8		
100/1000M Combo						2	
SFP Ports			1 x 100/1000M	2 x 1000M (3810Gf) 2 x 100M (3810f)			1 x 1000M (JetNet 3205GP-1F)
DI/DO (Dry Relay)			1 x DO	1 x D(	0	1 x DO	1 x DO
DC Power input	2 x 12	2-24V	2 x 12-36V	1 x 12-24V 1 x 8-32V (3810G V2)	1 x 48V	2 x 12V-56V	2 x 44V-57V
Hi-Pot	AC	1KV	AC 1.5KV	AC 1.51	KV	AC 1.2KV	AC 1.2KV
			Power over Eth	nernet			
PoE Ports	8	8	4	8/4 (3806G)	8	8	4
Power Feeding Mode	M12-X: V+(1,2), V-(3,4)	M12-X: V+(1,2), V-(3,4) M12-D: V+(1,3), V-(2,4)	1,2,3,6 (A)	4,5,7,8 (B)		1,2,3,6 (A)	1,2,3,6 (A)
PoE Mode	IEEE 80	2.3af/at	IEEE 802.3af/at	IEEE 802	2.3af	IEEE 802.3af/at	IEEE 802.3af/at
System PoE Budget	180W@24V	120W@24V 60W@12V	110W@24V, 65°C 90W@24V, 75°C	65W@24V, 60°C	65W@48V, 70°C	240W	112W
			Features				
QoS	•	•		•	•	•	
Failure Alarm			Port, Power	Port		Power	Power
Jumbo Frame	10Kbytes	10Kbytes	9Kbytes			10Kbytes	9Kbytes
			HW/ME				
Housing Protection (IP)		el Metal tal by request	IP30 (total 44 models) Steel Metal	IP30 (total 44 models) Aluminum	IP30 (total 44 models) Aluminum	IP30 (total 44 models) Metal	IP30 (total 44 models) Metal
Dimension (H x W x D mm)	116 x 58 x 146	116 x 58 x 146	140 x 55 x 119	149 x 66 x 131.2	149 x 66 x 131.2	135 x 96.18 x 132	120 x 30 x 108
Mounting	Wall Mount	Wall Mount	DIN Rail	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Operating Temperature	-40~75°C	-40~75°C	-40~75°C	-25~60°C	-25~70°C	-40~75°C	-40~75°C
			Certification	on			
Regulatory/Approval	CE/FCC/EI	N50121-3-2	CE/FCC	CE/FC	CC .	CE/FCC	CE/FCC
Railway	EN50155/	EN50121-4					
Vehicle	E-Mark	c/ITxPT		E-Mark (JetNet	3810G v2)	E-Mark	
Safety				UL 62328-1			UL 62328-1

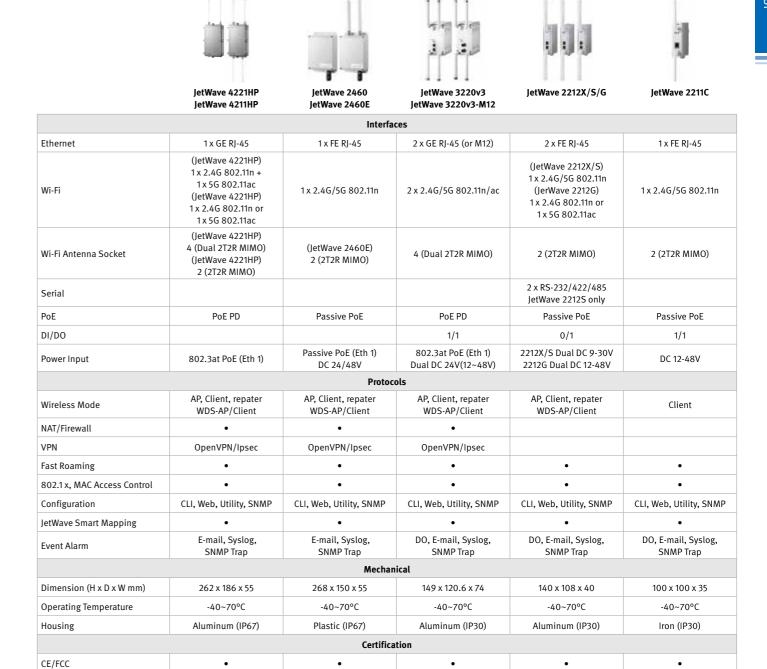
Supported

#### **Media Converter**

	Indus	trial Media Con	verter	Media Po	Converter	PoE In	jector
				(E)	. 6.11	•	
	JetCon 3401G V2	JetCon 2502	JetCon 1301	JetCon 3701GP-U	JetCon 3701G	JetCon 1701GP-U	JetCon 1702
			Interface				
Total Ports Number	2	3	2	2	2	2	4
Number of 10/100TX ports		1	1				
Number of 10/100/1000TX port	1					1	2
Fiber Ports	1 X 100/1000SFP		1 x 100FX/SC 2km (1301-m) 30km (1301-s)	1 x 100/1000SFP	1 x 100/1000SFP		
Other Ports		1xVDSL2					
Power Input	2 x DC 10-60V	2 x DC 12~48V (1 Terminal & 1 Power Jack)	DC 18~32V	2 x DC 44-57V	2 x DC 44-57V	2 x DC 44-57V	1x DC 44-57V
Event Alarm	•						
Hi-Pot (AC 1.5KV)	•	•	•	•	•	•	•
			Power over Ethe	rnet			
PoE ports				1	1	1	2
Power Feeding Mode				1,2,3,6 (A)	1,2,3,6 (A)	1,2,3,6 (A)	1,2,3,6 (A) 4,5,7,8 (B)
PoE Mode				IEEE 802.3 af/ at/bt	IEEE 802.3 af/at	IEEE 802.3 af/ at/bt	IEEE 802.3 af/at
System Power Budget				90W	30W	90W	60W
			Features				
QoS				•	•	•	
Failure Alarm				•	•	•	
			SW/Protocol	s			
Link Loss Forwarding	•		•				
Switch Mode with Store & Forward	•	•	•				
Pure Converter Mode			•				
Quality of Service	•	•					
Broadcast storm Filtering		•					
			HW/ME				
Housing Protection (IP)	IP30 (total 44 models) Steel	IP30 Aluminum	IP30 (total 44 models) Aluminum	IP30 (total 44 models) Steel	IP30 (total 44 models) Steel	IP30 (total 44 models) Steel	IP30 Steel
Dimension (H x W x D mm)	120 x 30 x 108	114.8 x 110 x 29.6	70 x 30 x 89	120 x 30 x 108	120 x 30 x 108	120 x 30 x 108	111.8 x 30 x 98.5
Mounting	DIN Rail	DIN Rail Wall mount	DIN Rail	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Operating Temerature	-40~75°C	-40~70°C	-10~70°C -40~80°C (-w)	-40~75°C	-40~75°C	-40~75°C	-40~75°C
MTBF (hurs)	>313,000	>897,000	>506,000		>313,000		>313,000
			Certificate				
Regulatory/Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Compliance Standard	EN50121-4 Complicance			EN50121-4 Complicance	EN50121-4 Complicance	EN50121-4 Complicance	

Supported

#### Wireless



Wi-Fi AP

Railway EMC

EN50121-4

EN50121-4

EN50121-4

EN50121-4

EN50121-4

<sup>•</sup> Supported

#### Wireless

#### **Mobile Cellular Router / Gateway**







JetWave 2111

	JetWave 3420v3-M12	JetWave 2411L	JetWave 2411
		Interfaces	
Ethernet	2 x GE RJ-45 (or M12)	1 x FE RJ-45	1 x FE RJ-45
Wi-Fi	1 x 2.4G 802.11n or 1 x 5G 802.11ac		
Cellular	LTE CAT4 E/A/U	LTE CAT1/4 E/A/U	LTE CAT1/4 E/A/U
Wi-Fi Antenna Socket	2 (2T2R MIMO)		
Serial	1x RS-232/422/485		1 x RS-232/422/485
PoE	PoE	Passive PoE	
DI/DO	1/1	1/1	1/1
Power Input	802.3at PoE (Eth 1) Dual DC 24V(12~48V)	DC 12-48V	DC 9-30V
		Protocols	
Wireless Mode	AP, Client, WDS-AP/Client		
Routing	LAN/Wi-Fi to LTE/WAN	LAN to 3G or LTE	LAN to 3G or LTE
NAT/Firewall	•	•	•
VPN	OpenVPN/Ipsec	OpenVPN/IPSec	OpenVPN/IPSec/PPTP
WAN Redundancy	WAN/LTE		
Link Fault Pass-Through	•		
Fast Roaming	•		
802.1 x, MAC Access Control	•		
Configuration	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP
Link Test Tools	•		
Event Alarm	DO, E-mail, Syslog, SNMP Trap	DI/DO, E-mail, Syslog, SNMP Trap	DI/DO, E-mail, Syslog, SNMP Trap
		Mechanical	
Dimension (H x D x W mm)	149 x 120.6 x 74	100 x 100 x 30	100 x 100 x 35
Operating Temperature	-40~70°C	-40~70°C	-40~70°C
Housing	Aluminum (IP30)	Iron (IP30)	Aluminum (IP30)
		Certification	
CE/FCC	•	•	•
Railway EMC	EN50121-4	EN50121-4	EN50121-4

#### Supported

#### Standard

Wi-Fi IEEE802.11a/b/g/n/ac 3G 3GPP Release 4,6,7 LTE 3GPP Release 8,9

#### **Operating Frequency**

2.4G Wi-Fi FCC: 2.412~2.462GHz; CE: 2.412~2.472GHz

FCC: 5.170~5.250GHz and 5.745~5.825GHz, CE: 5.170~5.250GHz 5G Wi-Fi

2100(n1)/1900(n2)/1800n(3)850(n5)/2600(n7)/900(n8)/700(n12)/800(n20)/700(28)/2500(n41)/(5G

1700 2100 (n66)/600(n71)/3500(n78)/4700(n79)

GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz, 3G UMTS/HSPA+: Five band 800/850/900/1900/2100MHz

LTE-E: 800(20)/900(8)/1800(3)/2600(7)MHz LTE LTE-U: 700(17)/850(5)/AWS1700 and 2100(4)/1900(2)MHz

\*DI: Digital Input; DO: Digital Output

#### Wireless

#### **Mobile Cellular Router / Gateway**







**Private LoRa** 

JetWave 2114 JetWave 2414

JetWave 2424

JetWave 4110L

	Jetwave 2414			
		Interfaces		
Ethernet	4 x FE RJ-45	4 x FE RJ-45	2 x GE RJ-45	
Wi-Fi		1 x 2.4G	1 x 2.4G	
Cellular	LTE CAT1/4 E/A/U	LTE CAT4 E/A/U	5G /4G LTE	
LoRa				Private LoRa
Wi-Fi Antenna Socket		2 (2T2R MIMO)	2 (2T2R MIMO)	
Serial	2 x RS-232/422/485			1 x RS-485
PoE	Passive PoE		PoE PD	
DI/DO	2/2			1(DI or AI)/1
Power Input	DC 12-48V	DC 12-48V	802.3at PoE DC 9-36V	DC 12-36V
		Protocols		
Wireless Mode		AP, Client, WDS-AP/Client	AP, Client, WDS-AP/Client	
Routing	LAN to 3G or LTE	LAN to 3G or LTE	LAN to 5G or LTE	
NAT/Firewall	•	•	•	
VPN	OpenVPN/IPSec/PPTP	OpenVPN/IPSec/PPTP	OpenVPN/IPSec/PPTP	
Configuration	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility, SNMP	CLI, Web, Utility,
Auto IP Report	•	•	•	
Event Alarm	DI/DO, E-mail, Syslog, SNMP Trap	E-mail, Syslog, SNMP Trap	E-mail, Syslog, SNMP Trap	DI/DO
		Mechanical		
Dimension (H x D x W mm)	100 x 100 x 55	140 x 110 x 33	131 x 100 x 30	100 x 100 x 48
Operating Temperature	-40~70°C	-40~70°C	-30~60°C	-40~80°C
Housing	Aluminum (IP30)	Aluminum (IP30)	Aluminum (IP30)	Plastic (IP68)
		Certification		
CE/FCC	•	CE	CE	•
Railway EMC	EN50121-4			

#### Supported

#### Standard

Wi-Fi IEEE802.11a/b/g/n/ac 3G 3GPP Release 4,6,7 LTE 3GPP Release 8,9

#### **Operating Frequency**

2.4G Wi-Fi FCC: 2.412~2.462GHz; CE: 2.412~2.472GHz

5G Wi-Fi FCC: 5.170~5.250GHz and 5.745~5.825GHz, CE: 5.170~5.250GHz

2100(n1)/1900(n2)/1800n(3)850(n5)/2600(n7)/900(n8)/700(n12)/800(n20)/700(28)/2500(n41)/ 5G

1700 2100 (n66)/600(n71)/3500(n78)/4700(n79)

GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz, 3G UMTS/HSPA+: Five band 800/850/900/1900/2100MHz

LTE-E: 800(20)/900(8)/1800(3)/2600(7)MHz LTE LTE-U: 700(17)/850(5)/AWS1700 and 2100(4)/1900(2)MHz

LoRa 410~525MHz/862~1020MHz (According to the local regulatory compliance)

\*DI: Digital Input; DO: Digital Output; AI: Analog Input

## Antenna & Cable

#### Omni Antenna

		JWA-2.4/5G-2dBi- SM-00	JWA-2.4G-5dBi- NF-00	JWA-2.4G-7dBi- NF-00	JWA-2.4G-9dBi- NF-00	JWA-5G-7dBi-NF-00	JWA-2.4/5G-5/7dBi- NF-00	JWA-5G-12dBi- NF-00
Appli	cation	Indoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor
Connec	tor Type	SMA Male	N-Type Male	N-Type Male	N-Type Female	N-Type Male	N-Type Male	N-Type Female
Gain	(dBi)	2dBi	5dBi	7dBi	9dBi	7dBi	2.4G 5dBi/5G 7dBi	12dBi
	Horz	360°	360°	360°	360°	360°	360°	360°
Angle	Vert	360°	10° - 12°	10° - 12°	10° - 12°	10° - 12°	10° - 12°	10° - 12°
Dimensi	ion (mm)	81 x 14.5 x 14.5	187 x 20 x 22.8	286.5 x 15 x 19.8	438.5 x 20 x 23.2	187 x 20 x 22.8	187 x 20 x 22.8	455 x 20 x 22
Remark		AGV application Point to multipoint	Point to multipoint	Point to multipoint	Point to multipoint	Point to multipoint	Point to multipoint	Point to multipoin

#### **Directional Panel Antenna**

		JWDA-2.4G-12dBi-NF-00	JWDA-2.4G-14dBi-SM-00	JWDA-5G-14dBi-NF-00	JWDA-5G-22dBi-SM-00		
Frequ	uency	2.4G	2.4G	5G	5G		
Appli	olication Outdoor Outdoor		Outdoor	Outdoor			
Connector Type N-Type Female		N-Type Female	SMA Female	N-Type Female	SMA Female		
Gain	n (dBi) 12dBi		14dBi	14dBi	22dBi		
Al	Horz	35°	32°	32°	9°		
Angle	Vert	30°	30°	30°	9°		
Dimension (mm)		199.7 x 120 x 47.6	220 x 220 x 31	199.7 x 120 x 47.6	380 x 380 x 18		
Remark		Point to Point Long distance					

#### **RF Cable**

	JWA-Cable-SM-to-SM-00	JWA-Cable-NM-to-NM-00	JWA-Cable-NM-to-NM-WP-00	JWA-Cable-NM-to-SMWP-00
Connector	RP-SMA Male to RP-SMA Female	N-Type Male to N-Type Male	N-Type Male to N-Type Male	N-Type Male to SMA Male
Length	1500mm	1500mm	1500mm	1500mm

<sup>\*</sup>The distance is based on the measurement in the open space and lab calculation. The distance still vary with the environment in each field sites.

## Wi-Fi AP/Antenna Distance Reference Table

#### Omni Antenna

	Connector		Default	JWA-2.4/5G- 2dBi-SM-00	JWA-2.4G- 5dBi-NF-00	JWA-2.4G- 7dBi-NF-00	JWA-2.4G- 9dBi-NF-00	JWA-5G-7dBi- NF-00	JWA-2.4/5G- 5/7dBi-NF-00	JWA-5G-12dBi- NF-00
Model Name	type	Frequency	Antenna	2.4G/5G 2dBi	2.4G 5dBi	2.4G 7dBi	2.4G 9dBi	5G 7dBi	2.4/5G-5/7dBi	5G 12dBi
				SMA	N-Type	N-Type	N-Type	N-Type	N-Type	N-Type
	6144	2.4G	0.2km	0.15km	0.6km	1km	1.5 km		0.6 km	
JetWave 2211C	SMA	5G	0.15km	0.1km				1km	1.5 km	1.5 km
JetWave 2212 & SMA	6144	2.4G	0.3km	0.15km	0.6km	1km	1.5 km		1.5 km	
	5G	0.2km	0.1km				1km	1.5 km	1.5 km	
JetWave 2460	Embedded	2.4G/5G	1.5km				n/a			
		2.4G	0.6km	0.15km	0.6km	1km	1.5 km		1.5 km	
JetWave 2460E	N-Type	5G	1.5km	0.1km				1km	1.5 km	1.5 km
JetWave 4221/4211		2.4G	,	0.15km	0.6km	1km	1.5 km		1.5 km	
	N-Type	5G	n/a	0.1km				1km	1.5 km	1.5 km
JetWave		2.4G	,		1.5km	2.4km	3 km		3 km	
4221/4211 HP	N-Type	5G	n/a					3 km	4km	4km

#### **Directional Panel Antenna**

				JWDA-2.4G-12dBi-NF-00	JWDA-2.4G-14dBi-SM-00	JWDA-5G-14dBi-NF-00	JWDA-5G-22dBi-SM-00
Model Name	Connector type	Frequency	Default Antenna	2.4G 12dBi	2.4G 14dBi	5G 14dBi	5G 22dBi
	.,,,,,		7	N-Type	SMA	N-Type	SMA
1 1111 20445	C111	2.4G	0.2km	2.5 km	3 km		
JetWave 2211C	SMA	5G	0.15km			2.5 km	3.5km
JetWave 2212 &	& SMA	2.4G	0.3km	2.5 km	3 km		
3000 series		5G	0.2km			2.5 km	3.5km
JetWave 2460	Embedded	2.4G/5G	1.5km		n/	'a	
		2.4G	0.6km	2.5 km	3 km		
JetWave 2460E	N-Type	5G	1.5km			2.5 km	3.5km
JetWave		2.4G	,	2.5 km	3 km		
4221/4211	N-Type	5G	n/a			2.5 km	3.5km
JetWave		2.4G	,	4 km	4.5km		
4221/4211 HP	11 HP N-Type	5G	n/a			7km	10km

#### **About Beijer Electronics**

Beijer Electronics is a multinational, cross-industry innovator that connects people and technologies to optimize processes for business-critical applications. Our offer includes operator communication, solution engineering, digitalization and communication, and support. As experts in user-friendly software, hardware and services for the Industrial Internet of Things, we empower you to meet your challenges through leading-edge solutions.

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