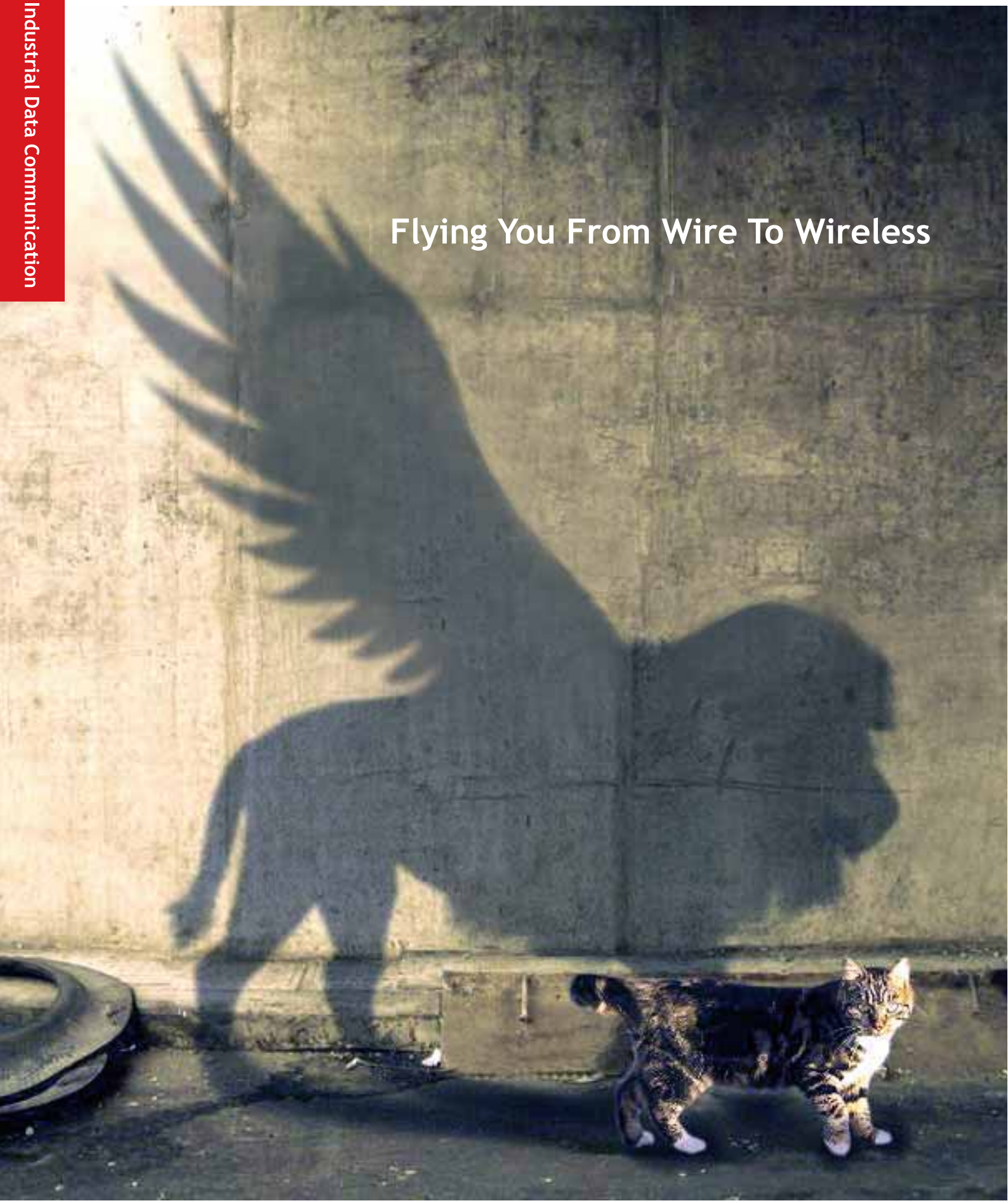
Industrial Data Communication



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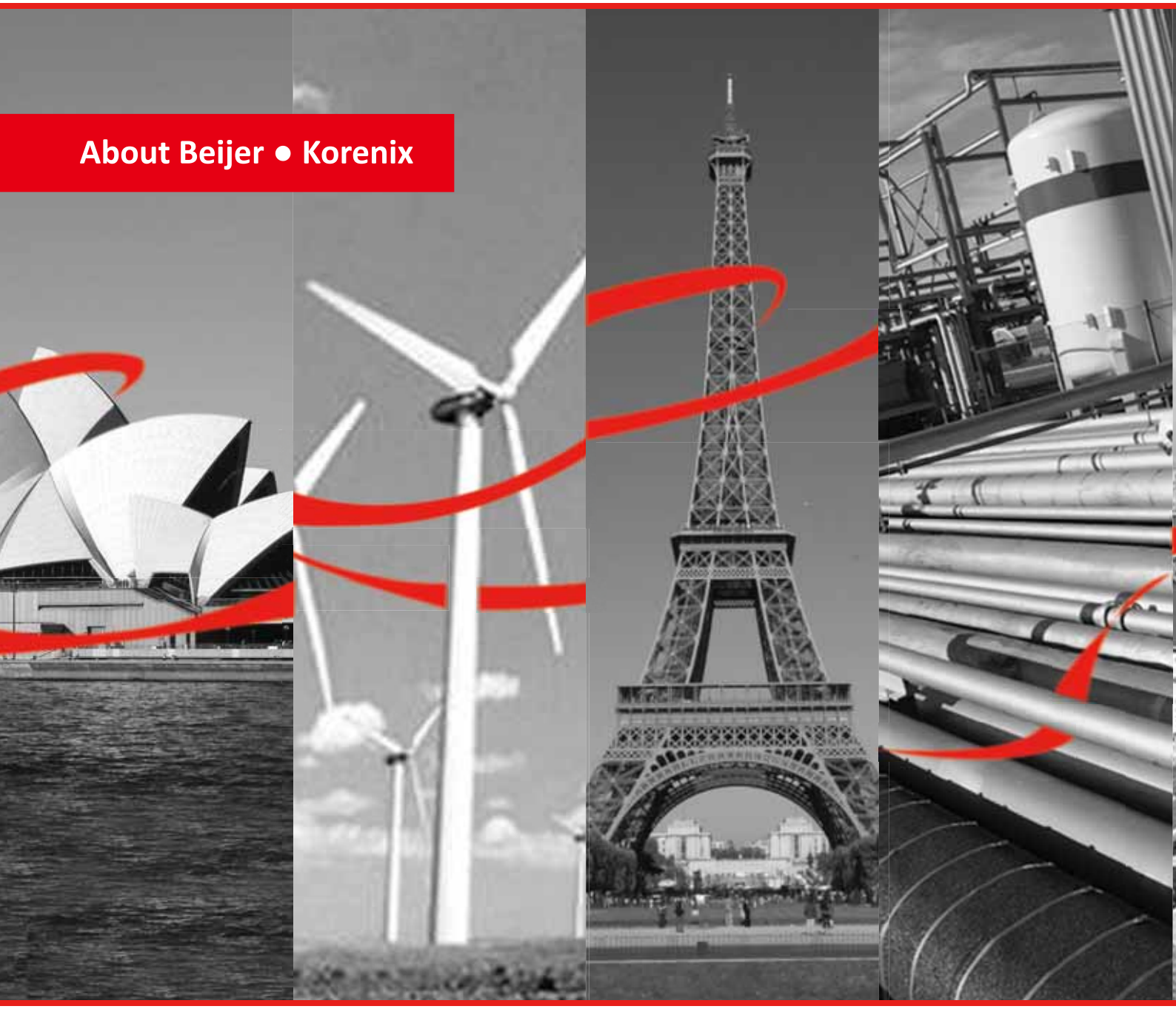
Beijer ELECTRONICS korenix

About Beijer • Korenix



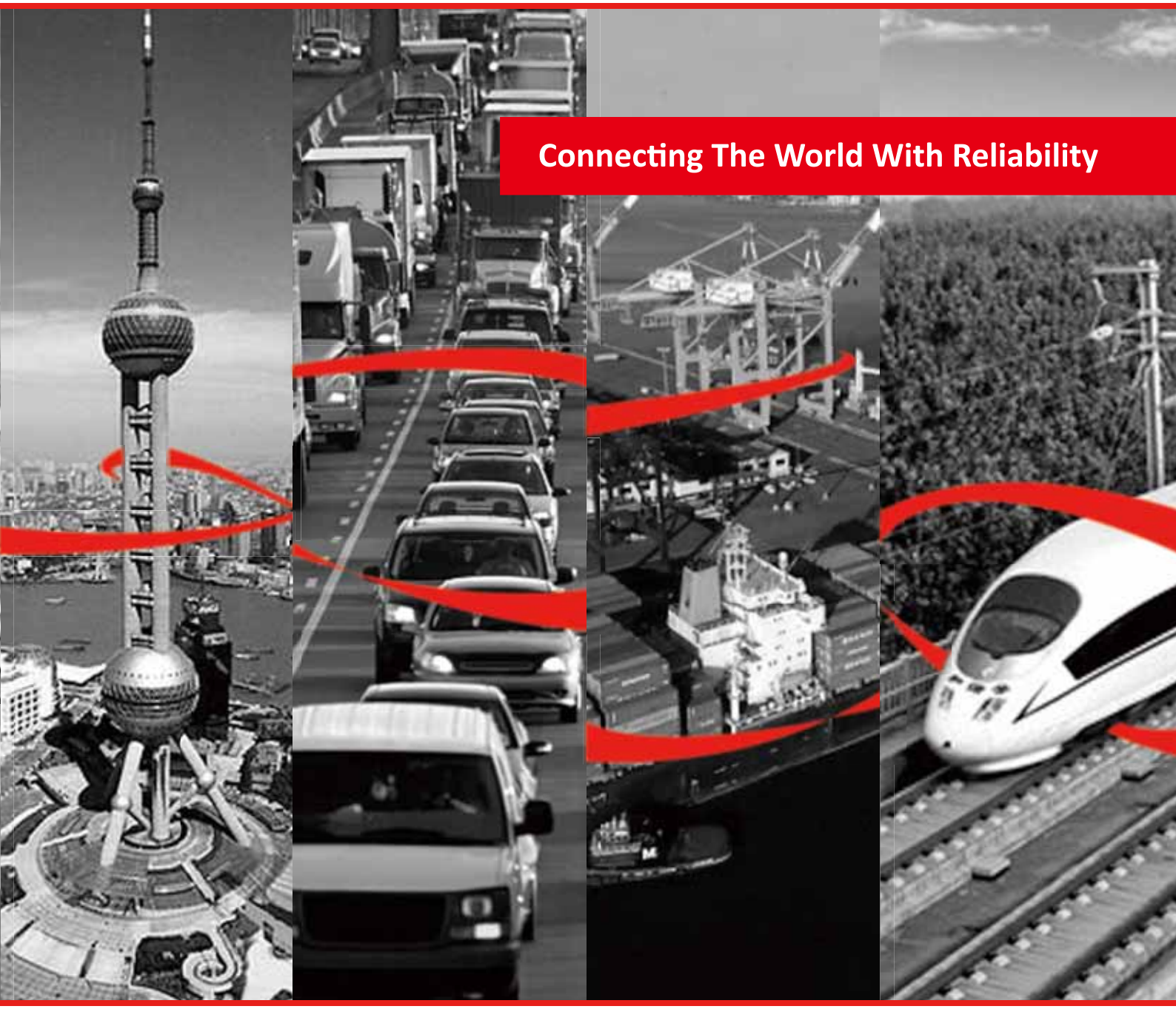
Beijer ELECTRONICS korenix

Beijer ELECTRONICS

Beijer Electronics is a fast growing company with extensive experience of industrial automation anddata communication, developing and marketing competitive products and solutions that focus on the user. Since start-up in 1981, the company has evolved into a multinational group and organized into three business areas: Automation, HMI Products and Industrial Data Communications (IDC). The company is listed on the Nasdaq OMX Nordic Exchange Stockholm's Small Cap list under the ticker BELE.

korenix

Korenix Technology, a Beijer group company within the Industrial Data Communication division, is a market leading brand in industrial networking and computing solutions with an extensive track record in providing innovative, market-oriented, value focused solutions. Worldwide customer base covers different segments, including end-customers, OEMs, integrators and brand label partners.



Worldwide Sales Network

Sales and customer support is available through our subsidiaries and local distributors in more that 70 countries on all continents. Our business is driven by a strong commitment to people and technology that customers can trust.

International Development Organization

International presence is essential to meet the demands of global customers. Product development and manufacturing centers are conducted in India, Brazil, China, USA and Taiwan, where regional market know-how is utilized in a shared development agenda.

Sharp Focus On Product Development And Support

Development operations involve a number of development centers around the world. Beijer Electronics group complete development organization in each business segment works according to collective processes and a shared development agenda, which facilitates synergies and a cohesive product portfolio. Simultaneously, this global organization enables development to stay close to the different markets and products adapted to customer needs.

Grow With Us In Global Industrial Market

Korenix's Innovation Milestone

2006
- Pioneer of the world - Industrial PoE switch
- EtherCAT realtime - Ethernet fiber converter

2007
- Pioneer of the world - 7+3G Industrial Ethernet switch
- Patented MSR redundant ring
- Patented 0ms seamless restoration

2008
- Patented 6-in-1 communication computer
- World's 1st 24V booster PoE switch card
- IP68 waterproof switch

2009
- Patented 24V to 48V PoE booster
- 40km ultra long distance wireless AP
- Industrial routing computer




Our Core Value

Innovation

Sharp focus on innovation and in value creation, Korenix reaps rewards from the proactive professionals. By understanding the composition and change of drivers, korenix leads the market and develops solutions that exceed customers' satisfaction.

Commitment

Korenix is dedicated to develop long-term partnerships based on the foundation of mutual trust, brand commitment and branch franchise. The family-like strength brings all the partners together in annual Global Partner Summit for sharing the success.

Trust

Quality and Service is the core to your success. Over 500 Korenix well-trained customer service engineers around the world provide you solid, real-time pre-sales and after-sales technical services by phone, email, or on-site support.

International Awards

2010 D&B D-U-N-S Registered™ Enterprise

2010 Standard Chartered SME Elite

2009 Taiwan Leading Product Sponsorship

2009 Best I/O Modules of Automation

2009 COMPUTEX Best Choice Award

2009 COMPUTEX Design & Innovation Award

2008 COMPUTEX Best Choice Award

2008 Outstanding IT Products Award

2008 Golden Penguin Award

2007 COMPUTEX Best Choice Award

2007 PRODUCT OF THE YEAR Control Engineering

2013

- Triple RF, high performance wireless AP
- 50ms super roaming technology
- Gigabit high power PoE injector

2012

- Broadcast storm prevention technology
- NEMA TS2 traffic control switch
- RM redundant technology

2011

- Pioneer of the world - L2+ security DIN-rail switch
- Industrial grade NMS, JetView Pro
- High power EN50155 train PoE switch

2010

- Pioneer of the world - 540W high power PoE switch
- 12V/24V E-mark vehicle PoE switch
- Korenix PoE concept

Quality Assurance

Korenix and its own production facility in Taipei, designs products with high level of ruggedness and reliability, fulfilling and exceeding the requirements of mission critical communications networks deployed in harsh environments.

- ISO 9001:2008
- UL / CE / FCC / TAF / TUV
- REACH / WEEE / RoHS
- TAF GPMS – QC 080000
- TAF HSPM – QC 080000 RoHS
- EN50155 Railway rolling stock
- IEC61373 Railway shock and vibration tests
- EN50121-3-2 EMC of apparatus on railway rolling stock
- EN50121-4 Railway signaling and telecommunications apparatus
- E-Mark Safety approval for motor vehicles
- NEMA TS2 Intelligent transportation system
- UL508 Industrial environment

Product Categories

Railway

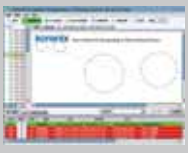
PSCADA

IPv6

JetNet 5012G

Industrial L2+ Managed Switch

- Broadcast storm protection
- High RSTP compatibility
- Advanced L2+ security

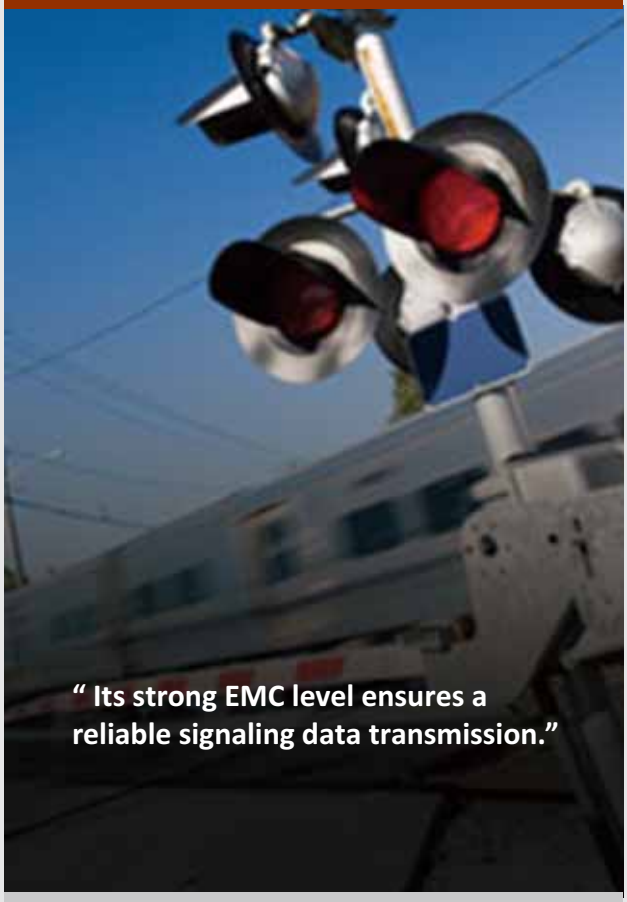


JetView Pro

Network Management System

- Auto topology generation
- Manages 3rd party devices
- User defined event-action rules

Signaling



JetCon 2301

Industrial Media Converter

- EN 50121-4 compliance
- 10~60VDC dual power input
- Strong EMS protection

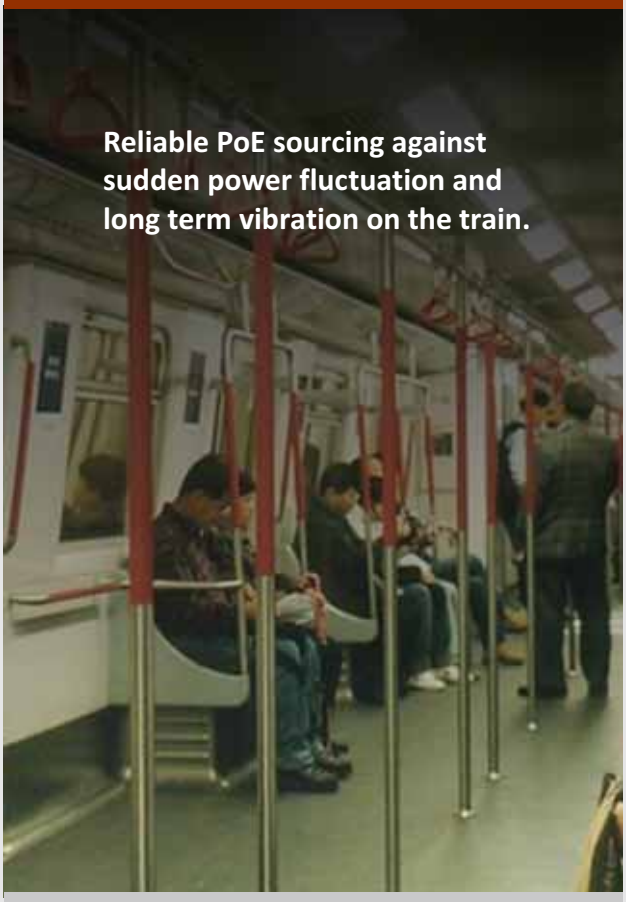
IPv6

JetNet 5628G L2+ Managed Switch

- 3 modular slots, up to 18+4G fibers
- EN 50121-4 EMC rated
- Fanless -40~85°C Op. temperature

Railway

CCTV



IPv6

JetNet 6710G-M12 (HVDC)

Industrial 8+2G 802.3at PoE Switch

- 110 (77~137) VDC power input
- M12 rugged connectors
- 120W PoE power budget

IPv6

JetNet 6810G-M12/RJ

Industrial 8+2G 802.3at PoE Switch

- 24 (23~42.5) VDC power input
- M12/RJ rugged connectors
- 120W PoE power budget

PIS

JetWave 2820

Dual RF Outdoor Wireless AP

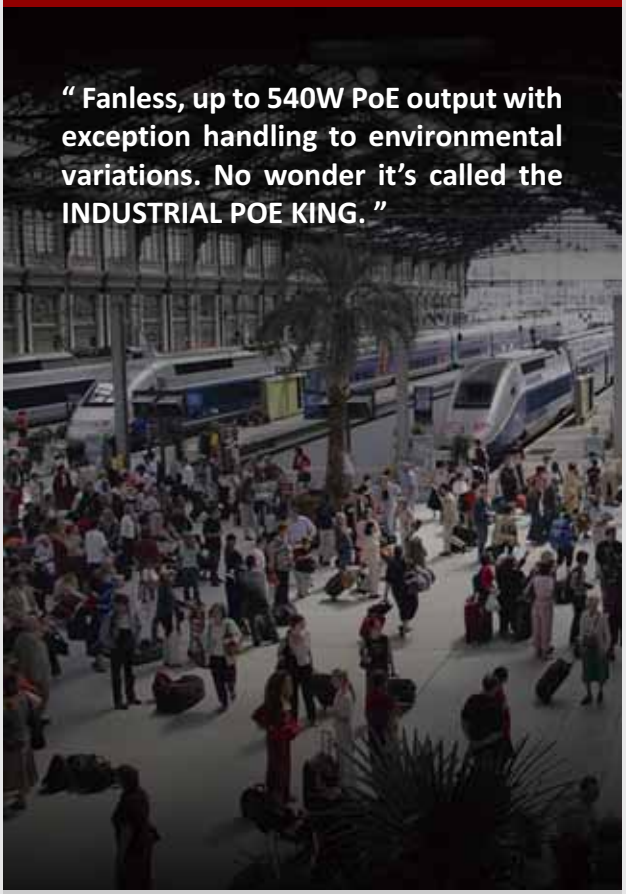
- 802.11a/b/g/n configurable
- 20ms Super roaming, 120Mbps throughput at 120km/h

JetCon 3401G

Industrial Gigabit Media Converter

- Flexible Gigabit SFP fiber
- QoS precedence transmission
- Strong EMS immunity

Station



IPv6

JetNet 5728G-24P Industrial PoE King

- 24-port 30W PoE, max 540W@65°C in total
- PoE emergency management
- Advanced Layer 2+ security

IPv6

JetNet 5310G

Industrial 8 + 2G PoE Switch

- 30W PoE per port, 80W in total
- IP camera keep alive checking
- DDM Fiber quality monitoring

Vehicle

JetNet 3810G

Industrial 8 + 2G PoE Switch

- 12~24VDC power input
- 802.3af 48VDC PoE output
- e-mark type approval

IPv6

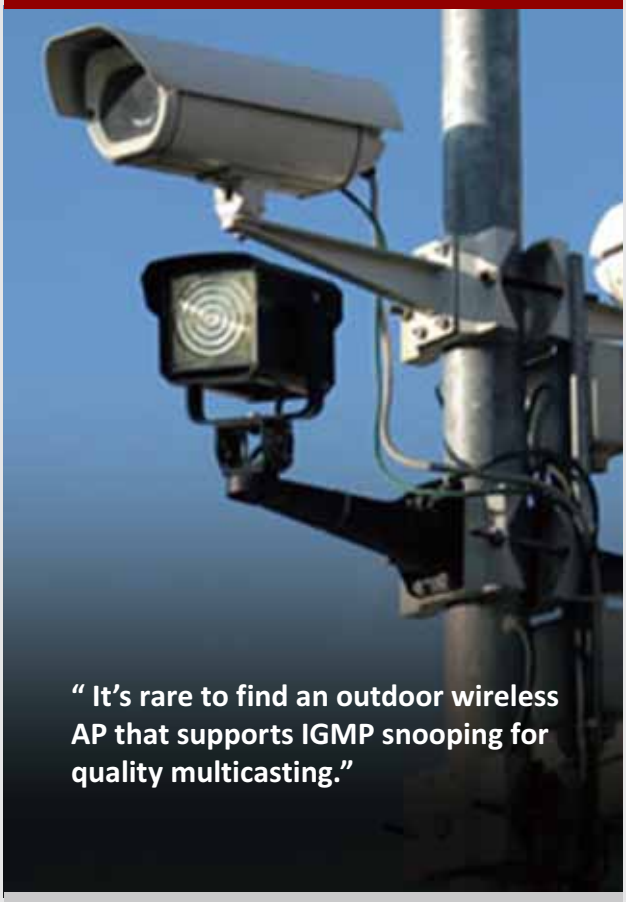
JetBox 9560

Embedded PoE Routing Computer

- 12~24VDC power input
- GSM/GPRS/3G, GPS extension
- VPN remote control

Surveillance

City



“ It’s rare to find an outdoor wireless AP that supports IGMP snooping for quality multicasting.”

JetWave 2450

Outdoor 802.11b/g/n Wireless AP

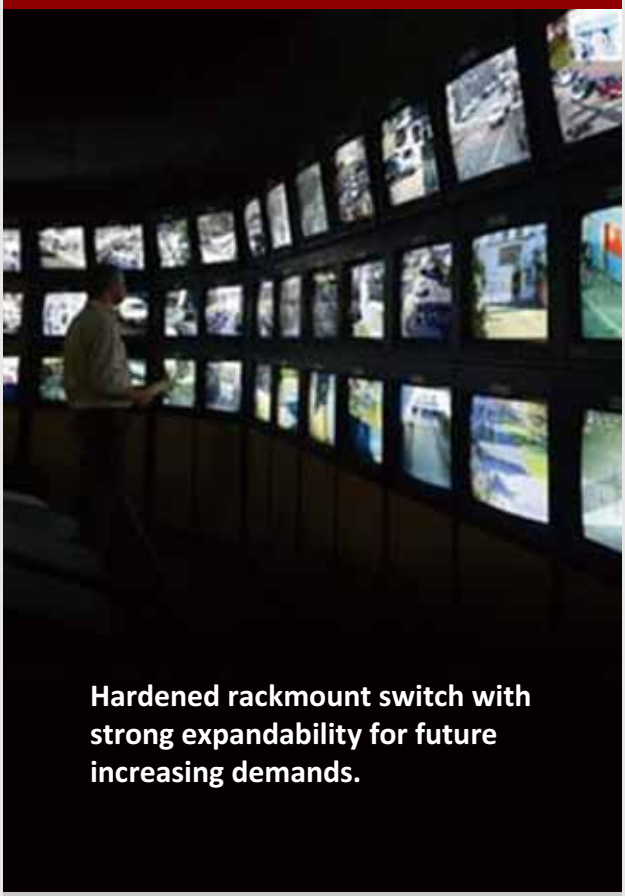
- IGMP snooping video multicast
- WMM video transmission
- Up to 150Mbps net data rate

JetNet 3008G

Industrial 8G Ethernet Switch

- 8 port full gigabit plug and play
- Broadcast storm filtering
- QoS video transmission

Center



Hardened rackmount switch with strong expandability for future increasing demands.

JetNet 5828G Modular L3 Switch

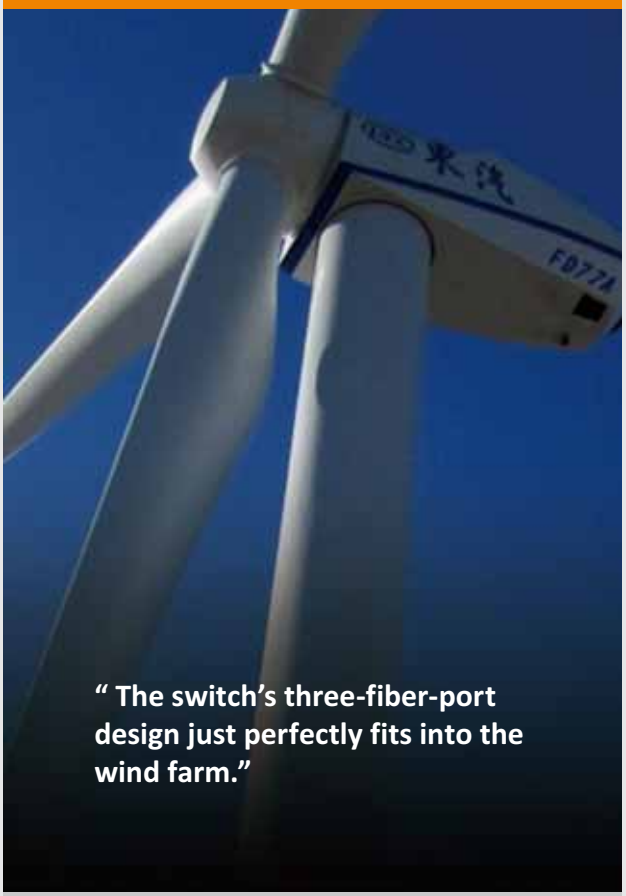
- 3 module slots, up to 22 fiber links
- IGMP and L3 uni/multicast routing
- EN 50121-4 EMC rated

JetNet 6524G 24G Stackable L3 Switch

- Stackable, up to 192 ports, 384G throughput
- High performance uni/multicast routing
- Jumbo frame enhances NVR performance

Power

Generation



" The switch's three-fiber-port design just perfectly fits into the wind farm."

IPv6

JetNet 4510

Industrial 7+3F Managed Switch

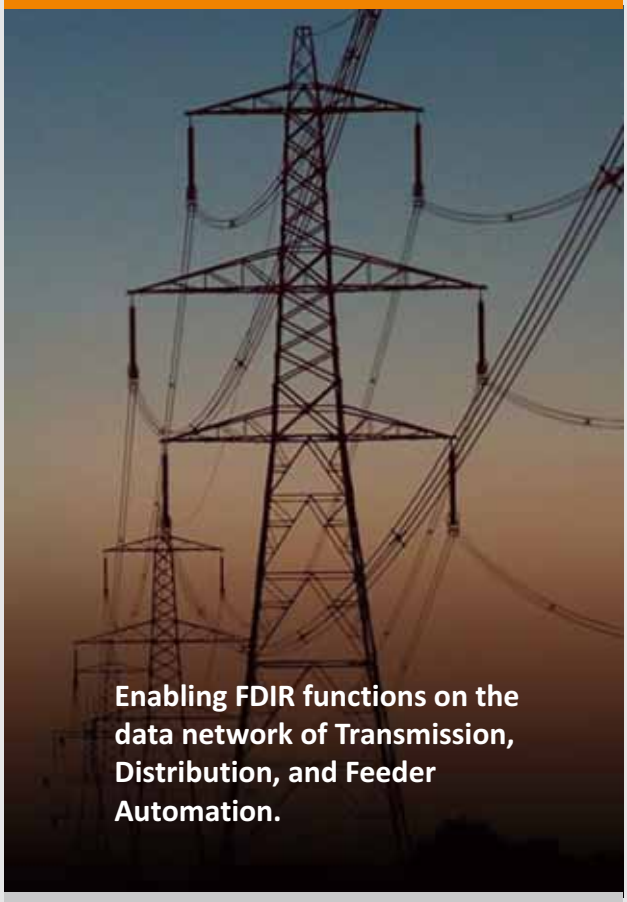
- 3 100Mbps SFP fibers
- 5ms ring failure recovery
- Broadcast storm protection

JetView Pro

Network Management System

- Auto topology generation
- Manages 3rd party devices
- User defined event-action rules

T&D



Enabling FDIR functions on the data network of Transmission, Distribution, and Feeder Automation.

IPv6

JetNet 4508f

Industrial Managed Fiber Switch

- Network failure detection, identification and recovery
- Low power consumption
- -40~75°C operating temp.

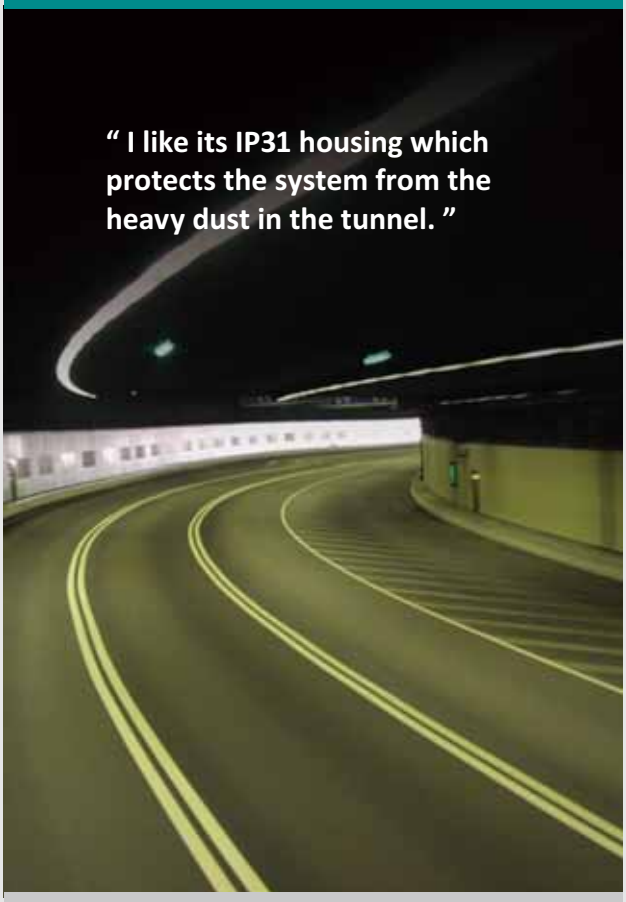
JetWave 2820

Dual RF Outdoor Wireless AP

- Wireless daisy-chain
- Multiple hopping up to 120 Mbps at 10 hops

Transportation

Tunnel



JetNet 5010G

Industrial 7+3G Managed Switch

- IP31 aluminum protection
- 5ms ring failure recovery
- NEMA TS compliance

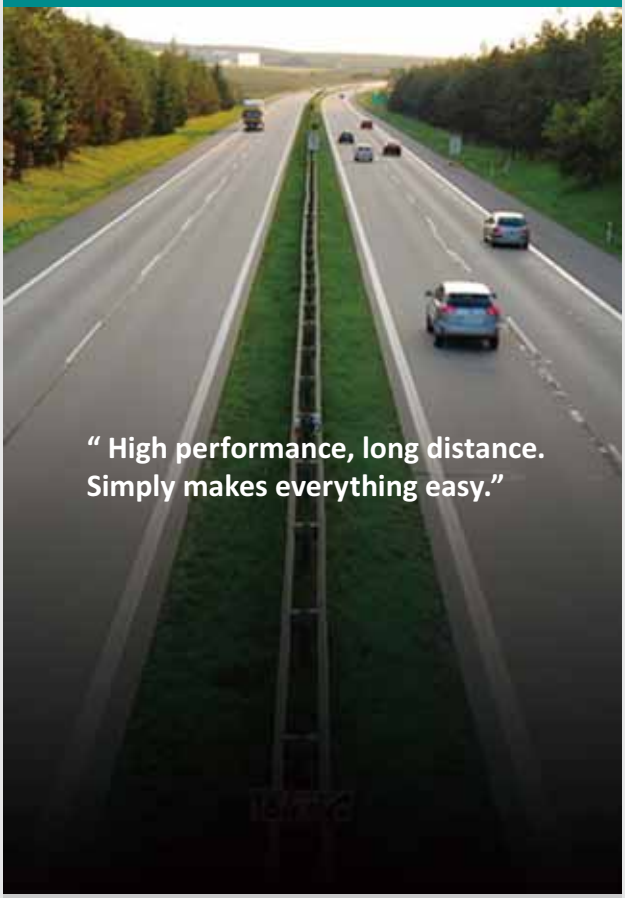
IPv6

JetBox 5300

Embedded Linux Computer

- 2 LAN, 4 Serial, 4 DI, 4 DO
- Modbus gateway
- Programmable for traffic control

Highway



JetWave 2610

Outdoor 802.11a Wireless AP

- Up to 40km ultra long distance
- Max 54Mbps data rate
- Low interference 5G band

JetNet 6059G

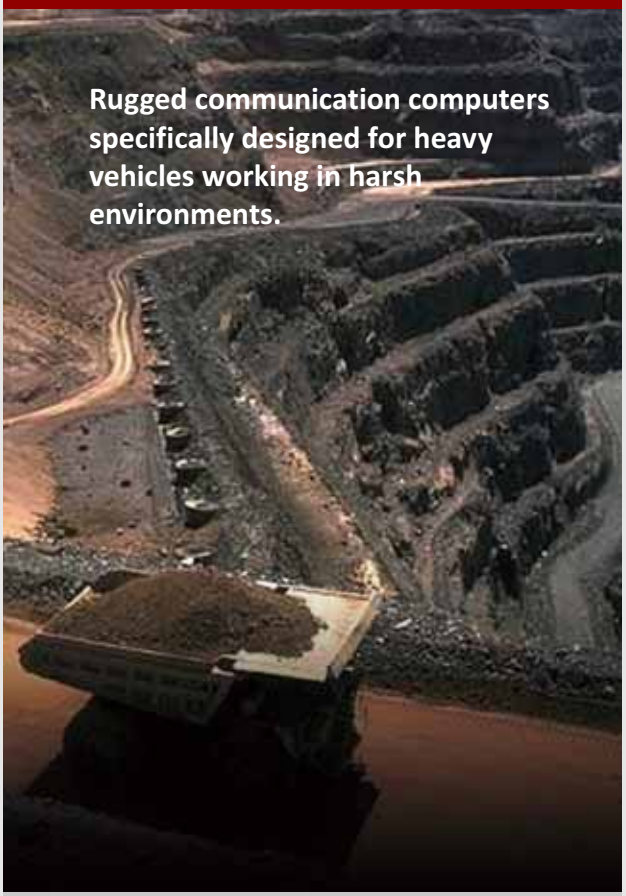
Industrial 9G Managed Switch

- Full gigabit for surveillance
- 2G fiber TrunkRing backbone
- DDM fiber quality monitoring

IPv6

Heavy Industry

Mining



JetBox 8152

Industrial Communication Computer

- Redundant operating system
- CANbus
- Ethernet, COM, VGA, audio, usb

JetBox 8195

Industrial Communication Computer

- 4 vehicle boost PoE + 2GbE
- miniPCI for wireless extension
- Serial, VGA, audio, usb

Oil and Gas

JetWave 2830

Triple RF Outdoor Wireless AP

- 802.11a long distance backhaul
- 802.11b/g local coverage
- 802.11n MIMO 350Mbps high speed

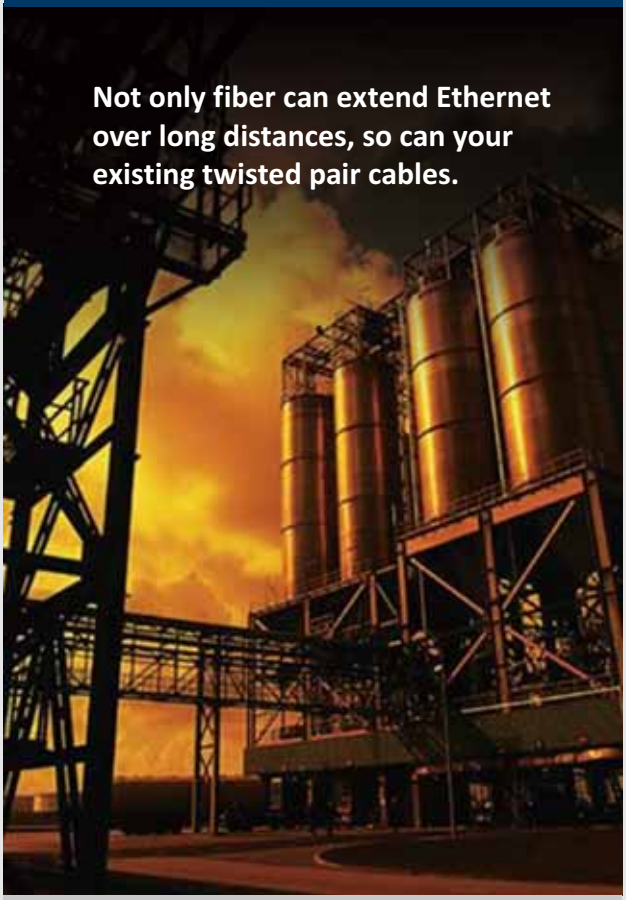
JetBox 5432-w

Embedded VPN Computer

- VPN routing + 4 LAN
- Serial buffering in case of link loss
- Modbus gateway

IPv6

Factory



JetCon 2502

Industrial VDSL2 Ethernet Extender

- Ethernet over existing copper
- Extend distance up to 1km
- 1.5KV AC HiPot isolation

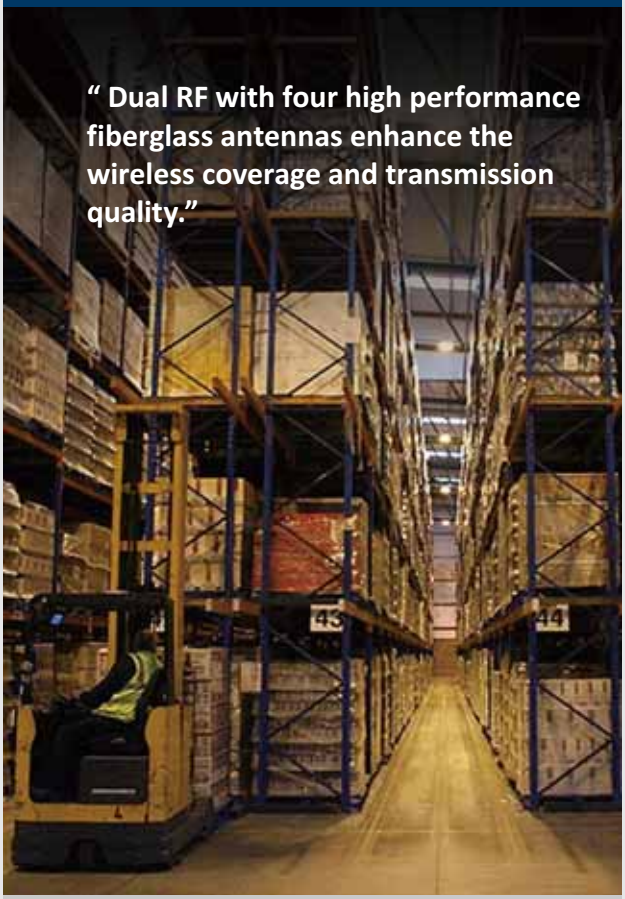
JetNet 4518-w

Industrial 16+2F Managed Switch

- Broadcast storm protection
- Modbus/TCP managed
- Advanced L2+ Security

IPv6

Warehouse



JetWave 2720

Industrial Dual RF Wireless AP

- High gain fiberglass antenna
- 2 Gigabit Ethernet
- Wireless to wire max 350Mbps

JetPort 5801

Wireless Serial Device Server

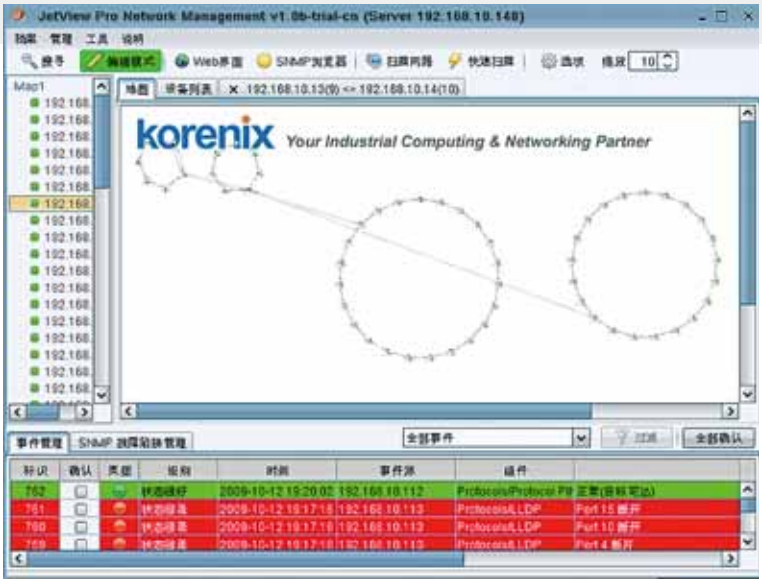
- RS232/422/485 to 802.11b/g
- Supports high speed Real COM
- High gain fiberglass antenna

JETVIEW

Industrial Network Ma

JetView Pro

- Network discovery and fast scan
- Automated or manual topology generation
- Manage 3rd party IP-based or SNMP-enabled network devices
- Up to 1024 nodes in heterogeneous network, such as LAN, WLAN, WAN
- Event warning and failure positioning
- Changeable background image, mapping geographic image with network topology
- Network map can be exported to JPG, BMP, PNG and PDF files
- Support IPv6 management (Coming soon)

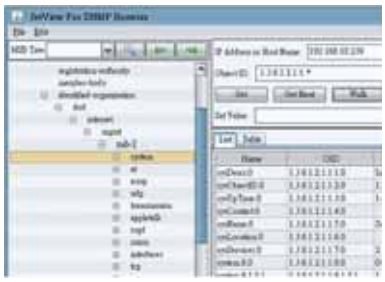


- Windows XP/2000/2003/7/Vista platforms
- Java Runtime Environment (JRE) 1.6.0 or higher
- Minimum Intel Core 2 Quad-Core CPU 2.4 GHz or higher, 1GB RAM, 1GB hard disk

Batch Management

- Assign a range of IP addresses
- Firmware upgrade
- MSR redundant ring setting
- Configuration backup, restoration

Device Configuration



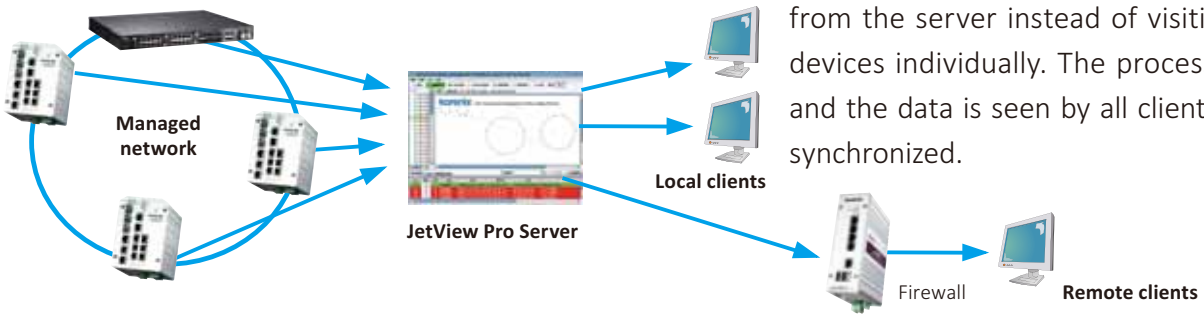
- Supports SNMP browser and MIB compiler
- Simply manage 3rd party devices by compiling the MIB file into the browser

Auto Restoration

- The configuration of devices is periodically backed up to the server. If a device is replaced, the original settings will be restored automatically to the new one

anagement System

Benefit: Fast, Reliable, and Scalable



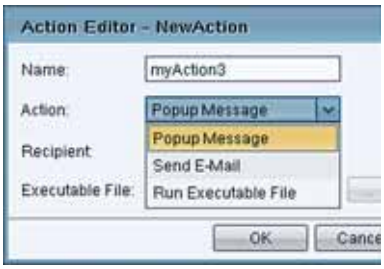
Local Client obtains the managing result from the server instead of visiting all the devices individually. The process is faster and the data is seen by all clients that are synchronized.

Your Managed Network is not disturbed by the clients, it only feedbacks to the server. JetView Pro reduces the management overhead, which is more suitable for large-scale network systems.

JetView Pro Server periodically refreshes its database from the managed network and serves the clients with the results. Users can setup a backup server to enhance system reliability.

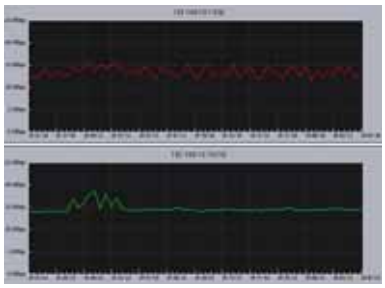
Remote Client accomplishes secure remote control through a firewall. JetView Pro Server solves typical limitations of standalone NMS which cannot access all internal devices in the managed network remotely.

Define Your Event Actions



- Configurable "Event-Action" rules
- Warning events such as link down, power failure, ring broken or device failure are handled via syslog, email, SNMP trap or user defined applications

Performance Monitoring



- Real time traffic performance monitoring and historical statistics tracking on every single link

Multi-OS Multi-Language

- Fast customization to multiple languages: English, Simplified-Chinese, and Russian are now available.
- Windows XP/2000/2003/Vista/7 (32/64 bit) platforms

JETNET

Multiple Super Ring

Beyond Fast Recovery

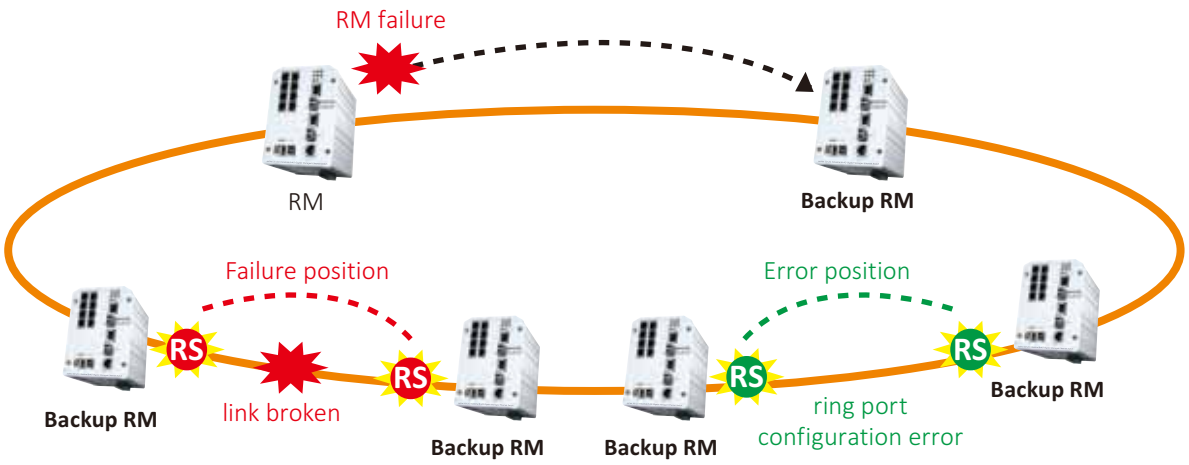
It's reliable, stable, quality and broadcast-storm-free.

RM Redundancy

While RM is the only manager in the ring, Korenix-patented **RM Redundancy** solves the critical point problem and guarantees the ring is always well-controlled.

Backup RMs All Standby

Every switch other than the RM is **Backup RM**. One of the backup RM will immediately take over the role if the RM happens to fail. No manual configuration is required.



5 ms Failure Recovery
0 ms Link Restoration

Korenix-patented **Seamless Restoration** introduces the most stable restoration process to the world:

- No packet loss
- No broadcast storm
- No influence to the network

Seamless Restoration

Packet loss

Broadcast storm

Failure Positioning
Failure Identification

JetView Pro and the RS LED (Ring Status) help administrators and field engineers to identify the type and location of a failure, which quickens troubleshooting.

(*Advanced RS LED supported on some of the switches)

JetView Pro points out the failure position

No Broadcast Storm

The Root Causes and Korenix Solutions

We prevent the problem in advance.

Broadcast Storm: Why and When

Broadcast storm occurs to industrial Ethernet networks, especially a redundant ring, because of the ring's **loop topology**, which is the root cause of broadcast storm. Broadcast storm happens to a ring when: (1) **RM malfunctions**, (2) **link restoration**, (3) **ring port connection error**, or (4) **network restarts**.

Korenix Solves The Root Causes

1.Prevention

The best way to eliminate broadcast storm is to prevent network looping. Network looping happens with **link restoration** or **network restarts**.

Patented **Seamless Restoration** prevents network looping by a **0 ms** restoration procedure at the first moment when a link is restored to a ring.

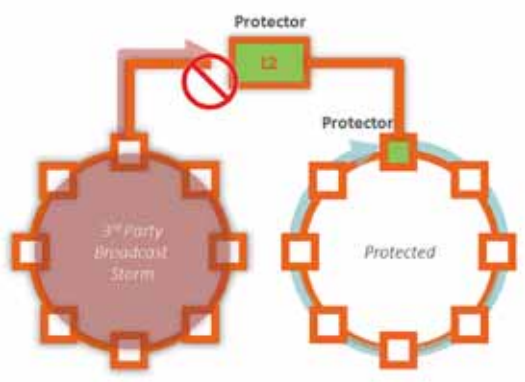
2.Resilience

RM Redundancy is designed to solve the single critical point problem of RM. A backup RM activates immediately when a **RM malfunction** or failure is detected. The ring is always under control by a well-functioning RM, which solves one of the root causes of broadcast storm.

3.Protection

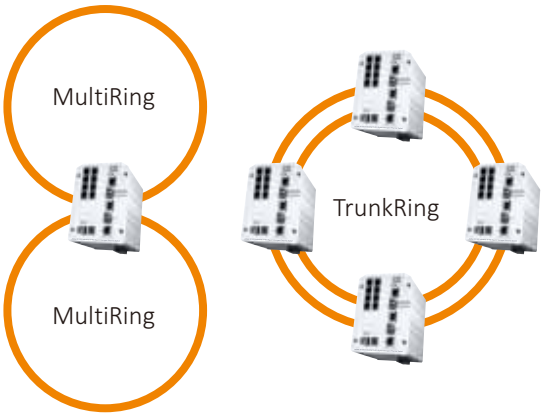
By enabling the unique feature of **Loop Protection**, a switch becomes a **Protector** and starts to detect if any loop is in the network. The connection between the protector and the loop will be disabled if a loop is found, which protects from **ring port connection error**.

As shown in the diagram, a broadcast storm that occurs in the left part of the network is blocked and will not flow out to the right part. Korenix L2 switch protects your network instead of a costly L3 switch.



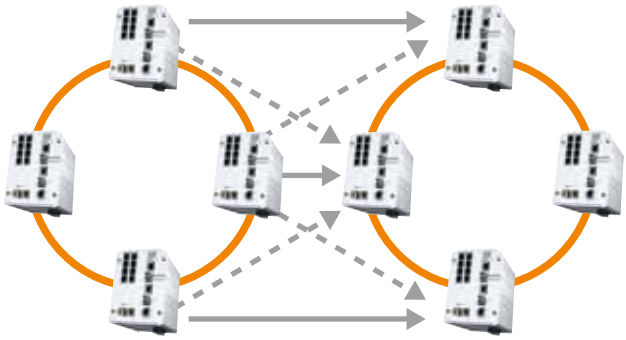
IPv6
Meets The Future

Fully-fledged features of IPv6, including IPv6 SSH & SSL, Ping6, CLI/Telnet/Web management, neighbor discovery, firmware upgrades. Dual stack design allows the use of IPv4-IPv6 in mixed network environments.



MultiRing, TrunkRing
Flexible Ring Deployment

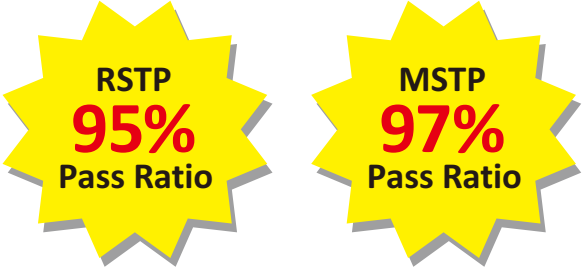
MultiRing provides the simplest way to connect multiple rings together. TrunkRing combines port trunk and MSR technologies, which doubles the network bandwidth and the link redundancy.



Rapid Dual Homing
Multiple redundancies in free style

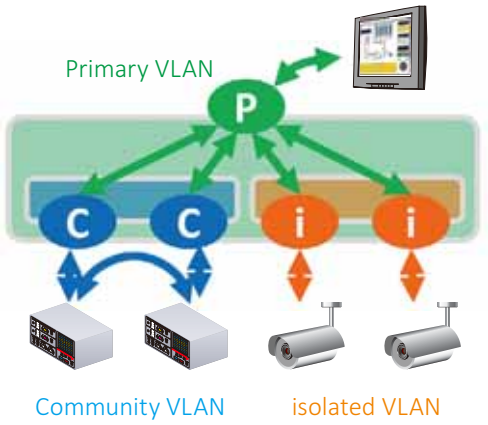
Rapid Dual Homing
Double, Triple... Redundancy

Simply enable the function and connect two rings through multiple links in free style without complex configurations such as master, slave, coupler port and so on. The failover time is less than 50ms and restoration time is 0.



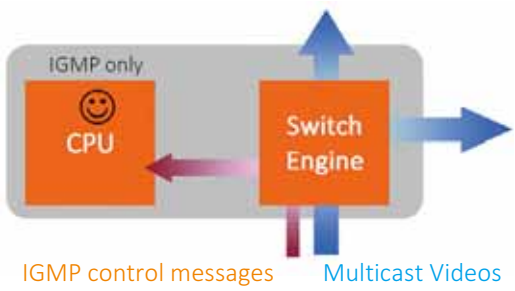
High RSTP Conformance
Outstanding Compatibility

Very high pass ratio of IxANVL Conformance & Inter-Op test greatly reduces the problems and efforts when Korenix switches are connected to 3rd party switches in a project.



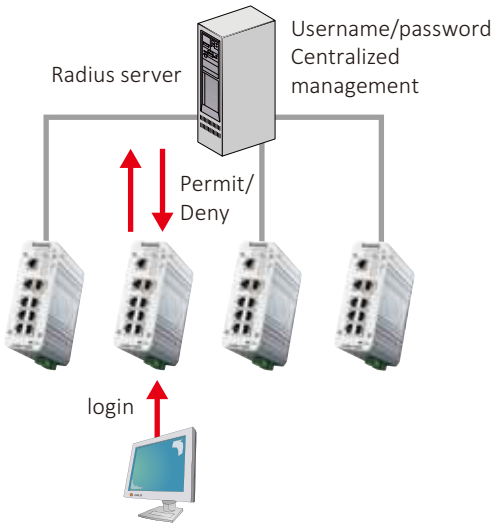
Private VLAN
Advanced Traffic Isolation

Simply divide a network into Primary VLAN, Community VLAN and Isolated VLAN. The server can talk to the PLCs and cameras, the PLCs can talk to the server and with each other, while the cameras are isolated and can only send images to the server.



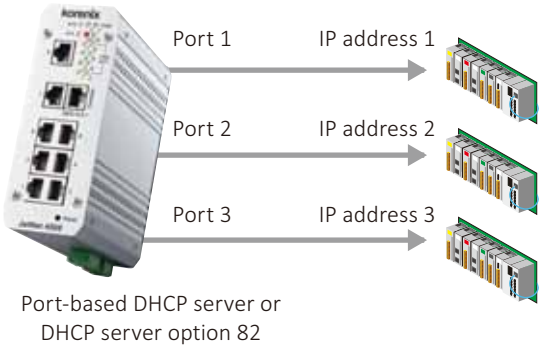
Optimized IGMP
Quality Video Multicast

Unlike some other switches, Korenix IGMP implementation snoops IGMP messages only without receiving multicast traffic. The CPU then has a clear brain to ensure video multicasting quality, especially in large surveillance systems.



Radius Login
Centralized Authentication

Centralize security control by managing the login user name and password in the radius server instead of saving the configuration in the switches individually. Users should pass the authentication and then login to the switch.

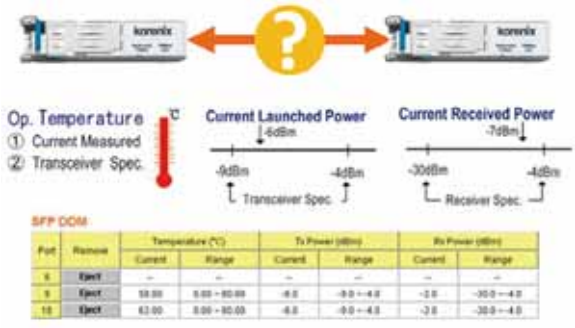


Advanced DHCP Server
Assigns Fixed IP by Port

In addition to DHCP option 82 server, JetNet supports Port-Based DHCP allowing users to assign specific IP by port without the need for an option 82 server. A device will always get a fixed IP as long as it is connected to the same port.

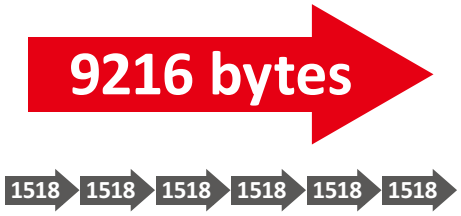
DDM
Fiber Quality Monitoring

DDM (Digital Diagnostic Monitoring) monitors SFP parameter, such as optical output power, optical input power, temperature in real-time for fast maintenance and debugging without additional optical cable analyzers.



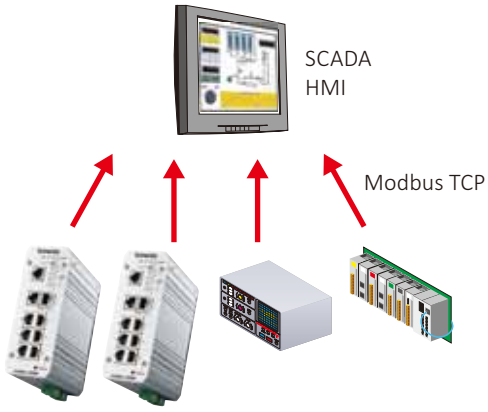
Jumbo Frame
Maximum NVR Performance

A 9KB jumbo frame is 6 times larger than a common 1518-byte Ethernet maximum transfer unit. It helps to maximize NVR video storage performance in surveillance applications.



Modbus TCP Managed
for Industrial Integration

Industrial engineers are able to include JetNet switches and monitor the network status on their SCADA or HMI systems through Modbus TCP without the need of IT knowledge or an additional network management system.



Monitor and control the network and the industrial devices through one single management interface

IT Staff Friendly
Cisco-like CLI

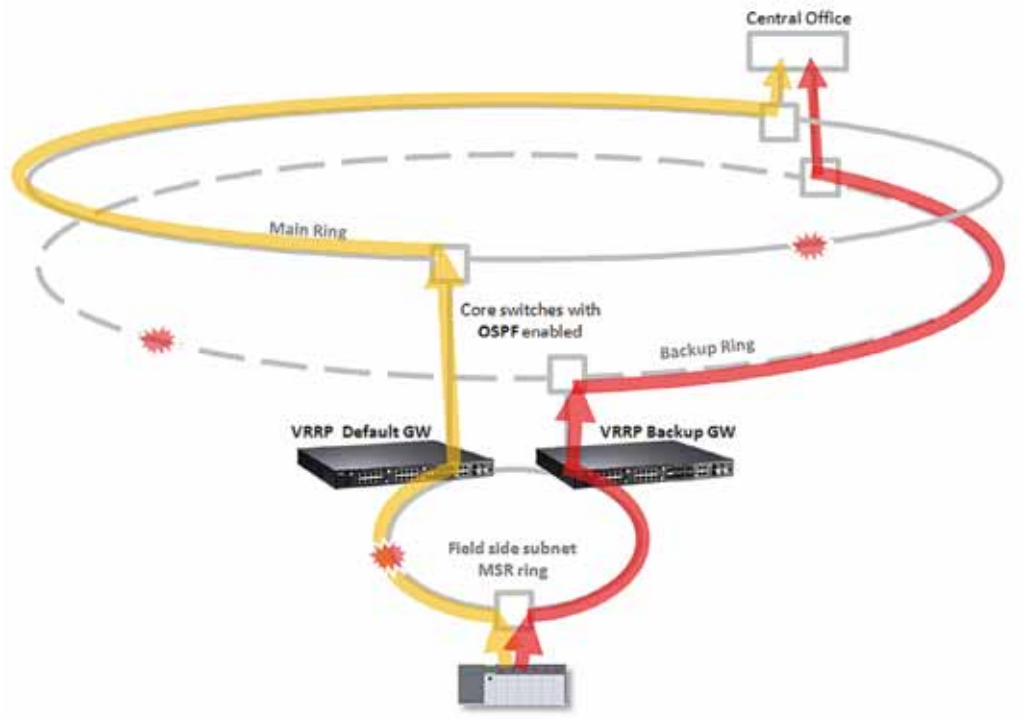
The command line interface is friendly to the advanced IT staffs and minimizes the learning curve and maintenance efforts on JetNet switches.

```
Switch# sh running-config
Building configuration...

Current configuration:
hostname Switch
vlan learning independent
!
vlan 1
!
interface fastethernet1
  switchport access vlan add 1
!
interface fastethernet2
  acceptable frame type vlantaggedonly
  ingress filtering enable
  switchport access vlan add 1
  switchport trunk native vlan 2
```

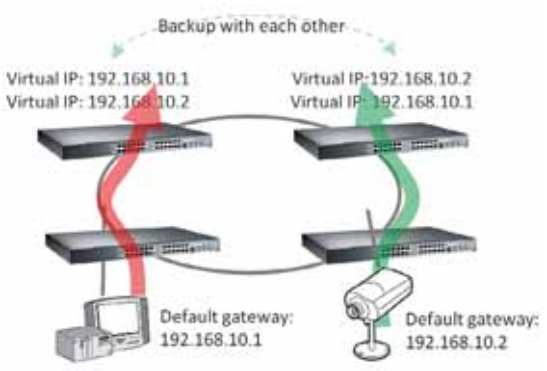
Advanced L3 Routing Enables Dual Ring Redundancy

Korenix L3 switches are featured with **VRRP** (Virtual Router Redundancy Protocol) and **OSPF** (Open Shortest Path First) protocols. While VRRP allows the field devices to have redundant gateways to the remotes, OSPF is powerful for creating fault tolerant networks. By connecting JetNet L3 switch to OSPF core switches of dual-rings, the network system will automatically figure out the shortest path between the field devices and the central office, and is able to recover from multiple link downs and device failures. This is critical for large industrial network projects such as railway, oil field, electricity and so on.



VRRP GW Redundancy and Load Sharing

By setting gateways with virtual IP and priority, different gateways can backup mutually. Users can further assign the end devices to different gateways, The traffic is bypassed and shared to different paths. For example: separating traffic from process control and video surveillance.



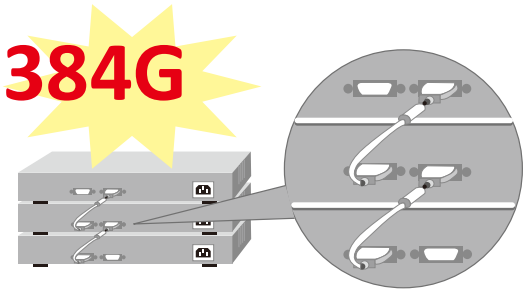
Industrial 24-port Full Gigabit Stackable Layer 3 Switch

JetNet 6524G Series

- Stackable, up to 8 units with 192 gigabit ports
- Wire-speed L3 Routing, multicast routing
- VRRP for gateway redundancy
- MSR redundant ring member mode
- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- 9KB Jumbo Frame enhances NVR performance

Stack up to 384G Capacity

Up to 8 switches can be put into a single stack and be managed by a single IP address. The dual 10G stacking interfaces can be connected into a redundant ring ensuring a reliable, high performance stacking backplane, which fits heavy loading video surveillance applications in the central room.



10G stacking interfaces connected into a redundant ring at the rear

Industrial 24+4G Modular Layer 3 Switch

JetNet 5828G

- 3 exchangeable slots, up to 24 10/100TX or 18 100FX
- 4 on-board Gigabit SFP combo ports
- Wire-speed L3 Routing, multicast routing
- VRRP for gateway redundancy
- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Loop protection prevents broadcast storm *
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Radius login for centralized password authentication *
- 9KB Jumbo Frame enhances NVR performance
- EN50121-4 EMC rated for railway applications
- NEMA-TS2 rated for traffic control

* Coming soon

Module	JNMS-8TX	JNMS-2SFP/4MSC	JNMS-2SFP/4SSC	JNMS-4TX/4SFP
10/100TX	8			4
100FX (SFP)		2	2	
100FX (SC)		4 (2km multi-mode)	4 (30km single-mode)	4

	 JetNet 6524G, JetNet 6524G-DC24, JetNet 6524G-DC48	 JetNet 5828G
	L3 Full Giga Stackable Managed	**L3 Modular Giga Managed**
Interfaces		
10/100TX Ports		max 24
10/100/1000TX Ports	24 (4 combo)	4 (combo)
Fiber Ports	4 x 1000 SFP	max 22 (18 + 4G)
DI/DO (Dry Relay) /Console	RS-232	2 x DI, 2 x DO, RS-232
DC Power Input	2 x 24VDC (6524G-DC24) 2 x 48VDC (6524G-DC48)	2 x 24/48 VDC (5828G) 2 x 80-370 VDC (5828G-2HDC)
AC Power Input	1 x 90-264 VAC (6524G)	1 x85-264 VAC (5828G) 2 x 85-264 VAC (5828G-2AC)
Hi-Pot		AC 1.5KV
Features		
MSR, MultiRing, TrunkRing, RDH	MSR member	●
Broadcast Storm/ Loop Protection		●*
Layer 2+ Security (L2/L3/L4 ACL)	●	●
DHCP Server (Op82, Port-based)	●	●
JetView/ JetView Pro Managed	●	●
L3 Protocols		
Layer 3 Routing	Static/Dynamic/VLAN Routing RIP v1/v2, OSPF v1/v2	Static/Dynamic/VLAN Routing RIP v1/v2, OSPF v1/v2
Multicast Routing	IGMP, Mroute, DVMRP, PIM-DM/SM	IGMP, Mroute, DVMRP, PIM-DM
VRRP Gateway Redundancy	●	●
SW/Protocol		
IPv6 Management		●*
RSTP/MSTP	●	●
QoS Traffic Priority	8 Queues	8 Queues
VLAN, Private VLAN, QinQ, GVRP	●	●
IGMP Query, Snooping, GMRP	IGMP Query, Snooping , GMRP	IGMP Query, Snooping , GMRP
LLDP Network Discovery	●	●
LACP/ Static Trunking	●	●
IEEE 1588 PTP		●
Jumbo frame	9.2 Kbytes	9.2 Kbytes
Port Mirror	●	●
DDM SFP Monitoring	●	●
802.1x, IP/Port Security, HTTPS, SSH	●	●
Centralized Password Authentication	TACACS+ , Radius	Radius*
Modbus TCP Management		●
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●
HW/ME		
Housing Protection (IP)	Metal	Metal
Dimension (H x W x D mm)	44 x 438 x 237	44 x 431 x 375
Mounting	Rackmount	Rackmount
Operating Temperature	-10~55°C (6524G) -40~65°C (6524G-DC, Fanless)	-40~85°C (Fanless)
MTBF (hrs)	> 445,000	> 310,000
Certificate/DoC		
Regulatory Approval	CE/FCC	CE/FCC
RoHS/REACH	●	●
Vertical Market		Heavy Industry/EN50121-4 (EMC Rated) NEMA TS2 (Rated)

* Coming soon

Industrial 24+4G Modular Layer 2 Plus Switch

JetNet 5628G, 5628G-R

JetNet 5628G

JetNet 5628G-R

- 3 exchangeable slots, up to 24 10/100TX or 18 100FX
- 4 on-board Gigabit SFP combo ports
- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Loop protection prevents broadcast storm *
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Radius login for centralized password authentication *
- 9KB Jumbo Frame enhances NVR performance
- EN50121-4 EMC rated for railway applications
- NEMA-TS2 rated for traffic control

* Coming soon

Module	JNMS-8TX	JNMS-2SFP/4MSC	JNMS-2SFP/4SSC	JNMS-4TX/4SFP
10/100TX	8			4
100FX (SFP)		2	2	
100FX (SC)		4 (2km multi-mode)	4 (30km single-mode)	4

Industrial 24+4G Layer 2 Plus Switch

JetNet 5428G Series, 5428G-2FX-2G

- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Loop protection prevents broadcast storm *
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Radius login for centralized password authentication *
- 9KB Jumbo Frame enhances NVR performance

Rackmount Ring Switch

While RSTP can be used for network redundancy, its original purpose is for interconnection in any topology. MSR is designed for rapid failure recovery which is more reliable and scalable for industrial applications.

	RSTP	MSR Ring
Topology	Any	Ring
Algorithm	Complex	Simple
Failure Recovery	Not deterministic	Deterministic < 5 ms ✓
Restoration	Topology change	Seamless 0 ms ✓
Scalability	20 in depth	250 in one ring ✓

	 JetNet 5628G JetNet 5628G-R	 JetNet 5428G JetNet 5428G-DC	 JetNet 5428G-2G-FX
	L2+ Modular Giga Managed	**L2+ Giga Managed**	**L2+ Giga Managed**
Interfaces			
10/100TX Ports	max 24	24	24
10/100/1000TX Ports	4 (combo)	4 (combo)	2 (combo)
Fiber Ports	max 22 (18 + 4G)	4 x 1000 SFP	2 x 100/1000 SFP + 2 x 1000 SFP
DI/DO (Dry Relay) /Console	2 x DI, 2 x DO, RS-232	RS-232	RS-232
DC Power Input	2 x 24/48 VDC (5628G) 2 x 80-370 VDC (5628G-2HDC)	2 x 12-48VDC (5428G-DC)	
AC Power Input	1 x 85-264 VAC (5628G) 2 x 85-264 VAC (5628G-2AC)	1 x 90-264 VAC (5428G)	1 x 90-264 VAC
Hi-Pot	AC 1.5KV	AC 1.5KV	AC 1.5KV
Features			
MSR, MultiRing, TrunkRing, RDH	●	●	●
Broadcast Storm/ Loop Protection	●*	●*	●*
Layer 2+ Security (L2/L3/L4 ACL)	●	●	●
DHCP Server (Op82, Port-based)	●	●	●
JetView/ JetView Pro Managed	●	●	●
SW/Protocol			
IPv6 Management	●	●	●
RSTP/MSTP	●	●	●
QoS Traffic Priority	8 Queues	4 Queues	4 Queues
VLAN, Private VLAN, QinQ, GVRP	●	●	●
IGMP Query, Snooping, GMRP	IGMP Query, Snooping , GMRP	IGMP Query, Snooping , GMRP	IGMP Query, Snooping , GMRP
LLDP Network Discovery	●	●	●
LACP/ Static Trunking	●	●	●
IEEE 1588 PTP	●	●	●
Jumbo frame	9.2 Kbytes	9.2 Kbytes	9.2 Kbytes
Port Mirror	●	●	●
DDM SFP Monitoring	●		
802.1x, IP/Port Security, HTTPS, SSH	●	●	●
Centralized Password Authentication	Radius*	Radius*	Radius*
Modbus TCP Management	●	●	●
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●
HW/ME			
Housing Protection (IP)	Metal	Metal	Metal
Dimension (H x W x D mm)	44 x 431 x 375	44 x 438 x 370	44 x 438 x 370
Mounting	Rackmount	Rackmount	Rackmount
Operating Temperature	-40~85°C (Fanless)	-25~70°C (Fanless)	-25~70°C (Fanless)
MTBF (hrs)	> 310,000	> 234,000 (5428G-DC) > 219,000 (5428G)	> 219,000
Certificate/DoC			
Regulatory Approval	CE/FCC	CE/FCC/UL	CE/FCC/UL
RoHS/REACH	●	●	●
Vertical Market	Heavy Industry EN50121-4 (EMC Rated) NEMA TS2 (Rated)	Heavy Industry	Heavy Industry

* Coming soon

L2+ Security

From Layer 2 to Layer 4, Every Flow Under Control

Precisely permit or deny a specific traffic to come in from
a specific port and go out to a specific port.

L2 **MAC Level Security**

Permit or deny a traffic by its:

- Source MAC address,
- Incoming port,
- Destination MAC address,
- Outgoing port.

L3 **IP Level Security**

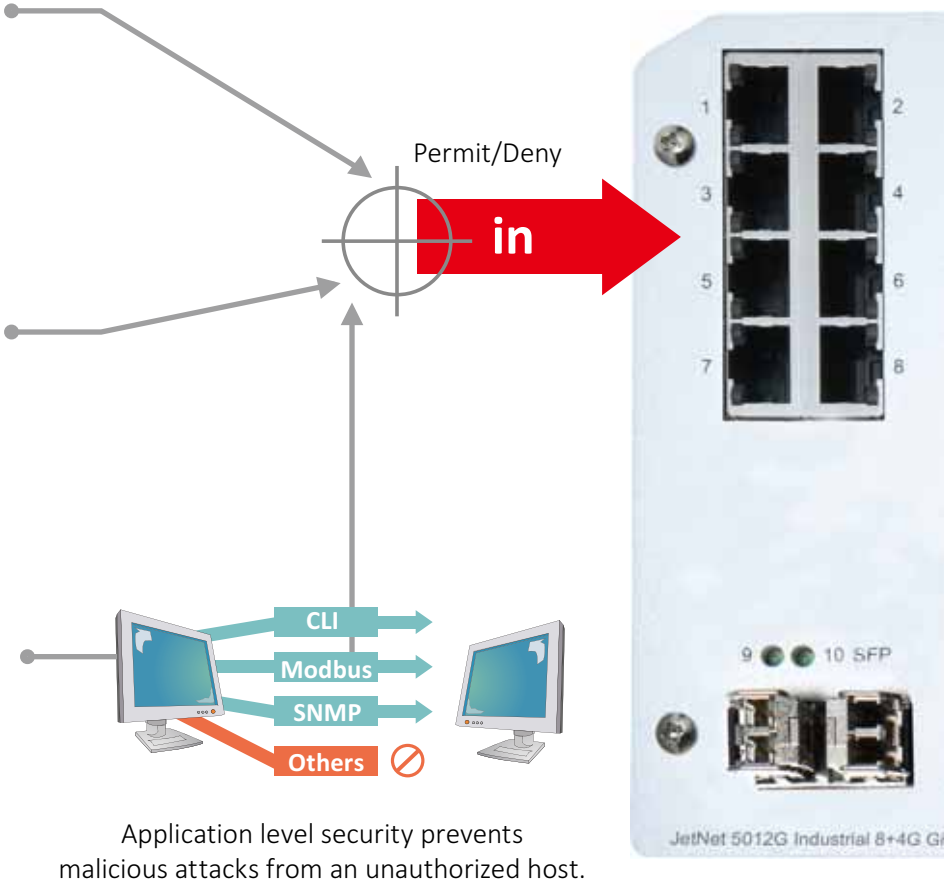
Permit or deny a traffic by its:

- Source IP address
- Incoming port
- Destination IP address,
- Outgoing port.

L4 **Application Level Security**

Permit or deny a traffic by its:

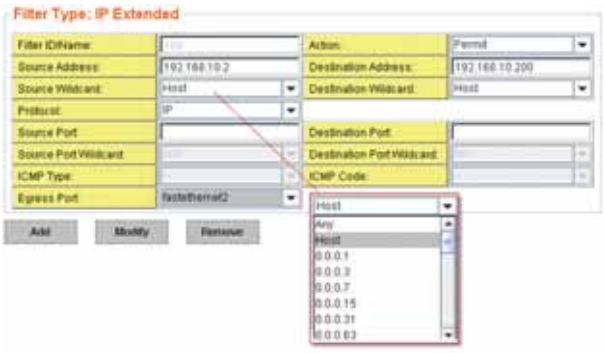
- Source IP address,
- Source TCP/UDP port,
- Incoming port,
- Destination IP address,
- Destination TCP/UDP port,
- Outgoing port.



Application level security prevents
malicious attacks from an unauthorized host.

Wildcard.

Managing one or a group of hosts, IP addresses,
or traffic flows by a single click.



Unique

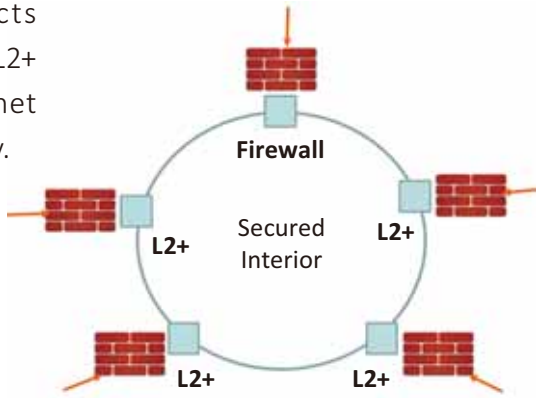
From A to A+

Globally unique DIN rail L2+ switch from Korenix

out

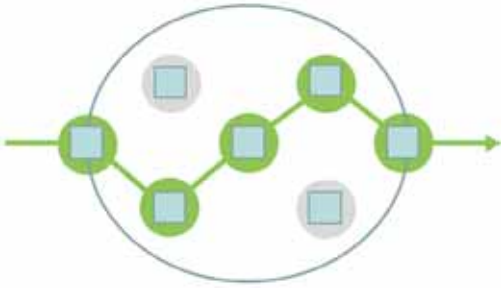
Secured Interior.

While a firewall protects the external entrance, a L2+ switch secures the subnet internally at the boundary.



Restriction.

Precisely define the path where a traffic is allowed to go in the subnet.



L2 vs. L2+ Security

	L2 Security			L2+ Security
	Port Security	802.1x	IP Security	
Allow authorized MAC to a port	✓	✓		✓
Authorized IP can access the switch			✓	✓
Permit/Deny traffic from MAC A to MAC B				✓
Permit/Deny traffic from IP A to IP B				✓
Permit/Deny a specific application/service				✓
Precisely define the traffic path in the subnet				✓

Industrial 16+2G SFP Layer 2 Plus Managed Switch

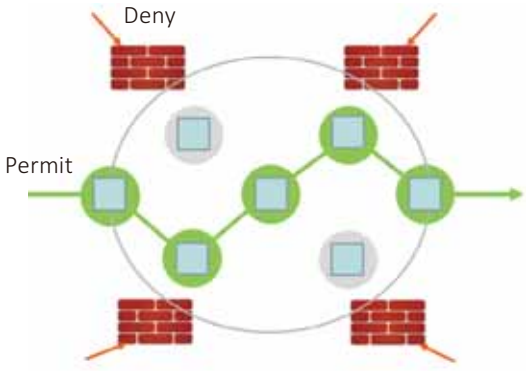
JetNet 5018G-w

- High performance single chip solution for wire-speed switching
- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Loop protection prevents broadcast storm *
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Radius login for centralized password authentication *

* Coming soon

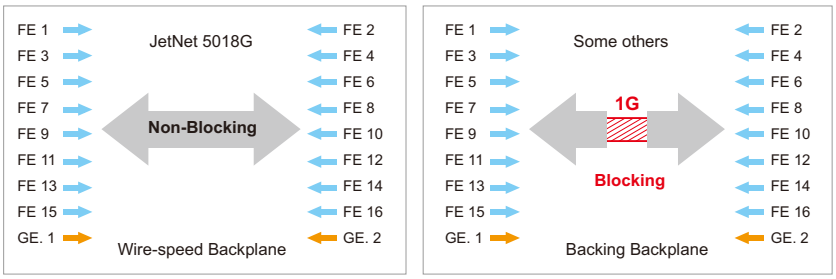
Distinct Layer 2+ Din-Rail Switch

Permit or deny a packet according to its L2/L3/L4 information, and precisely define the path that the packet is allowed to go.



High Performance, Non-Blocking Solution

The single-chip 12.8G backplane is much higher than 16+2G requires. All traffic is forwarded in wire-speed without any blocking or loss. Compared to two-chip blocking solutions from some others, it ensures quality data transmission in mission-critical applications.



Industrial 8+4G SFP Layer 2 Plus Managed Switch

JetNet 5012G

UNIQUE

- Distinct 8+4G design
- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Loop protection prevents broadcast storm *
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server*
- Radius login for centralized password authentication

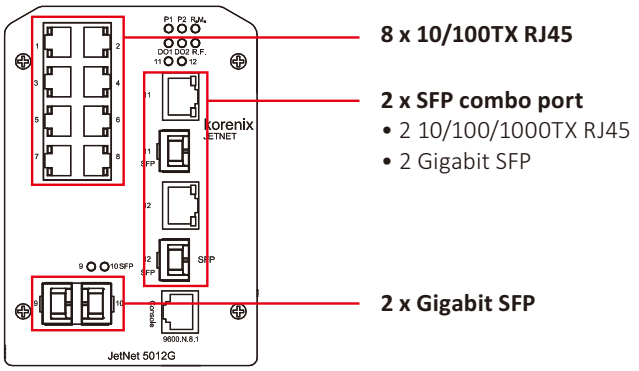
* Coming soon

High Value Alternative to 7+3G and Full Giga Solutions

With the distinct 8+4G port arrangement and the advanced L2+ features, JetNet 5012G has few competitors. It has 2 more ports than the 7+3G switches to expand ring configuration, and is more appropriate for most kinds of applications than the full gigabit switches.

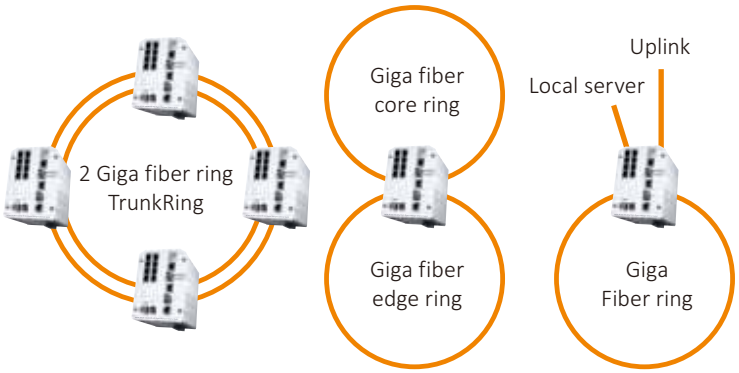
Unique 4G SFP Design

Variety of port arrangements: (1) 8+4G fibers; (2) 9+3G fibers; (3) 10+2G fibers, which is more flexible and easy for future extensions.



Strong Ring Capability

JetNet 5012G can be configured as a 2G TrunkRing, or a MultiRing connecting a core ring and an edge ring. It also satisfies the bandwidth demand for an uplink and a local server.



Industrial 16+2 SFP Layer 2 Plus Managed Switch

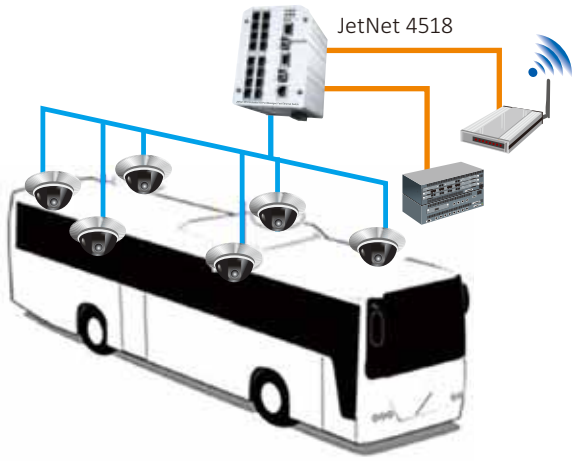
JetNet 4518-w

- High performance single chip solution for wire-speeding switching
- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Loop protection prevents broadcast storm *
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicast
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Radius login for centralized password authentication *
- E-Mark approval for vehicle applications

* Coming soon

E-Mark Approval

JetNet 4518 is E-Mark certificated for vehicles. The 18 ports can integrate plenty of IP devices, such as IP cameras, NVR, wireless AP, 3G routers, embedded computers, LED signatures and so on.



Port-Based DHCP Assigns Fixed IP On Vehicle

It allows users to manually configure specific IP by port. A device will always get a fixed IP as long as it is connected to the same port, which makes IP maintenance much easier on the vehicle.

Industrial 8+2G SFP Layer 2 Plus Managed Switch Board

JetCard 5010G-P

- L2+ Security (L2/ L3/ L4 ACL) precise flow filtering/control
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP high compatibility for 3rd party switch interconnection
- Optimized IGMP Snooping for quality video multicasting

	 JetNet 5018G-w	 JetNet 5012G	 JetCard 5010G-P	 JetNet 4518-w
	L2+ Giga Managed	**L2+ Giga Managed**	**L2+ Giga Managed**	**L2+ Managed**
Interfaces				
10/100TX Ports	16	8	8	16 + 2(combo)
10/100/1000TX Ports	2 (combo)	2 (combo)		
Fiber Ports	2 x 100/1000 SFP	4 x 1000 SFP	2 x 1000 SFP	2 x 100 SFP
DI/DO (Dry Relay) /Console	2 x DO, RS-232	2 x DO, RS-232	RS-232	2 x DO, RS-232
DC Power Input	2 x DC24V (12-48V)	2 x DC24V (12-48V)	3.3V	2 x DC24V (12-48V)
Hi-Pot	AC 1.5KV	AC 1.5KV		AC 1.5KV
Features				
MSR, MultiRing, TrunkRing, RDH	●	●	●	●
Broadcast Storm/ Loop Protection	●*	●*		●*
Layer 2+ Security (L2/L3/L4 ACL)	●	●	●	●
DHCP Server (Op82, Port-based)	●	●	DHCP Server	●
JetView/ JetView Pro Managed	●	●	●	●
SW/Protocol				
IPv6 Management	●	●		●
RSTP/MSTP	●	●	RSTP	●
QoS Traffic Priority	4 Queues	4 Queues	4 Queues	4 Queues
VLAN, Private VLAN, QinQ, GVRP	●	●	VLAN, GVRP	●
IGMP Query, Snooping, GMRP	IGMP Query, Snooping, GMRP	IGMP Query, Snooping, GMRP	IGMP Snooping	IGMP Query, Snooping, GMRP
LLDP Network Discovery	●	●	●	●
LACP/ Static Trunking	●	●	●	●
IEEE 1588 PTP	●	●	●	●
Jumbo frame	9.2 Kbytes	9.2 Kbytes	9.2 Kbytes	9.2 Kbytes
Port Mirror	●	●	●	●
DDM SFP Monitoring	●	●		●
802.1x, IP/Port Security, HTTPS, SSH	●	●	●	●
Centralized Password Authentication	Radius*	Radius*		Radius*
Modbus TCP Management	●	●		●
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●	●
HW/ME				
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum		IP31 Aluminum
Dimension (H x W x D mm)	137 x 96 x 129	137 x 96 x 129	30 x 127.4 x 122.5	137 x 96 x 129
Mounting	DIN Rail	DIN Rail	PCBoard Mounting	DIN Rail
Operating Temperature	-40~70°C	-40~70°C	-25~70°C	-40~75°C
MTBF (hrs)	> 468,000	> 402,000		> 468,000
Certificate/DoC				
Regulatory Approval	CE/FCC/UL	CE/FCC/UL		CE/FCC/UL
RoHS/REACH	●	●	●	●
Vertical Market	Heavy Industry	Heavy Industry		Heavy Industry E-Mark

* Coming soon

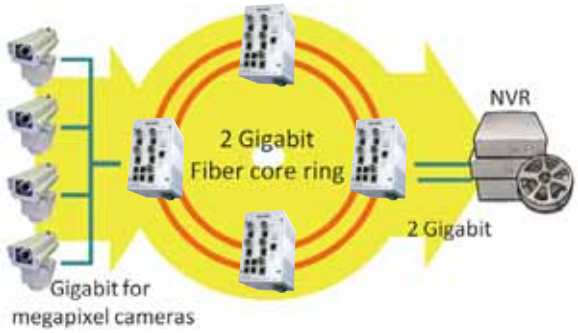
Industrial 9-port Full Gigabit L2 Managed Switch

JetNet 6059G

- Huge bandwidth for large video surveillance projects
- Loop protection prevents broadcast storm
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Radius login for centralized password authentication
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Wide range dual 10.5-60VDC power inputs

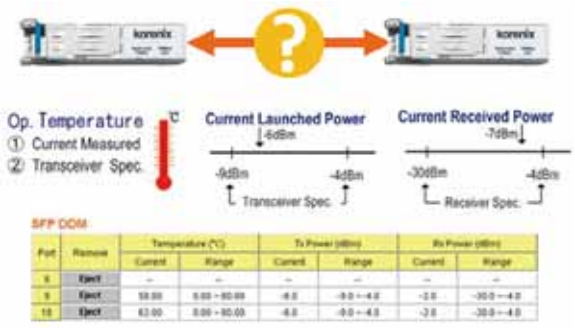
Full Gigabit

Its huge bandwidth capacity is able to carry a large number of mega pixel cameras to the central office through multi-gigabit TrunkRing backbone.



Fiber Quality Monitoring

DDM (Digital Diagnostic Monitoring) monitors SFP parameters, such as optical output power, optical input power, and temperature in real-time for fast maintenance and debugging without additional optical cable analyzers.



Superb EMC Protection

Exceeds railway EMC EN50121-4, Traffic control NEMA TS2 and Heavy-industrial standards by outstanding electrical slow transient (Surge), Radio-Frequency Electromagnetic Field (RS), and Electromagnetic Fast Transient (EFT) levels. JetNet 6059G is an ideal solution for industrial applications.

	EN50121-4 Railway	NEMA TS2 Traffic Control	Heavy Ind.	JetNet 6059G
ESD (V)	6K,8K/B	4K,8K/B	4K,8K/B	6K,8K/A
R.S.(V)	20V	3V	3V	20V
EFT (V)	2K	2K/1K	2K/1K	4K/4K,A
Surge (V)	1K/L-L 2K/L-N	1K/L-L 2K/L-N	1K/L-L 2K/L-N	2K/L-L, A 4K/L-N, A
C.S.(V)	10V	10V	10V	10V,A

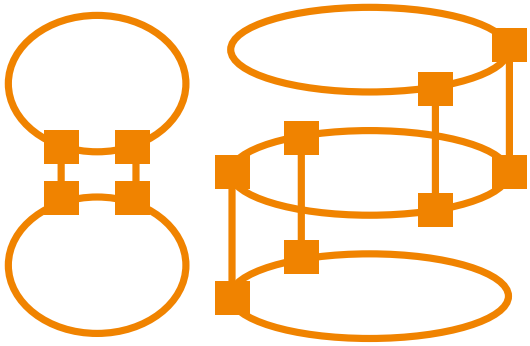
Industrial 7+3(G) SFP L2 Managed Switch

JetNet 5010G, 4510

- Loop protection prevents broadcast storm
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch interconnection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Radius login for centralized password authentication
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server*
- Wide range dual 10.6-60VDC power inputs
- NEMA TS2 rated for traffic control applications

3 SFP Combo Ports

Flexible configurations: 7+3F, 8+2F, 9+1F or 10 coppers, which is suitable for most applications such as ring interconnection and 3-dimensional installation.

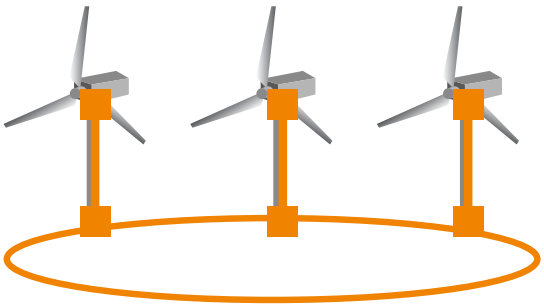


Ring interconnection

Three dimensional installation

Best Fit for Wind Farm

The 3 SFP fiber optic ports perfectly connect the wind turbine and wind towers. The MSR redundant ring and the broadcast storm protection mechanism ensure a stable and reliable wind farm network.



Two single mode fibers connect wind towers and one multi mode fiber links to the wind turbine

NEMA TS2 Compliant

JetNet 5010G, 4510 is suitable for most industrial applications. In addition, with its 10.6-60VDC power input and -40~75°C operating temperature, JetNet 5010G(-w), 4510 (-w) has passed NEMA TS2 related tests for traffic control applications.

Industrial 8-port L2 Managed Switch

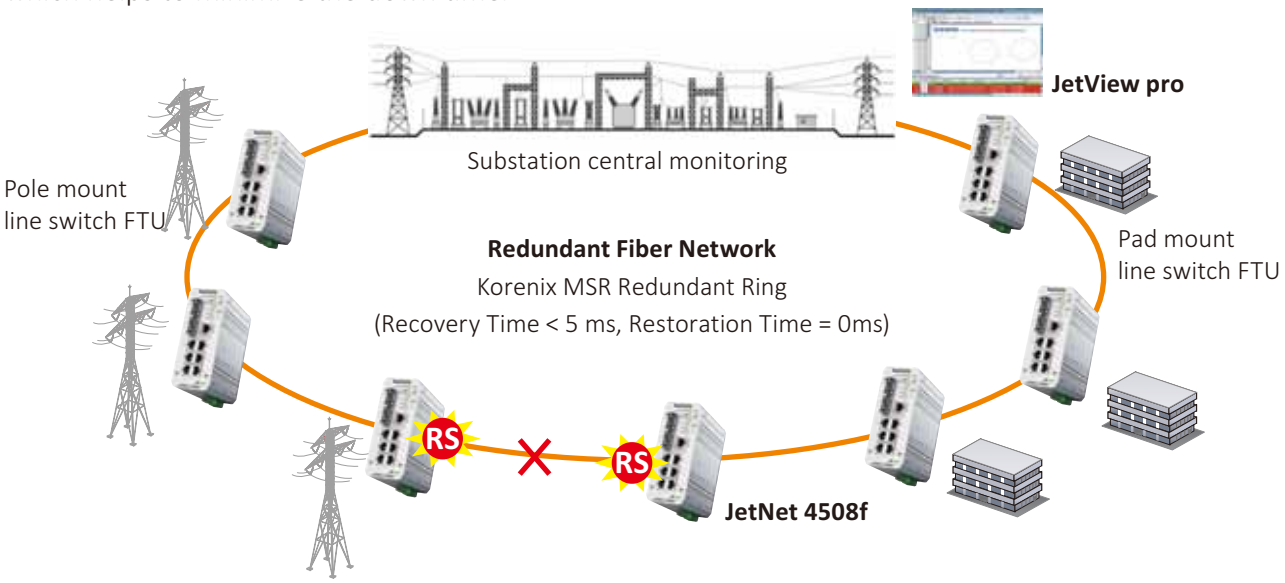
JetNet 4508, 4508f

JetNet 4508 JetNet 4508f

- Loop protection prevents broadcast storm
- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP/MSTP high compatibility for 3rd party switch connection
- Private VLAN easily configure community and isolated VLAN
- Optimized IGMP Snooping for quality video multicasting
- Radius login for centralized password authentication
- Advanced DHCP assigns fixed IP by Op82 or Port-based DHCP server
- Wide range dual 10-60VDC power inputs
- Exceeds EN50121-4 EMC for railway track side applications

Enabling FDIR in Power Distribution Data Network

JetNet 4508f is compact, rugged and fits into FTU (Feeder Terminal Unit) well. By enabling MSR redundant ring, any link failure can be detected, identified, and recovered (FDIR). The failure location is reported and shown to the administrators by Korenix's network management system, JetView pro, which helps to minimize the down time.



Compact, Rugged, Great Cooling for Harsh Environments

The slim body is just as wide as a business card. The internal components that generate heat are directly attached to the entire aluminum housing. Its great cooling effect ensures a stable operation at 75°C with IP31 protection.

Industrial 7+3 SFP Web-Managed Switch

JetNet 4010

- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy, MultiRing, TrunkRing, RDH
- RSTP high compatibility for 3rd party switch interconnection
- Optimized IGMP Snooping for quality video multicasting
- NEMA TS2 rated for traffic control applications
- Wide range dual 10.6-60VDC power inputs

Full Network Management Features with Lite Managing Interface

JetNet 4010 is a web-managed Ethernet switch that supports the most commonly used network management features that such as MSR, RSTP, VLAN, QoS, IGMP snooping and so on. Users who do not need advanced group management features or SNMP can benefit from this cost effective solution in their projects.

User-friendly web interface

JetView utility

Cisco-like CLI

Industrial 6-port L2 Managed Switch

JetNet 4006, 4006f

- Multiple Super Ring, failover < 5ms, restoration = 0ms
- Support Ring Master redundancy
- RSTP high compatibility for 3rd party switch connection
- Optimized IGMP Snooping for quality video multicast
- Support SNMP and managed by JetView pro
- Support Din-Rail and Wall-mount

JetNet 4006

JetNet 4006f

JETNET

	 JetNet 6059G	 JetNet 5010G	 JetNet 4510	 JetNet 4508
	Full Giga L2 Managed	**Giga L2 Managed**	**L2 Managed**	**L2 Managed**
Interfaces				
10/100TX Ports		7	7 + 3(combo)	8
10/100/1000TX Ports	4 + 5(combo)	3 (combo)		
Fiber Ports	5 x 100/1000 SFP	3 x 100/1000 SFP	3 x 100 SFP	
DI/DO (Dry Relay) /Console	1 x DI, 1 x DO, RS-232 (isolated)	2 x DI, 2 x DO, RS-232	2 x DI, 2 x DO, RS-232	1 x DI, 1 x DO, RS-232
DC Power Input	2 x DC24V (10.5-60V)	2 x DC24V (10.6-60V)	2 x DC24V (10.6-60V)	2 x DC24V (10-60V)
Hi-Pot	AC 1.5KV	AC 1.2KV	AC 1.2KV	AC 1.5KV
Features				
MSR, MultiRing, TrunkRing, RDH	●	●	●	●
Broadcast Storm/ Loop Protection	●	●	●	●
Layer 2+ Security (L2/L3/L4 ACL)				
DHCP Server (Op82, Port-based)	●	●*	●*	●
JetView/ JetView Pro Managed	●	●	●	●
SW/Protocol				
IPv6 Management	●	●	●	●
RSTP/MSTP	●	●	●	●
QoS Traffic Priority	4 Queues	4 Queues	4 Queues	4 Queues
VLAN, Private VLAN, QinQ, GVRP	●	●	●	●
IGMP Query, Snooping, GMRP	IGMP Query, Snooping, GMRP	IGMP Query, Snooping	IGMP Query, Snooping	IGMP Query, Snooping, GMRP
LLDP Network Discovery	●	●	●	●
LACP/ Static Trunking	●	●	●	●
IEEE 1588 PTP	●			●
Jumbo frame				
Port Mirror	●	●	●	●
DDM SFP Monitoring	●	●	●	
802.1x, IP/Port Security, HTTPS, SSH	●	●	●	●
Centralized Password Authentication	Radius	Radius	Radius	Radius
Modbus TCP Management	●	●	●	●
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●	●
HW/ME				
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum & Steel Metal
Dimension (H x W x D mm)	160 x 95 x 136	137 x 96 x 119	137 x 96 x 119	149 x 55 x 120.6
Mounting	DIN Rail / Wall Mount	DIN Rail / Wall Mount	DIN Rail / Wall Mount	DIN Rail
Operating Temperature	-25~70°C/-40~75°C (-w)	-25~70°C/-40~75°C (-w)	-25~70°C/-40~75°C (-w)	-25~70°C/-40~75°C (-w)
MTBF (hrs)	> 425,000	> 458,000	> 458,000	> 701,000
Certificate/DoC				
Regulatory Approval	CE/FCC/UL	CE/FCC/UL	CE/FCC/UL	CE/FCC/UL
RoHS/REACH	●	●	●	●
Vertical Market	Heavy Industry NEMA Compliance	Heavy Industry NEMA Compliance	Heavy Industry NEMA Compliance	Heavy Industry EN50121-4, IEC 61373 NEMA Compliance

* Coming soon

	 JetNet 4508f	 JetNet 4010	 JetNet 4006	 JetNet 4006f
	L2 Managed	**L2 Web Managed**	**L2 Managed**	**L2 Managed**
Interfaces				
10/100TX Ports	6	7 + 3(combo)	6	4
10/100/1000TX Ports				
Fiber Ports	2 x 100FX/ SC 2km (4508f-m) 30km (4508f-s)	3 x 100 SFP		2 x 100FX/ SC 2km (4006f-m) 30km (4006f-s)
DI/DO (Dry Relay) /Console	1 x DI, 1 x DO, RS-232	2 x DI, 2 x DO, RS-232	1 x DO, RS-232	1 x DO, RS-232
DC Power Input	2 x DC24V (10-60V)	2 x DC24V (10.6-60V)	2 x DC 24V (12~48V)	2 x DC 24V (12~48V)
Hi-Pot	AC 1.5KV	AC 1.2KV	AC 1.2KV	AC 1.2KV
Features				
MSR, MultiRing, TrunkRing, RDH	●	●	MSR, RDH	MSR, RDH
Broadcast Storm/ Loop Protection	●			
Layer 2+ Security (L2/L3/L4 ACL)				
DHCP Server (Op82, Port-based)	●	DHCP server	DHCP server	DHCP server
JetView/ JetView Pro Managed	●	JetView	●	●
SW/Protocol				
IPv6 Management	●			
RSTP/MSTP	●	RSTP	RSTP	RSTP
QoS Traffic Priority	4 Queues	4 Queues	4 Queues	4 Queues
VLAN, Private VLAN, QinQ, GVRP	●	VLAN, GVRP	Port Based VLAN	Port Based VLAN
IGMP Query, Snooping, GMRP	IGMP Query, Snooping, GMRP	IGMP Query, Snooping	IGMP Query, Snooping	IGMP Query, Snooping
LLDP Network Discovery	●	●	●	●
LACP/ Static Trunking	●	●		
IEEE 1588 PTP	●			
Jumbo frame				
Port Mirror	●	●	●	●
DDM SFP Monitoring				
802.1x, IP/Port Security, HTTPS, SSH	●	●	IP Security, HTTPS, SSH	IP Security, HTTPS, SSH
Centralized Password Authentication	Radius			
Modbus TCP Management	●			
SNMP/RMON/Trap	V1/V2c/V3		V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●	●
HW/ME				
Housing Protection (IP)	IP31 Aluminum& Steel Metal	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	149 x 55 x 120.6	137 x 96 x 119	45.5 x 185.3 x 136	45.5 x 185.3 x 136
Mounting	DIN Rail	DIN Rail / Wall Mount	DIN Rail /Wall Mount	Din Rail /Wall Mount
Operating Temperature	-10~70°C/-40~75°C (-w)	-25~70°C/-40~75°C (-w)	-25~70°C	-10~60°C
MTBF (hrs)	> 661,000	> 458,000	>388,000	>315,000
Certificate/DoC				
Regulatory Approval	CE/FCC/UL	CE/FCC/UL	CE/FCC	CE/FCC
RoHS/REACH	●	●	●	●
Vertical Market	Heavy Industry EN50121-4, IEC 61373 NEMA Compliance	Heavy Industry NEMA Compliance		

* Coming soon

Industrial Full Gigabit Ethernet Switch

JetNet 3008G, 3005G

- Full Gigabit
- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures
- IP31 with no holes or openings on the top provides better protection

JetNet 3008G JetNet 3005G

Plug and Play, Hardened Solution for Industrial Surveillance

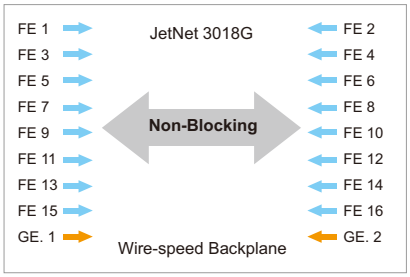
With the full gigabit, QoS and jumbo frame, the 8-port and 5-port hardened plug-&-play switches are ideal for high resolution video transmission in industrial environments such as traffic surveillance, city surveillance, public hotspots and so on.

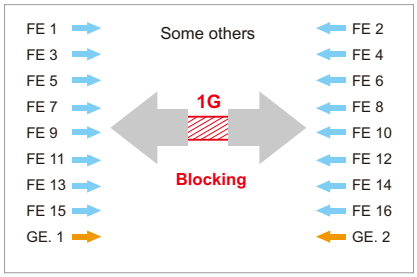
Industrial 16+2G SFP Gigabit Ethernet Switch

JetNet 3018G

- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures
- IP31 with no holes or openings on the top provides better protection

High Performance, Non-Blocking Solution





The single-chip 12.8G backplane is much higher than 16+2G requires. All traffic is forwarded in wire-speed without any blocking or loss. Compared to two-chip blocking solutions of some switches, it ensures quality data transmission in mission-critical applications.

Industrial 7+3G SFP Gigabit Ethernet Switch

JetNet 3010G

- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures
- IP31 with no holes or openings on the top provides better protection
- Typical model handles -25~70°C operating temperatures




	JetNet 3018G	JetNet 3010G	JetNet 3008G	JetNet 3005G
	16+2G Unmanaged	10+3G Unmanaged	8 Full G Unmanaged	5 Full G Unmanaged
Interface				
10/100TX Ports	16	7		
10/100/1000TX Ports	2 x 100/1000TX (Combo)	P8: 10/100/1000TX (combo) P9: 10/100/1000TX (combo) P10: 1000TX (combo)	8	5
Fiber Ports	2 x 1000 SFP	3 x 1000 SFP		
DI/DO (Dry Relay)	2 DO		1 DO	1 DO
Power Input	2 x DC24V (12~48V)	2 x DC24V (10.6~60V)	2 x DC 24V (12~48V)	2 x DC 24V (12~48V)
Hi-Pot	AC 1.5KV	AC 1.2KV	AC 1KV	AC 1KV
Feature				
QoS Traffic Priority	4 Queues	4 Queues	4 Queues	4 Queues
Broadcast Storm Filtering			●	●
Port/ Power Event Alarm	Port 17,18 Alarm		●	●
Jumbo frame	9.2 Kbytes		9.6Kbytes	9.6Kbytes
HW/ME				
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	137 x 96 x 129	137 x 96 x 119	120 x 55 x 108	120 x 55 x 108
Mounting	DIN Rail / Wall Mount	DIN Rail / Wall Mount	DIN Rail	DIN Rail
Operating Temperature	-40~75°C	-25~70°C/-40~70°C (-w)	-10~70°C	-10~70°C
MTBF (hrs)	> 468,000	> 460,000	> 382,000	> 386,000
Certificate/DoC				
Regulatory Approval	CE/ FCC/ UL	CE/FCC/UL	CE/ FCC	CE/ FCC
RoHS/REACH	●	●	●	●
Vertical Market	Heavy Industry	Heavy Industry		

Industrial 8-port Fast Ethernet Switch

JetNet 3008, 3008f

- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant
- Excellent cooling enhances stability in extreme temperatures
- IP31 with no holes or openings on the top provides better protection
- Typical model handles -25~70°C operating temperatures (3008)
- Wide range dual DC10~60V power inputs
- EN50121-4 approval for railway applications
- e-mark approval for vehicle applications

JetNet 3008 JetNet 3008f

EN50121-4 and e-Mark Approval

The JetNet 3008 series provides a high level of EMC protection exceeding heavy industrial standards with distinguished electrical slow transient (Surge), radio-frequency electromagnetic field (RS), Electrical Fast Transient (EFT) protections. It provides reliable connectivity in harsh industrial environments.

Industrial 5-port Fast Ethernet Switch

JetNet 2005, 2005f

- Slim without compromise on strength
- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant
- Excellent cooling enhances stability in extreme temperatures
- IP31 with no holes or openings on the top provides better protection
- Typical model handles -25~70°C operating temperatures (2005)

JetNet 2005 JetNet 2005f

Simply Reliable

Accumulated RMA rate <

0.01%

High quality, plug-and-play switch with an extremely low RMA rate. Just put it in the system and let it work for you without worry.

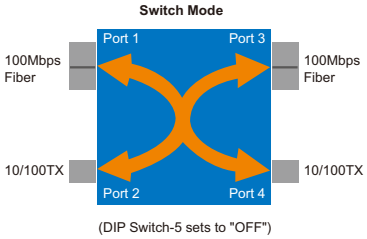
Enabling Networking in Your Machinery

The slim and rugged design makes JetNet 2005 the best solution to be a networking component in heavy equipments or machines to provide reliable internal and external connectivity.

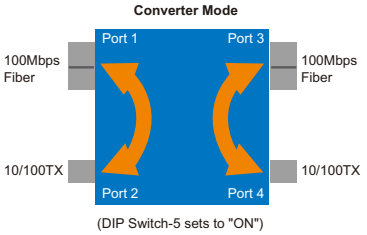
Industrial 2-Channel Ethernet to Fiber Media Converter, Industrial 4-port Ethernet Switch

JetCon 2302

- 4-port Fast Ethernet switch or 2-channel Ethernet Fiber Media Converter
- Port and power loss alarm
- EN50121-4 Railway application EMC rated



Switch Mode works as a plug-&-play switch with 2 10/100TX ports and 2 100Mbps fiber ports.



Converter Mode works as a 2-channel media converter with isolated traffic paths.

	 JetNet 3008	 JetNet 3008f	 JetNet 2005	 JetNet 2005f	 JetCon 2302
	8 Unmanaged	6+2F Unmanaged	5 Unmanaged	4+1F Unmanaged	2+2F Unmanaged
Interface					
10/100TX Ports	8	6	5	4	2
Fiber Ports		2 x 100FX/ SC 2km (3008f-m) 30km (3008f-s)		1 x 100FX/ SC 2km (2005f-m) 30km (2005f-s)	2 x 100FX/ SC 2km (2302-m) 30km (2302-s)
DI / DO (Dry Relay)	1 DO	1 DO	1 DO	1 DO	1 DO
Power Input	2 x DC 24V (10~60V)	2 x DC 24V (10~60V)	1 x DC 24V (18~36V)	1 x DC 24V (18~36V)	2 x DC 24V (10~60V)
Hi-Pot	AC 1.5KV	AC 1.5KV	AC 1.5KV	AC 1.5KV	AC 1.5KV
Feature					
QoS traffic priotity	2 Queues	2 Queues			
Broadcast Storm Filtering	●	●			
Port/ Power Event Alarm	●	●	Port Alarm	Port Alarm	●
Jumbo frame					
HW/ME					
Housing Protection (IP)	IP 31 Aluminum	IP 31 Aluminum	IP 31 Aluminum	IP 31 Aluminum	IP 31 Aluminum
Dimension (H x W x D mm)	120 x 55 x 108	120 x 55 x 108	111.8 x 30 x 98.2	111.8 x 30 x 98.2	120 x 55 x 99
Mounting	DIN Rail	DIN Rail	DIN Rail	DIN Rail	Din Rail
Operating Temperature	-25~70°C -40~75°C (-w)	-10~70°C -40~75°C (-w)	-25~70°C -40~70°C (-w)	-10~70°C -40~70°C (-w)	-25~75°C -40~75°C (-w)
MTBF (hrs)	> 1,285,000	> 903,000	> 3,137,000	> 510,000	> 813,000
Certificate/DoC					
Regulatory Approval	CE/ FCC	CE/ FCC	CE/ FCC /UL508	CE/ FCC /UL508	CE/ FCC
RoHS/REACH	●	●	●	●	●
Vertical Market	Heavy Industry EN50121-4 Railway e-Mark Vehicle	Heavy Industry EN50121-4 Railway e-Mark Vehicle	Heavy Industry	Heavy Industry	Heavy Industry EN50121-4 EMC rated

JETPoE

Korenix PoE Concept

A Helper Enhances System Reliability with Strong Drive

We take your system into consideration.

Budget Control.

Configurable **Power Budget**, limiting the total power consumption for all connected PDs, helps the power allocation in an integrated system and prevents over-consumption during system operation.

PSE Reliability.

Hardened industrial EMC level, wide operating temperature, fan-less, steel or aluminum housing, vibration and shock resistance ensures reliable power feeding in harsh environments.

Power Redundancy.

Connecting the **Dual Power Inputs** into a main source and a backup source, the power seamlessly transfers to the backup source without any interruption when the main one fails.

110volt
48volt
24volt
12volt

Onboard PoE.

The built-in **Power Booster** makes PoE deployment easy at where 48V is not available such as train (110V), bus (24V), and car (12V).

Strong Drive.

Supports **802.at** and **802.3af** standard driving PoE more than 30W per port, maximum 540W in total per switch unit. It even drives non-standard PD by **Force Powering**.

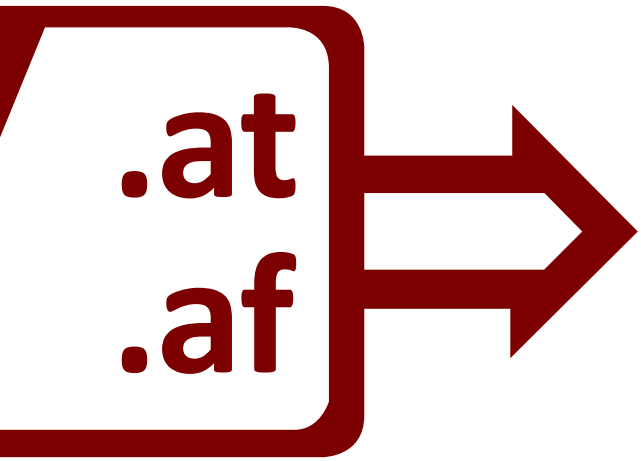
max 540w

Link Reliability.

Patented **MSR redundant ring** technology ensures a reliable connection with **5ms** failover time on either Ethernet cables or long distance fibers.

PD Reliability.

LPLD (Link Partner Line Detect) does keep-alive checking on PD every 10 seconds. It resets the PoE port to restart the PD if the PD fails.



Safe and Secure.

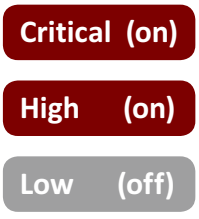
Configurable **Power Limitation** defines an upper bound of PoE power on each port to ensure personnel safety and to prevent over consumption from a malicious or malfunctioning PD.

PoE On Demand.

PoE scheduling turns on/off a PD according to the user defined schedule, **802.1AB LLDP PoE** negotiates with PD to give power on demand. It's simply green and efficient.

Emergency Management.

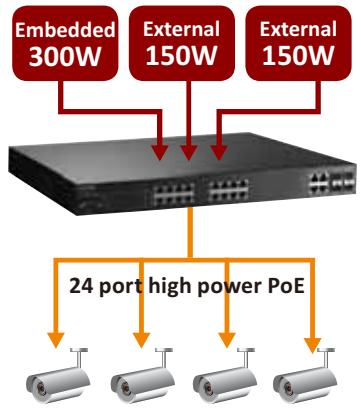
Each port is given a **PoE priority**, the lower priority PD will be turned off to ensure critical PD keeps working in case of power supply failure or ambient temperature overheat.

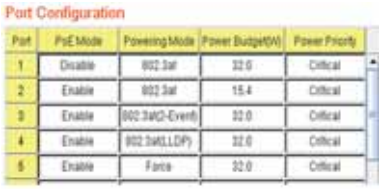


Industrial 24(16/8) PoE + 4G Layer 2 Plus High Power PoE Switch

JetNet 5728G-24P Series

- Supports 802.3af, 802.3at 2-event, 802.3at LLDP and Force Powering
- 30W PoE per port, up to 540W in total @DC 65°C
- LPLD for PD keep alive checking and auto resets if PD fails
- PoE scheduling and LLDP dynamic powering on demand of PD
- PoE emergency management by Priority Powering
- Easy PD IP maintenance by Port Based DHCP Server
- Support Power Aggregation, Power Redundancy, Budget Control
- MSR redundant ring, recovery < 5ms, restoration = 0ms
- Layer 2 plus security precisely controls every traffic in the network
- 9KB Jumbo Frame enhances NVR performance
- Fanless, max -25~65°C operating temperature





540W Huge Power Budget

All the power inputs can be aggregated to 600W or more, and to deliver 540W PoE @DC 65°C.

Power Redundancy

The three power inputs backup with one another to enhance reliability with double Power Redundancy.

Per Port Power Budget

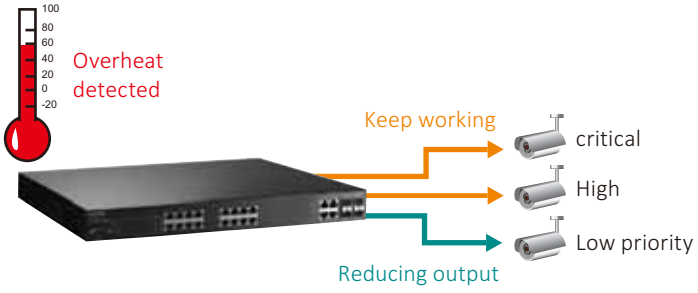
Defines an upper bound of the PoE output of each port to prevent over consumption from a malicious or malfunctioning PD.

Emergency Management

Assign PoE port with a priority, the lower priority PD will be shutdown to keep critical PD working in case of power failure.

Overheat Protection

An embedded thermal sensor warns of overheating. The PoE output of less important ports will be reduced to ensure critical PD functioning in abnormal conditions.



	 JetNet 5728G-24P	 JetNet 5728G-16P	 JetNet 5720G-8P
	Giga L2+ 802.3at Managed	Giga L2+ 802.3at Managed	Giga L2+ 802.3at Managed
Interface			
10/100TX Ports	24	24	16
10/100/1000TX Ports	4 (combo)	4 (combo)	4 (combo)
Fiber Ports	4 x 1000 SFP	4 x 1000 SFP	4 x 1000 SFP
DI/DO/Console	1 x DO, RS-232	1 x DO, RS-232	1 x DO, RS-232
Power Input	2 x DC 46 ~ 57V 1 x AC 90~264V/DC127~370V	2 x DC 46 ~ 57V 1 x AC 90~264V/DC127~370V	2 x DC 46 ~ 57V 1 x AC 90~264V/DC127~370V
Hi-Pot	AC 1.5KV	AC 1.5KV	AC 1.5KV
Pover Over Ethernet			
PoE Ports	24	16	8
PoE Wiring (A: Data Pins/ B: Spare Pins)	1,2,3,6 (A)	1,2,3,6 (A)	1,2,3,6 (A)
PoE modes	802.3 af, 802.3at 2-event, 802.3at LLDP, Forced Powering	802.3 af, 802.3at 2-event, 802.3at LLDP, Forced Powering	802.3 af, 802.3at 2-event, 802.3at LLDP, Forced Powering
PoE Power Per Port	15.4W/30W	15.4W/30W	15.4W/30W
Total Power Budget	240W @AC(50°C)/ 540W @DC(65°C)	240W @AC(50°C)/ 340W @DC(65°C)	75W @AC(50°C)/ 160W @DC(65°C)
Features			
PoE Priority Control	●	●	●
PD Keep Alive Checking	●	●	●
PoE Scheduling	●	●	●
MSR, MultiRing, TrunkRing, RDH	●	●	●
Broadcast Storm/Loop Protection	●*	●*	●*
DHCP Server (Op82, Port-based)	●	●	●
JetView Pro / JetView Managed	●	●	●
SW/Protocol			
IPv6 Management	●	●	●
RSTP/MSTP	●	●	●
QoS,Traffic Priority	●	●	●
VLAN, Private VLAN, QinQ, GVRP	●	●	●
IGMP Query, Snooping, GMRP	●	●	●
LLDP Network Discovery	●	●	●
LACP/Static Trunking	●	●	●
IEEE 1588	●	●	●
Jumbo frame	●	●	●
Port Mirror	●	●	●
DDM SFP Monitoring	●	●	●
802.1x, IP/Port Security, HTTPS, SSH	●	●	●
Centrialized Password Authentication	Radius *	Radius *	Radius *
Modbus TCP Management	●	●	●
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●
HW/ME			
Housing Protection (IP)	IP31 Steel	IP31 Steel	IP31 Steel
Dimension (H x W x D mm)	43.8 x 431 x 375	43.8 x 431 x 375	43.8 x 431 x 375
Mounting	Rackmount	Rackmount	Rackmount
Operating Temperature	-25~65°C (fanless)	-25~65°C (fanless)	-25~65°C (fanless)
MTBF (hrs)	> 202,000	> 216,000	> 234,000
Certificate/DoC			
Regulatory Approval	CE/ FCC/ UL	CE/ FCC/ UL	CE/ FCC
RoHS/REACH	●	●	●
Vertical Market	Heavy Industry	Heavy Industry	Heavy Industry

* Coming soon

Train 8 PoE +2G Managed High Power PoE Switch

JetNet 6810G-M12, JetNet 6810G-RJ
JetNet 6710G-M12 HVDC

- 24V or 110V power input to 57V/48V high power PoE
- M12 or Rugged RJ45 connector for vibration and shock
- Supports PoE IEEE802.3af, 802.3at LLDP and Force Powering
- 30W PoE per port, 120W in total
- LPLD for PD keep alive checking and auto resets if PD fails
- PoE scheduling and LLDP dynamic powering on demand of PD
- PoE emergency management by port-based Priority Powering
- Easy PD IP maintenance by Port Based DHCP Server
- Supports Power Aggregation, Power Redundancy, Budget Control
- MSR redundant ring, recovery < 5ms, restoration = 0ms

Certificate of Railway EN 50121-4, IEC 61373

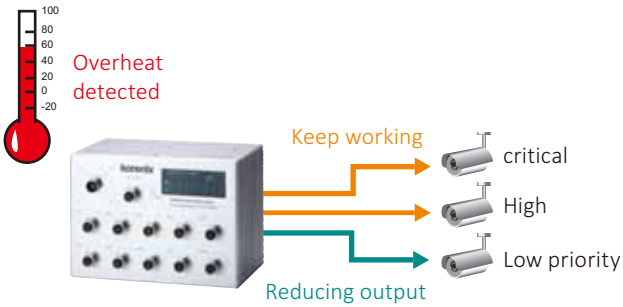
Proven to sustain the strong EMC interference and heavy, long term vibration, Korenix's PoE concept further enhances the system reliability on a train.

Train Power Input

Accepts 24V or 110V power on the train and transforms to 57V high power PoE. The Hi-pot isolation of the DC booster protects the device from surge, and ensures passenger isolated safety.

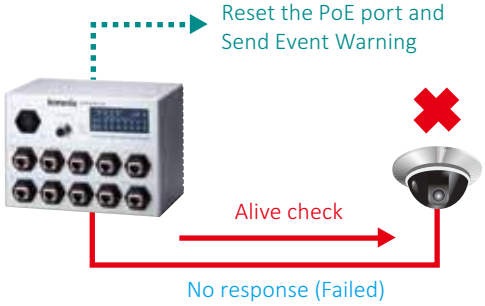
Overheat Protection

An embedded thermal sensor warns of overheating. The PoE output of less important ports will be reduced to ensure critical PD functioning in abnormal conditions.



PD Keep-Alive Check

LPLD does a keep-alive check on PD periodically and resets the PoE port to bring the PD back to life if a PD failure is detected.



	 JetNet 6810G-M12	 JetNet 6810G-RJ	 JetNet 6710G-M12 HVDC
	Giga 24V 802.3at Managed	**Giga 24V 802.3at Managed**	**Giga 110V 802.3at Managed**
Interface			
10/100TX Ports	8 M12 D-Code	8 Rugged RJ-45	8 M12 D-Code
10/100/1000TX Ports	2 M12 A-Code	2 Rugged RJ-45	2 M12 A-Code
DI/DO/Console	1 x DO, RS-232 (M12 A-code)	1 x DO, RS-232 (M12 A-code)	1 x DO, RS-232 (M12 A-code)
Power Input	37.5VDC (23~42.5V) CTG-4F Rugged Connector	37.5VDC (23~42.5V) CTG-4F Rugged Connector	2 x 110VDC (77~137V) M12 A-Code Male
Hi-Pot	AC 1.5KV	AC 1.5KV	AC 1.5KV
Pover Over Ethernet			
PoE Ports	8 M12 D-Code	8 Rugged RJ-45	8 M12 D-Code
PoE Wiring (A: Data Pins/ B: Spare Pins)	1,2,3,4 (A)	1,2,3,6 (A)	1,2,3,4 (A)
PoE modes	802.3 af, 802.3at LLDP, Forced Powering	802.3 af, 802.3at LLDP, Forced Powering	802.3 af, 802.3at LLDP, Forced Powering
PoE Power Per Port	15.4W/30W	15.4W/30W	15.4W/30W
Total Power Budget	120W @ 60°C	120W @ 60°C	120W @ 60°C
Feature			
PoE Power Boost	37.5VDC (23~42.5V)	37.5VDC (23~42.5V)	110VDC (77~137V)
PoE Priority Control	Port-based (P1: highest~P8: lowest)	Port-based (P1: highest~P8: lowest)	Port-based (P1: highest~P8: lowest)
PD Keep Alive Checking	●	●	●
PoE Scheduling	●	●	●
MSR, MultiRing, TrunkRing, RDH	●	●	●
Broadcast Storm/Loop Protection	●	●	●
DHCP Server (Op82, Port-based)	●	●	●
JetView Pro / JetView Managed	●	●	●
SW/Protocol			
IPv6 Management	●*	●*	●*
RSTP/MSTP	●	●	●
QoS,Traffic Priority	●	●	●
VLAN, Private VLAN, QinQ, GVRP	●	●	●
IGMP Query, Snooping, GMRP	●	●	●
LLDP Network Discovery	●	●	●
LACP/Static Trunking	●	●	●
IEEE 1588	●	●	●
Port Mirror	●	●	●
802.1x, IP/Port Security, HTTPS, SSH	●	●	●
Centrialized Password Authentication	Radius	Radius	Radius
Modbus TCP Management	●*	●*	●*
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●
HW/ME			
Housing Protection (IP)	IP30 Steel Metal	IP30 Steel Metal	IP30 Steel Metal
Dimension (H x W x D mm)	145.2 x 198 x 120	145.2 x 198 x 120	145.2 x 198 x 120
Mounting	Wall Mount	Wall Mount	Wall Mount
Operating Temperature	-40~60°C	-40~60°C	-40~60°C
MTBF (hrs)	> 150,000	> 150,000	> 150,000
Certificate/DoC			
Regulatory Approval	CE/ FCC	CE/ FCC	CE/ FCC
RoHS/REACH	●	●	●
Vertical Market	Heavy Industry, EN50121-4 Railway IEC61373	Heavy Industry, EN50121-4 Railway IEC61373	Heavy Industry, EN50121-4 Railway

* Coming soon

Industrial 8 PoE + 2G Managed High Power PoE Switch

JetNet 6710G-M12, 6710G-RJ

- Supports PoE IEEE802.3af, 802.3at LLDP and Force Powering
- M12 or Rugged RJ45 connector for vibration and shock
- 30W PoE per port, up to 240W in total
- LPLD for PD keep alive checking and auto resets if PD fails
- PoE scheduling and LLDP dynamic powering on demand of PD
- PoE emergency management by port-based Priority Powering
- Easy PD IP maintenance by Port Based DHCP Server
- Supports Power Aggregation, Power Redundancy, Budget Control
- MSR redundant ring, recovery < 5ms, restoration = 0ms
- Railway EN50121-4, IEC61373 certificates

Distinct Onboard High Capacity PoE

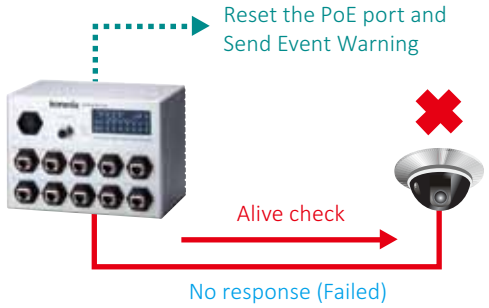
The superb PoE capacity drives high power demand PoE devices such as WiMax and IEEE802.11a/b/g/n wireless AP on a vehicle.

30W x 8 → 240W

Each port **ports** **In total**

PD Keep-Alive Check

LPLD does a keep-alive check on PD periodically and resets the PoE port to bring the PD back to life if a PD failure is detected.



Industrial 8 PoE + 2G Managed High Power PoE Switch

JetNet 5710G

- Supports PoE IEEE802.3af, 802.3at LLDP and Force Powering
- 30W PoE per port, up to 240W in total
- LPLD for PD keep alive checking and auto resets if PD fails
- PoE scheduling and LLDP dynamic powering on demand of PD
- PoE emergency management by port-based Priority Powering
- Supports Power Aggregation, Power Redundancy, Budget Control
- MSR redundant ring, recovery < 5ms, restoration = 0ms

	 JetNet 6710G-M12	 JetNet 6710G-RJ	 JetNet 5710G
	Giga 802.3at Managed	Giga 802.3at Managed	Giga 802.3at Managed
Interface			
10/100TX Ports	8 M12 D-Code	8 Rugged RJ-45	8
10/100/1000TX Ports	2 M12 A-Code	2 Rugged RJ-45	2
DI/DO/Console	1 x DO, RS-232 (M12 A-code)	1 x DO, RS-232 (M12 A-code)	1 x DO, RS-232
Power Input	2 x DC48~57V CTG-4F Rugged Con	2 x DC48~57V CTG-4F Rugged Con	2 x DC 48~57V
Hi-Pot	AC 1.5KV	AC 1.5KV	AC 1.5KV
Pover Over Ethernet			
PoE Ports	8 M12 D-Code	8 Rugged RJ-45	8
PoE Wiring (A: Data Pins/ B: Spare Pins)	1,2,3,4 (A)	1,2,3,6 (A)	1,2,3,6 (A)
PoE modes	802.3 af, 802.3at LLDP, Forced Powering	802.3 af, 802.3at LLDP, Forced Powering	802.3 af, 802.3at LLDP, Forced Powering
PoE Power Per Port	15.4W/30W	15.4W/30W	15.4W/30W
Total Power Budget	240W @ 60°C	240W @ 60°C	240W @ 60°C/120W @ 70°C
Feature			
PoE Priority Control	Port-based (P1: highest~P8: lowest)	Port-based (P1: highest~P8: lowest)	Port-based (P1: highest~P8: lowest)
PD Keep Alive Checking	●	●	●
PoE Scheduling	●	●	●
MSR, MultiRing, TrunkRing, RDH	●	●	●
Broadcast Storm/Loop Protection	●	●	●
DHCP Server (Op82, Port-based)	●	●	●
JetView Pro / JetView Managed	●	●	●
SW/Protocol			
IPv6 Management	●*	●*	●*
RSTP/MSTP	●	●	●
QoS,Traffic Priority	●	●	●
VLAN, Private VLAN, QinQ, GVRP	●	●	●
IGMP Query, Snooping, GMRP	●	●	●
LLDP Network Discovery	●	●	●
LACP/Static Trunking	●	●	●
IEEE 1588	●	●	●
Port Mirror	●	●	●
802.1x, IP/Port Security, HTTPS, SSH	●	●	●
Centrialized Password Authentication	Radius	Radius	Radius
Modbus TCP Management	●*	●*	●*
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●
HW/ME			
Housing Protection (IP)	IP30 Steel Metal	IP30 Steel Metal	IP30 Steel Metal
Dimension (H x W x D mm)	145.2 x 198 x 74	145.2 x 198 x 74	145.2 x 185 x 63.8
Mounting	Wall Mount	Wall Mount	Wall Mount
Operating Temperature	-40~60°C	-40~60°C	-40~70°C
MTBF (hrs)	> 200,000	> 200,000	> 200,000
Certificate/DoC			
Regulatory Approval	CE/ FCC	CE/ FCC	CE/ FCC
RoHS/REACH	●	●	●
Vertical Market	Heavy Industry, EN50121-4 Railway IEC61373 Railway	Heavy Industry, EN50121-4 Railway IEC61373 Railway	Heavy Industry

* Coming soon

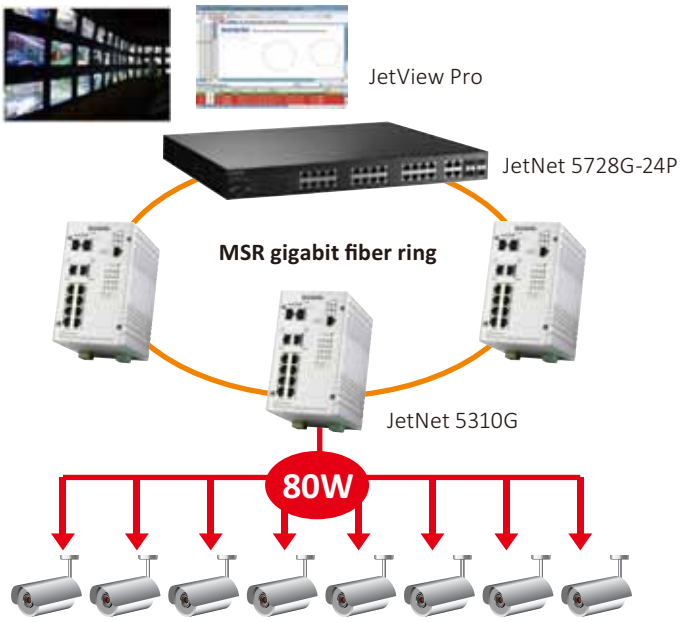
Industrial 8 PoE + 2G SFP Managed High Power PoE Switch

JetNet 5310G

- Supports PoE IEEE 802.3af, 802.3at 2-event, 802.3at LLDP and Force Powering
- 30W PoE per port, up to 80W in total
- LPLD for PD keep alive checking and auto resets if PD fails
- PoE scheduling and LLDP dynamic powering on demand of PD
- PoE emergency management by Priority Powering
- Easy PD IP maintenance by Port Based DHCP Server
- Supports Power Aggregation, Power Redundancy, Budget Control
- MSR redundant ring, recovery < 5ms, restoration = 0ms

Hardened For All Industrial Surveillance

Two gigabit fibers, max 80W PoE at 75°C, certificated to IEC 61000-6-2/6-4 Heavy Industry EMC standard, compliance to EN 50121-4 railway and NEMA TS2 traffic control applications. JetNet 5310G is hardened for industrial surveillance applications in harsh environments.



Industrial 4 PoE + 2TX(FX) Managed High Power PoE Switch

JetNet 4706, 4706f

- Up to 25W per port forced powering, max 80W in total
- PoE scheduling by hour/weekly basis
- LPLD for PD keep alive checking and auto resets if PD fails
- MSR redundant ring, recovery < 5ms, restoration = 0ms

JetNet 4706 JetNet 4706f

	JetNet 5310G	JetNet 4706	JetNet 4706f
	Giga 802.3at Managed	High Power Managed	High Power Managed
Interface			
10/100TX Ports	8	6	4
10/100/1000TX Ports	2 (Combo)		
Fiber Ports	2 x 100/1000 SFP		2 x 100FX/SC 2km (4706f-m) 30km (4706f-s)
DI/DO/Console	1 x DI, 1 x DO, RS-232	1 x DO, RS-232	1 x DO, RS-232
Power Input	2 x DC 48~57V	2 x DC 48~57V	2 x DC 48~57V
Hi-Pot	AC 1.5KV	AC 1.5KV	AC 1.5KV
Pover Over Ethernet			
PoE Ports	8	4	4
PoE Wiring (A: Data Pins/ B: Spare Pins)	1,2,3,6 (A)	4,5,7,8 (B)	4,5,7,8 (B)
PoE modes	802.3 af, 802.3at 2-event, 802.3at LLDP, Forced Powering	802.3 af, Forced Powering	802.3 af, Forced Powering
PoE Power Per Port	15.4W/30W	15.4W/25W (Forced)	15.4W/25W (Forced)
Total Power Budget	80W @ 75°C	80W @ 60°C	80W @ 60°C
Feature			
PoE Priority Control	●		
PD Keep Alive Checking	●	●	●
PoE Scheduling	●	●	●
MSR, MultiRing, TrunkRing, RDH	●	MSR, RDH	MSR, RDH
Broadcast Storm/Loop Protection	●		
DHCP Server (Op82, Port-based)	●		
JetView Pro / JetView Managed	●	●	●
SW/Protocol			
IPv6 Management	●		
RSTP/MSTP	●	RSTP	RSTP
QoS,Traffic Priority	●	●	●
VLAN, Private VLAN, QinQ, GVRP	●	Port Based VLAN	Port Based VLAN
IGMP Query, Snooping, GMRP	●	IGMP Query, Snooping	IGMP Query, Snooping
LLDP Network Discovery	●	●	●
LACP/Static Trunking	●		
IEEE 1588	●		
Port Mirror	●	●	●
DDM SFP Monitoring	●		
802.1x, IP/Port Security, HTTPS, SSH	●	●	●
Centrialized Password Authentication	Radius		
Modbus TCP Management	●*		
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●
HW/ME			
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	160 x 95 x 127	46.5 x 147.8 x 136	46.5 x 147.8 x 136
Mounting	DIN Rail	DIN Rail / Wall Mount	DIN Rail / Wall Mount
Operating Temperature	-40~75°C	-40~60°C	-40~60°C
MTBF (hrs)	> 200,000	> 200,000	> 200,000
Certificate/DoC			
Regulatory Approval	CE/ FCC/ UL	CE/ FCC/ UL	CE/ FCC/ UL
RoHS/REACH	●	●	●
Vertical Market	Heavy Industry NEMA TS2 compliant		

* Coming soon

Vehicle 12~24V Gigabit Booster PoE Switch

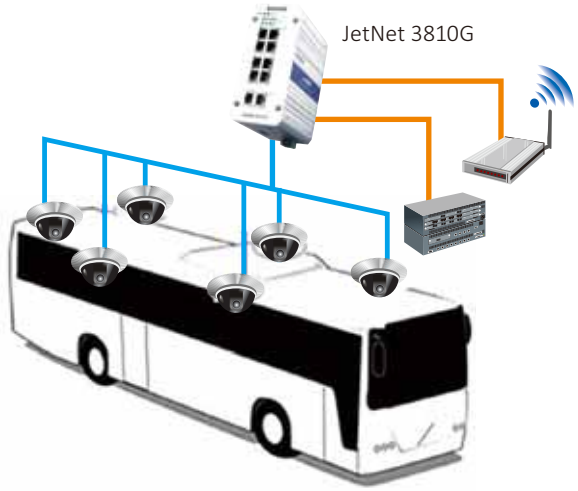
JetNet 3810G, 3806G

- 12~24VDC power booster to 802.3af 48V PoE
- 15.4W per port, up to 65W in total
- Gigabit Ethernet for megapixel video surveillance
- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures
- e-mark certificate for vehicle applications

JetNet 3810G JetNet 3806G

Vehicle Power Input

Boost 12-24VDC power to 48V PoE for IP cameras and Wireless AP where 48V power supply is not available such as cars, buses and other vehicles.



Ideal for Bus Surveillance

e-mark certificate, vehicle PoE, gigabit uplinks and QoS ensure high quality video transmission on buses.

Industrial 12~24V Booster PoE Switch

JetNet 3810Gf, 3810f

- 12~24VDC power booster to 802.3af 48V PoE
- 15.4W per port, up to 65W in total
- Gigabit Ethernet for megapixel video surveillance (3810Gf)
- Flexible fiber transmission through SFP transceivers
- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures

24VDC and SFP Fiber

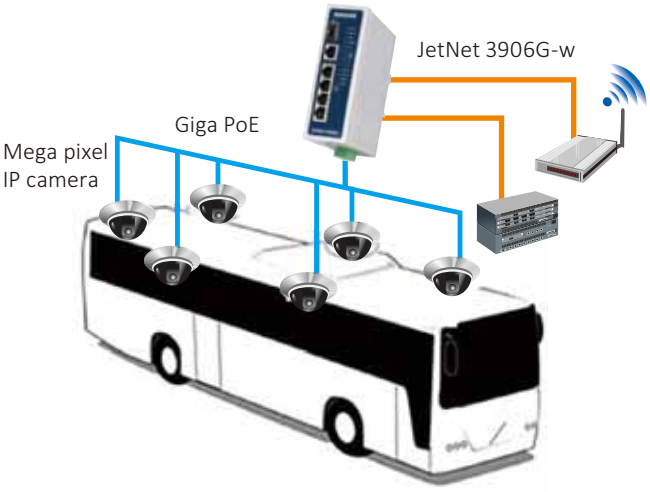
Boost 12-24VDC power to 48V PoE for IP cameras and Wireless AP. Ideal for border surveillance, campus surveillance, and traffic surveillance applications that are driven by solar or 24VDC power systems.

	 JetNet 3810Gf	 JetNet 3810f	 JetNet 3810G	 JetNet 3806G
	Giga 12~24V PoE switch	12~24V PoE switch	Giga 12~24V PoE switch	Giga 12~24V PoE switch
Interface				
10/100TX Ports	8	8	8	4
10/100/1000TX Ports			2	2
Fiber Ports	2 x 1000 SFP	2 x100 SFP		
DI/DO	1 x DO	1 x DO	1 x DO	1 x DO
Power Input	12~24VDC	12~24VDC	12~24VDC	12~24VDC
HiPot	AC 1.5KV	AC 1.5KV	AC 1.5KV	AC 1.5KV
Power Over Ethernet				
PoE Ports	8	8	8	4
PoE Wiring (A: Data Pins/ B: Spare Pins)	4,5,7,8 (B)	4,5,7,8 (B)	4,5,7,8 (B)	4,5,7,8 (B)
PoE modes	802.3af	802.3af	802.3af	802.3af
PoE Power Per Port	15.4W	15.4W	15.4W	15.4W
Total Power Budget	65W @24V, 60°C	65W @24V, 60°C	65W @24V, 60°C	60W @24V, 60°C
Feature				
PoE Power Boost	12~24VDC	12~24VDC	12~24VDC	12~24VDC
QoS Traffic priority	●	●	●	●
Port/Power Failure Alarm	Port	Port	Port	Port
Jumbo frame				
HW/ME				
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	149 x 66 x 131.2	149 x 66 x 131.2	149 x 66 x 131.2	149 x 66 x 131.2
Mounting	DIN rail	DIN rail	DIN rail	DIN rail
Operating Temperature	-25 ~ 60°C	-25 ~ 60°C	-25 ~ 60°C	-25 ~ 60°C
MTBF (hrs)	> 200,000	> 200,000	> 200,000	> 200,000
Certificate / DoC				
Regulatory Approval	CE/ FCC/ UL	CE/ FCC/ UL	CE/ FCC/ UL	CE/ FCC/ UL
RoHS/WEEE	●	●	●	●
Vertical Market	e-mark	e-mark	e-mark	e-mark

Industrial 12~36V Full Gigabit Booster PoE Switch

JetNet 3906G-w

- Compact, full gigabit non-blocking switch
- 12~36VDC power boost to 57V 802.3at, 48V 802.3af PoE
- 4 Gigabit PoE ports, 30W per port, 120W in total
- 1 1000TX and 1 100/1000 SFP fiber ports
- 9KB Jumbo frame, QoS enhances video transmission



Full Gigabit, 30W PoE for Mega Pixel Surveillance

Strong PoE capacity, high performance switching with 12~36VDC power input, JetNet 3906G-w enables advanced surveillance on buses. The SFP fiber port extends the distance and fits industrial surveillance applications without 48-57V power source.

Industrial 8 PoE + 2G Switch

JetNet 3710G

- 8 port 802.3af PoE, 15.4W per port, max 65W in total
- Two gigabit uplinks for video surveillance
- Supports QoS for quality transmission
- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures

Industrial 4 PoE + 1TX(FX) Switch

JetNet 3705, 3705f

- 15.4W per port full capacity
- Supports QoS for quality transmission
- Fault relay for active warning of port failure
- Thick, rugged aluminum housing stronger than plastic
- Durable, corrosion resistant and rust resistant housing
- Excellent cooling enhances stability in extreme temperatures

				
	JetNet 3710G	**JetNet 3906G-w**	**JetNet 3705**	**JetNet 3705f**
	Giga PoE switch	**Full Giga PoE+ Switch**	**PoE Switch**	**PoE Switch**
Interface				
10/100TX Ports	8		5	4
10/100/1000TX Ports	2	5		
Fiber Ports		1 x 100/1000 SFP		1 x 100FX/SC 2km (3705f-m) 30km (3705f-s)
DI/DO	1 x DO	1 x DO	1 x DO	1 x DO
Power Input	48VDC	2 x 12~36VDC	2 x 48VDC (Termial Block)/1 x 48VDC (DC Jack)	2 x 48VDC (Termial Block)/1 x 48VDC (DC Jack)
HiPot	AC 1.5KV	AC 1.5KV	AC 1.2KV	AC 1.2KV
Power Over Ethernet				
PoE Ports	8	4	4	4
PoE Wiring (A: Data Pins/ B: Spare Pins)	4,5,7,8 (B)	1,2,3,6 (A)	4,5,7,8 (B)	4,5,7,8 (B)
PoE modes	802.3af	802.3at/802.3af	802.3af	802.3af
PoE Power Per Port	15.4W	30/15.4W	15.4W	15.4W
Total Power Budget	65W @48V, 70°C	120W @24V, 60°C 80W @24V, 75°C	60W @48V, 70°C	60W @48V, 70°C
Feature				
PoE Power Boost		12~36VDC		
QoS Traffic priority	●	●		
Port/Power Failure Alarm	Port	Port , Power	Port , Power	Port , Power
Jumbo frame		9Kbytes		
HW/ME				
Housing Protection (IP)	IP31 Aluminum	IP31 Steel Metal	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	149 x 66 x 131.2	140 x 45 x 105	108 x164.8 x 33.8	108 x164.8 x 33.8
Mounting	DIN rail	DIN Rail	DIN Rail	DIN Rail
Operating Temperature	-25 ~ 70°C	-40 ~ 75°C	-20 ~ 70°C	-10 ~ 70°C
MTBF (hrs)	> 200,000	> 200,000	> 200,000	> 200,000
Certificate				
Regulatory Approval	CE/ FCC/ UL	CE/ FCC/ UL	CE/ FCC/ UL	CE/ FCC/ UL
RoHS/WEEE	●	●	●	●
Vertical Market		Heavy Industry NEMA TS2 Compliant		

JETWAVE

Multi-RF High Speed

Distinct Triple RF solution with incomparable performance for outdoor and industrial applications.

Outdoor
JetWave 2800 Series

Industrial
JetWave 2700 Series

Triple RF, Dual Band Global Distinct Solution

A Triple RF solution is available in addition to single RF and dual RF models. Each RF module is IEEE802.11 a/b/g/n and 2.4G/5G band configurable, offering the best possible topology for all demands.

Incomparable High Performance

The powerful CPU empowers an incomparable high speed data transmission up to 350Mbps among the three RF and gigabit Ethernet interfaces.

Wider Range Better Signal Quality

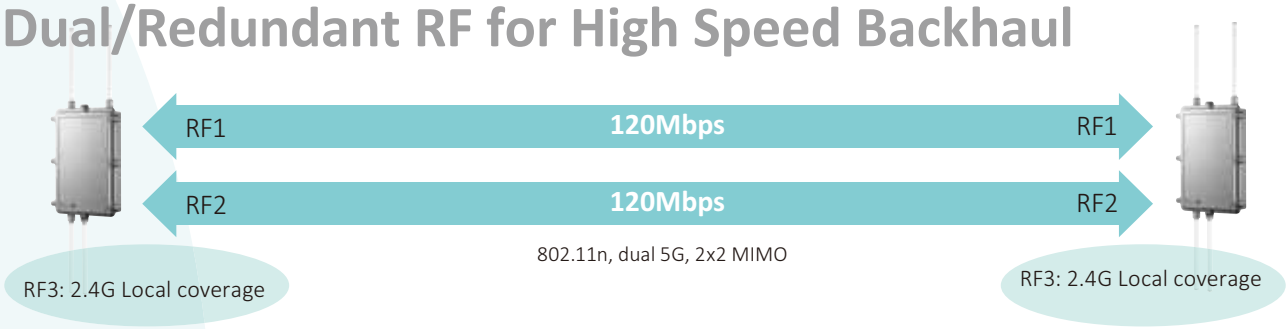
Up to 21dBm strong TX power and -95dBm high RX sensitivity. Combined with the high gain fiberglass antennas, JetWave 2800/2700 is capable of covering a wider range without compromising signal quality.

2x2 MIMO Technology Doubles Data Rate

Each RF module has two antennas. With MIMO (Multi-Input, Multi-Output) enabled, each antenna simultaneously transmits and receives data which increases the throughput significantly.

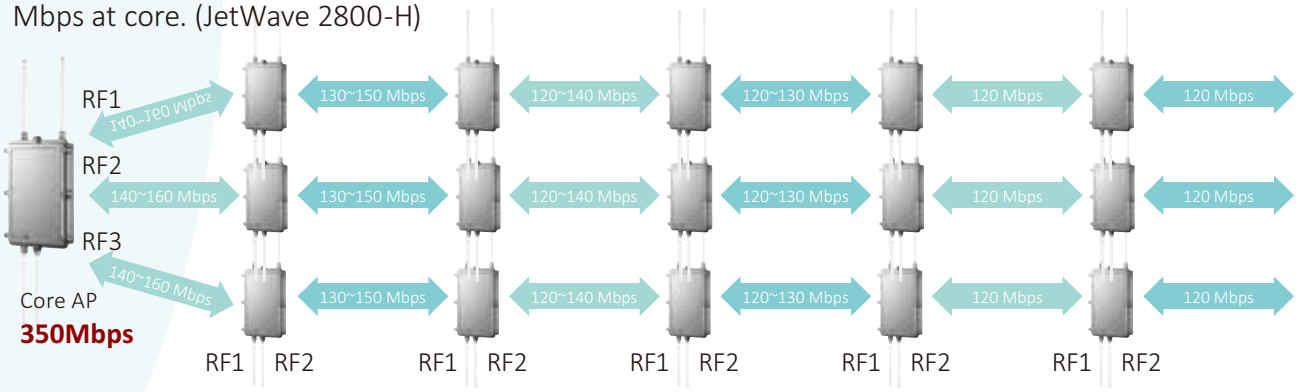
Wireless AP

Dual/Redundant RF for High Speed Backhaul



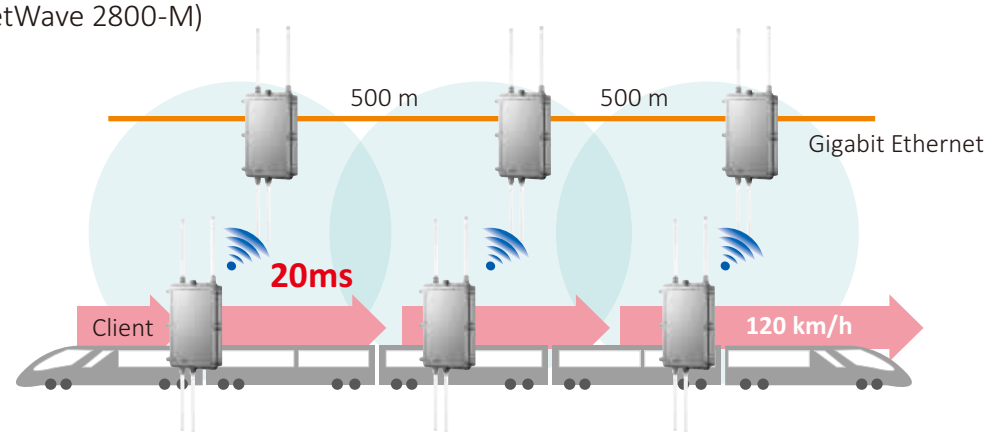
High Capacity Multiple Hopping

Create three multiple-hopping paths with minimum 120Mbps throughput on the way and max 350 Mbps at core. (JetWave 2800-H)



20ms Super Roaming

20 ms seamless handover, up to 120Mbps throughput for 120km/h high speed moving trains or vehicles. (JetWave 2800-M)



Outdoor Multi-RF 802.11a/b/g/n Wireless AP

JetWave 2800 Series

- Single/Dual/Triple RF configurable: 802.11a/b/g/n and 2.4G/5G
- Superb performance: 3 RF with 1 GbE up to 350Mbps
- Strong TX output power extends distance and coverage
- High RX sensitivity enhances receiving signal quality
- 2x2 MIMO doubles data rate
- Supports Super Roaming, Mesh, and Mobility mode (2800-M)
- Supports high performance multiple hopping mode (2800-H)
- Wireless QoS (WMM) for video precedence transmission
- High gain weatherproof fiberglass antenna by selection
- Gigabit PoE power input, PoE injector included
- IP67 aluminum housing, -30~70°C outdoor solution

JetWave 2810 *Outdoor, Single RF Wireless AP*
JetWave 2820 *Outdoor, Dual RF Wireless AP*
JetWave 2830 *Outdoor, Triple RF Wireless AP*

Industrial Multi-RF 802.11a/b/g/n Wireless AP

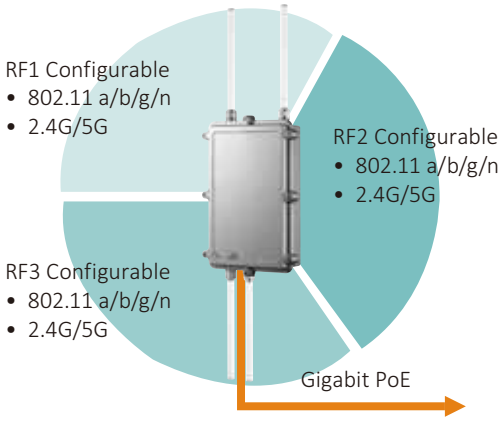
JetWave 2700 Series * Coming soon

- Single/Dual/Triple RF configurable: 802.11a/b/g/n and 2.4G/5G
- Superb performance: 3 RF with 2 GbE up to 350Mbps
- Strong TX output power extends distance and coverage
- High RX sensitivity enhances receiving signal quality
- 2x2 MIMO doubles data rate
- Supports Super Roaming, Mesh and Mobility mode (2700-M)
- Supports high performance multiple hopping mode (2700-H)
- Wireless QoS (WMM) for video precedence transmission
- High gain weatherproof fiberglass antenna
- Gigabit PoE power input, PoE injector included

JetWave 2710 *Industrial, Single RF Wireless AP*
JetWave 2720 *Industrial, Dual RF Wireless AP*
JetWave 2730 *Industrial, Triple RF Wireless AP*

High Flexibility Outstanding Performance

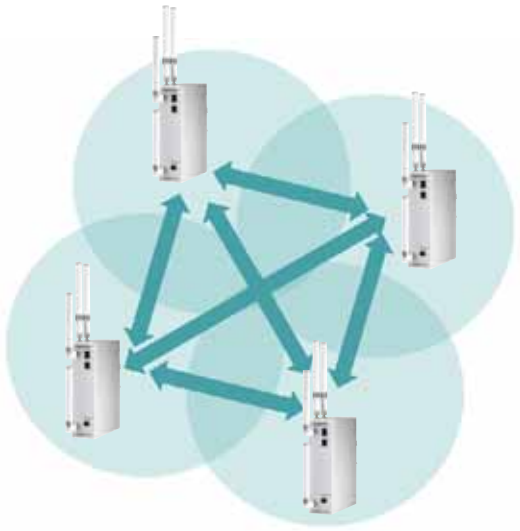
Three RF modules are configurable to meet various kinds of needs. Along with the gigabit Ethernet, it achieves max 350Mbps wireless to wired speed.



Performance		
Wireless To Wire	TCP	Up to 180Mbps for one radio to Ethernet
		Up to 320Mbps for multiple radios to Ethernet
	UDP	Up to 240Mbps for one radio to Ethernet
		Up to 350Mbps for multiple radios to Ethernet

Self-configuring, Self Healing Wireless Mesh

In Mesh mode, JetWave 2800/2700 series discovers each other and incorporates a self-configuring, scalable, and self-healing network, which overcomes the environmental or architectural constraints and offers reliable wireless communication in mission-critical industrial applications. (-M, Mesh version)



High Gain, Durable Fiberglass Antenna

Compared to rubber antennas, fiberglass antennas have higher GAIN to increase performance. Its water, dust and UV resistant characteristics make it an ideal solution for outdoor environments.

Rugged for Extreme Environments

JetWave 2800 is protected by a strong IP67 aluminum housing, equipped with waterproof, anti-vibration connectors and durable fiberglass antennas, which survive harsh environments.

Long Range Outdoor Wireless AP

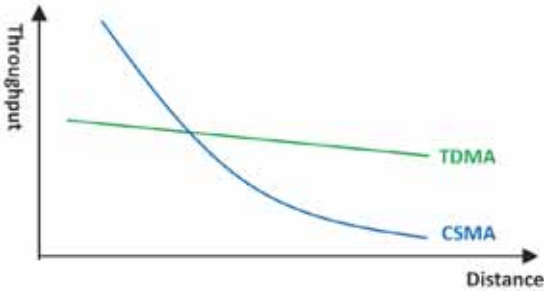
JetWave 2600 Series

- Un-crowded IEEE 802.11a 5.8GHz band
- Embedded 23dbi high gain antenna extends distance to 40km
- Intel TDMA technology ensures high throughput at long distance
- Supports Super A/G; doubles transmission speed
- Wireless QoS (WMM) for video precedence transmission
- PoE power input, industrial PoE injector included

JetWave 2610 *Outdoor Long Range 802.11a Wireless AP*
JetWave 2620 *Outdoor Long Range Dual 802.11a Wireless AP*

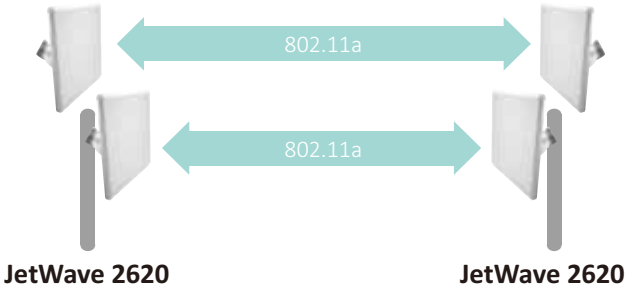
40 km High Quality Wireless Connection

In addition to common CSMA technology, JetWave 2600 series supports Intel TDMA transmission technology. With TDMA, the distance is extended to 40km with high performance.



Link Aggregation for Double Bandwidth

JetWave 2620's dual RF can be aggregated into a trunk, which doubles the bandwidth between the two peers.



Ultra Long Distance Bridge or Relay

The dual 5G interfaces extend the distance from one side to the other possibly extending the range to 80km, 120 km or longer without performance loss.

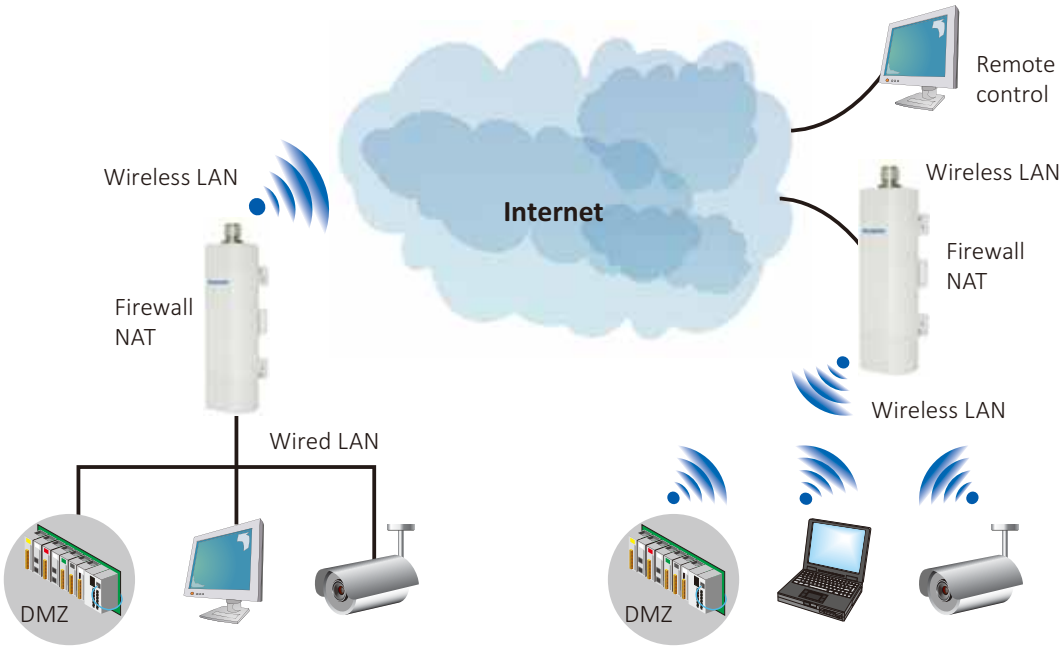
Outdoor High Performance 802.11 b/g/n Wireless AP/Router

JetWave 2450

- 3 times faster than 802.11b/g, up to 150Mbps net data rate
- Embedded 8dbi directional antenna
- N-Type socket for external antenna on the top
- Up to 5KM Wireless coverage (embedded 8dbi antenna)
- Supports IGMP snooping for efficient multicasting
- Supports Router mode, PPPoE and Firewall, NAT, DMZ for secure access
- Wireless QoS (WMM) for video precedence transmission
- 12VDC PoE power input, industrial PoE injector included

Wireless Router

Either the wireless or the wired interface of JetWave 2450 can be configured as a WAN port to connect to the Internet. Any access from WAN to internal network are secured by Firewall, NAT or DMZ.



IGMP Snooping for Video Multicasting

By enabling IGMP snooping, JetWave 2450 will forward multicast traffic to those clients identified as multicast group members, which results in efficient multicasting for video surveillance.





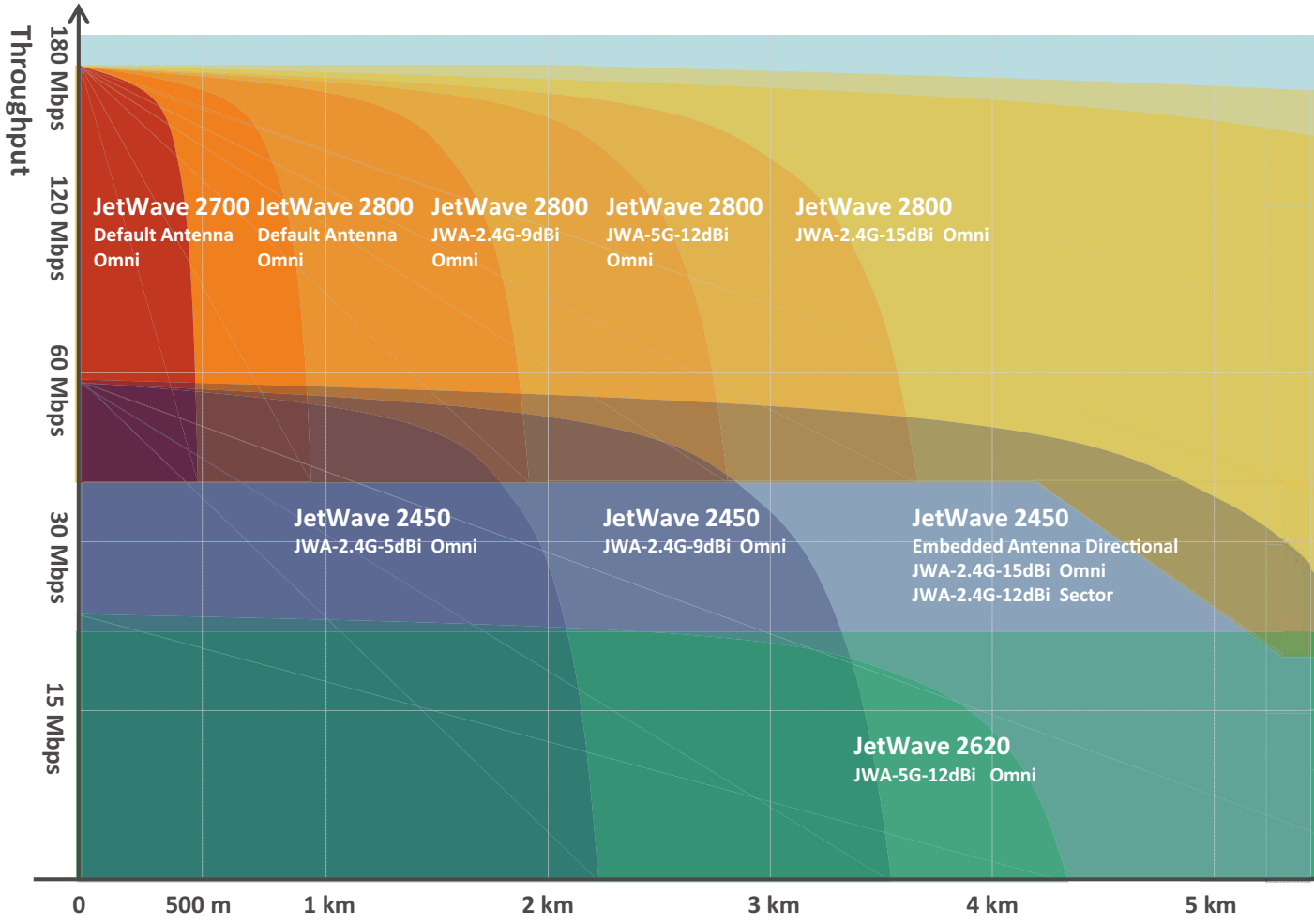

	JeWave 2810-M JeWave 2810-H	JeWave 2820-M JeWave 2820-H	JeWave 2830-M JeWave 2830-H	JeWave 2710-M JeWave 2710-H	JeWave 2720-M JeWave 2720-H	JeWave 2730-M JeWave 2730-H
	Outdoor Single RF	Outdoor Dual RF	Outdoor Triple RF	Industrial Single RF	Industrial Dual RF	Industrial Triple RF
Interface						
10/100/1000 Ports	1	1	1	2	2	2
WLAN Ports	1	2	3	1	2	3
Standard	IEEE 802.11 a/b/g/n			IEEE 802.11 a/b/g/n		
Operating Frequency	FCC : 2.400~2.483GHz, CE: 2.400~2.483 GHz FCC: 5.15~5.35GHz, 5.50~5.700 GHz, 5.725~5.825GHz, CE:5.15~5.35GHz, 5.47~5.725GHz					
RF Output Power	802.11a: 17dBm@54M(5180MHz),16dBm@54M(5825MHz), 21dBm@6M(all); 802.11b: 21dBm@11M(all), 20dBm@1M(2412MHz),19dBm@1M(2484MHz); 802.11g: 19dBm@54M(all), 23dBm@6M(all); 802.11a/n HT20: 21dBm@MCS0/8(5180MHz),16dBm@ MCS7/15(5180MHz); 19dBm@MCS0/8(5825MHz), 14dBm@ MCS7/15(5825MHz); 802.11a/n HT40: 19dBm@MCS0/8(5190MHz),18dBm@ MCS7/15(5795MHz),13dBm@ MCS7/15(all); 802.11g/n HT20: 21dBm@MCS0/8(all), 17dBm@ MCS7/15(all); 802.11g/n HT40: 21dBm@MCS0/8(2422MHz),20dBm@MCS0/8(2462MHz),16dBm@ MCS7/15(all)					
RX Sensitivity	802.11a: -82dBm@6Mbps, 1Rx; -95/-91dBm@6Mbps, 2Rx; -65dBm@54Mbps, 1Rx; -79/-75dBm@54Mbps, 2Rx 802.11b: -82dBm@1Mbps, 1Rx; -95/-91dBm@1Mbps, 2Rx; -65dBm@54Mbps, 1Rx; -91/-87dBm@11Mbps, 2Rx 802.11g: -82dBm@6Mbps, 1Rx;-95/-91dBm@6Mbps, 2Rx; -65dBm@54Mbps, 1Rx; -80/-76dBm@54Mbps, 2Rx 802.11a/n HT20: -82dBm@MCS0, 1Rx; -95/-91dBm@MCS0, 2Rx; -64dBm@MCS7,1Rx; -77/-73dBm@MCS7, 2Rx 802.11a/n HT40: -79dBm@MCS0, 1Rx; -91/-87dBm@MCS0, 2Rx; -61dBm@MCS7, 1Rx;-74/-70dBm@MCS7, 2Rx 802.11g/n HT20: -82dBm@MCS0, 1Rx; -95/-91dBm@MCS0, 2Rx; -64dBm@MCS7, 1Rx;-77/-73dBm@MCS7, 2Rx 802.11g/n HT40: -79dBm@MCS0, 1Rx; -90/-86dBm@MCS0, 2Rx; -61dBm@MCS7, 1Rx;-74/-71dBm@MCS7, 2Rx					
Power Input (PoE)	802.3at (48VDC)			802.3at (48VDC)		
HW/ME						
Housing (IP Rating)	IP67 Metal	IP67 Metal	IP67 Metal	IP30 Metal	IP30 Metal	IP30 Metal
Default Antenna	Dual band 5G 7dBi, 2.4G 5dBi Omni antennax 2	Dual band 5G 7dBi, 2.4G 5dBi Omni antennax 4	Dual band 5G 7dBi, 2.4G 5dBi Omni antennax 6	Dual band 5G 6dBi, 2.4G 3dBi Omni antennax 2	Dual band 5G 6dBi, 2.4G 3dBi Omni antennax 4	Dual band 5G 6dBi, 2.4G 3dBi Omni antennax 6
Optional Antenna	2 by selection	4 by selection	6 by selection			
Dimension (H x W x D mm)	262 x 182 x 55	262 x 182 x 55	262 x 182 x 55	185 x 75 x 140	185 x 75 x 140	185 x 75 x 140
Operating Temperature	-35~70°C	-35~70°C	-35~70°C	-35~65°C	-35~65°C	-35~65°C
Protocols						
Operating Mode	-H version: Access Point, Wireless Station, Access Point(WDS), Wireless Station(WDS) -M version: Access Point, Wireless Station, Access Point(WDS), Wireless Station(WDS), Mesh, Mobility					
CSMA/TDMA Transmission	CSMA	CSMA	CSMA	CSMA	CSMA	CSMA
WEP, WPA, WPA2	●	●	●	●	●	●
STP (Spanning Tree Protocol)	●	●	●	●	●	●
DHCP server/client	●	●	●	●	●	●
NTP (Network Time Management)	●	●	●	●	●	●
Link Aggregation	●	●	●	●	●	●
QoS (WMM)	●	●	●	●	●	●
Wireless Isolation	●	●	●	●	●	●
CLI/Web/SNMP/JetView pro/Utility	●	●	●	●	●	●
Link Test Tools	●	●	●	●	●	●
HTTPS, SSH, Telnet	●	●	●	●	●	●
802.1x MAC Access Control	●	●	●	●	●	●
Certification / DoC						
Regulatory Approval	CE/FCC/RoHS/WEEE			CE/FCC/RoHS/WEEE		

* Preliminary specification



	JetWave 2610	JetWave 2620	JetWave 2450
	Outdoor Single 802.11a	Outdoor Dual 802.11a	Outdoor Single 802.11 b/g/n
Interface			
10/100TX Ports	1	1	1
WLAN Ports	1	2	1
Standard	IEEE 802.11a	IEEE 802.11a	IEEE 802.11b/g/n
Operating Frequency	FCC : 2.412~2.462GHz, 5.725~5.850 GHz CE : 2.412~2.472GHz, 5.470~5.600 GHz, 5.650~5.725 GHz		FCC: 2.412 ~2.462 GHz(HT20), 2.422~ 2.452 GHz(HT40) CE/ETSI: 2.412 ~ 2.472 GHz(HT20), 2.422~ 2.462 GHz(HT40)
RF Output Power	802.11a: 24dBm/FCC; 30dBm/CE		FCC: 802.11b/g/n: Max. 27.5dBm ETSI(CE): 802.11b/g/n: Max. 10.5dBm
RX Sensitivity	802.11a: < -92dBm@6Mbps; < -73dBm@54Mbps		802.11b: 11Mbps≦-93dBm, 802.11g: 54Mbps≦-88dBm, 802.11n - HT 20≦-88dBm, 802.11n - HT 40≦ -84dBm
Power Input (PoE)	802.3af (48VDC)	802.3af (48VDC)	12VDC
Antenna Alignment Buzzer Indication	●	●	
HW/ME			
Housing (IP Rating)	IP67	IP67	IP65
Default Antenna	1 x 23dbi Directional	1 x 23dbi Directional	1 x 5dbi Directional
Optional Antenna		1	1
Moisture Exclude Vent	●	●	
Dimension (H x W x D mm)	400 x 400 x 88	400 x 400 x 88	165 x 60 x 34
Operating Temperature	-30~70°C	-30~70°C	-20~70°C
Protocols			
Operating Mode	Base Station, CPE, P2P, P2MP	Base Station, CPE, Relay, P2P, P2MP	Base Station, CPE, P2P, P2MP
CSMA/TDMA Transmission	CSMA/TDMA	CSMA/TDMA	CSMA
WEP, WPA, WPA2	●	●	●
STP (Spanning Tree Protocol)	●	●	●
DHCP server/client	Client	client	●
NTP (Network Time Management)	●	●	●
Link Aggregation		●	
QoS (WMM)	●	●	●
Wireless Isolation	●	●	●
CLI/Web/SNMP/JetView pro/Utility	●	●	●
Link Test Tools	●	●	●
HTTPS, SSH, Telnet	●	●	●
802.1x MAC Access Control	●	●	●
Certification / DoC			
Regulatory Approval	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE

Quick Selection Guide for JetWave Series and Antennas



Accessories: High Gain, Durable Antennas

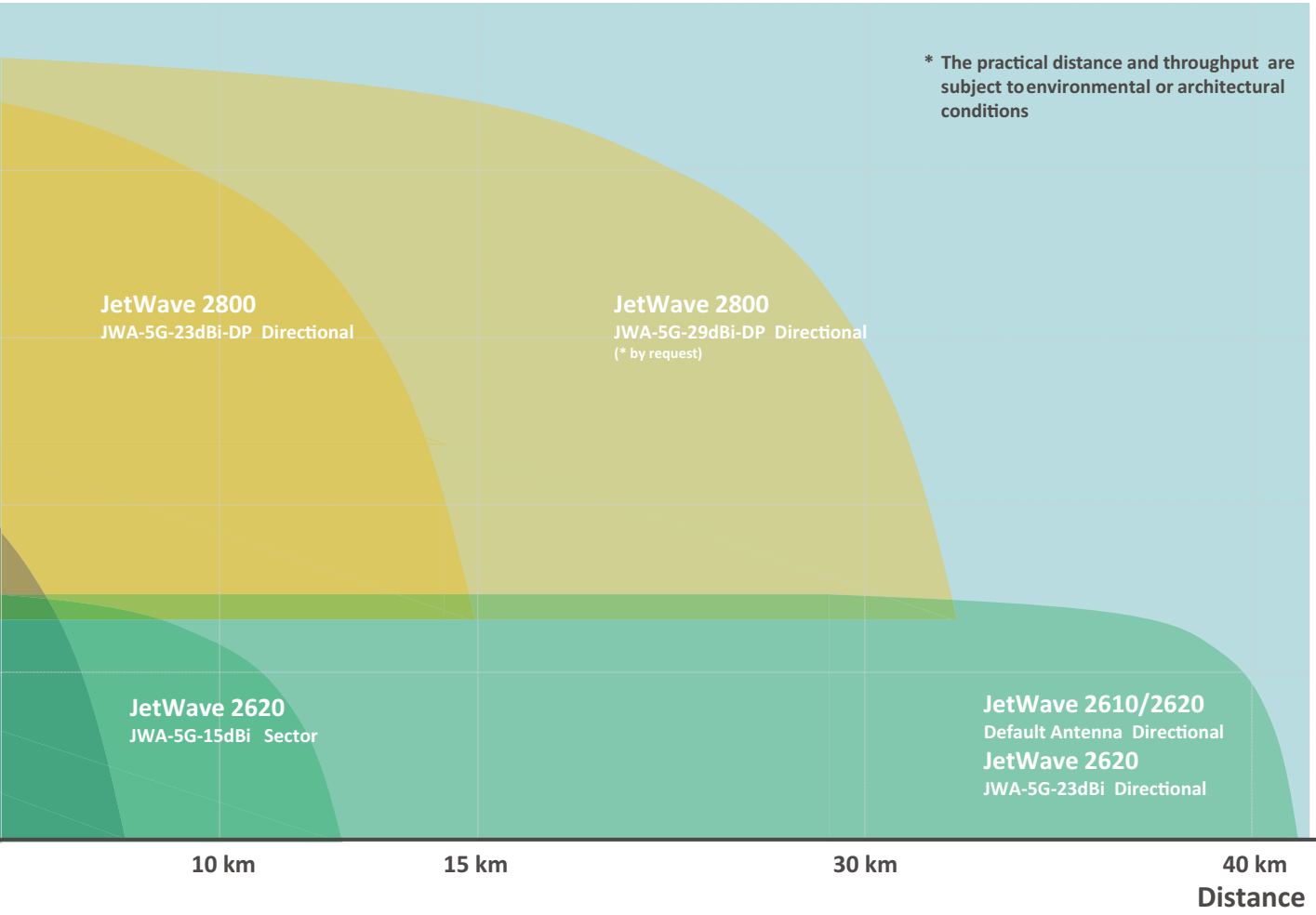
JWA-2.4G-5dBi
2.4G Band, 5dBi
Omni-directional Antenna
N-Type Female Connector
Operating Temperature -30 ~60°C
Dimension 335 x 30 mm
Mounting kit and 1m RF cable included

JWA-2.4G-12dBi
2.4G Band, 12dBi
120° Sector Antenna
N-Type Female Connector
Operating Temperature -20 ~60°C
Dimension 370 x 130 x 65 mm
Mounting kit and 1m RF cable included

JWA-2.4G-15dBi
2.4G Band, 15dBi
Omni-directional Antenna
N-Type Female Connector
Operating Temperature -40 ~80°C
Dimension 1600 x 51 mm
Mounting kit and 1m RF cable included

JWA-2.4G-9dBi
2.4G Band, 9dBi
Omni-directional Antenna
N-Type Female Connector
Operating Temperature -20 ~60°C
Dimension 420 x 35 mm
Mounting kit and 1m RF cable included

JWA-5G-12dBi
5G Band, 12dBi
Omni-direction Antenna
N-Type Female Connector
Operating Temperature -40 ~80°C
Dimension 575 x 20 mm
Mounting kit and 1m RF cable included



JWA-5G-23dBi-DP
5G Band, 23dBi, Dual Polarization
Directional Antenna
N-Type Female Connector
Operating Temperature -40 ~80°C
Dimension 420 x 420 x 38 mm
Mounting kit and 1m RF cable included

JWA-5G-23dBi
5G Band, 23dBi
Directional Antenna
N-Type Female Connector
Operating Temperature -40 ~80°C
Dimension 320 x 320 x 43 mm
Mounting kit, V-shape steel plank,
1m RF cable included

JWA-Arrestor-5803
0-6G Arrestor for N-Type Antenna
DC breakdown voltage 90V±20%
Impulse breakdown voltage < 600V
AC discharge current 5A
Surge discharge current 5KA

JWA-5G-15dBi
5G Band, 15dBi
120° Sector Antenna
N-Type Female Connector
Operating Temperature -20 ~60°C
Dimension 370 x 130 x 65 mm
Mounting kit and 1m RF cable included

JETBOX

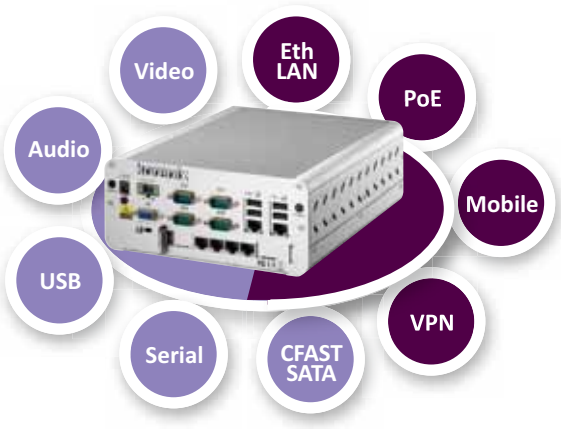
Industrial Multimedia M

Rugged industrial PC with rich interfaces and strong network extension.

Mobile Extension	GPRS/ 3G/Wifi	GPRS/ 3G/Wifi	GPRS/ 3G/Wifi	GPRS/ 3G/Wifi		
PCI Extension	12~24V PoE Switch	Ethernet Switch	PCI slot			
Ethernet	GbE	GbE	GbE	GbE	FE	FE
Video	VGA	VGA	VGA	DVI	VGA	VGA
USB	6	6	6	4	2	2
Serial	RS 232/422/485	RS 232/422/485	RS 232/422/485	RS 232/422/485	RS 232/422/485 CANbus	RS 232/422/485
OS & Programming	Windows Embedded			Windows Embedded, Linux		
	JetBox 8195	**JetBox 8194**	**JetBox 8193**	**JetBox 8180**	**JetBox 8152**	**JetBox 8150**

Multi Media Plus Industrial Networking

Combining Ethernet, serial, VGA/DVI, USB and high definition audio in an industrial rugged design, JetBox 8000 series fits perfectly for industrial applications with multimedia and networking demands.



Meeting the industrial multi-media PC and industrial networking

Ready-to-use Windows Embedded and Linux

By integrating Windows embedded device drivers, protocol stacks, system utilities, supporting services in a CF/CFAST card or a 2.5” SATA HD, JetBox 8000 series lets users experience the computer in a simple way.

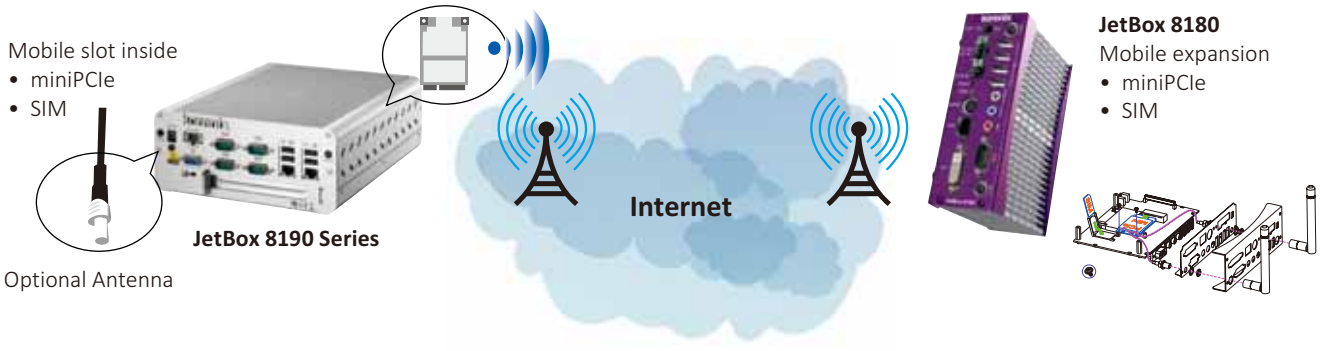
Windows Embedded fedora

*OS is optional accessory for JetBox8000 series.

Networking Computer

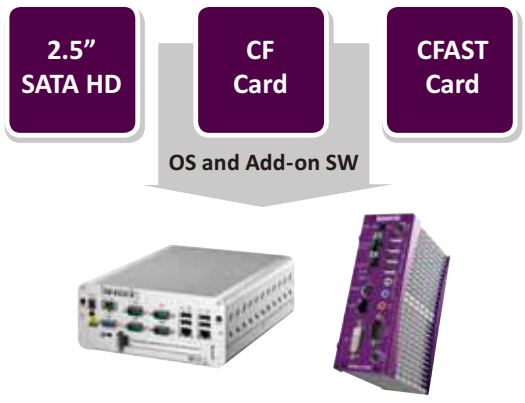
Mobile Extension

With the reserved miniPCIe, SIM and antenna slot for GPS/3G/Wifi extension, JetBox becomes an ideal solution for wireless remote control on moving vehicles.



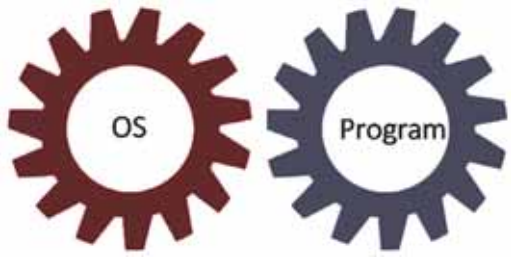
HD, CF/CFAST Multiple Storages

In addition to its small and compact size, JetBox 8000 series supports 2.5" SATA HD, CF card and high speed CFAST card slot for OS storage and add-on SW expansion.



Separate Storages for OS & Program

JetBox 8000 series supports CF/CFAST card slot and 2.5" SATA HD slot, one for installing the operating system and the other for storing program data. If the OS is damaged, the OS recovery can be done separately without losing program data.



Industrial Multimedia Communication Computer

JetBox 8190 Series

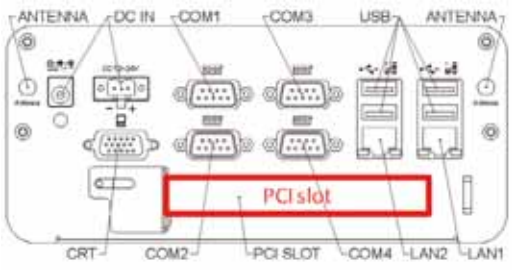
- Intel Atom D525 1.8GHz and DDR3 RAM for high speed computing
- CFAST card and 2.5" SATA dual storage expansion for system development
- Enriched interface: Gigabit Ethernet, serial, USB for flexible applications
- miniPCIe & SIM card slot for mobile network extension
- Ready to use WES2009 operating system suitable for industrial domain
- Rugged, fan-less, industrial design. Anti-vibration & anti-shock

Windows Embedded

JetBox 8195 *Industrial Booster PoE Networking Computer*
JetBox 8194 *Industrial Multi LAN Networking Computer*
JetBox 8193 *Industrial PCI Networking Computer*

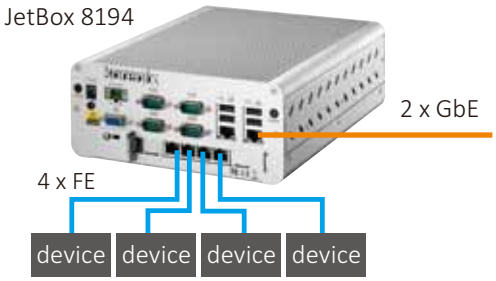
PCI Slot Expansion

In addition to Gigabit Ethernet and plenty of multi-media and control interfaces, JetBox 8193 has a PCI slot for expansion.



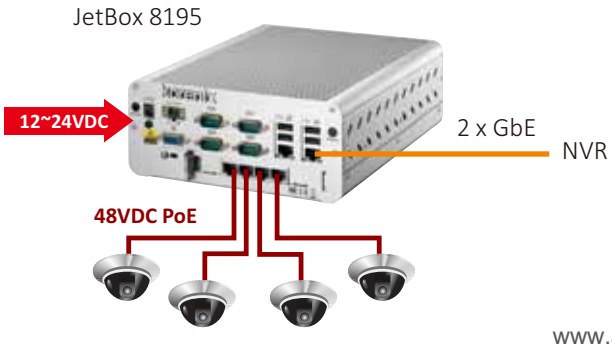
4-port Ethernet Switch

With JetCard 2205 extension, JetBox 8194 becomes a strong network platform with a 4-port fast Ethernet switch linking the front-end devices.



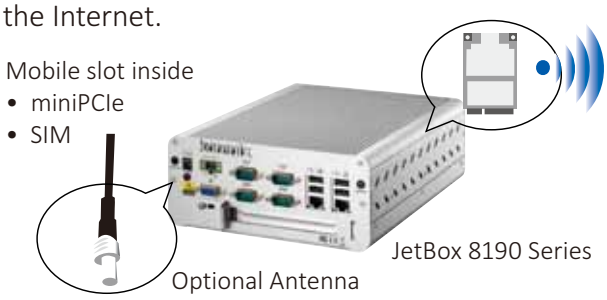
12~24V Booster PoE

With JetCard 2215 extension, JetBox 8195 boosts 12~24V power input to 48V PoE for transit surveillance where only 12/24V input are available.



Mobile NVR

With its miniPCIe & SIM slot extension, powerful CPU performance, gigabit Ethernet, and large storage, JetBox 8190 series is suitable for mobile NVR with remote control through the Internet.





	JetBox 8195	JetBox 8194	JetBox 8193
	GbE, booster PoE, miniPCIe	**GbE, LAN, miniPCIe**	**GbE, PCI, miniPCIe**
Interface			
Ethernet link only	GbE x2	GbE x2	GbE x2
Booster PoE LAN	x4(PCI card extension)		
Ethernet Switch LAN		x4(PCI card extension)	
Extension slot			PCI x1
RS232/422/485	x1(DB9)	x1(DB9)	x1(DB9)
RS232	x3(DB9)	x3(DB9)	x3(DB9)
USB2.0	x6	x6	x6
CF/CFAST card slot	CFAST x1	CFAST x1	CFAST x1
2.5" SATA HD slot	x1	x1	x1
VGA	x1	x1	x1
Audio	Ear-phone, MIC-in, Line-in	Ear-phone, MIC-in, Line-in	Ear-phone, MIC-in, Line-in
miniPCIe &SIM slot	x1	x1	x1
PoE Power Budget*	45~60W(24V, 25°C)		
System			
Processor	Intel Atom D525 1.8GHz, 1MB L2 cache, 82801HBM(ICH8M)	Intel Atom D525 1.8GHz, 1MB L2 cache, 82801HBM(ICH8M)	Intel Atom D525 1.8GHz, 1MB L2 cache, 82801HBM(ICH8M)
System memory	Removable DDR3 2GB 204 Pin-DIMM Max 4GB	Removable DDR3 2GB 204 Pin-DIMM Max 4GB	Removable DDR3 2GB 204 Pin-DIMM Max 4GB
Reset	●	●	●
Watchdog timer	●	●	●
Power on/off button	●	●	●
DC input	12~24V	12~24V	12~24V
Power consumption	100W(incl. PoE)	60W	54W
ME			
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	82 x190 x 240	82 x190 x 240	82 x190 x 240
Mounting	Wall mount	Wall mount	Wall mount
Operating Temperature	-15~60°C	-15~60°C	-15~60°C
MTBF (hrs)	> 30,000	> 30,000	> 30,000
OS			
Windows	WES2009	WES2009	WES2009
SDK	Windows driver	Windows driver	Windows driver
Certificate / DoC			
Regulatory Approval	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE

*With increase in temperature, PoE power supply decreases

JetCard 2205
Industrial Ethernet Switch Card

JetCard 2215
Industrial PoE Switch Card

Industrial Compact Multimedia Communication Computer

JetBox 8180, 8150 Series

- X86 processor and DDR2 RAM for high speed computing
- CF card and 2.5” SATA dual storage expansion for system development
- Enriched interface: Ethernet, serial, USB, CANbus for flexible applications
- Supports VGA/DVI for on-site monitoring
- Ready to use Windows embedded or Linux fedora for industrial applications
- Rugged, fan-less, industrial design. Anti-vibration & anti-shock

JetBox 8180 *Industrial GbE, DVI Communication Computer*
JetBox 8152 *Industrial CANbus Communication Computer*
JetBox 8150 *Industrial Serial Communication Computer*

Compact and Rugged

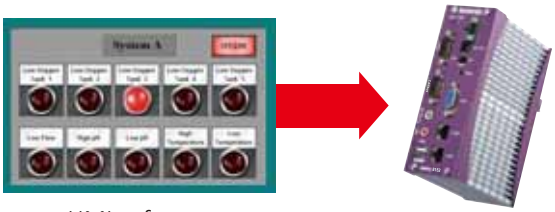
Integrates all the powerful features into a strong, fanless aluminum housing, which meets IP31 protection, high operating temperatures, anti vibration/shock in harsh environments.

Abundant OS Support

Including Linux Fedora, Windows XPe, WES2009, and WES7E embedded system, JetBox 8000 series also supports WinCE which is compact, real-time and suitable for industrial applications such as POS, transportation and automation.

HMI Applications

With the ready-to-use OS support from Korenix, users can easily run their HMI or soft PLC applications for factory automation, process control and so on.



HMI software

CANbus (optional)

JetBox 8152 supports the CANbus control in Windows system. CANbus sample programs and VC6 library are available for user customization.

CANbus control

JetBox 8152

	JetBox 8180	JetBox 8152	JetBox 8150
	GbE, DVI, miniPCIe	LAN, CANbus	LAN, serial
Interface			
Ethernet link only	GbE x1	Ethernet x2	Ethernet x2
RS232/422/485	x1(DB9)	x1(DB9)	x1(DB9)
RS232			x1(DB9)
CANbus		x1(DB9)	
USB2.0	x4	x2	x2
CF/CFAST card slot	CF x1	CF x1	CF x1
2.5" SATA HD slot	x1	x1	x1
PS2	x1		
DVI	x1 dual display(optional)		
VGA(VGA memory)		x1(Max. 128MB)	x1(Max. 128MB)
Audio	Ear-phone, MIC-in, Line-in	Ear-phone, MIC-in or Line-in	Ear-phone, MIC-in or Line-in
miniPCIe &SIM slot	x1		
System			
Processor	Intel Atom N270 1.6GHz, 512KB L2 cache, 945GSE + ICH7M	VIA Eden V4 1GHz, 128KB L2 cache, multimedia processor CX700M	VIA Eden V4 1GHz, 128KB L2 cache, multimedia processor CX700M
System memory	Removable DDR2 1GB 200 Pin SoDIMM Max 2GB	Removable DDR2 1GB 200 Pin SoDIMM Max 1GB	Removable DDR2 1GB 200 Pin SoDIMM Max 1GB
Reset	●	●	●
Watchdog timer	●	●	●
Power on/off switch	●	●	●
DC input	12~24V	12~24V	12~24V
Power consumption	32W	24W	24W
ME			
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	145 x 50 x 102	145 x 50 x 102	145 x 50 x 102
Mounting	DIN rail	DIN rail	DIN rail
Operating Temperature	-10 ~ 50°C	-15 ~ 70°C	-15 ~ 70°C
MTBF (hrs)	> 70,000	> 70,000	> 70,000
OS			
Linux	Fedora 15	Fedora 10	Fedora 10
Windows	XPe, WES2009, WES7E	XPe, WinCE 6.0	XPe, WES2009, WinCE 6.0
SDK	Windows driver	Windows driver, WinCE 6.0 SDK	Windows driver, WinCE 6.0 SDK
Certificate / DoC			
Regulatory Approval	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE

JETBOX

Industrial Networking

Combining Industrial Computing and Advanced Networking to enable secure remote monitoring and control over Internet. No more distance between field site and remote access.

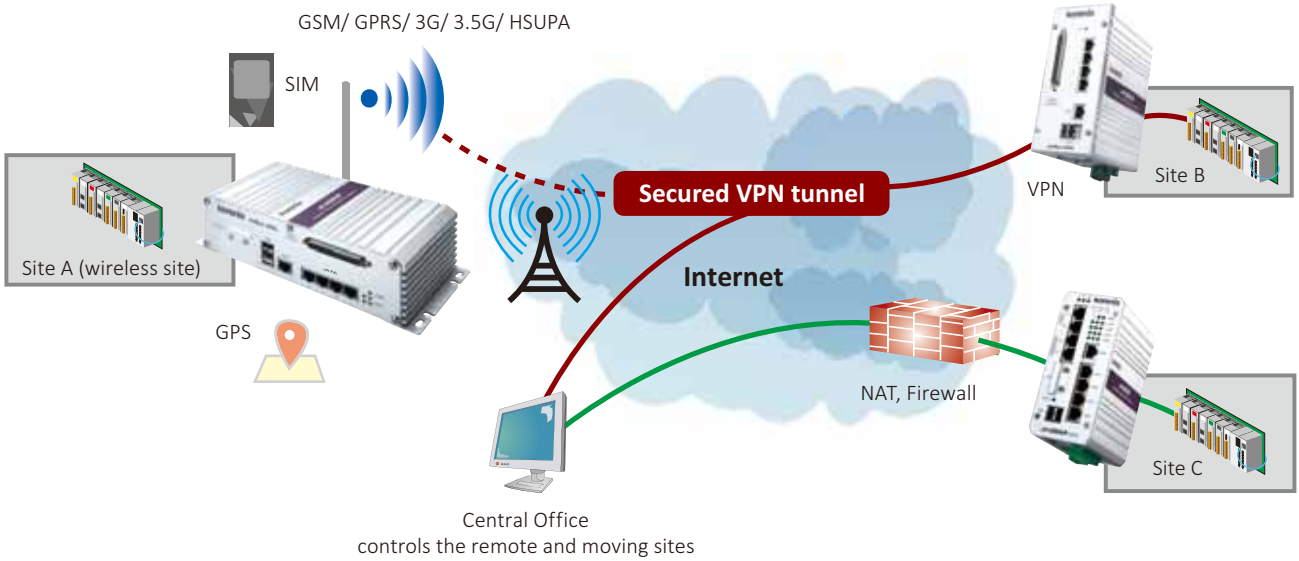
Mobile Extension	Optional GSM/ GPRS/ 3G/ 3.5G/ HSUPA and GPS						
WAN Remote Control	VPN, NAT, Firewall, DMZ, Complete L3 Routing				VPN, NAT, Firewall, DMZ, Complete L3 Routing		
LAN Ethernet Switch	12~24V Booster PoE Switch		Switch		Ring PoE Switch		Ring Switch
Storage	CF and SD				CF and SD		
DIO/USB	USB, DI, DO				USB, DI, DO		
Serial	RS 232/422/485	n/a	RS 232/422/485	n/a	RS 232/422/485	n/a	RS 232/422/485
OS & Programming	Korenix Embedded Linux JetOS, SDK support				Korenix Embedded Linux JetOS, SDK support		
	JetBox 9562	**JetBox 9560**	**JetBox 9462**	**JetBox 9460**	**JetBox 9532**	**JetBox 9530**	**JetBox 9432**

Mobile Extension

With the reserved miniPCIe and SIM slot, the optional antenna and the GPS extension, JetBox becomes an ideal solution for wireless remote control on moving vehicles.

WAN, Remote Control

JetBox integrates the most advanced Layer 3 routing, VPN, NAT and firewall features which make secured remote access through Internet come true.



Computer

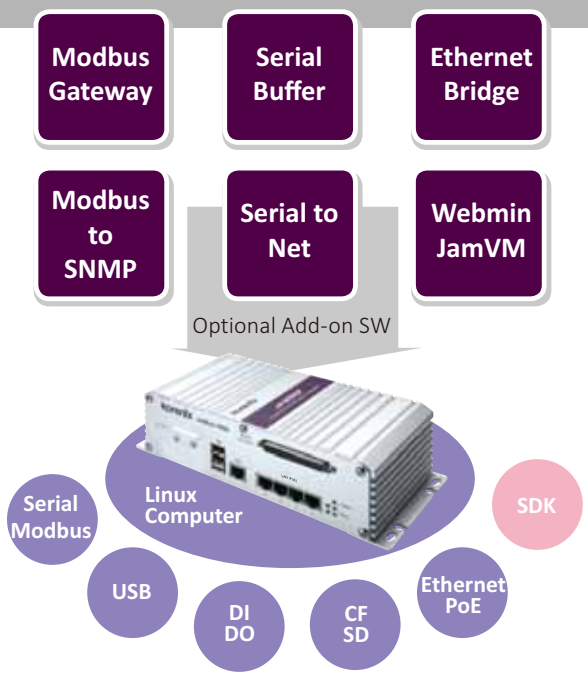
VPN, NAT, Firewall, DMZ, Complete L3 Routing			NAT, Firewall , DMZ, Static Routing				
Ring Switch	Switch		PoE Switch	Switch	Switch	Daisy Chain	
CF and SD	n/a		SD		SD	mSD	
USB,DI,DO	USB		USB, DI, DO		USB, DI, DO	USB	USB, DI, DO
n/a	RS 232/422/485	n/a	RS 232+ 232/422/485			RS 232/422/485(i)	RS 232/422/485
Korenix Embedded Linux JetOS, SDK support			Korenix Embedded Linux JetOS, SDK support			Embedded Linux, SDK support	
JetBox 9430	**JetBox 5432**	**JetBox 5430**	**JetBox 9310**	**JetBox 9300**	**JetBox 5300**	**JetBox 3350i**	**JetBox 3300**

LAN, Field Networking

Upgraded with Ethernet (PoE) switch for field networking. MSR redundant ring is available to secure network reliability.

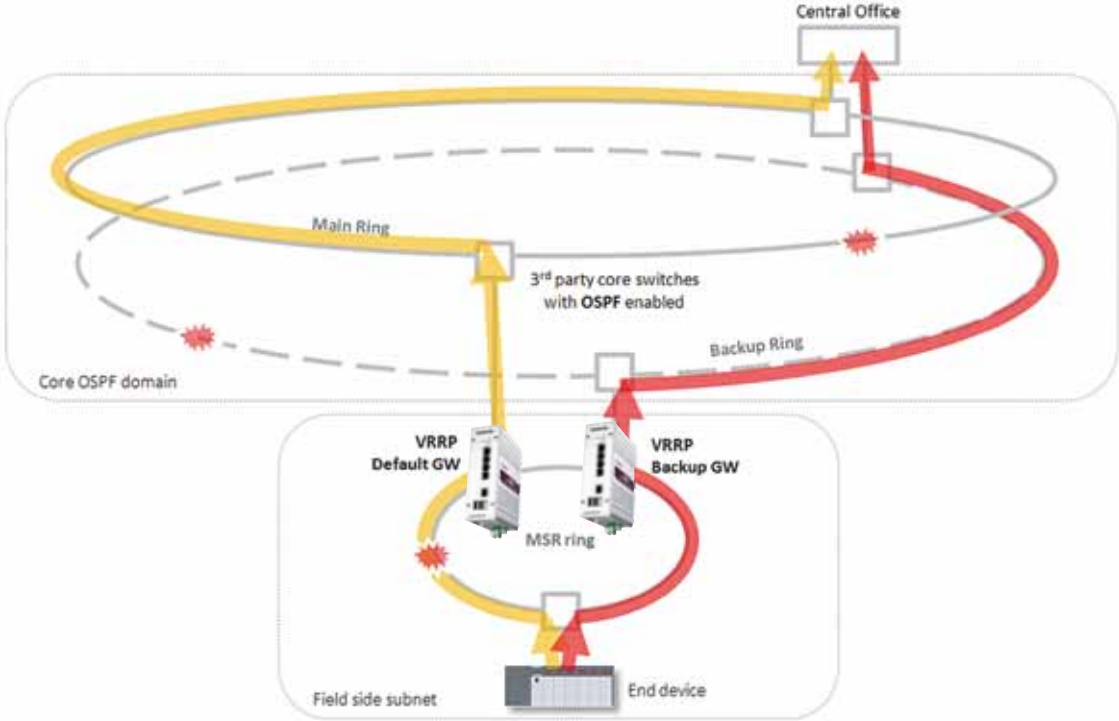
Front-End Control

JetBox are ruggedized industrial computers with comprehensive interfaces that are controlled by an optimized embedded Linux. SW packages and SDK are available for fast customization.



Enable Multi-Redundancy from End Device to Central

JetBox 9500/9400 series are featured with **VRRP** (Virtual Router Redundancy Protocol) and **OSPF** (Open Shortest Path First protocol). While VRRP allows the field devices to have redundant gateways to the remotes, OSPF is powerful for creating fault tolerant networks. By using JetBox to connect the subnets and the core OSPF domain, the network system will automatically find out the shortest path between end devices and the central office, and is able to recover from multiple link failures by VRRP and OSPF. This is critical for large industrial network projects such as railway, oil field, electricity and so on.



JetOS
Korenix Embedded Linux

Based on embedded Linux and optimized for industrial usages including VPN, NAT, Firewall, L3 routing, L2 switching, and front-end device control, JetOS delivers exceptional value for networking and computing.

Developer SDK
Programming Support

Including the cross compiler, libraries, binutils, and sample codes for users to implement their programs rapidly. Together with auto-run function, users can execute the programs when the system is booted.

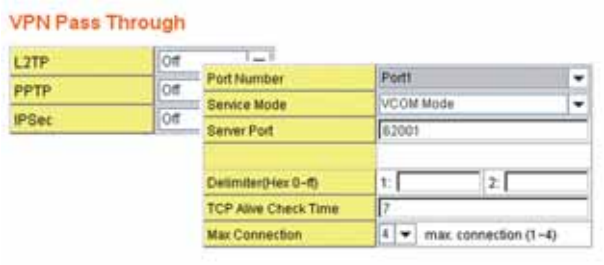
GCC Compiler | **Libraries** | **Binutils** | **Sample Codes**

Webmin

A web-based interface for system administration, such as setting up user accounts, configuration, DNS, file sharing and so on. It eliminates the need to manually edit complex Linux files like /etc/passwd. Korenix Webmin consists of a simple web server and a number of CGI programs which helps you simply manage system files. (For JetBox9500/9400 series)

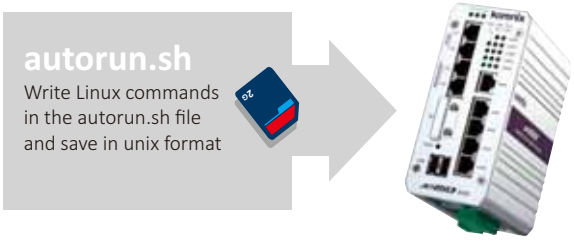
Easy to Use

The powerful and comprehensive features can be simply managed by the user-friendly web interfaces including the WAN port, VPN, NAT, VLAN, PoE, VCOM, DI/DO and so on. (For JetBox 9310/9300 series)



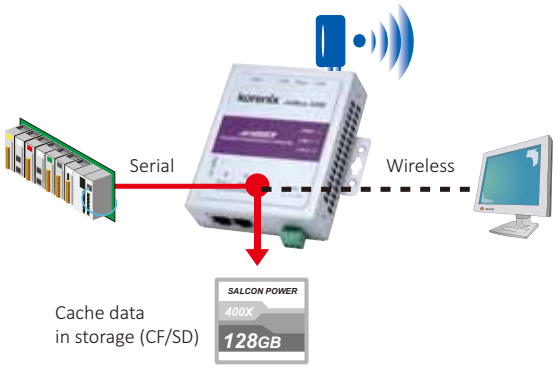
Linux Auto-Run

Auto-run allows the user to run specific configuration or applications on JetBox automatically. The auto-run commands are simply stored onto a SD or CF card.



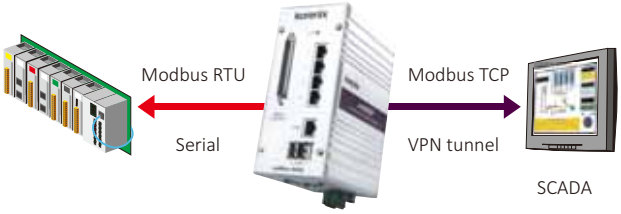
Ser2Net, SerialBuffer

Ser2Net converts data from serial to Ethernet. To prevent data loss in case of link failure, **SerialBuffer** caches the serial data and resends it when the link is recovered.



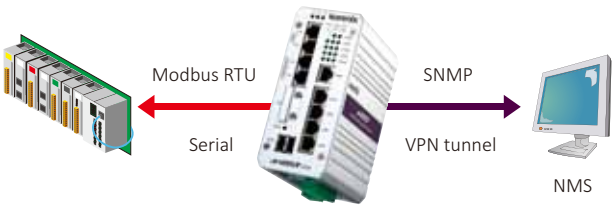
Modbus Gateway

Supports multi TCP to multi COM for Modbus TCP/RTU data converting. Users can configure each port with a different slave ID range to separate each controller.



Modbus2SNMP

JetBox 9300/3300 series supports **Modbus2SNMP** for converting Modbus RTU to SNMP protocol which is most commonly used by the IT staffs.

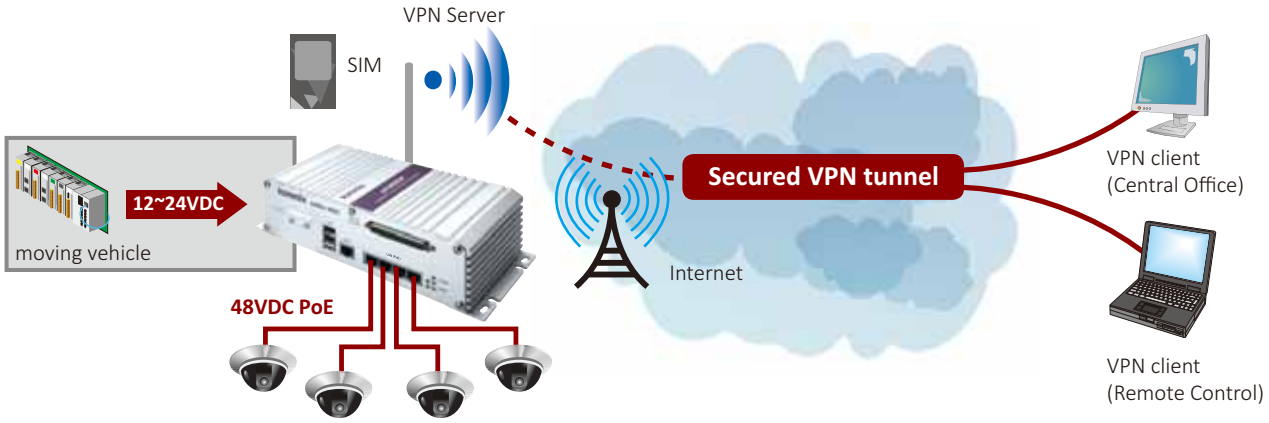


VPN Routing, Booster PoE Switch, Serial, Embedded Linux Computer

JetBox 9562 Series

- miniPCIe & SIM card slot for mobile network and GPS extension
- VPN, IPSec, OpenVPN for secured remote control
- Managed 12~24V Booster PoE switch for vehicle surveillance
- Complete layer 3 routing: OSPF, RIP, DVMRP, VRRP
- IPv6 supported
- Serial device server supports TCP server, TCP client and TCP tunnel modes
- Optional SW module Ser2Net, SerialBuffer, Modbus GW for serial control

JetBox 9562 *VPN Routing, Booster PoE Switch, Serial, Vehicle Computer*
JetBox 9560 *VPN Routing, Booster PoE Switch, Vehicle Computer*
JetBox 9462 *VPN Routing, Ethernet Switch, Serial, Vehicle Computer*
JetBox 9460 *VPN Routing, Ethernet Switch, Vehicle Computer*



Mobile and GPS *(optional)*

A miniPCIe mobile card slot and optional antenna for network communication via GSM/GPRS/3G/3.5G/HSUPA and reporting the position by the GPS extension.

12~24V Booster PoE

By boosting 12~24V power input to 48V standard PoE output, JetBox 9562 series is ideal for where 48V power sources are not available such as traditional 12/24V industrial environments or for transportation monitoring.




	JetBox 9562	JetBox 9560	JetBox 9462-w	JetBox 9460-w
	Booster PoE, serial	Booster PoE	LAN, serial	LAN
Interface				
Ethernet Switch LAN			x4	x4
Booster PoE LAN	x 4	x 4		
WAN	x1	x1	x1	x1
RS232/422/485	x4(DB37)		x4(DB37)	
USB2.0	x3	x3	x3	x3
DIO	DIO x8	DIO x8	DIO x8	DIO x8
CF card slot	x1	x1	x1	x1
SD card slot	x1	x1	x1	x1
miniPCIe &SIM card slot	x1	x1	x1	x1
PoE Power Budget*	45~60W(24V, 25°C)	45~60W(24V, 25°C)		
Feature				
Routing	Layer 3 routing: OSPF, RIP, DVMRP		Layer 3 routing: OSPF, RIP, DVMRP	
VPN	●	●	●	●
NAT, firewall, DMZ	●	●	●	●
IPv6	●	●	●	●
SNMP	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
ser2net	○	○	○	○
Add-on feature (accessory)				
Modbus gateway	○		○	
Webmin & JamVM	○	○	○	○
System				
Processor	Intel IXP435 667MHz		Intel IXP435 667MHz	
System memory	On-board DDR2 128MB		On-board DDR2 128MB	
Flash	32MB		32MB	
Console	3-pin RS232		3-pin RS232	
Reset	●	●	●	●
Watchdog timer	●	●	●	●
DC input	12~24V, Boost to 48V PoE		12~48V	
Power consumption	100W(incl. PoE)		25W	
ME				
Housing Protection (IP)	IP31 Aluminum		IP31 Aluminum	
Dimension (H x W x D mm)	66.5 x 250 x 106.3		66.5 x 250 x 106.3	
Mounting	Wallmount		Wallmount	
Operating Temperature	-25 ~ 70°C		-40 ~ 80°C	
MTBF (hrs)	> 200,000		> 200,000	
OS/SW				
Embedded Linux(Korenix JetOS)	JetOS95 (kernel 2.6.20)		JetOS95 (kernel 2.6.20)	
Programmable	●	●	●	●
SDK(Korenix JetOS)	cross-compile toolchain uClibc 0.9.29		cross-compile toolchain uClibc 0.9.29	
Certificate / DoC				
Regulatory Approval	CE/FCC/RoHS/WEEE		CE/FCC/RoHS/WEEE	
● Supported ○ Optional				

*With increase in temperature, PoE power supply decreases

VPN Routing, PoE Ring Switch, Serial, Embedded Linux Computer

JetBox 9532 Series

- VPN, IPSec, OpenVPN for secure remote control
- MSR Redundant ring member mode, recovery time < 5ms
- Managed PoE switch for video surveillance
- Complete layer 3 routing: OSPF, RIP, DVMRP, VRRP
- IPv6 supported
- Serial device server supports TCP server, TCP client and TCP tunnel modes
- Optional SW module Ser2Net, SerialBuffer, Modbus GW for serial control

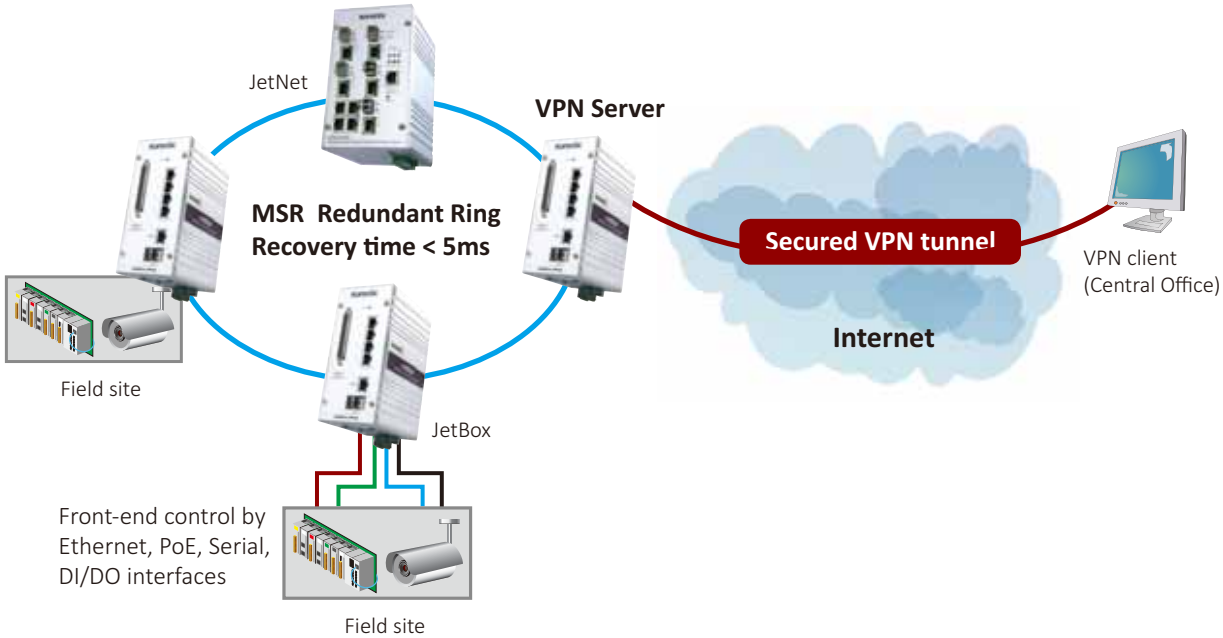
JetBox 9532	*VPN Routing, PoE Ring Switch, Serial, Embedded Computer*
JetBox 9530	*VPN Routing, PoE Ring Switch, Embedded Computer*
JetBox 9432	*VPN Routing, Ring Switch, Serial, Embedded Computer*
JetBox 9430	*VPN Routing, Ring Switch, Embedded Computer*
JetBox 5432	*VPN Routing, Switch, Serial, Embedded Computer*
JetBox 5430	*VPN Routing, Switch, Embedded Computer*

MSR Redundant Ring

Connect a field network through MSR redundant ring to ensure link reliability. A link failure is rapidly recovered within 5ms to minimize data loss. (Optional add-on feature)

VPN Remote Control

Supports OpenVPN, IPSec and L2TP by HW-based AES/DES/3DES encryption for secured remote control through the WAN port.



Industrial Networking Embedded Platform






	JetBox 9532	JetBox 9530	JetBox 9432-w	JetBox 9430-w	JetBox 5432-w	JetBox 5430-w
	PoE, serial, CF/ SD	PoE, CF/SD	LAN, serial, CF/ SD	LAN, CF/SD slot	LAN, serial	LAN
Interface						
Ethernet Switch LAN			x4	x4	x4	x4
PoE LAN	x4	x4				
WAN	x1	x1	x1	x1	x1	x1
RS232/422/485	x4(DB37)		x4(DB37)		x4(DB37)	
USB2.0	x3	x3	x3	x3	x1	x1
DIO	DIO x8	DIO x8	DIO x8	DIO x8		
CF card slot	x1	x1	x1	x1		
SD card slot	x1	x1	x1	x1		
PoE Power Budget*	45~60W(48V, 25°C)					
Feature						
Routing	Layer 3 routing: OSPF, RIP, DVMRP		Layer 3 routing: OSPF, RIP, DVMRP		Layer 3 routing: OSPF, RIP, DVMRP	
VPN	●	●	●	●	●	●
NAT, firewall, DMZ	●	●	●	●	●	●
IPv6	●	●	●	●	●	●
SNMP	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
ser2net	○		○		○	
Add-on feature (accessory)						
MSR Ring	○	○	○	○		
Modbus gateway	○		○			
Webmin & JamVM	○	○	○	○		
System						
Processor	Intel IXP435 667MHz		Intel IXP435 667MHz		Intel IXP435 667MHz	
System memory	On-board DDR2 128MB		On-board DDR2 128MB		On-board DDR2 128MB	
Flash	32MB		32MB		32MB	
Console	3-pin RS232		3-pin RS232		3-pin RS232	
Reset	●	●	●	●	●	●
Watchdog timer	●	●	●	●	●	●
Power on/off switch	●	●	●	●	●	●
DC input	48V		12~48V		12~48V	
Power consumption	90W(incl. PoE)		25W		25W	
ME						
Housing Protection (IP)	IP31 Aluminum		IP31 Aluminum		IP31 Aluminum	
Dimension (H x W x D mm)	160 x 76 x 112	160 x 56 x 112	160 x 76 x 112	160 x 56 x 112	160 x 76 x 112	160 x 56 x 112
Mounting	DIN rail		DIN rail		DIN rail	
Operating Temperature	-25 ~ 70°C		-40 ~ 80°C		-40 ~ 80°C	
MTBF (hrs)	> 200,000		> 200,000		> 200,000	
OS/SW						
Embedded Linux(Korenix JetOS)	JetOS95(kernel 2.6.20)		JetOS95(kernel 2.6.20)		JetOS95(kernel 2.6.20)	
Programmable	●	●	●	●	●	●
SDK(Korenix JetOS)	cross-compile toolchain uClibc 0.9.29		cross-compile toolchain uClibc 0.9.29		cross-compile toolchain uClibc 0.9.29	
Certificate / DoC						
Regulatory Approval	CE/FCC/RoHS/WEEE		CE/FCC RoHS/WEEE	CE/FCC/UL RoHS/WEEE	CE/FCC/RoHS/WEEE	
● Supported ○ Optional						

*With increase in temperature, PoE power supply decreases

NAT Routing, PoE Switch, Serial, Embedded Linux Computer

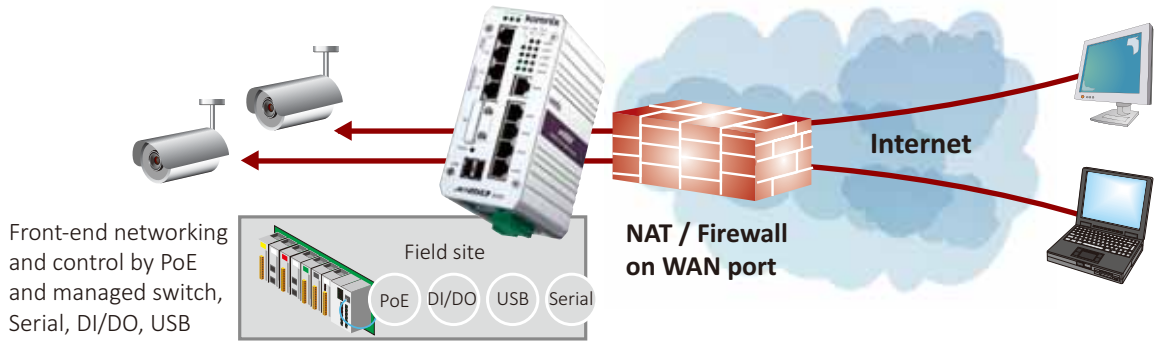
JetBox 9310 Series

- NAT, Firewall, DMZ and static routing
- Managed PoE switch for video surveillance
- Support VCOM, TCP server/client, TCP tunnel, UDP for serial device server
- Easy managed by SNMP
- Add-on software SerialBuffer, Modbus GW, Modbus2SNMP

JetBox 9310 *NAT Routing, PoE Switch, Serial Device Server, Embedded Computer*
JetBox 9300 *NAT Routing, Switch, Serial Device Server, Embedded Computer*
JetBox 5300 *Redundant Ethernet, Serial Embedded Computer*

NAT and Firewall

By enabling NAT (Network Address Translation) and Firewall on the WAN port, JetBox 9300 series opens the field side services to Internet securely. JetBox is a good fit for applications such as environmental monitoring, traffic surveillance, fire surveillance, forest surveillance and so on.



All-in-One Solution

JetBox 9310/9300 combines the advantages of router, PoE and managed switch, serial device server, DI/DO controller and Linux computing into a tiny box. This provides the best solution to various kinds of industrial applications.

Serial Device Server

JetBox 9310/9300 supports device servers such as VCOM, TCP server, TCP client, TCP tunnel and UDP. It also supports Modbus GW and Modbus2SNMP for protocol conversion, which is ideal for managing serial devices via Ethernet.

	 JetBox 9310/9310-w	 JetBox 9300/9300-w	 JetBox 5300-w
	WAN, PoE, serial device server	**WAN, LAN, serial device server**	**LAN, serial2net**
Interface			
Ethernet Switch LAN		x4	x2
PoE LAN	x4		
WAN	x1	x1	
RS232/422/485	x2(RJ45) w/Serial Device Server	x2(RJ45) w/Serial Device Server	x2(RJ45) w/ Serial2Net
RS232	x2(RJ45) w/Serial Device Server	x2(RJ45) w/Serial Device Server	x2(RJ45) w/ Serial2net
USB2.0	x2	x2	x2
DIO	DI x4, DO x4	DI x4, DO x4	DI x4, DO x4
SD card slot	x1	x1	x1
PoE Power Budget*	45~60W(48V, 25°C)		
Feature			
Routing	Static routing	Static routing	
NAT, firewall, DMZ	●	●	
SNMP	v1, v2c, v3	v1, v2c, v3	agent
ser2net			○
Add-on feature (accessory)			
Modbus gateway	○	○	○
Modbus2SNMP	○	○	○
System			
Processor	Atmel 180MHz	Atmel 180MHz	Atmel 180MHz
System memory	On-board SDRAM 64MB	On-board SDRAM 64MB	On-board SDRAM 64MB
Flash	16MB ROM	16MB ROM	16MB ROM
Reset	●	●	●
Watchdog timer	●	●	●
Power on/off switch	●	●	●
DC input	2x48V	2x12~48V	2x12~48V
Power consumption	76.8W(incl. PoE)	7.2W	7.2W
ME			
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	149 x 66 x 120.5	149 x 66 x 120.5	149 x 66 x 120.5
Mounting	DIN rail	DIN rail	DIN rail
Operating Temperature	-25 ~ 70°C(JetBox 9310) -40 ~ 80°C(JetBox 9310-w)	-25 ~ 70°C(JetBox 9300) -40 ~ 80°C(JetBox 9300-w)	-40 ~ 80°C
MTBF (hrs)	> 200,000	> 200,000	> 200,000
OS/SW			
Embedded Linux (Korenix JetOS)	JetOS93 (kernel 2.6.21) w/ Korenix web UI	JetOS93 (kernel 2.6.21) w/ Korenix web UI	JetOS93 lite (kernel 2.6.21)
Programmable	via Linux auto-run function	via Linux auto-run function	●
SDK(Korenix JetOS)	cross-compile toolchain uClibc 0.9.29	cross-compile toolchain uClibc 0.9.29	cross-compile toolchain uClibc 0.9.29
Certificate / DoC			
Regulatory Approval	CE/FCC/UL/RoHS/WEEE	CE/FCC/UL/RoHS/WEEE	CE/FCC/RoHS/WEEE

● Supported ○ Optional

*With increase in temperature, PoE power supply decreases

Compact Embedded Linux Computer

JetBox 3350i, 3300

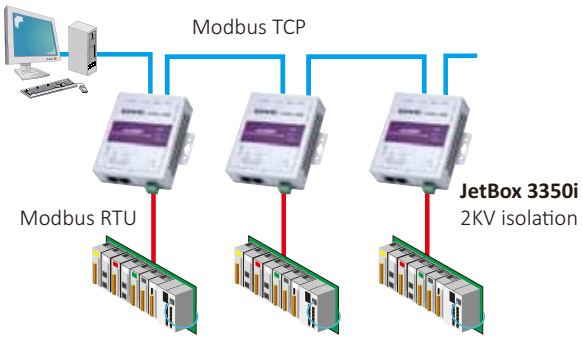
- Compact size and low power consumption
- Ready-to-use Linux for quick time-to-market
- Linux SDK and auto-run for customization & programming
- Optional Serial2Net, SerialBuffer, Modbus GW, Modbus2SNMP for serial control
- Supports JetView for IP management & SW upgrade
- 2KV Serial Isolation for reliable long length transmission (JetBox 3350i)

Compact Low Power Consumption

A RISC-based, compact embedded Linux computer with low power consumption designed to fit in small front-end controller system applications.

Daisy-Chain Network Connection

Enabling daisy chain feature on the 2 LAN ports simply integrates the system and eliminates the need for additional switching hubs.



Linux Programming

In addition to developer SDK including cross compiler, libraries and sample codes, optional SW packages speed up your project implementation.

- Serial to net
- Serial data buffer
- Modbus Gateway
- Modbus2SNMP
- Ethernet bridge (Daisy chain)
- wvdial for 3G connection
- NTP server synchronization

USB Wireless Dongle

Supports USB dongle for wireless networks, such as 3G for mobile communication, Wifi or Bluetooth for short distance wireless transmission.

	JetBox 3350i-w	JetBox 3300-w
	serial isolation	DIO
Interface		
Ethernet link only	x2	x2
RS232/422/485	x2 2kv isolation(RJ45)	x2(RJ45)
USB2.0	x2	x2
DIO		DI x8, DO x8
mSD card slot	x1	x1
Feature		
SNMP	agent	agent
ser2net	●	●
Ethernet bridge	●	●
Add-on feature (accessory)		
Modbus gateway	○	○
Modbus2SNMP	○	○
System		
Processor	Atmel 180MHz	Atmel 180MHz
System memory	On-board SDRAM 64MB	On-board SDRAM 64MB
Flash	16MB ROM	16MB ROM
Reset	●	●
Watchdog timer	●	●
DC input	12~48V	12~48V
Power consumption	7.2W	7.2W
ME		
Housing Protection (IP)	Metal	Metal
Dimension (H x W x D mm)	109 x 88 x 27	109 x 88 x 27
Mounting	Wall mount/DIN rail	Wall mount/DIN rail
Operating Temperature	-40 ~ 80°C	-40 ~ 80°C
MTBF (hrs)	> 200,000	
OS/SW		
Embedded Linux(Korenix JetOS)	JetOS93 lite (kernel 2.6.21)	JetOS93 lite (kernel 2.6.21)
Programmable	●	●
SDK(Korenix JetOS)	cross-compile toolchain uClibc 0.9.29	cross-compile toolchain uClibc 0.9.29
Certificate / DoC		
Regulatory Approval	CE/FCC/RoHS/WEEE	CE/FCC/RoHS/WEEE

● Supported ○ Optional

Industrial Wireless Serial Device Server

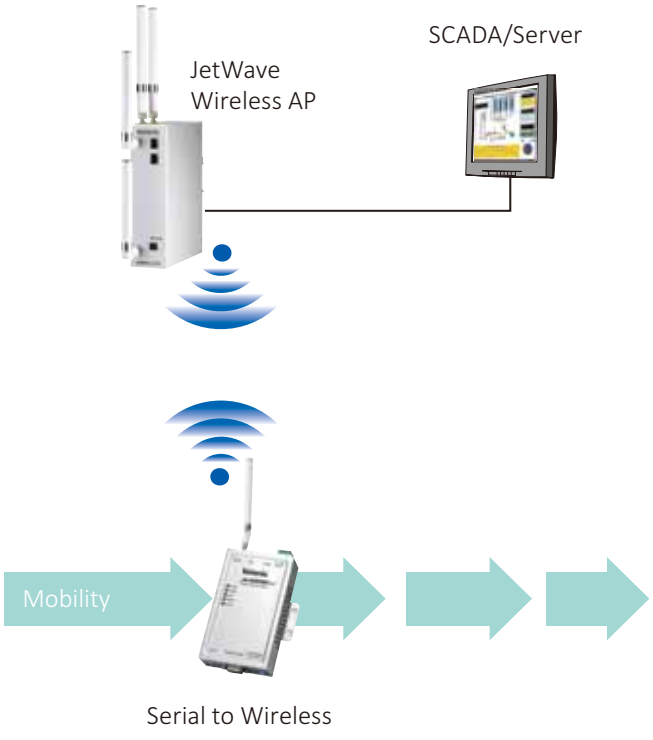
JetPort 5800 Series

- Serial to IEEE 802.11b/g wireless network (up to 54Mbps)
- High-gain, heavy duty fiberglass antenna resists water, dust and UV
- RTTD (Redundant to the Device) redundant Ethernet, recovery time < 200ms
- Support Real COM, Virtual COM, Serial Tunnel, TCP Server, TCP Client, UDP
- JetPort Commander window utility

JetPort 5804i *4-Port RS-422/485 Isolated, Redundant Ethernet, Wireless Device Server*
JetPort 5804 *4-Port RS-232/422/485, Redundant Ethernet, Wireless Device Server*
JetPort 5801 *1-Port RS-232/422/485, Wireless Device Server*

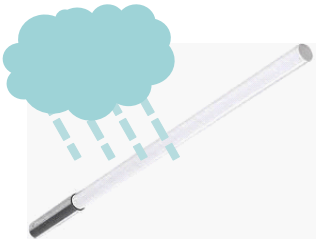
Serial To Wireless

Wireless fits into industrial environments that are hard to wire or where mobility is needed. Examples include moving vehicles, machinery, elevators in warehouses, harbors, manufacturing, retail, healthcare and so on.



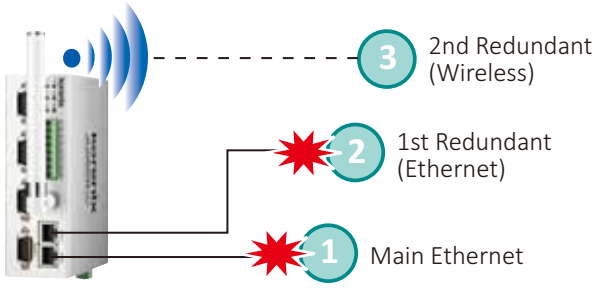
Fiberglass Antenna

Fiberglass is a durable and robust material that is resistant to water, dust, and UV. Its antenna gain is better than a rubber antenna as well. This is ideally more suitable for heavy industrial applications.



Double Redundant Links

The wireless interface acts as a backup to the redundant Ethernet interfaces. It activates if both physical links are disconnected.

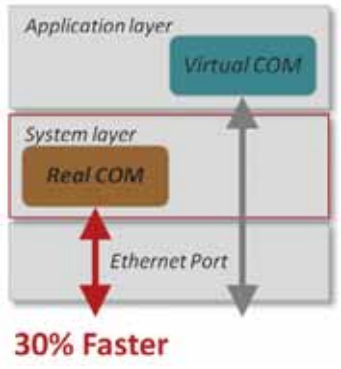


Signal Quality

JetPort Commander is a user-friendly Windows utility to configure and manage multiple JetPort devices at the same time. The wireless signal quality can be easily monitored on your screen.

Real COM

Embedded into Windows OS driver level, Real COM provides shorter latency, and brings the device driver to auto restart after a system boot which enhances the performance and efficiency.





	JetPort 5804i	JetPort 5804	JetPort 5801
	Wireless Isolation Redundant Device Server	Wireless Redundant Device Server	Wireless Device Server
Interface			
10/100TX Ports	2 RTTD Redundant	2 RTTD Redundant	1
802.11b/g WLAN	1	1	1
Max Distance	120m	120m	120m
Serial Ports	4 x RS422/485	4 x RS232/422/485	1 x RS232/422/485
Serial Line Protection	2KV Isolation 15KV ESD	15KV ESD	15KV ESD
Serial Speed	110 bps to 460.8K bps	110 bps to 460.8K bps	110 bps to 230.4K bps
Digital Input	4	4	
Digital Output	2	2	
Serial Interface	Terminal Block	male DB9	male DB9
Power Input	12-48 VDC Terminal Block		
HiPot	1200VAC	1200VAC	1200VAC
SW			
Utility	JetPort Commander		
Windows Driver	Windows 7(32/64 bit)/2000/XP/2003/Vista		
Serial Mode	Real COM, Virtual COM, TCP server, TCP client, UCP, Serial Tunnel		
Configuration: CLI/Web/ SNMP v1/v2c	•	•	•
Security: HTTPS/SSH	•	•	•
Warning Event: Syslog, SMTP, SNMP trap	•	•	•
HW/ME			
Housing Protection (IP)	IP 31 Aluminum	IP 31 Aluminum	IP 30 Aluminum
Dimension (H x W x D mm)	145 x 46.5 x 120	145 x 46.5 x 120	96.1 x 29.6 x 124
Mounting	Din Rail/Wall Mount		
Operating Temperature	-10~55°C	-10~55°C	-10~55°C
MTBF (hrs)	> 371,000	> 385,000	> 471,000
Certificate / DoC			
Regulatory Approval	CE / FCC / RoHS / WEEE		

Industrial Serial Device Server

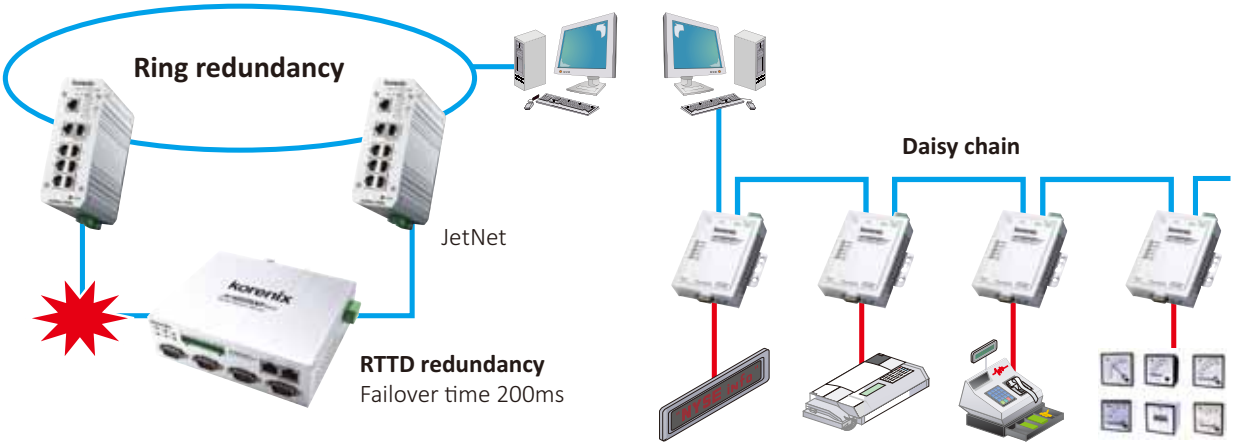
JetPort 5600, 5200 Series

- Serial to Fast Ethernet
- RTTD (Redundant to the Device) redundant Ethernet failure recovery < 200ms
- Support Real COM, Virtual COM, Serial Tunnel, TCP Server, TCP Client, UDP
- JetPort Commander Windows utility

JetPort 5604i *4-Port Isolated RS-422/485, Redundant Ethernet*
JetPort 5604 *4-Port RS-232/422/485, Redundant Ethernet*
JetPort 5601 *1-Port RS-232/422/485, Redundant Ethernet*
JetPort 5201 *1-Port RS-232*

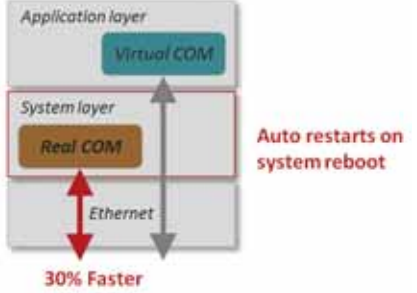
RTTD Redundant Ethernet or Daisy Chain

The dual Ethernet ports of JetPort 5600 series supports RTTD (Redundant to the Device) or daisy chain connections. With RTTD, link failure is recovered within 200 ms while daisy chain offers users an excellent and convenient installation.



Real COM

Embedded into Windows OS driver level, Real COM provides shorter latency than Virtual COM, and brings the device driver to restart automatically after system boots which enhances the performance and efficiency.






	JetPort 5604i	JetPort 5604	JetPort 5601	JetPort 5201
	Isolated Redundant Serial Server	**Redundant Serial Server**	**Redundant Serial Server**	**Serial Server**
Interface				
10/100TX Ports	2 RTTD Redundant Daisy chain	2 RTTD Redundant Daisy chain	2 RTTD Redundant Daisy chain	1
Serial Ports	4 x RS422/485	4 x RS232/422/485	1 x RS232/422/485	1 x RS232
Serial Line Protection	2KV Isolation 15KV ESD	15KV ESD	15KV ESD	15KV ESD
Serial Speed	110 bps to 460.8K bps	110 bps to 460.8K bps	110 bps to 921.6K bps	110 bps to 460.8K bps
Digital Input	4	4		
Digital Output	2	2		
Serial Interface	Terminal Block	male DB9	male DB9	male DB9
Power Input	12-48 VDC (Terminal Block) 12-48 VDC (DC Jack)		12-48 VDC (Terminal Block) 9-30 VDC (DC Jack)	9-30 VDC (DC Jack)
HiPot	1200VAC	1200VAC	1200VAC	1200VAC
SW				
Utility	JetPort Commander			
Windows Driver	Windows 7 (32/64 bit)/2000/XP/2003/Vista			
Serial Mode	Real COM, Virtual COM, TCP server, TCP client, UCP, Serial Tunnel			
Configuration: CLI/Web/ SNMP v1/v2c	•	•	•	•
Security: HTTPS/SSH	•	•	•	
Warning Event: Syslog, SMTP, SNMP trap	•	•	•	•
HW/ME				
Housing Protection (IP)	IP 31 Aluminum	IP 31 Aluminum	IP 30 Aluminum	IP 30 Aluminum
Dimension (H x W x D mm)	145 x 46.5 x 120	145 x 46.5 x 120	96.1x 29.6 x 99	78.5 x 29.2 x 79.6
Mounting	Din Rail/Wall Mount	Din Rail/Wall Mount	Din Rail/Wall Mount	Din Rail/Wall Mount
Operating Temperature	-10~70°C	-10~70°C	-10~70°C	0~60°C
MTBF (hrs)	> 371,000	> 358,000	> 620,000	> 848,000
Certificate / DoC				
Regulatory Approval	CE / FCC / RoHS / WEEE		CE / FCC / UL / RoHS / WEEE	

Industrial Gigabit Ethernet to Fiber Media Converter

JetCon 3401G

- SFP slot for flexible fiber installation
- Store and Forward Mode: check packet correctness and filter error packets
- Excellent EMS Immunity, up to 2~3 times heavy industrial levels
- Semi-auto Link Loss Forwarding, port and power loss alarm

Industrial Ethernet to Fiber Media Converter

JetCon 2301

- Store and Forward Mode : check packet correctness and filter error packets
- Pure Converter Mode: Extremely low forwarding latency: 1.6 x 10^{-6} Sec
- Link Loss Forwarding, port and power loss alarm
- EN50121-4 compliance for railway application

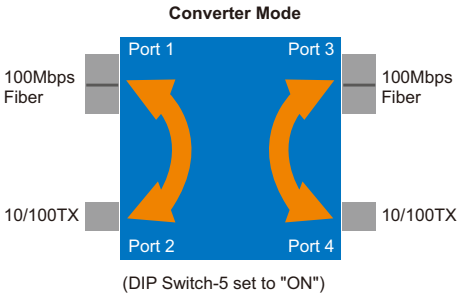
Industrial 2-Channel Ethernet to Fiber Media Converter, Industrial 4-port Unmanaged Ethernet Switch

JetCon 2302

- Converter Mode: 2-channel Fast Ethernet Media Converter
- Switch Mode: 4-port Fast Ethernet Switch
- Port and power loss alarm
- EN50121-4 Railway application EMC rated

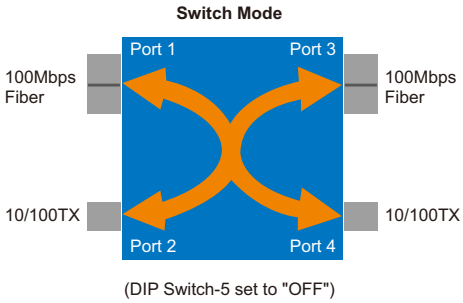
JetCon 2302 is configurable by a DIP switch into either Converter Mode or Switch Mode. In both modes, packets are forwarded by store-and-forward, which means all packets going through will be checked and dropped if a CRC error has occurred.

Converter Mode works as a 2-channel media converter with independent traffic paths, channel-A and B.



(DIP Switch-5 set to "ON")

Switch Mode works as a plug-&-play switch with 2 10/100TX RJ-45 ports and 2 100Mbps fiber ports.



(DIP Switch-5 set to "OFF")

Industrial Slim Ethernet to Fiber Media Converter

JetCon 1301

EtherCAT® ETHERNET POWERLINK

- Store and Forward Mode : check packet correctness and filter error packets
- Pure Converter Mode: Extremely low forwarding latency: 1.6 x 10^{-6} Sec
- Link Loss Forwarding
- AC 1.5KV HiPot isolation

Industrial 2 Ethernet to Fiber Media Converter

JetCon 1302

- Fault relay alarm for link loss
- AC 1.5KV HiPot isolation

JetCon 1301 JetCon 1302

JetCon 3401G

Gigabit Media Converter

JetCon 2301

Fast Ethernet Media Converter

JetCon 2302

Media Converter Ethernet Switch

JetCon 1301

Fast Ethernet Media Converter

JetCon 1302

Fast Ethernet Media Converter

Interface					
10/100/1000TX Ports	1				
10/100TX Ports		1	2	1	2
Fiber Ports	Gigabit SFP	1x100FX/SC 2km (2301-m) 30km (2301-s)	2x100FX/SC 2km (2302-m) 30km (2302-s)	1x100FX/SC 2km (1301-m) 30km (1301-s)	2x100FX/SC 2km (1302-m) 30km (1302-s)
Power Input	2 x DC12~48V	2 x DC 10~60V	2 x DC 10~60V	DC18~32V/AC18~27V	
Fault Relay Output	•	•	•		•
HI-Pot	AC1.5KV	AC1.5KV	AC1.5KV	AC1.5KV	AC1.5KV
Mechanical					
Housing Protection (IP)	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum	IP31 Aluminum
Dimension (H x W x D mm)	55 x 120 x 108	55 x 120 x 99	55 x 120 x 99	30 x 70 x 89	30 x 111.8 x 98.2
Operating Temperature	-25~70°C	-25~75°C -40~75°C (-w)	-25~75°C	-10~70°C -40~80°C (-w)	-10~70°C -40~70°C (-w)
MTBF (hrs)	> 313,000	>1,324,000	> 813,000	> 506,000	> 632,000
Protocols					
Link Loss Forwarding	•	•		•	
Store & Forward	•	•	2 channels	•	•
Pure Converter Mode		•		•	
Quality of Service	•				
Certification / DoC					
Regulatory Approval	CE/FCC/RoHS/WEEE				
Vertical Market	Heavy Industrial	Heavy Industrial EN50121-4 compliance	Heavy Industrial EN50121-4 EMC rated		

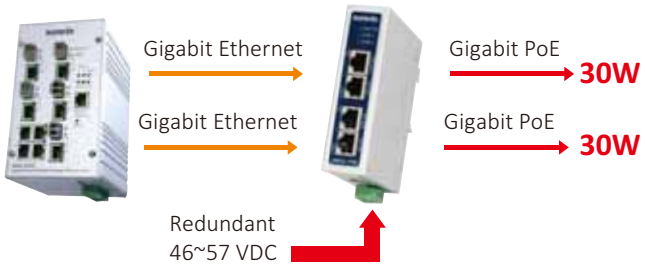
Industrial 2-Channel Gigabit High Power PoE Injector

JetCon 1702-A, 1702-B

- 2-channel Gigabit Ethernet to Gigabit PoE
- IEEE 802.3af and 802.3at compliant
- High power up to 30W per port
- Plug and play without setting
- PoE over-temp, over-current, cable-short protection
- Power port with surge, transient protection

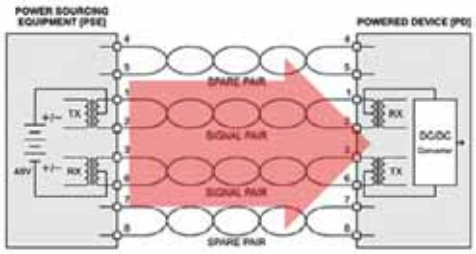
2-Channel PoE Injector

Passing power and data to the field devices through two independent gigabit Ethernet-to-PoE channels with redundant power protection.



PoE on 4-Wire Cables

JetCon 1702-A uses the data pairs of the Ethernet cable for power delivery and is ideal for 4-wire cables.



	JetCon 1702-A	JetCon 1702-B
	Giga PoE Injector, Alternative A	Giga PoE Injector, Alternative B
Interface		
10/100/1000TX Ports	2	2
10/100/1000TX PoE Ports	2	2
PoE Powering Pins	Data pairs (1,2,3,6)	Spare pairs (4,5,7,8)
PoE Modes	IEEE 802.3af/ at 2-Event	IEEE 802.3af/ at 2-Event
PoE Power per Port	15W/30W	15W/30W
Power Input	2 x DC 46 ~57V	2 x DC 46~57V
PoE Over Current Protection	•	•
PoE Over Temperature Protection	•	•
PoE Cable Short Protection	•	•
Surge Protection	•	•
Transient Protection	•	•
Mechanical		
Housing Protection (IP)	IP30 Steel Metal	IP30 Steel Metal
Dimension (H x W x D mm)	110.8 x 30.0 x89.5	110.8 x 30.0 x 89.5
Operating Temperature	-40~75°C	-40~75°C
MTBF (hrs)	> 498,000	> 498,000
Certification / DoC		
Regulatory Approval	CE/FCC/RoHS /WEEE	CE/FCC/RoHS/WEEE

Industrial USB to RS-232 Converter

JetCon 1100 Series

- USB 1.1/1.2/2.0, 12/480 Mbps high speed data throughput
- RS-232, 921.6Kbps High Speed with Flow Control
- Support USB/RS232 DCE connection
- 15KV ESD Human Body Mode Protection
- 5KV isolation for Medical Electrical Equipment (1101i-5KV)

Industrial USB to RS-422/485 Converter

JetCon 1201, 1201i-3KV

- USB 1.1/1.2/2.0, 12Mbps high speed data throughput
- RS-422/485, 921.6Kbps High Speed, up to 32 x RS-485 devices connection
- Build-in 120ohm Line Terminator, Biasing Resistor
- Terminal Block connection, DIP-Switch Configuration
- 15KV ESD Human Body Mode Protection
- 3KV isolation, 600W Serial Port surge protection (JetCon 1201i-3KV)

	 JetCon 1101	 JetCon 1101i-5KV	 JetCon 1102	 JetCon 1104	 JetCon 1201	 JetCon 1201i-3KV
Interface						
USB 1.1/1.2/2.0	1	1	1	1	1	1
Serial Port	1 x RS-232	1 x RS-232	2 x RS-232	4 x RS-232	1 x RS-422/485	1 x RS-422/485
Isolation		5KV				3KV
DTE-DCE Handshaking	•	•	•	•		
Serial Rate	921.6Kbps	921.6Kbps	921.6Kbps	921.6Kbps	921.6Kbps	921.6Kbps
USB Rate	12Mbps	12Mbps	480Mbps	480Mbps	12Mbps	12Mbps
15KV ESD	Yes	Yes	Yes	Yes	Yes	Yes
Mechanical						
Housing Protection (IP)	IP30 Plastic	IP30 Plastic	IP30 Plastic	IP30 Plastic	IP30 Plastic	IP30 Plastic
Dimension (H x W x D mm)	93.9 x 42 x 22	93.9 x 42 x 22	89 x 58.3 x 22	89 x 62.6 x 22	101.9 x 42.0 x 22	101.9 x 42.0 x 22
Operating Temperature	-30~75°C	-30~75°C	-30~75°C	-30~75°C	-30~75°C	-30~75°C
MTBF (hrs)	> 323,000	> 286,000	> 284,000	> 273,000	> 295,000	> 264,000
Operating System						
Windows XP, 2003, Vista, 2008, Win 7	•	•	•	•	•	•
Linux System 2.4, 2.6	•	•	•	•	•	•
Macintosh OS 8,9	•	•	•	•	•	•
Certification / DoC						
Regulatory Approval	CE/FCC/RoHS /WEEE		CE/FCC/RoHS /WEEE		CE/FCC/RoHS /WEEE	

Industrial Ethernet over VDSL Extender

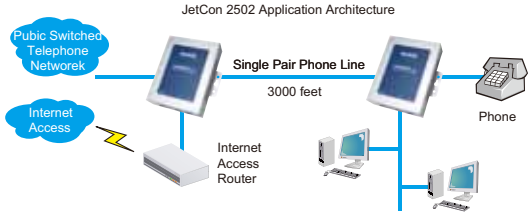
JetCon 2502

- Extends Ethernet distance over twisted pair cable to more than 1KM
- ITU-T G.993.2 VDSL2 standard, supports Master (CO) and Slave (CPE)
- Built-in POTS/ISDN Splitter
- Heavy Industrial level EMC

JetCon 2502 is an Ethernet/POTS to VDSL2 extender delivering Ethernet up to 100Mbps in both upstream and downstream over existing twisted copper which eliminates the need for new optic fiber installation.

JetCon 2502 fits for **Intelligent Traffic systems (ITS)** and carries traffic control signals over the underground twisted pair cables across the road intersections.

JetCon 2502 also applies to **Railway Applications** such as Fire Alarm Systems (FAS) and Passenger Information Systems (PIS) with VDSL2 technology to communicate between field devices and Control Room.



JetCon 2502

	Ethernet over VDSL Extender
Interface	
10/100TX	1
VDSL 2 (RJ11)	1
ISDN / POTS (RJ11)	1
Power Terminal	DC12~48V
Power Jack	DC12~48V
1500VAC HIPOT	●
Mechanical	
Housing Protection (IP)	IP 30 Aluminum
Dimension (H x W x D mm)	88 x 29 x 114
Operating Temperatue	-40~70°C
Mounting	DIN-Rail/Wall mount
MTBF (hrs)	> 897,000
Protocols	
Store & Forward	●
Quality of Service	●
Broadcast storm filtering	●
Certification / DoC	
Regulatory Approvals	CE / FCC / RoHS / WEEE

JetCon 2502, Fast mode, without noise, SNR 6dB 26AWG Twisted pair cable

Cable Length		Line Rate (Kb)		Data Rate (Kb)	
Feet	Meter	US	DS	US	DS
0	0	99,104	90,144	89,088	81,024
1,000	303	72,736	77,760	65,344	69,888
2,000	606	31,904	41,728	28,608	37,440
3,000	909	14,784	24,576	13,184	22,016
4,000	1,212	6,016	18,240	5,312	16,320
5,000	1,515	1,120	17,696	896	15,808
6,000	1,818	896	11,584	704	10,304
7,000	2,121	768	6,528	576	5,760
8,000	2,424	608	4,544	448	3,968

US: Up Stream DS:Down Stream

Industrial RS-232/422/485 Converter

JetCon 2201-w, 2201i-w

- RS-232 to RS-422/485 converter, High speed up to 921.6 Kbps
- RS-422/485 3000VDC isolation protection (JetCon 2201i-w)
- Auto baud rate and direction control
- Supports RX bias and terminal resistor
- Easy configuration by a DIP switch without resetting power

Industrial Serial to Fiber Converter

JetCon 2401

- 3-in-1 RS232/422/485 to serial fiber media converter
- PTP or SFR transmission mode for serial fiber ring communication
- Auto baud rate and direction control
- High level immunity with 15KV ESD protection
- Supports biasing resistor and two-way 120 ohm line terminator

	 JetCon 2201-w	 JetCon 2201i-w	 JetCon 2401
	RS 232 to RS 422/485 converter	**RS 232 to RS 422/485 converter**	**RS232/422/485 to Fiber converter**
Interface			
Serial Fiber			1 5km (2401-m) 40km (2401-s)
Serial Ports	1 x RS422/485, 1 x RS232	1 x RS232, 1 x RS422/485 3KV Isolation in between	1 x RS232/422/485
Power Terminal	DC12~48V	DC12~48V	DC12~48V, AC12~32V
Mechanical			
Housing Protection (IP)	IP 30 Aluminum	IP 30 Aluminum	IP 30 Aluminum
Dimension (H x W x D mm)	74 x24.7 x99	74 x24.7 x99	74 x24.7 x99
Operating Temperature	-40~70°C	-40~70°C	-20~70°C (JetCon 2401) -40~70°C (JetCon 2401-w)
Mounting	DIN-Rail/Wall mount	DIN-Rail/Wall mount	DIN-Rail/Wall mount
MTBF (hrs)	> 587,000	> 536,000	> 450,000
Certification / DoC			
Regulatory Approvals	CE / FCC/ RoHS / WEEE	CE / FCC/ RoHS / WEEE	CE / FCC/ RoHS / WEEE

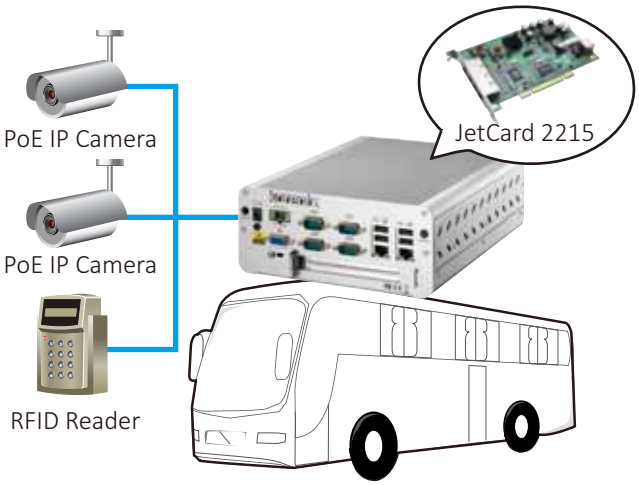
5 LAN (4 PoE 12~24V Booster) Ethernet Switch Universal PCI Card

JetCard 2215, 2205

JetCard 2215

JetCard 2205

- 5-port unmanaged Ethernet switch with flow control
- IP address configurable network interface card
- 4 port 802.3af PoE, 15.4W per port, 60W in total (JetCard 2215)
- 12~24VDC power input (JetCard 2215)



Design for Vehicle

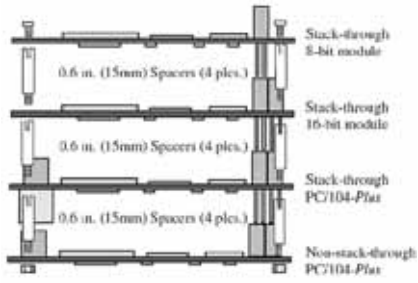
Transit Surveillance: The JetCard 2215, a high performance PoE switch card, is designed for the embedded computer systems used in transit surveillance applications.

12~24V DC Power Booster for 48V PoE: JetCard 2215 accepts 12~24VDC power system on vehicle and boost the power to drive 48VDC 802.3af PoE devices.

Linux-Ready Intel IXP435 400MHz 3.5" PCI-104 Single Board Computer

JetCard 5400-w

- Intel IXP435 400MHz with Networking Processor
- 128MB DDR2 RAM, 32MB system flash
- Router/ Ethernet switch function, 5 Ethernet ports: 1 WAN, 4 LAN
- Stackable PCI-104 interface, up to 4 cards
- 1 USB, 1 console port, 1 reset button
- Embedded Linux ready, Linux SDK provided



Extensible Networking SBC

The JetCard 5400-w is a single board computer with advanced layer3 routing features. The stackable PCI-104 interface can extend up to 4 cards performing various functions such as serial, gigabit Ethernet, VGA, or CANbus and so on.

4-Port Gigabit Ethernet Switch PCI-104 Card

JetCard 2154G

- 4-port Gigabit Ethernet Switch with jumbo frame, QoS and flow control
- IP address configurable network interface card

5-port Fast Ethernet Switch PCI-104 Card

JetCard 2105

- 5-port unmanaged Ethernet switch with QoS and flow control
- IP address configurable network interface card

	 JetCard 5400-w	 JetCard 2154G	 JetCard 2105	 JetCard 2215	 JetCard 2205
	3.5" SBC w/ PCI-104 bus	PCI-104 Switch Card	PCI-104 Switch Card	UPCI Switch Card	UPCI Switch Card
Function	**Linux-Ready Single Board Computer**	**Gigabit EthernetSwitch Card**	**Ethernet Switch Card**	**PoE Ethernet Switch Card**	**Ethernet Switch Card**
10/100/1000TX		4			
10/100TX	1 WAN, 4 LAN		5	5	5
Booster PoE ports				4	
USB	1				
Console	1				
Reset Bottom	1				
Max. stacked boards	4	4	4	4	4
Bus interface	32-bit PCI-104	32-bit PCI-104	32-bit PCI-104	32-bit UPCI	32-bit UPCI
Power Input	DC 12~48V terminal block(Power consumption Max 25W)	PCI-104 bus	PCI-104 bus	DC 12~24V external-power input(ATX 4Pin Connector)	UPCI bus
Board connector	RJ45 x5 external	RJ45 x4 external	RJ45 x4 external RJ45 x1 internal	RJ45 x4 external RJ45 x1 internal	RJ45 x4 external RJ45&JST x1 internal
Cable connection		RJ45	RJ45	RJ45	RJ45
Communication Controller	CPU: Intel IXP435 400MHz RISC 128MB DDR2 RAM	Marvell 88E8001 Marvell 88E6161	Realtek 8139C+ Marvell 88E6065	Realtek 8139C+ Marvell 88E6065	Realtek 8139C+ Marvell 88E6065
Performance	L3 routing VPN, IPv6 Managed switch	10/100/1000Mbps with auto-MDI/MDI-X, Ethernet Statistics monitor	10/100Mbps with auto-MDI/MDI-X, Ethernet Statistics monitor	10/100Mbps with auto-MDI/MDI-X, Ethernet Statistics monitor	10/100Mbps with auto-MDI/MDI-X, Ethernet Statistics monitor
Operating Temp.	-40~80°C	0~50°C	0~60°C	-25~70°C	-25~70°C
Operating System					
Windows		7/Vista/NT/2000/2003/XP		7/Vista/NT/2000/2003/XP	
Linux Kernel	Embedded Linux 2.6.20	2.4.x/2.6.x	2.4.x/2.6.x	2.4.x/2.6.x	2.4.x/2.6.x

Industrial I/O Server

JetI/O 6500 Series

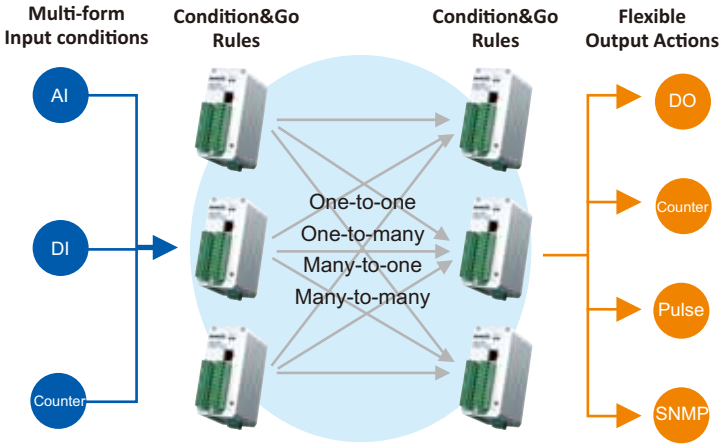
- 16 bits resolution high accuracy (6510)
- High/Low Voltage/Current active alarm (6550)
- Support active I/O and Peer-to-peer I/O
- Condition&Go (IF-Then) logic rules
- 1-to-1, 1-to-many, and many-to-many interactions
- Modbus/TCP, Window utility, SNMP, Web managed
- Free OPC server
- Application development SDK (VB, VB. Net, VC++, BCB, C#)

JetIO 6510 JetIO 6550

Flexible Discrete I/O

JetI/O series are equipped with one Ethernet port and multiple channels of AI, DI, DO. Users can perform I/O data collection, status change, logic control between the I/O servers through the Ethernet network.

With peer-to-peer and Condition&Go logic rules, JetI/O modules interact with one another in a flexible, effective manner. The logic result of IO channels from one can be sent to more than one peers without additional controllers.



JetI/O 6510

Analog Input	8 channels
Resolution	16 bits
Input Range	±10V, ±5V, ±1V, 500mV, ±150mV, ±20mA
Mechanical	
Dimension (mm)(H x W x D)	120 x 55 x 75
Mounting	DIN Rail
Housing Protection (IP)	IP31 Aluminum
Operating Temperature	-25 ~ 70°C
MTBF (hrs)	> 299,000
Certification / DoC	
Regulatory Approval	CE / FCC / RoHS/WEEE

JetI/O 6550

Digital Input	14 channels
Input Mode	DI/Event Counter
Driving Capacity	Logic 1: 30Vmax , Logic 0: 0-4V
Digital Output	8 channels
Output Mode	DO/Pulse Output
Driving Capacity	5-40V range, 250mA max
Mechanical	
Dimension (mm)(H x W x D)	120 x 55 x 75
Mounting	DIN Rail
Housing Protection (IP)	IP31 Aluminum
Operating Temperature	-25 ~ 70°C
MTBF (hrs)	> 521,000
Certification / DoC	
Regulatory Approval	CE / FCC / RoHS/WEEE

Industrial Ethernet Device Servers

DeviceMaster RTS

- Network-enable Any Serial Device
- The DeviceMaster RTS family of serial device servers enables browser-based remote port/device monitoring and configuration and provides an application software platform for local processing. The DeviceMaster RTS product is a network-attached solid-state embedded device server network serial port that delivers exceptional price, performance and reliability.
- RS-232/422/485 serial devices can be network-enabled with the DeviceMaster RTS device server to simplify maintenance, reduce cost-of-ownership, and translate savings and efficiencies to your company's bottom line!

	RTS VDC 1-Port DB9 (99440-4)	RTS 2-Port 2E (99481-7)	RTS 4-Port DB9 (99445-9)	RTS 8-Port DB9 (99448-0)	RTS 16-Port RJ45 (99455-8)	RTS 32-Port RJ45 (99456-5)
Hardware & Electrical						
10/100Base-TX ports	1	2	2	2	1	1
Serial ports	1 x RS232/422/485	2 x RS232/422/485	4 x RS232/422/485	8 x RS232/422/485	16 x RS232/422/485	32 x RS232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	Screw Terminal	DB9M	DB9M	RJ45	RJ45
Power Input	5-30VDC Terminal (2.5W)	5-30VDC Terminal (2W)	9-30VDC Terminal	9-30VDC Terminal	100-240VAC (US/EU Cord)	100-240VAC (US/EU Cord)
Included Power Supply			External 90-240VAC (US/EU)	External 90-240VAC (US/EU) input	N/A	N/A
Serial Surge protect	15KV	25KV	15KV	15KV	15KV	15KV
Environmental Specifications						
MTBF	46.2 Years	45.66 Years	25.0 Years	21.5 Years	8.1 Years	6 Years
Enclosure	STAINLESS STEEL	UL94-V0 PLASTIC	Black Finished Steel	Black Finished Steel	Black Finished Steel	Black Finished Steel
Dimension	3.6" x 0.8" x 2.8"	4.37" x 3.9" x 1.78"	10.8" x 1.5" x 6.3"	10.8" x 1.8" x 6.3"	17.25" x 1.74" x 10.8"	17.25" x 1.74" x 10.8"
Operating temperature	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C
Installation Method	DIN Rail/Panel	DIN Rail	Panel Mountable	Panel Mountable	Rack mountable	Rack mountable
Supported Device Drivers						
Win2000/Server 2003/XP	Yes	Yes	Yes	Yes	Yes	Yes
Windows Server 2008	Yes	Yes	Yes	Yes	Yes	Yes
Windows Vista	Yes	Yes	Yes	Yes	Yes	Yes
Windows 7	Yes	Yes	Yes	Yes	Yes	Yes
Linux	Yes	Yes	Yes	Yes	Yes	Yes
Software						
TCP, UDP Socket	Yes	Yes	Yes	Yes	Yes	Yes
PortVision® Plus remote monitoring, management	Yes	Yes	Yes	Yes	Yes	Yes
Web-based configuration	Yes	Yes	Yes	Yes	Yes	Yes
SSL & SSH encryption	Yes	Yes	Yes	Yes	Yes	Yes
E-mail event notification	Yes	Yes	Yes	Yes	Yes	Yes
Certifications						
CE/FCC/UL/RoHS	Yes	Yes	Yes	Yes	Yes	Yes
NEMA TS2	Yes	Yes	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

Industrial Ethernet Gateways

DeviceMaster UP

Industrial Ethernet Connectivity For Global Plant Floor Visibility

The DeviceMaster UP Industrial Ethernet Gateways are designed to provide innovative PLC to device connectivity. The DeviceMaster UP provides EtherNet/IP, Modbus/TCP, Modbus RTU/ASCII, and PROFINET connectivity to a wide variety of devices. Highly advanced raw/ASCII device interface functionality simplifies PLC programming and ensures robust operation. These features greatly simplify connecting devices such as barcode scanners, RFID readers, weigh scales, vision systems, printers, encoders, and sensors to PLCs. The DeviceMaster UP's many unique features provide connectivity options and flexibility not provided by other gateway products.

	UP 1-Port5- 30VDC (99441-1)	UP 1-Port VDC Modbus (99501-2)	UP 2-Port 1E (99531-9)	UP 2-Port 1E Modbus (99532-6)	UP 2-Port 2E (99541-8)	UP 2-Port 2E Modbus (99542-5)
Hardware						
10/100Base-TX ports	1	1	1	1	2	2
Serial ports	1 x RS232/422/485	1 x RS232/422/485	2 x RS232/422/485	2 x RS232/422/485	2 x RS232/422/485	2 x RS232/422/485
Serial Baud Rate	300bps to 230.4Kbps	50bps to 230Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	Screw Terminal	Screw Terminal	Screw Terminal	Screw Terminal
Power Input	5-30VDC Terminal (2.5W)	90 - 260VAC Terminal (2.5W)	5-30VDC Terminal (1.5W)	5-30VDC Terminal (1.5W)	5-30VDC Terminal (2W)	5-30VDC Terminal (2W)
Serial Surge protect	15KV	15KV	25KV	25KV	25KV	25KV
Environmental Specifications						
MTBF	46.2 Years	46.2 Years	58.57 Years	58.57 Years	45.66 Years	45.66 Years
Enclosure	STAINLESS STEEL	STAINLESS STEEL	UL94-V0 PLASTIC	UL94-V0 PLASTIC	UL94-V0 PLASTIC	UL94-V0 PLASTIC
Dimension	3.6" x 0.8" x 2.8"	3.6" x 0.8" x 2.8"	4.37" x 3.9" x 0.89"	4.37" x 3.9" x 0.89"	4.37" x 3.9" x 1.78"	4.37" x 3.9" x 1.78"
Operating temperature	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C
Installation Method	DIN Rail/ Panel Mountable	DIN Rail/ Panel Mountable	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Supported PLC Models						
EtherNet/IP	Yes	No	Yes	No	Yes	No
PROFINET	Yes	No	Yes	No	Yes	No
Modbus	Yes	Yes	Yes	Yes	Yes	Yes
Software						
DualConnectPlus	Yes	No	Yes	No	Yes	No
PortVision® Plus remote monitoring & management	Yes	Yes	Yes	Yes	Yes	Yes
SSL & SSH encryption	Yes	Yes	Yes	Yes	Yes	Yes
Web-based configuration	Yes	Yes	Yes	Yes	Yes	Yes
Certifications						
CE/FCC/UL/RoHS	CE/UL/RoHS	CE/FCC/UL/RoHS	CE/FCC/UL/RoHS	CE/FCC/UL/RoHs	CE/FCC/UL/RoHs	CE/FCC/UL/RoHs
NEMA TS2	Yes	No	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

- **Protocol Flexibility** — EtherNet/IP, Modbus/TCP, Profinet IO
- **Connectivity** — to both serial and Ethernet TCP/IP devices
- **DualConnectPlus™ Technology** — connect raw/ASCII devices (serial and/or Ethernet) to PLCs and/or applications simultaneously. String, RFID, and barcode data filtering eliminates redundant data while extracting the RFID and barcode parameters
- **Large received packet support** — up to 1518 bytes serial and 2048 bytes Ethernet TCP/IP
- **Received packet size control** — truncate or drop oversized packets
- **Intelligent packet identification** — start and end of transmission character detection/appending
- **Low latency** — Typically less than 10 ms
- **Diagnostic Capabilities** — Informative message logs, communication, and status pages
- **Unique protocol specific features** — Peer-to-Peer Modbus/TCP, Write-to-Tag EtherNet/IP, etc
- **PortVision™ Plus** — Remote monitoring and management software—automatically locates DeviceMaster UPs on the network, enables user to view status, update firmware, and resolve issues remotely

	UP DB9M 2-Port 1E (99551-7)	UP DB9M 2-Port 1E Modbus (99552-4)	UP DB9M 2-Port 2E (99561-6)	UP DB9M 2-Port 2E Modbus (99562-3)	UP 4-Port (99447-3)	UP 4-Port VDC Modbus (99521-0)
Hardware & Electrical						
10/100Base-TX ports	1	1	2	2	2	2
Serial ports	2 x RS232/422/485	2 x RS232/422/485	2 x RS232/422/485	2 x RS232/422/485	4 x RS232/422/485	4 x RS232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	50bps to 230.4Kbps
Serial Interface	DB9M	DB9M	DB9M	DB9M	DB9M	DB9M
Power Input	2 x 6-30VDC Terminal (1.56W)	2 x 6-30VDC Terminal (1.56W)	2 x 6-30VDC Terminal (2W)	2 x 6-30VDC Terminal (2W)	9-30VDC Terminal (4.8W)	5-30VDC Terminal (2.5W)
Serial Surge protect	25KV	25KV	25KV	25KV	15KV	15KV
Environmental Specifications						
MTBF	58.8 Years	58.8 Years	49.5 Years	49.5 Years	25 Years	25 Years
Enclosure	UL94-V0 PLASTIC	UL94-V0 PLASTIC	UL94-V0 PLASTIC	UL94-V0 PLASTIC	Black Finished Steel	Black Finished Steel
Dimension	4.6" x 3.9" x 0.9"	4.6" x 3.9" x 0.9"	4.6" x 3.9" x 1.8"	4.6" x 3.9" x 1.8"	10.8”x1.5”x6.3”	10.8”x1.5”x6.3”
Operating temperature	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C	-37°~ 74°C
Installation Method	DIN Rail	DIN Rail	DIN Rail	DIN Rail	Panel Mountable	Panel Mountable
Supported PLC Models						
EtherNet/IP	Yes	No	Yes	No	Yes	Yes
PROFINET	Yes	No	Yes	No	Yes	Yes
Modbus	Yes	Yes	Yes	Yes	Yes	Yes
Software						
DualConnectPlus	Yes	No	Yes	No	Yes	No
PortVision® Plus remote monitoring & management	Yes	Yes	Yes	Yes	Yes	Yes
SSL & SSH encryption	Yes	Yes	Yes	Yes	Yes	Yes
Web-based configuration	Yes	Yes	Yes	Yes	Yes	Yes
Certifications						
CE/FCC/UL/RoHS	CE/FCC/UL/RoHs	CE/FCC/UL/RoHs	CE/FCC/UL/RoHS	CE/FCC/UL/RoHS	CE/FCC/UL/RoHS	CE/FCC/UL/RoHS
NEMA TS2	Yes	Yes	Yes	Yes	No	No
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

EN 50155 Train L3/L2 Ethernet Switch

Viper Series

- Rugged, compact EN50155 approval Ethernet switch
- Advanced WeOS Layer 3 routing functionality
- Support NAT, DMZ, IPSec VPN, and stateful inspection firewall
- Support FRNT ring (20ms), RSTP, QoS, VLAN, IGMP snooping
- M12 USB configuration backup and restoration
- IP65 anti-condensation Gore-Tex membrane
- Single model wide power input 24~110VDC ±30% tolerance (±40% for 100 ms)
- Robust for long service life MTBF up to 100 years
- CEN45545-2 approval Fire enclosure

Viper 212

L3 Routing Switch

Viper 112

L2 Switch

Viper 408

L2 Switch

Viper 008

Unmanaged

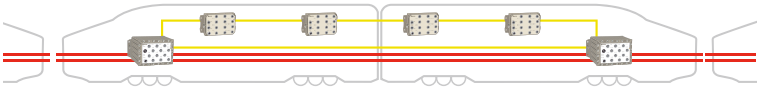
	Viper 212	Viper 112	Viper 408	Viper 008
Interfaces				
10/100TX Ports (M12)	12	12	8	8
DI/DO/Console (M12)	1 x console	1 x console	1 x console	
USB (M12)	•	•		
Power Input	2 x 24~110 VDC ±30% tolerance ±40% for 100 ms	2 x 24~110 VDC ±30% tolerance ±40% for 100 ms	2 x 24~110 VDC ±40% tolerance	2 x 24~110 VDC ±40% tolerance
Galvanic Isolation	•	•	•	•
L3 Protocols				
Static/Dynamic/VLAN Routing RIP v1/v2, OSPF v2	•			
VRRP Gateway Redundancy	•			
NAT/ Firewall/ DMZ	•			
IPSec VPN	•			
GRE (Generic Routing Encapsulation)	•			
SW/Protocol				
FRNT Ring (20ms) / FLHP	•	•	•	
RSTP/ QoS/ VLAN/ IGMP Snooping	•	•	•	
DHCP Client/Server, DDNS	•	•	•	
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3	
CLI/Web/Telnet	•	•	•	
HW/ME				
Housing Protection (IP)	Zinc, fire enclosure IP65	Zinc, fire enclosure IP65	Nickel coated zinc IP65	Nickel coated zinc IP65
Dimension (mm) (H x W x D)	100 x 175 x 65.2	100 x 175 x 65.2	100 x 175 x 50	100 x 175 x 50
Mounting	Wall mount	Wall mount	Wall mount	Wall mount
Operating Temperature	-40~70°C	-40~70°C	-40~70°C	-40~70°C
MTBF	554 000 h	554 000 h	876 000 h > 100 years	876 000 h > 100 years
Certificate / DoC				
Regulatory Approval	CE/FCC	CE/FCC	CE/FCC	CE/FCC
RoHS/REACH	•	•	•	•
Vertical Market	EN 50155, EN61373 EN50121-4, CEN45545-2	EN 50155, EN61373 EN50121-4, CEN45545-2	EN 50155, EN61373 EN50121-4	EN 50155, EN61373 EN50121-4

*EN50155 PoE Switch available, please contact your sales window

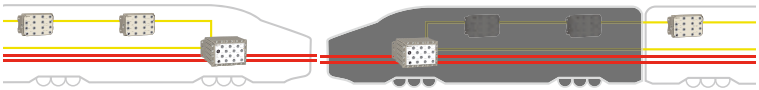
Westermo IP Train Solution

Resilient train communication

In addition to the FRNT ring by the viper switches in the carriage, the RedFox train switch aggregates a bypass relay on a dual backbone. In case of power failure in one carriage, the bypass relay closes to maintain the signal. All Westermo train products feature the 150m extended Ethernet standard giving extra insurance to bridge the failed network segments.



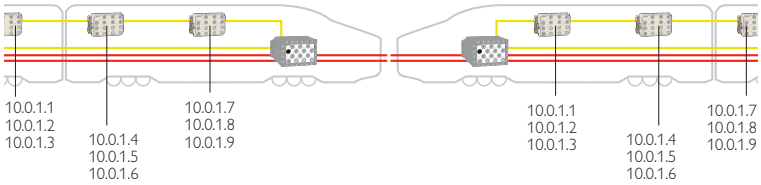
FRNT ring by Viper switches



Dual backbone with bypass relay on RedFox train switch

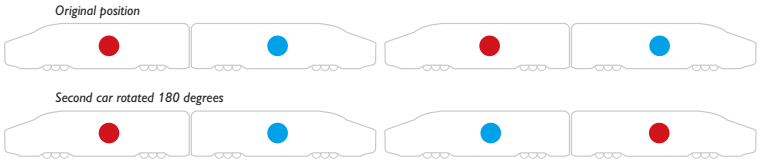
Simple to install and maintain

WeOS makes it easy to create, install and maintain a train network. Equipment which is connected to the network can be assigned identical IP addresses in each carriage, which simplifies the overall IP plan as well as maintenance and installation of new or replacement devices.



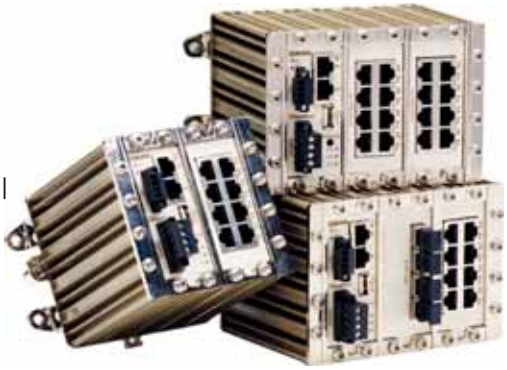
Carriage scalability and flexibility

WeOS allows you to create an intelligent train network where you can change the number or position of cars without affecting the network and the need of manual re-configuration, which offers high scalability and mobility.

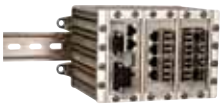


Industrial L3 Routing Switch

RedFox Series



- Ultra strong modular switch
- Advanced WeOS layer 3 routing functionality
- Support NAT, DMZ, IPSec VPN, and stateful inspection firewall
- Support FRNT ring (20ms), RSTP, QoS, VLAN, IGMP snooping
- Support USB configuration backup and restoration
- Dual 16~60 VDC power input
- DNV approval for marine applications
- ATEX approval for hazardous locations
- EN50121-4 for railway applications
- ABB industrial IT certification



	RFI-18-F4G-T4G	RFI-18-F4G-T4G-F8	RFI-10-F4G-T4G	RFI-6-F4G
	L3 Routing Switch	L3 Routing Switch	L3 Routing Switch	L3 Routing Switch
Interfaces				
10/100TX Ports	10	2	2	2
10/100/1000TX Ports	4	4	4	
Fiber Ports	4 x 100/1000 SFP	4 x 100/1000 SFP 8 x 100 SFP	4 x 100/1000 SFP	4 x 100/1000 SFP
DI/DO/Console	1 x DI, 1 x DO, 1 x Console	1 x DI, 1 x DO, 1 x Console	1 x DI, 1 x DO, 1 x Console	1 x DI, 1 x DO, 1 x Console
USB	•	•	•	•
Power Input	2 x 16~60VDC	2 x 16~60VDC	2 x 16~60VDC	2 x 16~60VDC
Galvanic Isolation	•	•	•	•
L3 Protocols				
Static/Dynamic/VLAN Routing RIP v1/v2, OSPF v2	•	•	•	•
VRRP Gateway Redundancy	•	•	•	•
NAT/ Firewall/ DMZ	•	•	•	•
IPSec VPN	•	•	•	•
GRE (Generic Routing Encapsulation)	•	•	•	•
SW/Protocol				
FRNT Ring (20ms)/ FLHP	•	•	•	•
RSTP/ QoS/ VLAN/ IGMP Snooping	•	•	•	•
DHCP Client/Server, DDNS	•	•	•	•
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	•	•	•	•
HW/ME				
Housing Protection (IP)	Aluminum IP40	Aluminum IP40	Aluminum IP40	Aluminum IP40
Dimension (mm) (H x W x D)	105 x 175 x 122	105 x 175 x 122	105 x 134 x 122	105 x 134 x 122
Mounting	Din Rail/ Wall mount	Din Rail/ Wall mount	Din Rail/ Wall mount	Din Rail/ Wall mount
Operating Temperature	–40~70°C	–40~70°C	–40~70°C	–40~70°C
MTBF	520 000 h	520 000 h	341 000 h	520 000 h
Certificate / DoC				
Regulatory Approval	CE/ FCC	CE/ FCC	CE/ FCC	CE/ FCC
RoHS/REACH	•	•	•	•
Vertical Market	EN50121-4 , DNV, ATEX	EN50121-4 , DNV, ATEX	EN50121-4 , DNV, ATEX	EN50121-4 , DNV, ATEX

Industrial L3/L2 Ethernet Switch, Device Server Switch

Lynx+ and Lynx DSS

- Compact design, world's smallest L3 routing switch
- Advanced WeOS Layer 3 routing functionality
- Support NAT, DMZ, IPSec VPN, and stateful inspection firewall
- Support FRNT ring (20ms), RSTP, QoS, VLAN, IGMP snooping
- Support serial server, Modbus gateway (Lynx DSS)
- Support USB configuration backup and restoration
- Dual 19~60 VDC power input, 6W Low power consumption
- DNV approval for marine applications
- EN50121-4 for railway applications
- ABB industrial IT certification

L+210-F2G

L+110-F2G

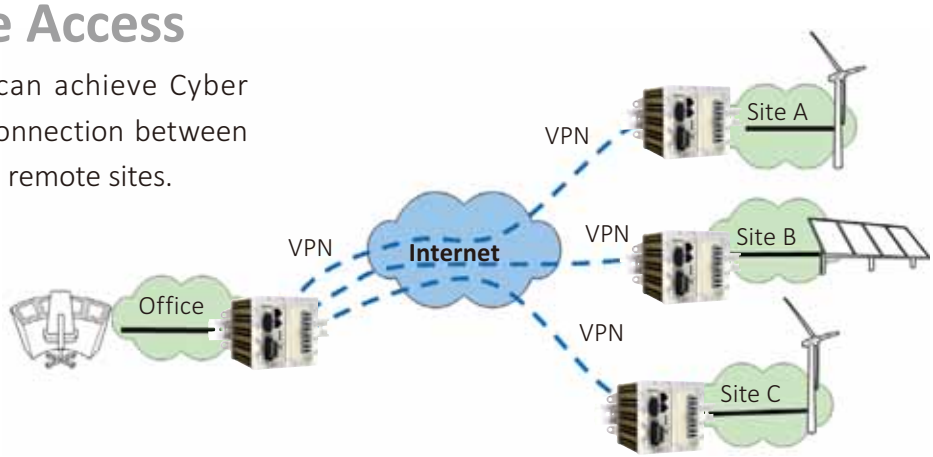
L208-F2G-S2

L108-F2G-S2

	L3 Routing Switch	L2 Switch	L3 Routing Device Server Switch	Device Server Switch
Interfaces				
10/100TX Ports	8	8	4	4
Fiber Ports	2x 100/1000 SFP	2x 100/1000 SFP	2x 100/1000 SFP	2x 100/1000 SFP
DI/DO/Console	1 x DI, 1 x DO, 1 x Console	1 x DI, 1 x DO, 1 x Console	1 x DI, 1 x DO, 1 x Console	1 x DI, 1 x DO, 1 x Console
USB				
Device Server			1x RS232 1x RS232/422/485 (VCOM and Modbus GW)	1x RS232 1x RS232/422/485 (VCOM and Modbus GW)
Power Input	2 x 19~60VDC	2 x 19~60VDC	2 x 19~60VDC	2 x 19~60VDC
Galvanic Isolation	●	●	●	●
L3 Protocols				
Static/Dynamic/VLAN Routing RIP v1/v2, OSPF v2	●		●	
VRRP Gateway Redundancy	●		●	
NAT/ Firewall/ DMZ	●		●	
IPSec VPN	●		●	
GRE (Generic Routing Encapsulation)	●		●	
SW/Protocol				
FRNT Ring (20ms) / FLHP	●	●	●	●
RSTP/ QoS/ VLAN/ IGMP Snooping	●	●	●	●
DHCP Client/Server, DDNS	●	●	●	●
SNMP/RMON/Trap	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3	V1/V2c/V3
CLI/Web/Telnet	●	●	●	●
HW/ME				
Housing Protection (IP)	Metal IP40	Metal IP40	Metal IP40	Metal IP40
Dimension (mm) (H x W x D)	100 x 52.5 x 101	100 x 52.5 x 101	100 x 52.5 x 101	100 x 52.5 x 101
Mounting	Din Rail	Din Rail	Din Rail	Din Rail
Operating Temperature	–40~70°C	–40~70°C	–40~70°C	–40~70°C
MTBF	666 000 h	666 000 h	499 000 h	499 000 h
Certificate / DoC				
Regulatory Approval	CE/FCC/UL	CE/FCC/UL	CE/FCC/UL	CE/FCC/UL
RoHS/REACH	●	●	●	●
Vertical Market	EN50121-4, DNV	EN50121-4, DNV	EN50121-4, DNV	EN50121-4, DNV

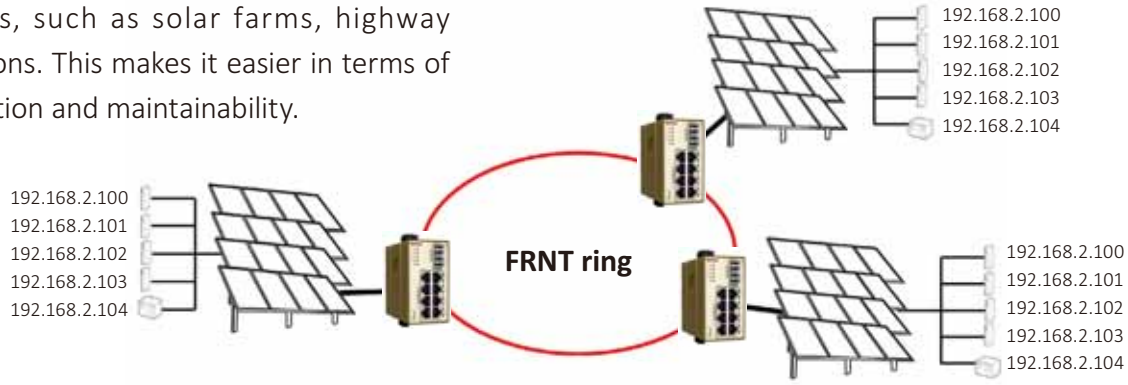
Secure Remote Access

With IPsec and VPN, we can achieve Cyber security in a LAN to LAN connection between the office networks and the remote sites.



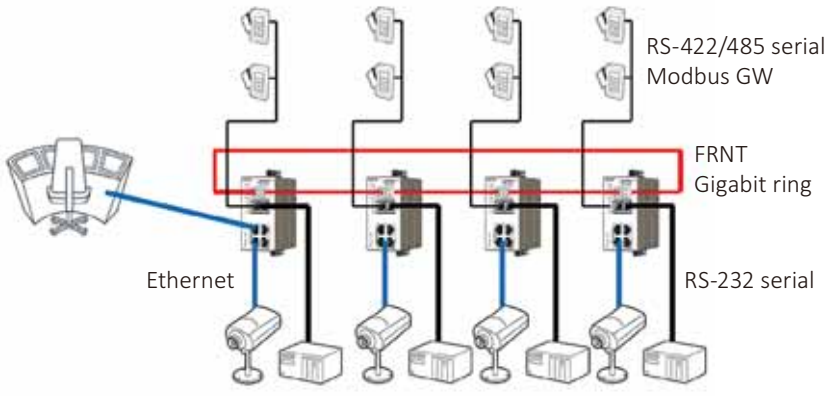
Simple to Install and Maintain

WeOS's NAT and routing features help you to have identical local IP settings in identical subsystems, such as solar farms, highway tolling stations. This makes it easier in terms of documentation and maintainability.



Managed Device Server Routing Switch

Lynx DSS, integrating two 100/1000 SFP fibers, four Ethernet copper ports and two serial interfaces, is the most compact and has the lowest power requirements in this class of device servers.



Industrial Mobile Broadband 3G Router

MRD-310

- Tri-Band UMTS/HSDPA/HSUPA: 900/2100 MHz uplink data rate 2Mbps, downlink 7.2Mbps
- Quad-Band GSM/GPRS/EDGE: 850/900/1800/1900 MHz
- Two 10/100 Ethernet switch ports with DHCP server
- 1 RS-232 support serial server, DNP3, Modbus gateway
- Secure remote access Firewall, IPSec VPN, SSL, PPTP or L2TP encryption
- Web and SNMP based configuration
- Operating voltage range of 10~60 VDC
- IP40 protection, operating temperature -30~60°C

Industrial Broadband Router

Falcon FDV-206-1D-1S

- 1 DSL port for ADSL/ADSL2/ADSL2+ or VDSL2,
- Single model for PSTN and ISDN
- Built-in 4-port Layer 3 routing switch
- 1 RS-232 support serial server, Modbus gateway
- Support NAT, DMZ, IPSec VPN, and stateful inspection firewall
- Support FRNT ring (20ms), RSTP, QoS, VLAN, IGMP snooping
- Support USB easy configuration backup and restoration
- Web, CLI and SNMP based configuration
- Dual power inputs 19~60 VDC
- IP40 protection, operating temperature -20~70°C
- Industrial EMC capability and long MTBF 580 000 hours

Industrial Fiber Optic Modem

ODW Series

- Convert PROFITBUS, RS-232, or RS-422/485 to LC fiber
- Automatic data rate detection and retiming
- Redundant power inputs 10~60VDC
- Industrial grade design IP21 protection
- Wide operating temperature -40~60°C

ODW-611-MM-LC2	*PROFIBUS, point-to-point 5km fiber*	**ODW-622-SM-LC15**	*RS-232, multi-drop or ring, 15km fiber*
ODW-611-SM-LC15	*PROFIBUS, point-to-point 15km fiber*	**ODW-631-SM-LC15**	*RS-422/485, point-to-point 15km fiber*
ODW-621-MM-LC2	*RS-232, point-to-point 5km fiber*	**ODW-642-MM-LC2**	*PROFITBUS, fast recovery ring, 15km fiber*

Accessories SFP / SFP with DDM Technology

	Fiber Transceiver	Speed	Distance	Wave-length	Operation Temperature
SFP100MM/SFP100MM-w	Multi-mode	100Mbps	2km	1310nm	-10~70°C/-40~85°C(W)
SFP100MMD/SFP100MMD-w	Multi-mode	100Mbps DDM	2km	1310nm	-10~70°C/-40~85°C(W)
SFP100MM5/SFP100MM5-w	Multi-mode	100Mbps	5km	1310nm	-10~70°C/-40~85°C(W)
SFP100MM5D/SFP100MM5D-w	Multi-mode	100Mbps DDM	5km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM30/SFP100SM30-w	Single-mode	100Mbps	30km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM30D/SFP100SM30D-w	Single-mode	100Mbps DDM	30km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM60/SFP100SM60-w	Single-mode	100Mbps	60km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM60D/SFP100SM60D-w	Single-mode	100Mbps DDM	60km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM80/SFP100SM80-w	Single-mode	100Mbps	80km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM80D/SFP100SM80D-w	Single-mode	100Mbps DDM	80km	1310nm	-10~70°C/-40~85°C(W)
SFP100SM100/SFP100SM100-w	Single-mode	100Mbps	100km	1550nm	-10~70°C/-40~85°C(W)
SFP100SM100D/SFP100SM100D-w	Single-mode	100Mbps DDM	100km	1550nm	-10~70°C/-40~85°C(W)
SFP100SM120/SFP100SM120-w	Single-mode	100Mbps	120km	1550nm	-10~70°C/-40~85°C(W)
SFP100SM120D/SFP100SM120D-w	Single-mode	100Mbps DDM	120km	1550nm	-10~70°C/-40~85°C(W)
SFP100SM20B13/SFP100SM20B13-w	Single-mode	100Mbps BIDI/WDM	20km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFP100SM20B13D/SFP100SM20B13D-w	Single-mode	100Mbps BIDI/WDM DDM	20km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFP100SM20B15/SFP100SM20B15-w	Single-mode	100Mbps BIDI/WDM	20km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFP100SM20B15D/SFP100SM20B15D-w	Single-mode	100Mbps BIDI/WDM DDM	20km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFP100SM40B13/SFP100SM40B13-w	Single-mode	100Mbps BIDI/WDM	40km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFP100SM40B13D/SFP100SM40B13D-w	Single-mode	100Mbps BIDI/WDM DDM	40km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFP100SM40B15/SFP100SM40B15-w	Single-mode	100Mbps BIDI/WDM	40km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFP100SM40B15D/SFP100SM40B15D-w	Single-mode	100Mbps BIDI/WDM DDM	40km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFP100SM60B13/SFP100SM60B13-w	Single-mode	100Mbps BIDI/WDM	60km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFP100SM60B13D/SFP100SM60B13D-w	Single-mode	100Mbps BIDI/WDM DDM	60km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFP100SM60B15/SFP100SM60B15-w	Single-mode	100Mbps BIDI/WDM	60km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFP100SM60B15D/SFP100SM60B15D-w	Single-mode	100Mbps BIDI/WDM DDM	60km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGSX/SFPGSX-w	Multi-mode	1000Base-SX	550m	850nm	-10~70°C/-20~85°C(W)
SFPGSXD/SFPGSXD-w	Multi-mode	1000Base-SX DDM	550m	850nm	-10~70°C/-20~85°C(W)
SFPGSX2/SFPGSX2-w	Multi-mode	1000Base-SX	2km	1310nm	-10~70°C/-40~85°C(W)
SFPGSX2D/SFPGSX2D-w	Multi-mode	1000Base-SX DDM	2km	1310nm	-10~70°C/-40~85°C(W)
SFPGLX10/SFPGLX10-w	Single-mode	1000Base-LX	10km	1310nm	-10~70°C/-40~85°C(W)
SFPGLX10D/SFPGLX10D-w	Single-mode	1000Base-LX DDM	10km	1310nm	-10~70°C/-40~85°C(W)
SFPGLHX30/SFPGLHX30-w	Single-mode	1000Base-LHX	30km	1310nm	-10~70°C/-40~85°C(W)
SFPGLHX30D/SFPGLHX30D-w	Single-mode	1000Base-LHX DDM	30km	1310nm	-10~70°C/-40~85°C(W)
SFPGXD50/SFPGXD50-w	Single-mode	1000Base-XD	50km	1550nm	-10~70°C/-40~85°C(W)
SFPGXD50D/SFPGXD50D-w	Single-mode	1000Base-XD DDM	50km	1550nm	-10~70°C/-40~85°C(W)
SFPGZX70/SFPGZX70-w	Single-mode	1000Base-ZX	70km	1550nm	-10~70°C/-40~85°C(W)
SFPGZX70D/SFPGZX70D-w	Single-mode	1000Base-ZX DDM	70km	1550nm	-10~70°C/-40~85°C(W)
SFPGLX10B13/SFPGLX10B13-w	Single-mode	1000Base-LX BIDI/WDM	10km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFPGLX10B13D/SFPGLX10B13D-w	Single-mode	1000Base-LX BIDI/WDM DDM	10km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)

	Fiber Transceiver	Speed	Distance	Wave-length	Operation Temperature
SFPGLX10B15/SFPGLX10B15-w	Single-mode	1000 Base-LX BIDI/WDM	10km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGLX10B15D/SFPGLX10B15D-w	Single-mode	1000 Base-LX BIDI/WDM DDM	10km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGLX20B13/SFPGLX20B13-w	Single-mode	1000 Base-LX BIDI/WDM	20km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFPGLX20B13D/SFPGLX20B13D-w	Single-mode	1000 Base-LX BIDI/WDM DDM	20km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFPGLX20B15/SFPGLX20B15-w	Single-mode	1000 Base-LX BIDI/WDM	20km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGLX20B15D/SFPGLX20B15D-w	Single-mode	1000 Base-LX BIDI/WDM DDM	20km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGLX40B13/SFPGLX40B13-w	Single-mode	1000 Base-LX BIDI/WDM	40km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFPGLX40B13D/SFPGLX40B13D-w	Single-mode	1000 Base-LX BIDI/WDM DDM	40km	TX 1310nm, RX 1550nm	-10~70°C/-40~85°C(W)
SFPGLX40B15/SFPGLX40B15-w	Single-mode	1000 Base-LX BIDI/WDM	40km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGLX40B15D/SFPGLX40B15D-w	Single-mode	1000 Base-LX BIDI/WDM DDM	40km	TX 1550nm, RX 1310nm	-10~70°C/-40~85°C(W)
SFPGLX60B13	Single-mode	1000 Base-LX BIDI/WDM	60km	TX 1310nm, RX 1550nm	-10~70°C
SFPGLX60B13D	Single-mode	1000 Base-LX BIDI/WDM DDM	60km	TX 1310nm, RX 1550nm	-10~70°C
SFPGLX60B15	Single-mode	1000 Base-LX BIDI/WDM	60km	TX 1550nm, RX 1310nm	-10~70°C
SFPGLX60B15D	Single-mode	1000 Base-LX BIDI/WDM DDM	60km	TX 1550nm, RX 1310nm	-10~70°C

Industrial Power Supply

	Input Voltage Range	Output Voltage	Output Power	Working Temperature
DR-4524	85 ~ 264VAC 120 ~ 370VDC	24V	48W	-10~50°C
DR-75-24	85 ~ 264VAC 120 ~ 370VDC	24V	76.8W	-10~60°C
DR-75-48	85 ~ 264VAC 120 ~ 370VDC	48V	76.8W	-10~60°C
DR-120-24	88 ~ 132VAC/176 ~ 264VAC by switch 248 ~ 370VDC	24V	120W	-10~60°C
DRP-240-24	85 ~ 264VAC 120 ~ 370VDC	24V	240W	-10~70°C
DRP-480S-24	90 ~ 132VAC/180 ~ 264VAC by switch 254 ~ 370VDC	24V	480W	-20~70°C
MDR-20-24	85 ~ 264VAC 120 ~ 370VDC	24V	24W	-20~70°C
MDR-40-24	85 ~ 264VAC 120 ~ 370VDC	24V	40.8W	-20~70°C
MDR-60-24	85 ~ 264VAC 120 ~ 370VDC	24V	60W	-20~70°C
MDR-100-24	85 ~ 264VAC 120 ~ 370VDC	24V	96W	-10~60°C
MDR-100-48	85 ~ 264VAC 120 ~ 370VDC	48V	96W	-10~60°C
U65S111-P2J	95 ~ 264VAC 140 ~ 370VDC	48V	80W	-10~40°C
SDR-480-48	85 ~ 264VAC 120 ~ 370VDC	48V	480W	-20~70°C

Beijer korenix
ELECTRONICS

Korenix, the Market Leader in industrial networking & embedded computing solution delivers the brodest range of intelligent ruggedized networking and computing platforms with the highest quality and reliability for enhancing network performance in industrial applications

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