

JetNet 5018G / 5018G-w

Industrial 16+2G Gigabit Managed Ethernet Switch



- 16 10/100-TX 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 9 Rapid Super Rings
- 802.1s MSTP, RSTP/STP, 256 802.1Q VLAN, Private VLAN, QinQ,
- QoS and up to 8 trunk groups
- IGMP Snooping, GMRP, Rate Control for multicast message management
- 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
- 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 5018G), -40~70°C (JetNet 5018G-w) operating temperature

Overview

The JetNet5018G, the high density Industrial Managed Ethernet Switch, is specially designed for industrial environments requesting support of high access ports. With fewer unit installation capability, the access ports share wider on-chip backplane, faster local transmission latency, efficient upstream transmission. Besides all the ports can be managed through a single management agent.

The JetNet 5018G is equipped with 16 10/100TX Fast Ethernet ports and 2 1000Base-T/Gigabit SFP combo ports. The SFP ports accept all types of Gigabit SFP transceivers, including Gigabit SX, LX, LHX, ZX and XD for several connections and distances. The 16+2G design allows aggregating up to 8 100M rings plus 1 Gigabit ring. This is a unique and Korenix patent protected ring technology.

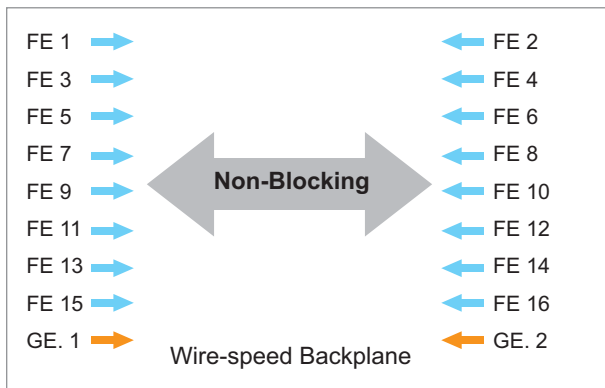
The JetNet 5018G is designed as rugged surface in aluminum material, with efficient heat dispersion and wide operating temperature. JetNet 5018G supports Jumbo frame, featuring up to 9,216 bytes packet size for large size file transmission, which is the trend for future industrial application requests.

The embedded software supports 802.1s MSTP, RSTP and Multiple Super Ring technology for ring redundancy protection. Besides, JetNet 5018G support full layer 2 management features, such as the VLAN, 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. With JetNet 5018G, you can fulfill the technicians' needs of having the best solution for the industrial Ethernet infrastructure.

High Bandwidth and Performance

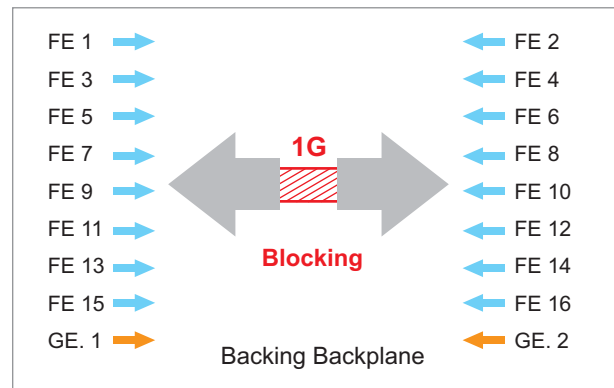
The JetNet 5018G equipped with 16 100M Fast Ethernet plus 2 Gigabit Ethernet ports, totally requests at least 7.2G backplane for wire-speed and bi-directional transmission. To meet the requests, there are 2 types of system architecture - non-blocking and blocking.

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



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 5018G 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.



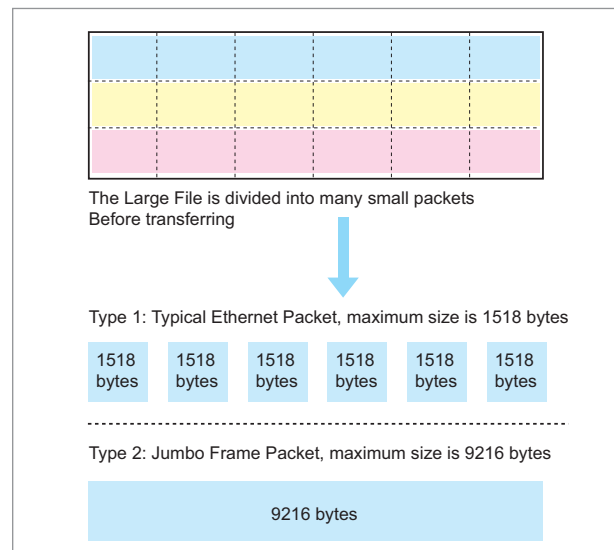
What is Jumbo Frame?

The typical Ethernet frame ranges from 64 to 1518 bytes. This is sufficient for general usage. However, when users want to transmit large files, the files may be divided into many small size packets. While the transmitting speed becomes slow, 9KBytes Jumbo frame can solve the issue.

Jumbo Frame examples:

Transmitting large files, like the size of the LCD's bitmap type circuit may reach up to 800MB.

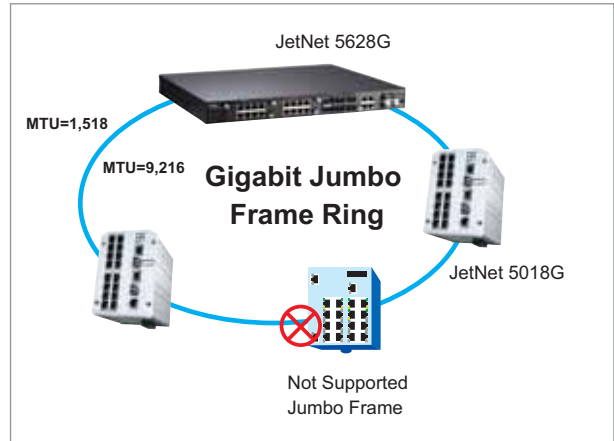
Network servers usually progress backups for lots of large files.



Jumbo Frame Ring

When running Jumbo Frame within the industrial ring environment, all the switches within the ring must support Jumbo Frame. Once there is any Jumbo Frame unaware switch within the ring, the Jumbo Frame would be dropped.

Korenix provides complete Jumbo Frame supported switches, the switches help to form the Jumbo Frame ring easier. you can choose and install JetNet rackmount switch in control room, and JetNet Din Rail switch as the entry level Jumbo frame switch for formning a jumbo frame ring



Gigabit SFP Port

The JetNet 5018G is equipped with 2 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 5018G 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.



Multiple Super Ring (MSR™) Aggregation Capability

The JetNet 5018G supports the new generation ring technology – MSR™ which includes various new technologies for redundancy applications and structures of different networks.

The JetNet 5018G allows to aggregate up to 9 Rapid Super Rings, including 8 Fast Ethernet plus one gigabit Ethernet Rings. The Korenix protected pattern eases your network planning.



Rapid Super Ring	Rapid Dual Homing	MultiRing	TrunkRing
<ul style="list-style-type: none"> ■ Ring Master auto-select ■ Seamless restoration ■ Ring Failure alarms/LED ■ Failed ring port together with Ring Master ■ Millisecond Recovery Time ■ Backward compatible with legacy Super Ring 	<ul style="list-style-type: none"> ■ Multiple Uplink Paths ■ One to One upper, Many to One upper, One to Many upper switches ■ Seamless Restoration ■ Korenix Patent protected 	<ul style="list-style-type: none"> ■ Couple 2 rings with shared unit ■ Multiple up to 8 100M rings plus 1 Gigabit ring. ■ Korenix Patent protected 	<ul style="list-style-type: none"> ■ Integrate Port Trunk/LACP with MSR, RSR ■ Load balancing of ring Ports ■ Backup with each other ■ Korenix Patent protected

LLDP and JetView Pro i²NMS for Auto Topology Visualization

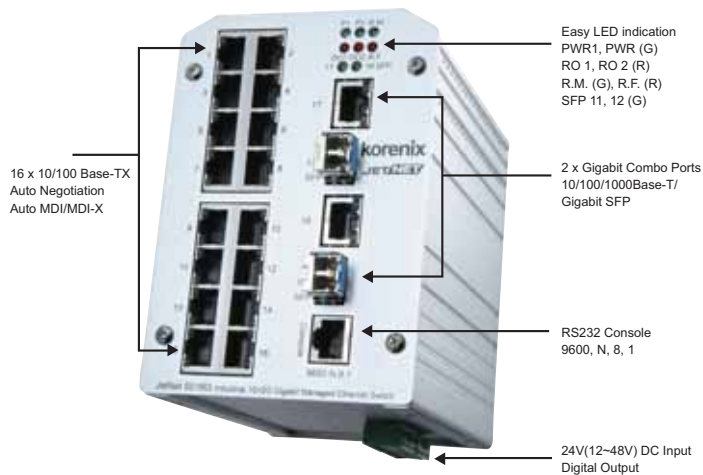
The Link Layer Discover Protocol (LLDP) was formally ratified as IEEE 802.1AB-2005. LLDP is the Layer 2 protocol that allows the network device/station to advertise connectivity & management information, the identity & major capabilities, it receives and establishes network management information on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

With SNMP, LLDP and JetView protocols supported, JetNet 5018G 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.

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 of the stations.



JetNet 5018G Appearance



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

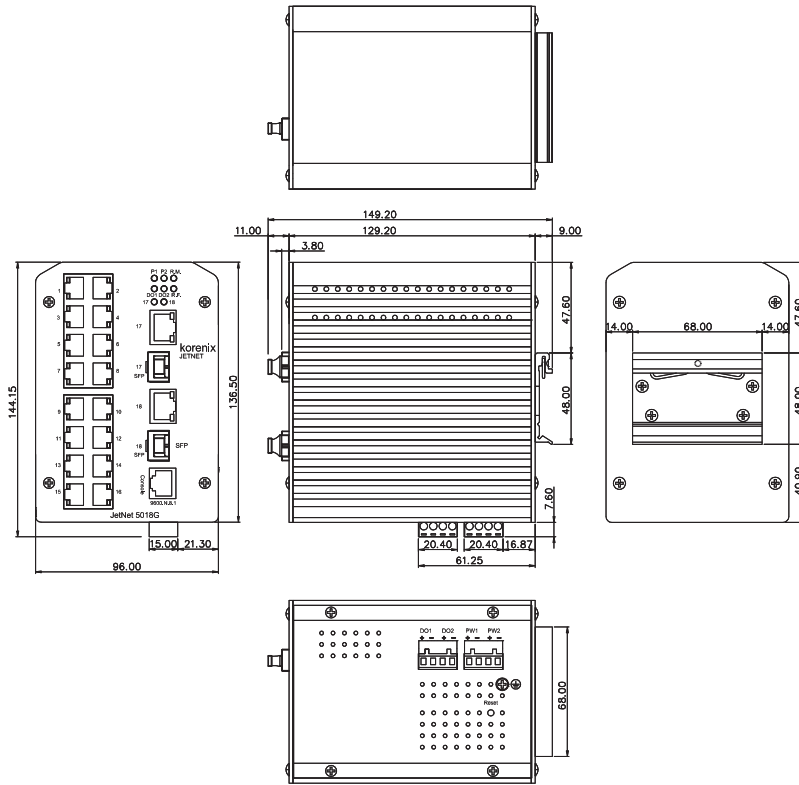
Media
Converter

Serial Device
Server

SFP Module

Din Rail
Power Supply

Dimensions (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 (MSTP)
- 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 (LLDP)

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, RSTP, MSTP, 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 9 Trunk Group, 2-8 ports per trunk

Rate Control: Ingress and Egress rate limiting

VLAN: IEEE802.1Q VLAN, GVRP. Up to 256 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 poll

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

Multiple Ring™: Couple or Multiple 8M 100M rings and 1 Gigabit ring within one switch

Legacy Super Ring: Backward compatible in client mode

Interface

Number of Fixed Gigabit Ports:

10/100Base-TX: 16 x RJ-45, Auto MDI/MDI-X, Auto Negotiation

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

1000Base-X: 2 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

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

-40~70°C (JetNet 5018G-w)

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

Storage Temperature: -40 ~ 85°C

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

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

Ordering Information

JetNet 5018G Industrial 16+2G Gigabit Managed Ethernet Switch, -25~70°C operating temperature

JetNet 5018G-w Industrial 16+2G Gigabit Managed Ethernet Switch, -40~70°C operating temperature

Includes:

- JetNet 5018G / 5018G-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