

JetNet 5012G / 5012G-w

Industrial 8+4G Gigabit Managed Ethernet Switch



- 8 10/100-TX, 2 Gigabit SFP and 2 Gigabit RJ-45/SFP combo ports (10/100/1000 Base-TX, 1000Base-X)
- Non-Blocking Switching Performance
- Up to 9KB Jumbo Frame for large file transmission
- Korenix Multiple Super Ring pattern aggregates up to 2 Gigabit and 4 100M Rings
- IEEE 802.1s MSTP, RSTP/STP, 256 802.1Q VLAN, Private VLAN, QinQ, QoS and up to 6 trunk groups
- Supports LLDP and JetViewPro i²NMS software for auto-topology visualization and efficient group management
- Industrial Modbus TCP protocol for device monitoring
- SNMP V1/V2c/V3, RMON for remote management
- IGMP Snooping, GMRP, Rate Control for multicast message management
- Advanced Security supports IP/Port Security, 802.1x and Access Control List
- Dual 24V (12-48V) DC power inputs
- IP31 rugged aluminum case
- -25~70°C (JetNet 5012G), -40~70°C (JetNet 5012G-w) operating temperature

Overview

JetNet 5012G, the 8+4G Industrial Managed Ethernet Switch, is specifically designed for industrial environments requiring low fast Ethernet ports and more gigabit interfaces for high-bandwidth data transmission. The JetNet 5012G is equipped with 8 10/100TX Fast Ethernet ports, 2 Gigabit SFP and 2 Gigabit RJ-45/SFP combo ports. With its flexible design it can be configured as 8+4G, 7+3G or 10+2G ring switch. The 8+4G design allows aggregating up to 4 100M rings plus 2 Gigabit rings within one switch, which is a unique and Korenix patent protected ring technology. The JetNet 5012G also allows one Gigabit ring plus 1 or 2 gigabit interfaces application. The client workstations, low bandwidth requiring equipments connect to the Fast Ethernet ports. The uplink port, SCADA station, public servers, share used equipment connect to the gigabit ports. Or it can reserve one of the gigabit ports as spare port for future application's expansion. JetNet 5012G supports Jumbo frame, featuring up to

9,216 bytes packet size for large size file transmission, which is the trend for future industrial application requests. The embedded software supports MSTP, RSTP and Multiple Super Ring technology for ring redundancy protection. Besides, JetNet 5012G support full layer 2 management features, such as the VLAN, Private VLAN, QinQ, IGMP Snooping, LACP for network control, SNMP, LLDP for network management. The secured access is protected by Port Security, 802.1x and flexible Layer 2/4 Access Control List. The switch can work with JetView Pro, the Korenix patented Industrial Innovation Network Management system which can draw the network topology, automatically update ring and port status, remotely manage the switch or monitor its status through LLDP and SNMP protocols. With JetNet 5012G, you can fulfill the technicians' needs of having the best solution for the industrial Ethernet infrastructure.

- Industrial Intelligent NMS
- Rackmount PoE Plus Switch
- Industrial PoE Plus Switch
- Industrial 12-24V PoE Switch
- Industrial PoE Switch
- Rackmount L3/L2 Switch
- Gigabit Managed Switch
- Managed Ethernet Switch
- Entry-level Switch
- Wireless Outdoor AP
- Embedded PoE/Router Computer (LINUX)
- Industrial Communication Computer (WIN/LINUX)
- Ethernet/PoE/Serial Board
- Ethernet I/O Server
- Media Converter
- Serial Device Server
- SFP Module
- Din Rail Power Supply

High Bandwidth and Performance

The JetNet 5012G, equipped with 8 100M Fast Ethernet plus 4 Gigabit Ethernet ports, requests at least 9.6G backplane for wire-speed and bi-directional transmission. To meet the requirements, there are 2 types of system architecture - non-blocking and blocking.

In non-blocking architecture, the switch fabric should provide higher backplane than the front ports' requests. No matter it's a one to one or fully mesh network, the throughput is always 100% without any loss.

Dual Gigabit Rings aggregation capability

Unlike traditional ring switches, which only allow one ring setting or one ring traffic pass-through, the JetNet 5012G supports MultiRing Technology. This allows aggregating 2 or multiple rings within a single switch, lowering the effort on configuration, minimizing the switch volume, easing the network plan especially for complex environments.

Main benefit of the JetNet 5012G is that it allows you to aggregate dual gigabit rings within a single switch. JetNet 5012G with 2 gigabit fiber plus 2 gigabit combo ports can aggregate 2 gigabit fiber rings or 1 gigabit fiber and 1 100M/Gigabit copper rings plus more 100M cooper rings within a single unit.

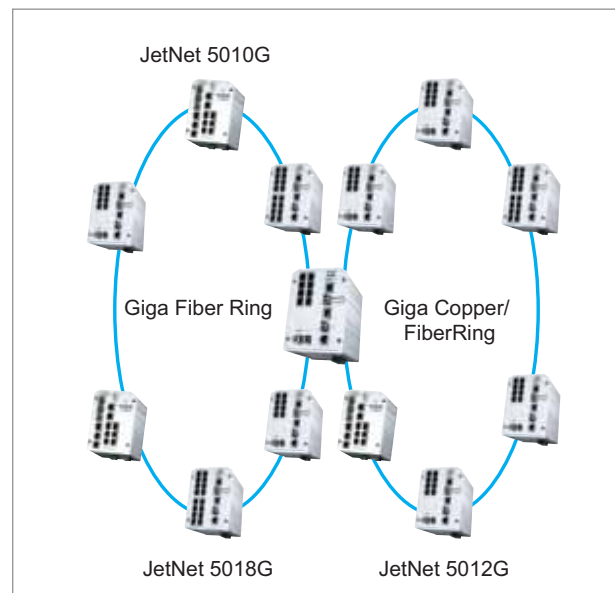
Gigabit SFP Port

The JetNet 5012G is equipped with 4 Gigabit RJ-45/SFP Combo Ports. The uplink ports' bandwidth is often the bottleneck, when a high port density switch connects to many ports. The Gigabit Combo interface acts as the uplink and downlink path, allowing you to choose copper or different range fiber connection.

The JetNet 5012G SFP socket supports 1000Base-X SFP transceiver. You can choose different types of SFP transceivers, including Multi/Single mode transceivers for your switch, depending on the environmental needs, the distance or the installed fiber cable types.

The blocking architecture is usually implemented in non-single chipset solution. Limited backplane may cause traffic jam when there is a heavy loading transmission among the ports.

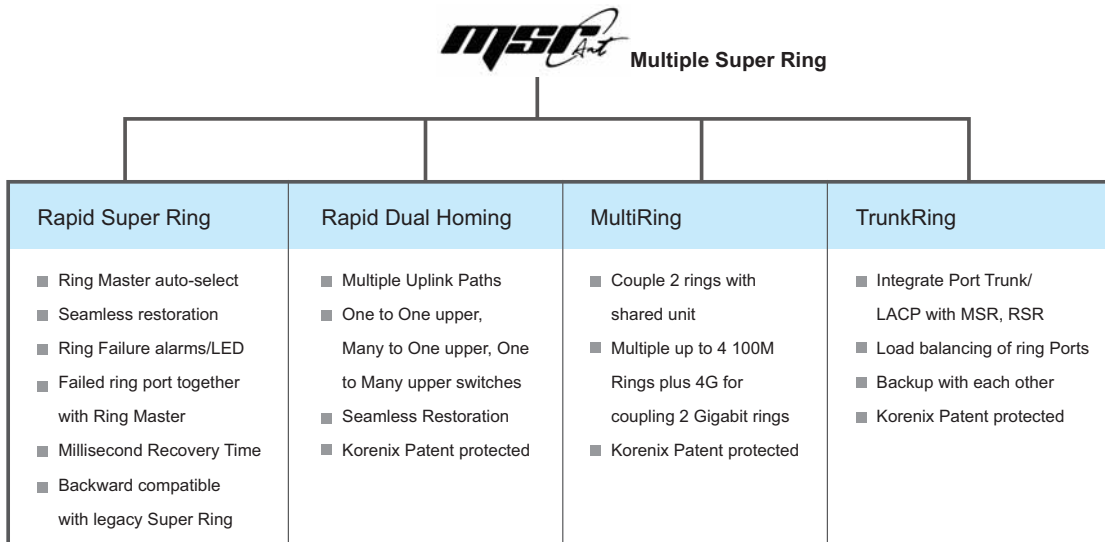
The JetNet 5012G embedded 12.8G backplane is much higher than the system requires. All the traffic can be switching without blocking and loss. Up to 9K Jumbo frame allows transmitting larger files with less segments. The high bandwidth and performance solution guarantees the high capabilities of the product.



Multiple Super Ring (MSR™) Aggregation Capability

The JetNet 5012G supports the new generation ring technology – MSR™ which includes various new technologies for redundancy applications and structures of different networks.

The JetNet 5012G allows to aggregate up to 6 Rapid Super Rings, 4 Fast Ethernet plus dual gigabit Ethernet Rings. The Korenix protected pattern eases your network planning.



LLDP and JetView Pro i²NMS for Auto Topology Visualization

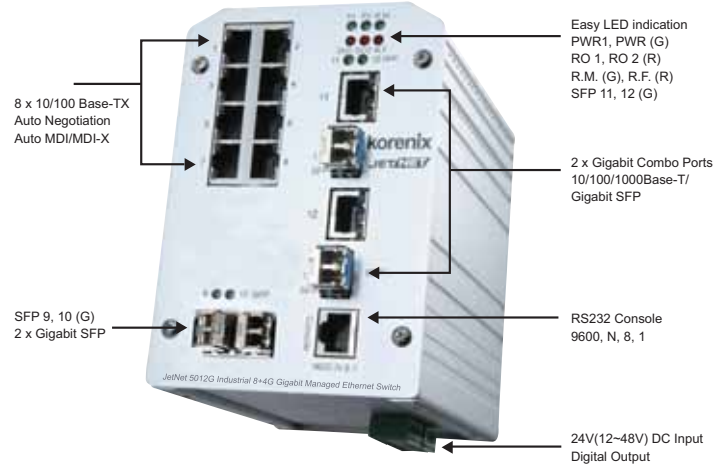
The Link Layer Discovery Protocol (LLDP) was formally ratified as IEEE 802.1AB-2005. LLDP is the Layer 2 protocol that allows the network device/station to advertise connectivity & management information, the identity & major capabilities. If receives and establishes network management information on the local same network.

In industrial environments, most vendors provide their own discovering protocols, window utility or other tools to manage their switches. The LLDP protocol fixes the interoperability among them. With LLDP supported, users can easily browse the network devices and establish the network management information schema about the stations.

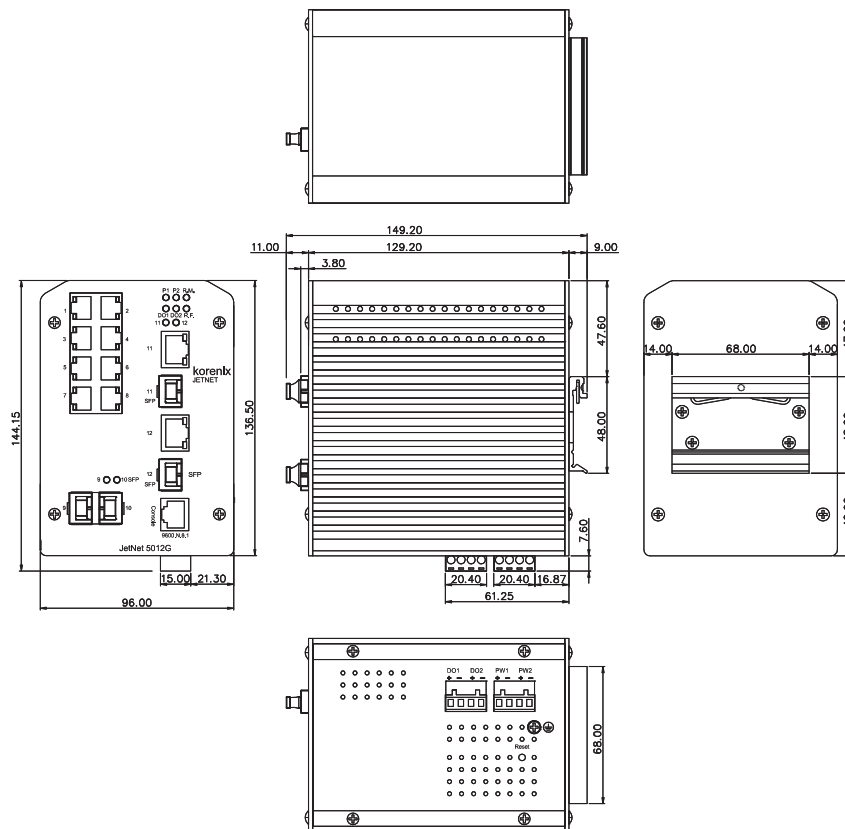
With SNMP, LLDP and JetView protocols supported, JetNet 5012G Series can be easily discovered, their port and ring status can be displayed by JetView Pro, the Korenix designed Network Management System or other NMS, which supports SNMP and LLDP. The software can help administrators efficiently and effectively manage the industrial network.



JetNet 5012G Appearance



Dimension (Unit = mm)



Specification

Technology

Standard:

IEEE 802.3 10Base-T Ethernet
 IEEE 802.3u 100Base-TX Fast Ethernet
 IEEE 802.3ab 1000Base-T
 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 802.1QinQ
 IEEE 802.1s Multiple Spanning Tree Protocol
 IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
 IEEE802.3ad Link Aggregation Control Protocol (LACP)
 IEEE802.1X Port based Network Access Control
 IEEE802.1AB Link Layer Discovery Protocol
 Modbus TCP/IP

Performance

Switch Technology:

Store and Forward Technology, 12.8Gbps Switch Fabric.

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

Transfer packet size: Typical: 64 bytes to 1536 bytes,

Jumbo Frame Enabled: Up to 9,216bytes.

MAC Address: 8K

Packet Buffer: 2Mbits

Management

Configuration: Cisco-Like CLI, Web, SSL, SSH, JetView, 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

Jumbo Frame Enable/Disable: up to 9,216KBytes

LLDP: Link Layer Discovery Protocol to advertise system/port identity and capability on the local network

Modbus/TCP: Industrial Communication protocol for device monitoring

SNMP: SNMP v1, v2c, v3 and Traps.

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

SNTP: Simple Network Time Protocol to synchronize time

IEEE1588 Precision Timer Protocol(PTP):

Synchronize time from the PTP server

Port Mirroring: Online traffic monitoring

Port Trunk: Static Trunk and 802.3ad LACP , Up to 6 Trunk Group, 2-8 ports per trunk

Rate Control: Ingress and Egress rate limiting

VLAN: IEEE802.1Q VLAN, GVRP. Up to 255 VLANs

Private VLAN: Direct client ports in isolated/community VLAN to promiscuous port in primary VLAN

QinQ: Double VLAN Tag in an Ethernet frame

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

GMRP: GARP Multicast Registration Protocol

Port Security: Assign authorized MAC to specific port

IP Security: IP security to prevent unauthorized access

802.1x: Port_based Network Access Control

Radius: Login by Radius account/password, Key for Radius Server Authentication

Access Control List: Permit/Deny access control lists

DHCP Server: Support 255 Dynamic IP pool

DHCP Option 82: Relay the DHCP request to remote server

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

Syslog: Message logged with server and client mode

Network Redundancy

Multiple Spanning Tree Protocol: IEEE802.1s MSTP, each MSTP instance can include one or more VLANs

Rapid Spanning Tree Protocol: 802.1D-2004 RSTP, compatible with Legacy STP

Multiple Super Ring(MSR™): Korenix Ring Redundancy Technology, Includes Rapid Super Ring, Rapid Dual Homing, TrunkRing, MultiRing; up to 20ms recovery time on fiber port
Rapid Dual Homing (RDH™): Multiple uplink paths to one or multiple upper switch

TrunkRing™: Integrate port aggregate function in ring path to get higher throughput ring architecture

MultiRing™: Couple or Multiple Rapid Super Rings within one switch. Maximum 4 100M rings plus 2 Gigabit Rings

Legacy Super Ring: Backward compatible in client mode

Interface

Number of Fixed Gigabit Ports:

10/100Base-TX: 8 x RJ-45, Auto MDI/MDI-X, Auto Negotiation

10/100/1000Base-T: 2 x RJ-45, combo with SFP

1000Base-X: 4 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:

System: Power 1, Power 2, Ring Master (Green), Relay 1, Relay 2, Ring Failure (Red)

10/100 RJ-45: Link/Activity (Green/Green Blinking),

Full Duplex/Collision (Yellow/Yellow Blinking)

1000Base-T RJ-45: Link/Active (Green/Green Blinking),

Full Duplex/Collision (Yellow/Yellow Blinking)

Gigabit SFP: Link/Activity (Green/Green Blinking)

RS232 Console: RJ-45 type, Pin: (2: TxD, 3: RxD, 5:GND)

Power: 2 sets of DC inputs

Relay Output: 2 sets of Relay Output

Reset: One Reset button for Reset Factory Default

Power Requirements

System Power: Dual 24 (12-48V) DC power input

Power Consumption: Max. 15 Watts

Mechanical

Installation: Din Rail or Wall Mount

Case: Aluminum metal case with IP31 protection

Dimension: 137mm(H) x 96mm (W) x 129mm (D)

Weight: 1.5 kg with package

Environmental

Operating Temperature: -25 ~70°C (JetNet 5012G)

-40~70°C (JetNet 5012G-w)

Operating Humidity: 5% ~ 95% (non-condensing)

Storage Temperature: -40 ~ 85°C

Industrial Intelligent NMS

Rackmount PoE Plus Switch

Industrial PoE Plus Switch

Industrial 12-24V PoE Switch

Industrial PoE Switch

Rackmount L3/L2 Switch

Gigabit Managed Switch

Managed Ethernet Switch

Entry-level Switch

Wireless Outdoor AP

Embedded PoE/Router Computer (LINUX)

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Ethernet/PoE/Serial Board

Ethernet I/O Server

Media Converter

Serial Device Server

SFP Module

Din Rail Power Supply

Regulatory Approvals

EMI: FCC Class A, CE/EN55022. Class A
EMS: IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4,
IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8
Safety: UL508

Shock: IEC60068-2-27
Vibration: IEC60068-2-6
Free Fall: IEC60068-2-32
Warranty: 5 years

Ordering Information

JetNet 5012G Industrial 8+4G Gigabit Managed Ethernet Switch, -25~70°C operating temperature

JetNet 5012G-w Industrial 8+4G Gigabit Managed Ethernet Switch, -40~70°C operating temperature

Includes:

- JetNet 5012G / 5012G-w (without SFP transceivers)
- Din Rail Kit
- Document CD
- Quick Installation Guide
- Console Cable

Optional Accessories

Gigabit SFP Transceiver

SFPGSX: 1000Base-SX multi-mode transceiver 550m , commercial operating Temp, -10~70°C
SFPGSX-w: 1000Base-SX multi-mode transceiver 550m , commercial operating Temp, -40~85°C
SFPGSX2: 1000Base-SX multi-mode transceiver 2km , commercial operating Temp, -10~70°C
SFPGSX2-w: 1000Base-SX multi-mode transceiver 2km , commercial operating Temp, -40~85°C
SFPGLX10: 1000Base-LX single-mode transceiver 10Km , commercial operating Temp, -10~70°C
SFPGLX10-w: 1000Base-LX single-mode transceiver 10Km , commercial operating Temp, -40~85°C
SFPGLHX30: 1000Base-LHX single-mode transceiver 30Km , commercial operating Temp, -10~70°C
SFPGLHX30-w: 1000Base-LHX single-mode transceiver 30Km , commercial operating Temp, -40~85°C
SFPGXD50: 1000Base-XD single-mode transceiver 50Km , commercial operating Temp, -10~70°C
SFPGXD50-w: 1000Base-XD single-mode transceiver 50Km , commercial operating Temp, -40~85°C
SFPGZX70: 1000Base-ZX single-mode transceiver 70Km , commercial operating Temp, -10~70°C
SFPGZX70-w: 1000Base-ZX single-mode transceiver 70Km , commercial operating Temp, -40~85°C

Gigabit SFP Transceiver (BIDI /WDM)

SFPGLX10B13: 1000Base-LX BIDI single-mode transceiver 10km, -10~70°C
SFPGLX10B13-w: 1000Base-LX BIDI single-mode transceiver 10km, -40~85°C
SFPGLX10B15: 1000Base-LX BIDI single-mode transceiver 10km, -10~70°C
SFPGLX10B15-w: 1000Base-LX BIDI single-mode transceiver 10km, -40~85°C
SFPGLX20B13: 1000Base-LX BIDI single-mode transceiver 20km, -10~70°C
SFPGLX20B13-w: 1000Base-LX BIDI single-mode transceiver 20km, -40~85°C
SFPGLX20B15: 1000Base-LX BIDI single-mode transceiver 20km, -10~70°C
SFPGLX20B15-w: 1000Base-LX BIDI single-mode transceiver 20km, -40~85°C
SFPGLX40B13: 1000Base-LX BIDI single-mode transceiver 40km, -10~70°C
SFPGLX40B13-w: 1000Base-LX BIDI single-mode transceiver 40km, -40~85°C
SFPGLX40B15: 1000Base-LX BIDI single-mode transceiver 40km, -10~70°C
SFPGLX40B15-w: 1000Base-LX BIDI single-mode transceiver 40km, -40~85°C
SFPGLX60B13: 1000Base-LX BIDI single-mode transceiver 60km, -10~70°C
SFPGLX60B13-w: 1000Base-LX BIDI single-mode transceiver 60km, -40~85°C
SFPGLX60B15: 1000Base-LX BIDI single-mode transceiver 60km, -10~70°C