

JetNet 5010G

Industrial 7+3G Gigabit Managed Ethernet Switch



- 7 10 / 100-TX ports and 3 Gigabit RJ-45/SFP combo ports (10 / 100 / 1000 Base-TX, 100 Base-FX, 1000 Base-X)
- Multiple Super Ring (recovery time ≤5ms), Rapid Dual Homing, Multiple Ring, and RSTP
- VLAN, GVRP, QoS, IGMP Snooping V1/V2/V3, Rate Control, Port Trunking, LACP, Online Multi-Port Mirroring
- 32Gbps Non-Blocking, 8K MAC address table
- Supports console CLI , Web, SNMP V1/V2c/V3, RMON, HTTPS, SSH and JetView
- Advanced security feature supports IP Security, Port Security, DHCP Server, IP and MAC Binding, 802.1x network access control
- Event Notification by E-mail, SNMP trap, Syslog, Digital Input and Relay Output
- Rigid Aluminum Case complies with IP31, Great heat dispersing, Redundant power
- DIN-Rail/Wall-Mounting/Desktop Installation
- -20~70°C operating temperature for hazardous environment application

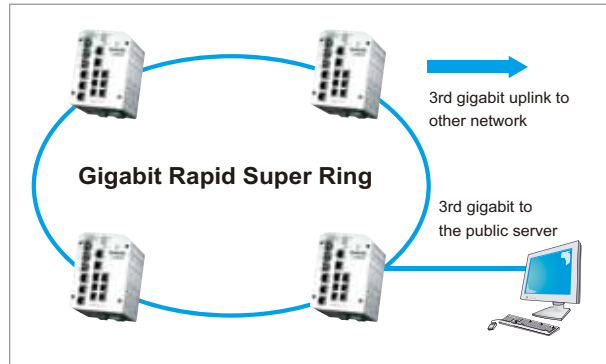
Overview

The JetNet 5010G is a Managed Industrial Ethernet Switch, equipped with 7 ports 10/100TX and 3 ports 10/100/1000 RJ-45/100-FX/Gigabit SX/LX combo ports. The 2 gigabit ports are used to form the nonstop Rapid Super Ring. The 3rd gigabit port is used to connect the upper switch, couple ring or public server. The gigabit combo port design giving flexibility to choose copper or fiber media, 100Base-FX or 1000Base-X, multi-mode or Single-Mode for different distance and without stocking different switch models. The JetNet 5010G is designed as rugged surface in

aluminum material, curvilinear heating dispersing mechanical design and with wide operating temperature. The embedded software supports full Layer 2 management features, multi-form ring redundancy, network control, monitor, security and notification. The JetNet 5010G also provides builtin watchdog timer, digital input and relay output to avoid undetected damage. With JetNet 5010G, you can fulfill the dream of having the perfect solution to construct your industrial Ethernet infrastructure.

3rd Gigabit Uplink for Flexible Network Planning

JetNet 5010G offers three Gigabit RJ-45/SFP combos which improve the performance dramatically compared to typical two Gigabit RJ-45/ SFP combos. Each combo comes with flexible connectivity, 100Mbps Single-Mode/Multi-Mode or 1000Mbps Single-Mode/Multi-Mode, as well as a copper connection. Now, end-users can achieve as many as 10 different combinations of port connections. Also, by selecting a suitable range of fiber transceivers, the JetNet5010G can fulfill your industrial applications at long distances.



100 / 1000Mbps SFP Supported

The JetNet 5010G SFP socket supports 100Base-FX Single/Multi-Mode and 1000Base-SX/LX/LHX/XD Multi/Single-Mode transceiver. The available distance of the 100Base-FX is up to 30KM. 1000Base-SX Multi-Mode supports 550M, 1000Base-LX Single-Mode supports 10KM, 1000Base-LHX Single-Mode supports 30KM, 1000Base-XD Single-Mode supports up to 50KM. 1000Base-ZX Single-Mode supports up to 70KM.



Comprehensive Redundant Solutions — Multiple Super Ring (MSR™)

The JetNet 5010G supports MSR™ (Multiple Super Ring); the new generation of RSR (Rapid Super Ring) technology. This new technology includes various new features for different network redundancy applications and structures. With the MSR™ technology, a node can be configured to multiple rings with the failover time in as little as 5ms and ZERO-second of restore time. In addition, users can extend the ring topology by adding hundreds of JetNet 5010G to meet the network needs without compromising the speed of the network.

The MSR™ also facilitates the JetNet 5010G to connect with core management switch via standard Rapid Spanning Tree Protocol or through multiple paths or nodes to increase the reliability of the Rapid Dual Homing (RDH™) Technology. By integrating MSR™ and Link Aggregation Control Protocol (LACP), the JetNet 5010G can enhance the link availability and increase the link capacity. Two or more Fast Ethernet connection are bundled in order to increase the bandwidth and to create a resilient and redundant links.

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PoE Switch

IP67/68
Ethernet Switch

Rackmount
Managed
Switch

Gigabit Switch

Redundant
Switch

Entry-Level
Switch

Networking
Computer

Communication
Computer

Ethernet
I/O Server

Serial Device
Server

Media
Converter

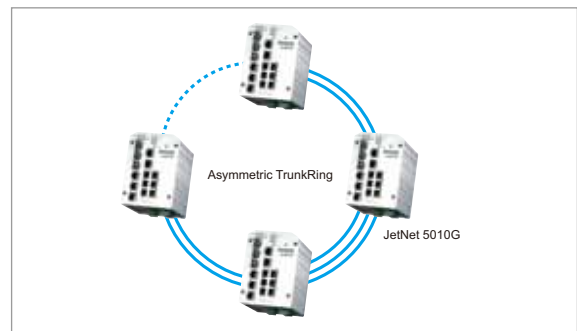
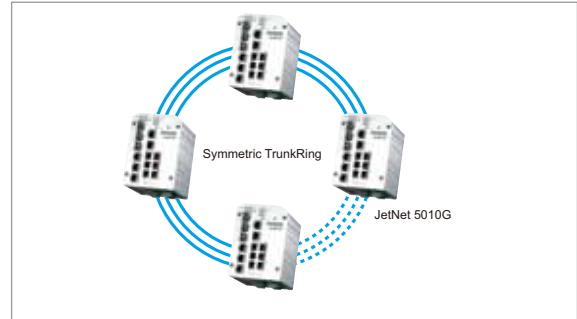
Multiport
Serial Card

SFP Module

Din Rail
Power Supply

TrunkRing™

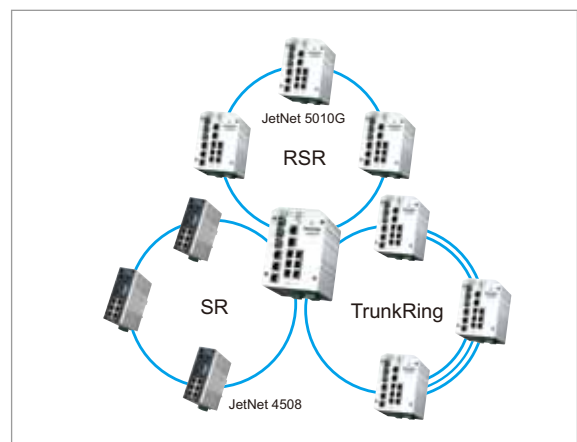
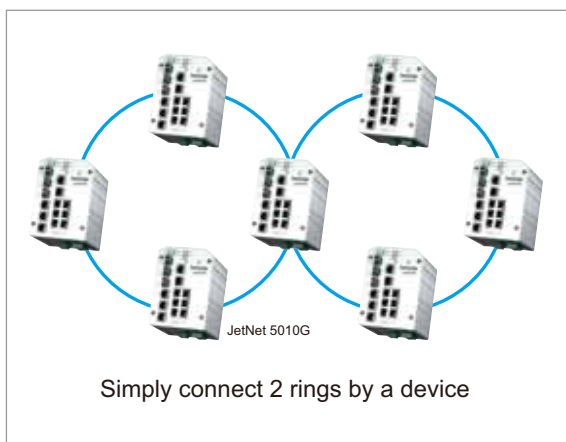
Symmetric TrunkRing™ Asymmetric TrunkRing™
 TrunkRing™ is a new feature in MSR™ which merges the two technologies of RSR and link aggregation. It takes advantage of aggregation to enhance the link redundancy, while increasing the link speed. The ring will open only if all the aggregated links are broken. Link aggregation can be achieved by either, static trunk or LACP protocol. Not all the link sections in a TrunkRing™ need to be the same. Ring links can be either symmetric or asymmetric. Some are a single link, and the others are aggregated by links where the number of links in a trunk group can be different. Users can enhance the link redundancy at different locations in accordance to the need. And the link with less speed is more likely to be used as the backup path for restoring the network to full play capacity.



MultiRing™

MultiRing™ provides easier connectivity between two ring networks. The simplest example is to connect two rings by a single device. Depending on the number of ports, a device can even gather multiple rings together. As shown in the figure, MultiRing™ technology simply extends the network topology by linking multiple rings

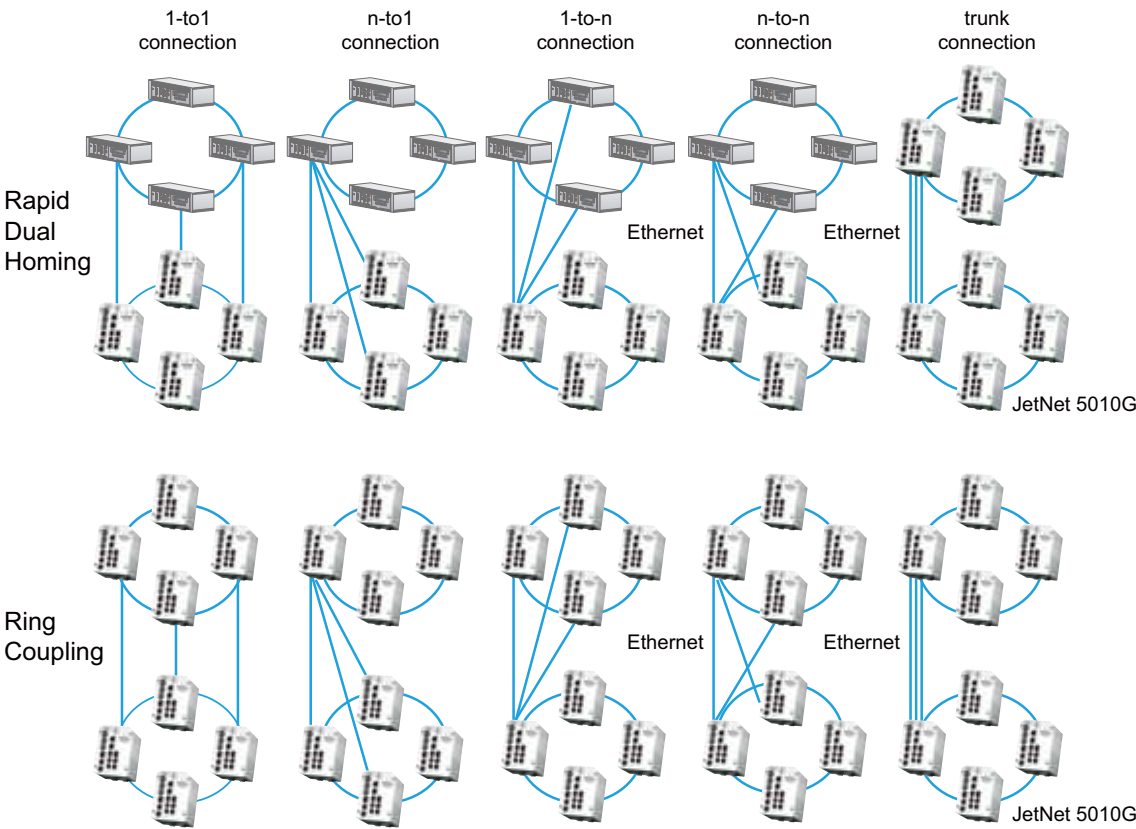
into a line or into multiple directions. In addition to extensibility, MultiRing™ has great diversity of various ring technologies. With MultiRing™ enabled, a device can connect RSR rings, TrunkRing™ and a ring of Super Ring together. Which provides extensibility to new technologies while keeps the great backward compatibility.



Rapid Dual Homing (RDH™) Technology

Rapid Dual Homing (RDH™) replaces DualHoming II and can be used for ring coupling. While keeping easy configuration and multiple redundancies, the failover time is much faster (less than 50 ms) and the restore time is ZERO (seamless restoration). Uplinks can be auto detected and gathered into groups. In each group, uplinks are sorted into Primary, Secondary,

and Standbys by their link speed. The uplink with the highest speed is more likely to be the active path for data transmission. Link aggregation is also integrated into RDH™. An uplink can be a link or several links aggregated as a trunk, which provides better redundancy and link capacity.



- Industrial PoE Switch
- IP67/68 Ethernet Switch
- Rackmount Managed Switch
- Gigabit Switch
- Redundant Switch
- Entry-Level Switch
- Networking Computer
- Communication Computer
- Ethernet I/O Server
- Serial Device Server
- Media Converter
- Multiport Serial Card
- SFP Module
- Din Rail Power Supply

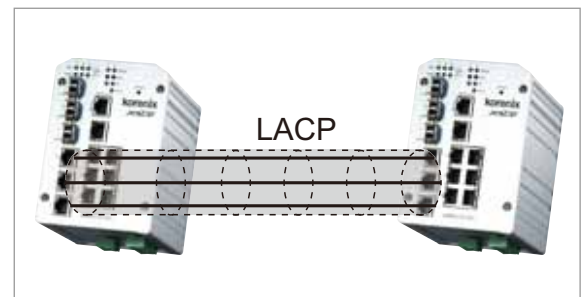
Various Network Control and Security Features

The JetNet 5010G provides various network control and security features. The Network Control feature allows users to optimize their industrial environment. The supported features include VLAN, IGMP Snooping, Quality of Service (QoS), Link Aggregation

Control Protocol (LACP), Rate Control. The security also helps users to avoid hackers' attack. The features included are, DHCP Server, IP and MAC Binding, 802.1x Access Control, SSH, IP Access Table and Port Security.

Link Aggregation Control Protocol

Link Aggregation Control Protocol (LACP) allows you to group multiple Ethernet ports in parallel to increase the link bandwidth. The aggregated ports can be considered as one physical port, so that the bandwidth is higher than just one single Ethernet port. The member ports of the same trunk group can balance the loading and backup with each other. The LACP feature is usually used when you need higher bandwidth for the backbone network. This is an inexpensive way for users to transfer much more data. If the trunk port is also assigned as a ring port, it will become as a TrunkRing™, which means, that the bandwidth of ring path has increased with port trunk

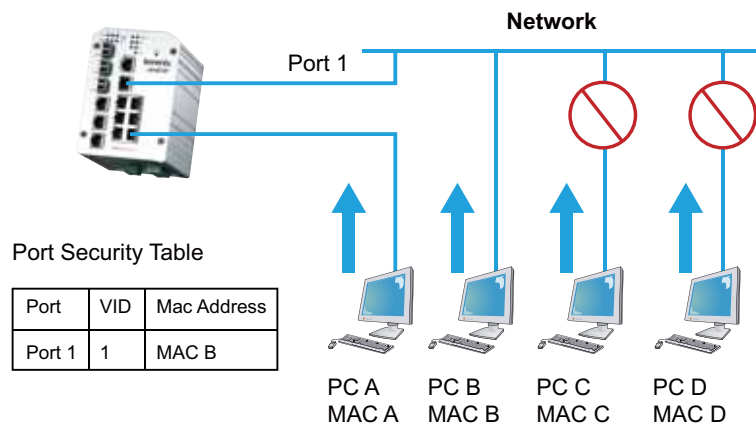


technology. Now, there is no recovery time when failures occur. The JetNet 5010G provides a simple and easy way to aggregate port bandwidth into Rapid Super Ring.

Port Security

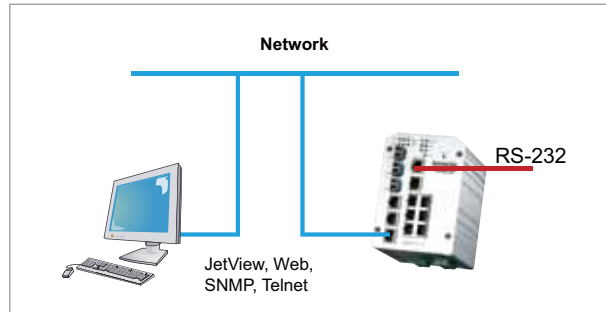
Port Security is an enhanced security feature provided by JetNet 5010G. Port Security is also known as, "Port and MAC Binding". The users can bind a specific MAC address to a specific port, add the MAC and Port binding entry/entries

to the port security table. After enabling this, only the PC with the available MAC address can access the network through the switch. The other PCs can't even pass the traffic through the port.



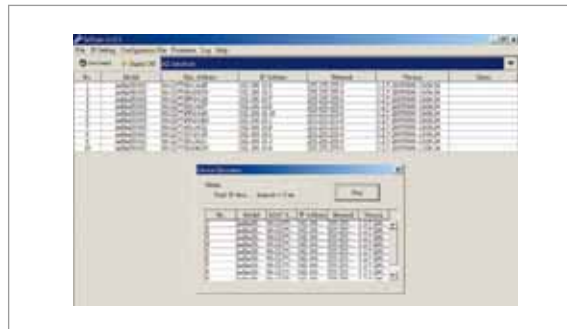
Easy-to-Configure Network Management Features

The JetNet 5010G also provides users many advanced management features. It can be configured smartly by JetView, Web browser, SNMP, Telnet and RS-232 console Command Line Interface (CLI). It provides Failure notification by E-mail, SNMP Trap, System Log, Digital Input and Fault Relay. The JetNet 5010G also supports Built-In Watchdog Timer for system recovering when detecting CPU failure.



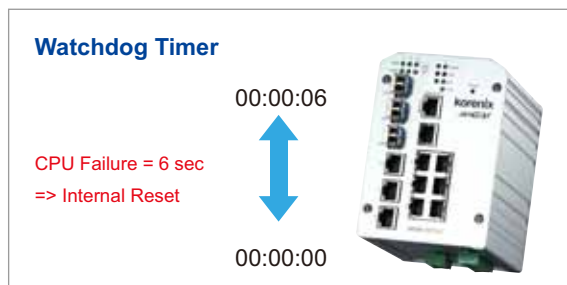
JetView, Easy Management Utility

The JetView is a convenient tool to help administrators to discover the JetNet series Switches. It supports group IP assignment, group firmware, upgrade, group configuration backup and restore.



A Built-in Watchdog Timer

With a Built-In Watchdog Timer, the JetNet 5010G performs a warm boot (restarting the switch) automatically when the switch system locks up. It saves the effort of maintenance for keeping network alive if the switch can recover by itself.



Robust Mechanism Design

Korenix JetNet 5010G's outstanding outlook is rock solid and fashionable with strong functionality. Using aluminum extrusion case with industrial

quality, IP 31 class of protection, light weight, rigid shell and excellent thermal conductivity units can operate under harsh industrial environment reliably.

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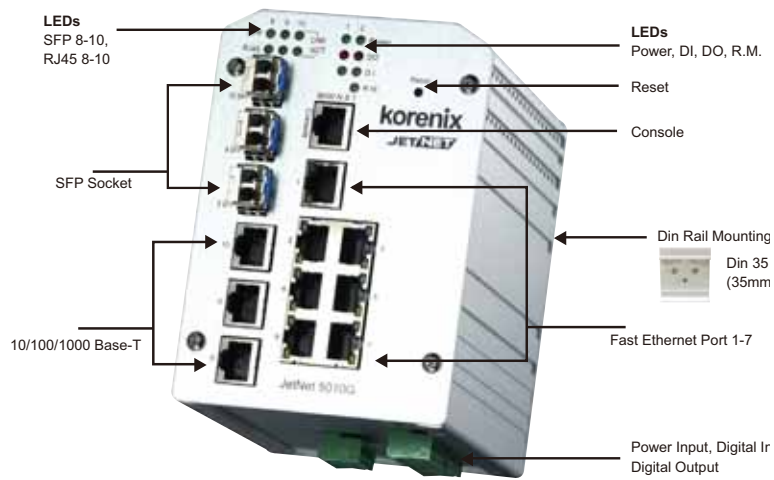
Media Converter

Multiport Serial Card

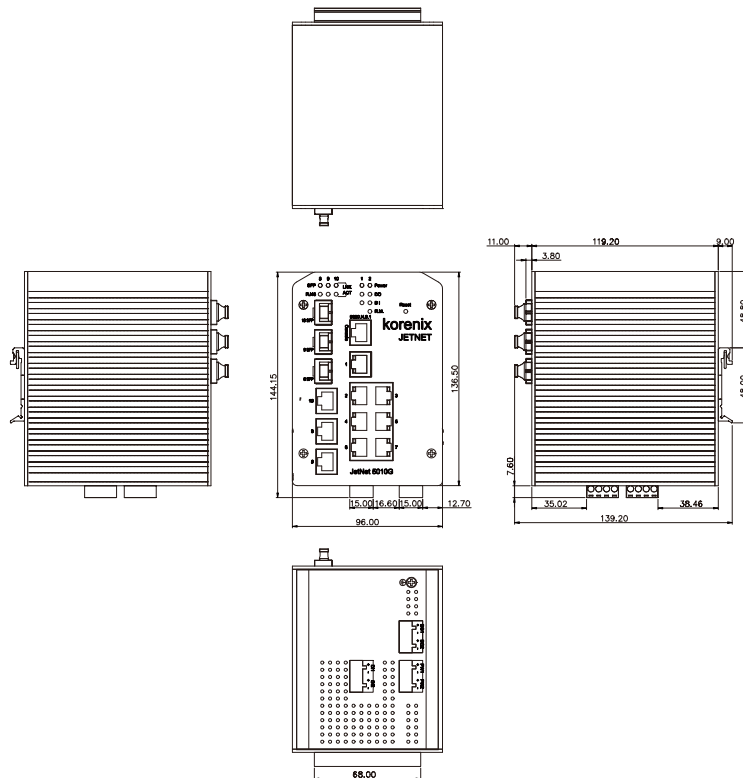
SFP Module

Din Rail Power Supply

JetNet 5010G Appearance



Dimensions (Unit –mm)



Specification

Technology

Standard:

IEEE 802.3 10Base-T Ethernet
 IEEE 802.3u 100Base-TX Fast Ethernet
 IEEE 802.3ab 1000Base-TX
 IEEE 802.3z Gigabit Ethernet Fiber
 IEEE 802.3x Flow Control and Back-pressure
 IEEE 802.1p class of service
 IEEE 802.1Q VLAN and GVRP
 IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
 IEEE802.3ad LACP
 IEEE802.1X Port_based Network Access Control

Performance

Switch Technology:

Store and Forward Technology with 32Gbps Switch Fabric.

System Throughput: 14,880pps for 10M Ethernet, 148,800pps for 100M Fast Ethernet, 1,488,100 for Gigabit Ethernet

Transfer packet size: 64 bytes to 1522 bytes (with VLAN Tag)

MAC Address: 8K MAC

Packet Buffer: 1Mbits

Relay Alarm: Dry Relay output with 1A@24V ability

Management

Configuration: Cisco-Like CLI, JetView, Web, HTTPS, SSH; TFTP/Web Update for firmware and configuration backup/restore, DHCP Client, Warm reboot, Reset to default, Admin password, Port Speed/Duplex control, status, statistic, MAC address table display, Static MAC, Aging time, **SNMP v1, v2c, v3**, Traps and RMON1.

SNMP MIB: MIB-II, Bridge MIB, VLAN MIB, SNMP MIB, RMON and Private MIB

Port Trunk: Up to 5 Static Trunk and IEEE802.3ad LACP

VLAN: IEEE802.1Q VLAN, GVRP. Up to 64 VLAN groups

Quality of Service: Four priority queues per port,

IEEE802.1p COS and Layer 3 TOS/DiffServ

IGMP Snooping: IGMP Snooping V1/V2/V3 for multicast filtering and IGMP Query V1/V2

Rate Control: Ingress filtering for Broadcast, Multicast, Unknown DA or All packets, and Egress filtering for All packets

NTP: Network Time Protocol to synchronize time from Internet or local PC

Embedded Watchdog: Embedded hardware watchdog timer to auto reset system when switch system failure

Port Mirroring: Online traffic monitoring on multiple selected ports

Port Security: Assign authorized MAC to specific port

IP Security: IP security to prevent unauthorized access

802.1x: Port_based Network Access Control

DHCP Server: Up to 255 IP address, support IP and MAC binding

E-mail Warning: Automatic warning by pre-defined events

System Log: Supports both Local mode and Server mode

Network Redundancy

Rapid Spanning Tree Protocol: IEEE802.1D-2004 Rapid

Spanning Tree Protocol. Compatible with Legacy STP and IEEE802.1w.

Rapid Super Ring(RSR): 2nd generation Korenix Ring Redundancy Technology. Failure recovery within 5ms.

Rapid Dual Homing (RDH™): Multiple uplink paths to upper switches

MultiRing™: Couple or multiple Rapid Super Rings

Legacy Super Ring: Backward compatible in client mode

Interface

Number of Ports: 10/100TX: 7 x RJ-45, Auto MDI/MDI-X, Auto Negotiation

10/100/1000TX: 3 x RJ-45, combo with SFP

Gigabit Fiber/100Base-FX: 3 x SFP with Hot Swappable

Cables:

10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable (100m)

100 Base-TX: 2/4-pair UTP/STP Cat. 5 cable (100m)

1000 Base-T: 4-pair UTP/STP Cat. 5 cable (100m)

Diagnostic LED:

10/100 RJ-45: Link/Activity(Green), Full duplex/Collision (Yellow)

Gigabit Copper/SFP: Link/Activity(Green)

Unit: Power(Green), Digital Out(Red), Digital Input(Green), R.M.(Green)

RS232 Console: RJ-45 Connector, Pin3: Tx D, Pin6: Rx D, Pin5: GND

Power: 2 sets of power Inputs

Digital Input: 2 sets of Digital Input

Logic Low (0): 0-10VDC/Logic High(1): 11-30VDC

Alarm: 2 sets of Relay outputs for pre-defined events

Reset: Reset button is provided to restore default settings

Power Requirements

System Power: 12~48V/-12~-48VDC with Reverse Polarity Protection

Power Consumption: 11.5 Watts @ DC 48V

Mechanical

Installation: DIN-Rail mount or Wall Mount

Case: IP-31 protection, aluminum metal case

Dimension: 137mm(H) x 96mm (W) x 119mm (D)

Weight: 0.915kg with package

Environmental

Operating Temperature: -20 ~70°C

Operating Humidity: 0% ~ 95% (non-condensing)

Storage Temperature: -40 ~ 85°C

Hi-Pot: 1.2KV for ports and power

Regulatory Approvals

EMI: EN55022 CLASS A, EN61000-3-2,

EN61000-3-3, EN61000-6-4

EMS: EN55024, EN61000-6-2, IEC 61000-4-2,

IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5,

IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11,

IEC 61000-6-2

Safety: UL/cUL 60950

Shock: IEC60068-2-27

Vibration: IEC60068-2-6

Free Fall: IEC60068-2-32

MTBF: 249,683 Hours, MIL-HDBK-217F GB standard

Warranty: 5 years

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Din Rail
Power Supply



Ordering Information

JetNet 5010G Industrial 7+3G Gigabit Managed Ethernet Switch

Includes:

- JetNet 5010G(without SFP transceiver)
- Wall mounting plate
- Quick Installation Guide
- Documentation CD-ROM
- Console cable



Optional Accessories

100Base-FX Multi-Mode SFP Transceiver

100Base-FX Single-Mode SFP Transceiver

100Base-FX BIDI/WDM Single-Mode SFP Transceiver

Gigabit Multi-Mode SFP Transceiver

Gigabit Single-Mode SFP Transceiver

Gigabit BIDI/WDM Single-Mode SFP Transceiver