JetNet 5728G-24P / 5728G-16P / 5720G-8P

Industrial Rackmount 24+4G Managed High Power IEEE802.3at PoE Switch

Industrial Rackmount High Power PoE

CE FC ☒ **RoHS**

24 x 30WPoE	460W*	MSR < 5ms	12+2Giga Rings	LPLD
LLDP & JetViewPro	IEEE 1588PTP	9K Jumbo Frame	HDC	-25~65°C

- Up to 24 10/100 BaseTX and 4 Gigabit uplink ports
- Up to 24 ports support both 15.4W IEEE 802.3af and the latest 30W high power IEEE 802.3at, including 2-event and LLDP classification
- Total power budget is 460W* by IEEE 802.3at with maximum 30W per port
- Flexible-bandwidth and long-distance data transmission by SFP transceivers
- LPLD for reliable PoE connection through Active Powered Device status detection and auto reset function
- 12.8G Non-Blocking backplane, 16K MAC table for wire speed bidirectional switching
- IEEE 1588 PTP compliance for precise time synchronization
- Korenix patented MSR for aggregating up to 12 x 100Mb plus 2 Gigabit rings
- Supports up to 9,216 bytes Jumbo Frame for secured large file transmission
- IEEE 802.1AB LLDP and optional JetView Pro i[2]NMS software for auto-topology and large network group management
- IGMP Query v1/v2 & Snooping v1/v2/v3 for advanced multicast filtering
- Up to 255 VLAN traffic isolation
- Advanced network management features support SNMP, RMON
- Supports DHCP client/server, DHCP Option 82 for automatic IP configuration
- Dual redundant low voltage range: 48VDC(46~57VDC) and HDC range: 90~264VAC or 127~370VDC
- IP31 rugged aluminum case with great heat dispersion

Overview

JetNet 5728G series is rackmount High-Port Density and Gigabit Managed Industrial Power over Ethernet switch, designed exclusively for highly critical PoE applications such as real time IP video surveillance with high resolution quality and the evolving wireless communication systems such as Wimax and 802.11 a/b/g/n Access Points. All of the 8, 16 or 24 Fast Ethernet PoE injector ports of the switches can deliver 15.4W by IEEE 802.3af or 30W by the latest High Power PoE IEEE 802.3at standard for upgrading the existing video network infrastructure to a powerful surveillance network. The 4 Gigabit Ethernet ports provide high speed uplink to connect with higher level backbone switches. With the Korenix patented MSRTM network redundancy technology, the switches can aggregate up to 12 fast ethernet rings and 2 gigabit rings while providing high quality data transmission with less than 5ms network recovery time. Furthermore, to ensure the traffic switching without data loss and blocking, the

JetNet 5728G series provides 12.8G backplane with the integtrated non-blocking switching function. JetNet 5728G incorporates LLDP function and perfectly works with the Korenix patented JetView Pro i2NMS for allowing administrators to automatically discover devices and efficiently manage the industrial network performance in large scale surveillance networks. To further ensure the non-stop power delivery, JetNet 5728G series supports dual 48VDC power inputs and provides alarm relay output signaling function. For high voltage requiring applications the PoE switch provides extra 90~264VAC or 127~370VDC power supply capability. With the advanced Layer2 management features including IGMP Query/Snooping, DHCP, 255 VLAN, QoS, LACP, LPLD, etc. and the corrosion resistant robust design, JetNet 5728G highly outstands from other PoE switches and becomes the revolutionary solution for industrial surveillance applications.

Driving the IP Surveillance / Wireless PoE market

Since the ratification of the PoE standard in 2003, the Power over Ethernet technology becomes a trend; more devices adopt PD technology to obtain power through Ethernet cable eliminating the need of running separate power wirings to a remote device. In this context, the IEEE 802.3af PoE standard with 15.4 w power budget already satisfies the power needs of most applications, such as 802.11 a/b /g /n wireless AP for Hot-Spots, Airport Terminations etc. However, it cannot satisfy the power needs of high end demanding applications, such as WiMAX, IP DOM Cameras, requiring greater than the 15.4w power.

The JetNet 5728G comes with the new PSE solution, compliant with both IEEE 802.3af and IEEE 802.3at high power PoE standards. All the 8 or 16 or 24 PoE ports support IEEE 802.3at PoE plus standard and can deliver 30 watts power per port to outdoor PTZ IP cameras with

direction control for cross–street monitoring, or WiMAX systems for internet access in train stations, airports or Hot-spots. The additional dual Gigabit ports provide more resilient and redundancy for users while forming a ring network and delivering increased bandwidth to the central network.

Reliable Power Feeding Mechanisms

The JetNet 5728G series is offered with dual 48VDC power inputs for providing true network redundancy. An alarm relay output signals when a power input fails or other critical events occur.

To ensure reliable power delivery, other advanced PoE power management features include individual port status monitoring, emergency power management (3 power supply indication inputs for quick shutdown of ports according to pre-defined priority table in cases where power supply failure occurs) and voltage/current monitoring and regulation. Power management allows the JetNet 5728G series to determine the exact power draw per port and to balance each port PoE power output accordingly. This, in turn, allows the switch to
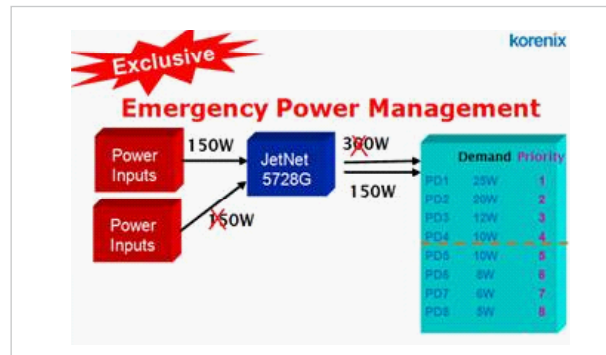
power higher and lower wattage devices according to user-definable parameters such as maximum available power, port priority (critical, high, low), and maximum allowable power per port.

High Port Density and Gigabit Capability

With up to 24 10/100 Mbps ports and 4 RJ-45/SFP combo ports JetNet 5728G series can connect to servers or Gigabit-speed backbone to provide quick and reliable delivery of large multimedia, image and video files in a non-stop network. The 4 shielded RJ-45 ports

automatically negotiate to the highest speed, whereas the 4 hot-swappable SFP GBIC slots provide optional copper and fiber-based gigabit media connectivity for flexible bandwidth and longer distance transmission.

Up to 9KBytes Jumbo Frame

The typical Ethernet frame ranges from 64 to 1518 bytes, which is only sufficient for general usage. Contrary, in large scale surveillance networks, where users need to transmit large video streams, the files may be divided into many small size packets. While the transmitting speed becomes slow, 9KBytes Jumbo frame can solve the issue.

Korenix JetNet 5728G series supports Jumbo Frame to enhance the network communication while allowing users to easily transmit up to 9K Jumbo Frame packet.

Multiple Super Ring Aggregation Capability
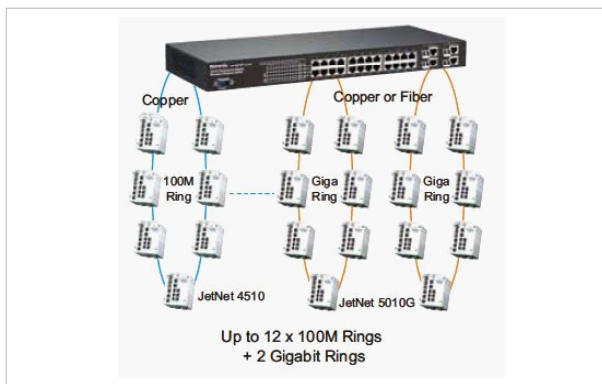
The JetNet 5728G series supports the new generation ring technology – MSRTM which includes various new technologies for redundancy applications and structures of different networks. The PoE switch allows to aggregate up to 14 Rapid super rings, including 12 Fast Ethernet plus 2 gigabit Ethernet Rings. With the MSRTM technology, a node can be configured to multiple rings with the failover time in as little as 5ms and zero-second of restoration time.

LPLD for Smart Powered Device Alive-Check

JetNet 5728G series can be configured by Korenix patented PoE "Link Partner Line Detect" technology to guarantee the reliable connection of PD devices through easy monitoring of their real-time status.

Once the keep-alive checking detects PD failure, it resets the PoE port to bring the PD back to a working state. This greatly enhances the system reliability while minimizing the maintenance time and cost.

Auto Topology Discovery & Efficient Management

JetNet 5728G supports topology discovery or LLDP (IEEE 802.1AB Link Layer Discovery Protocol) function that can help users to discover multi-vendor's network devices on the same segment by an NMS system, which support LLDP function. With LLDP function, NMS can easily maintain the topology map, display port ID, port description, system description, VLAN ID, etc.. Once a link failure happens, the topology changed events are updated to the NMS to help users easily maintain the network system. Besides the SNMP and LLDP protocols, JetNet 5728G series efficiently works with the Korenix patented JetView Pro i2NMS, which in addition to the auto-topology discovery, also delivers MSRTM group management, group IP assignment, group firmware upgrade, group configuration file backup/ restore, SNMP
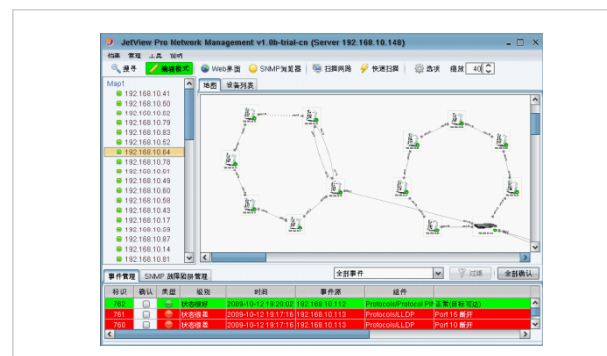
MIB Browser /compiler, etc.

The user-friendly software allows administrators to discover devices automatically and efficiently manage the performance of the large-scale industrial surveillance networks.

Outstanding Management and Enhanced Security

JetNet 5728G provides various software features for ensuring high-quality performance, bandwidth aggregation and efficient video stream transmission in industrial surveillance networks.

The network optimization can be achieved by the JetNet 5728G series' DHCP option 82, QoS, 255 VLAN groups, IGMP Query/Snooping, GMRP, LACP link aggregation (802.3ad), ACL (Access Control List), PoE scheduling and many other advanced management and security features. System administrators can benefit from its rich interface for remotely managing and configuring devices via JetView, JetView Pro (Korenix's advanced management utility), Web browser, SNMP, Telnet etc.

Appearance

Dimensions

www.korenix.com
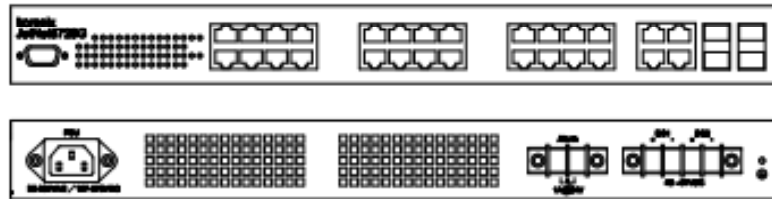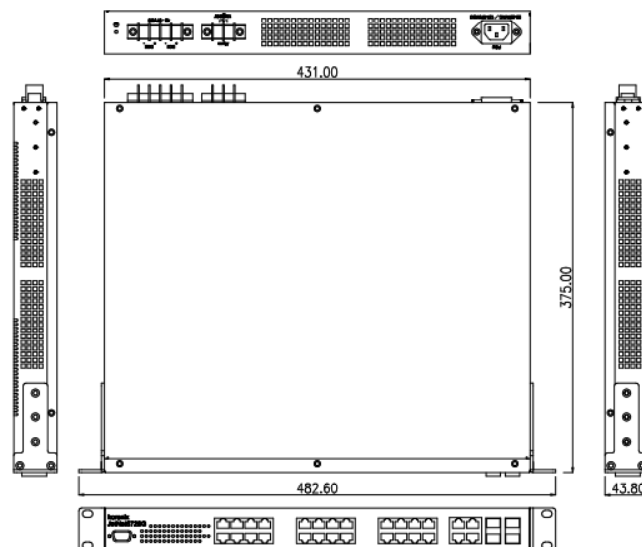
Specification

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 802.3af Power Over Ethernet (PoE)
IEEE 802.3at Power Over Ethernet Plus (PoE Plus)
IEEE 802.1p Class of Service
IEEE 802.1Q VLAN
IEEE 802.1P GMRP
IEEE 802.1d 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
IEEE1588 Precision Time Protocol

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 for Gigabit Ethernet
Transfer packet size: Typical: 64 bytes to 1536 bytes
Jumbo Frame Enabled: Up to 9,216bytes
MAC Address: 16K
Packet Buffer: 32Mbits
PoE Technology: End-Span wiring architecture, fully IEEE802.3af-2003 compliant, and support IEEE802.3at, including 2-event and LLDP classification
PoE Pin Assignments: RX/V+(1, 2) and TX/V-(3, 6)

Management
Configuration: Cisco-Like CLI, Telnet, JetView Pro, Web, SSL, SSH, SNMP v1/v2c/v3, RMON
LLDP: Link Layer Discovery Protocol for NMS automated topology discovery (ex. JetView Pro)
SNMP Trap: SNMP v1/v2c Traps.
SNMP MIB: MIB-II, Bridge MIB, Ethernet-like MIB, VLAN MIB, SNMP MIB, PoE MIB, LLDP MIB, RMON MIB, Trap MIB, and Private MIB
NTP: Network Time Protocol to synchronize time
Port Mirroring: Online traffic monitoring
Port Trunk: Static Trunk and 802.3ad LACP , Up to 8 Trunk Group, 8 ports per trunk
Rate Control: Ingress filtering for Broadcast, Multicast, Unknown DA or All packets, step by 64kbps.
VLAN: IEEE802.1Q VLAN, GVRP. Up to 255 VLANs
Quality of Service: 8 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
GMRP: GARP Multicast Registration Protocol
IEEE 1588 PTP: Precision Time Protocol for precise time synchronization of networks
Port Security: Assign authorized MAC to specific port
802.1x: Port based Network Access Control
Access Control List (ACL): L2~L4 access control lists

DHCP: Supports DHCP Client/Server & DHCP Option 82
E-mail Warning: Automatic warning by pre-defined events
Syslog: Supports both local mode and server mode

Network Redundancy
Rapid Spanning Tree Protocol: IEEE802.1D-2004 RSTP. Compatible with STP.
Multiple Super Ring (MSR™): New generation Korenix Ring Redundancy Technology, including Rapid Super Ring, Rapid Dual Homing, TrunkRing, and MultiRing.
Rapid Super Ring (RSR™): Provide failover time less than 5 ms and seamless restoration at full load
Rapid Dual Homing (RDH™): Multiple uplink paths to one or multiple upper switch
TrunkRing™: Increase the ring bandwidth and redundancy
MultiRing™: Multiple ring connections. Up to 12 100Mbps rings and 2 Gbps rings in one JetNet 5728G.
LPLDTM: Auto-detect Powered Device status for device auto-reset
PoE Schedule Management: Each PoE port can be activated and powered scheduling with different rules. Weekly schedule on hourly basis is supported
Advanced PoE Power Management: Individual port status monitoring, emergency power management, voltage/current monitoring and regulation

Interface
Number of Ports:
10/100Base-TX: 16/24 x RJ-45 with 8/16/24 PoE injector
10/100/1000Base-TX: 4 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)
MSR status LED:
1. MSR in Normal State (Lit Green)
2. MSR in Abnormal State (Lit Yellow)
3. MSR function not active (Not Lit)
4. Incorrect configuration of MSR, ex. ring not connected to ring port (Flashes Green)
5. The break has been detected to be local to one of the ports (Flashes Yellow)
PoE LED:
802.3af mode: Detection/Powering (Green)
802.3at mode: Detection/Powering (Blue)
Port LED:
10/100 RJ-45: Link/Activity (Lit Green/Flashes Green)
Gigabit Copper/SFP: Link/Activity (Lit Green/Flashes Green)
Diagnostic LED:
PSU/DC Power (Green), RDY (Green), Alarm (Red)
RS232 Console: RJ-45 Connector, Pin3: TxD, Pin6: RxD, Pin5:GND
Power Connector: 1 Standard 3-pronged AC plug + 4 pin DC Terminal Block
Relay Alarm: 1 set of relay output with current carrying capability of 1A@24V
Alarm Events: Power (PSU, DC1, DC2) failure, port failure, ping failure, login failure, RSR topology change

Power Requirements

Power Consumption: 28 Watts Max

PSU: 90-264VAC/127-370VDC, 300W

DC1/DC2: 48VDC (46-57VDC), redundant dual inputs

Overload Current Protection: Present

Reverse Polarity Protection: Present

PoE Power Supply - 48VDC: 36-57VDC, 0.6A

PoE Protection: over-temp, over-current, over/under-voltage & transient

Mechanical

Installation: 19-inch, 1U Rack Mount

Casing: IP31 protection, Metal case

Dimension: 43.8mm(H) x 431mm (W) x 375mm (D)

Weight: appr. 5 kg

Environmental

Operating Temperature: -25 ~ 60°C (fanless)

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

Storage Temperature: -40 ~ 85°C

Hi-Pot: 1.5KV for ports and power

Regulatory Approvals

EMI: FCC Class A, CE/EN55022. Class A

EMS:

EN61000-4-2 (ESD), level 3

EN61000-4-3 (RS), level 3

EN61000-4-4 (EFT), level 3

EN61000-4-5 (Surge), level 3

EN61000-4-6 (CS), level 3

EN61000-4-8

EN61000-4-11

Traffic Control: NEMA TS2 (Pending)

Maritime: DNV (Pending), GL (Pending)

Safety: UL, cUL, EN60950

Shock: IEC60068-2-27

Vibration: IEC60068-2-6

Free Fall: IEC60068-2-32

MTBF: Above 200,000 Hours, MIL-HDBK-217F GB standard

Warranty: 5 years

▌ Ordering Information

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- **JetNet 5728G-24P:** Industrial Rackmount 24+4G Gigabit Managed High Power IEEE 802.3at PoE Switch with 24-port PoE
  JetNet 5728G-24P (without SFP transceivers), Rack Mount Kit, Quick Installation Guide, Document CD

- **JetNet 5728G-16P:** Industrial Rackmount 24+4G Gigabit Managed High Power IEEE 802.3at PoE Switch with 16-port PoE
  JetNet 5728G-16P (without SFP transceivers), Rack Mount Kit, Quick Installation Guide, Document CD

- **JetNet 5720G-8P:** Industrial Rackmount 16+4G Gigabit Managed High Power IEEE 802.3at PoE Switch with 8-port PoE
  JetNet 5720G-8P (without SFP transceivers), Rack Mount Kit, Quick Installation Guide, Document CD

▌ Optional Accessories

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SFP Transceiver

- Gigabit Multi-Mode SFP Transceiver
- Gigabit Single-Mode SFP Transceiver
- Gigabit BIDI/WDM Single-Mode SFP Transceiver

Power Supply

- SDR-480-48: Industrial DC48V Power Supply, 90~264VAC/127~370VDC power input, -25~70°C