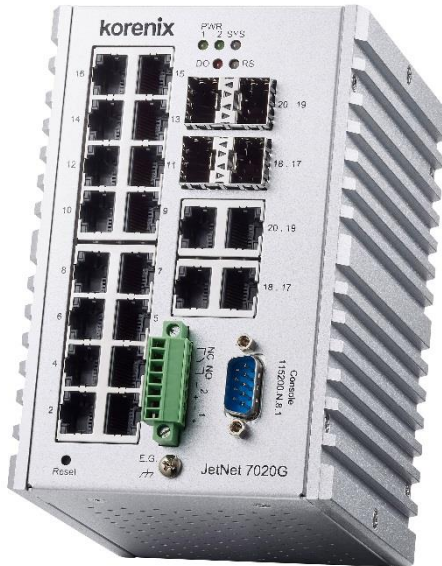


## Industrial Gigabit Ethernet L3 Switch

# JetNet 7020G



The JetNet 7020G is a Layer 3 routing Switch with 16 ports Gigabit Ethernet RJ-45, 4 ports Gigabit with RJ-45 or SFP combo design.

The Switch is designed with IP layer3 packet forwarding ability that allows several IP domains integrated and exchange in one Switch, it enhanced the network performance and enlarged the network topology with flexible network construction.

The JetNet 7020G is designed with multi-purpose concept, it features particular power system design to endure the harsh operating environment, such as -40-75°C operating temperature, 10-60V wide power source, and serious electromagnetic interfere, to satisfy the request of railway communication, road traffic control or power substation for smart grid applications.



Layer 3



Gigabit



Dual Power



EN50121-4



10-60V



Cyber Security



Cyber Redundancy

## Features

- ▶ 16 ports GbE RJ-45, 4 ports GbE RJ-45/SFP Combo
- ▶ Managed Layer-3 Gigabit Routing Switch
- ▶ 40Gbps Non-Blocking, High Speed Network Switching Fabric
- ▶ Network Redundancy - MSR (Multiple Super Ring), ITU-T G.8032 ERPS, RSTP, MSTP, Super Chain, ERPS V2
- ▶ Fully Device Management - SNMP v1/v2c/v3, RMON, Web UI, Telnet and Local Console
- ▶ Friendly Device and Network Topology recovery utility - Korenix View, Korenix NMS
- ▶ Advanced Network Security - MAC security, IEEE 802.1x Port Based access control, IEEE 802.1x Radius Server authentication, 802.1x MAB, L2/3/4 ACL, IP Source Guard, Deny of ARP Inspection, TACACS+
- ▶ Layer 2 Network Performance - IEEE802.1Q VLAN, Private VLAN, Trunk, Traffic Filtering, DHCP Server/Client, Traffic Prioritize, Forwarding Rate Control
- ▶ Layer 3 Network Routing Protocols - Static/Dynamic Route, VLAN Routing, Multicast Routing
- ▶ Hardware Watchdog for System Auto-Recovery
- ▶ Multiple Event Dry Relay Output
- ▶ High Level Electromagnetic interference immunity
- ▶ Harsh operating environment: -40-75°C, DC 10-60V power redundancy
- ▶ Compliance with Heavy Industrial Application

# Specification

Technology	
Standard	IEEE 802.3 10 Base-T Ethernet IEEE 802.3u 100 Base-TX Fast Ethernet IEEE 802.3ab 1000 Base-T IEEE 802.3x Flow Control and Back-pressure IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.1p Class of Service (CoS) IEEE 802.1Q VLAN and GVRP IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) IEEE 802.3ad Link Aggregation Protocol (LACP) IEEE 802.1x Port Based Network Access Protocol ITU-T G.8032 ERPS IEEE 1588 PTP
Performance	
Switch Technology	Store and Forward Technology with 40Gbps Non-Blocking Switch Fabric
CPU performance	32 bits CPU with Hardware based Watch-dog timer with 10s rest down-counter
System Memory	32M bytes flash ROM, 256M bytes System RAM
Transfer packet size	64 bytes to 9K bytes Jumbo Frame
Packet Buffer	1.5MBytes shared memory for packet buffer with intelligent memory management unit for burst data traffic
Transfer performance	14,880pps for Ethernet and 148,800 for Fast Ethernet, 1488,100 for Gigabit Ethernet
Management	
Management Interface	Telnet with SSH, Web Browser with SSL, SNMP V1/V2c/V3 with SNMP Trap (up to 4 trap stations), RMON (Group 1,2,3,9) for in-band management. Local RS-232 M12 connector for out-band management.
Management Security	The maximum management session up to four, and support management Host IP secure feature to prevent unauthorized remote login
SNMP MIB	MIB-II, Bridge MIB, Ethernet-like-MIB, VLAN MIB, IGMP MIB, Private MIB
Korenix NMS	Windows based Korenix NMS and Korenix View for device discovery and network topology auto construct
Network Time Protocol	NTP with daylight saving and localize time sync function
Management IP Security	Predefined Host IP address for management host login security
E-mail Warning	4 Receipt E-mail accounts with E-mail server authentication
System Event Log	2 event log modes, Local and remote Log Server with authentication
Network Performance	
Port Configuration	Port link Speed, Link mode, current status and enable/disable
Port Trunk	IEEE 802.3ad Link Aggregation Control Protocol (LACP) and Static port trunk; trunk member up to 8 ports in one group, maximum 7 trunk groups
VLAN	IEEE 802.1Q Tag VLAN with 256 VLAN Entries and provides 2K GVRP entries; 3 VLAN link modes- Trunk mode, Hybrid mode and Link access mode
Private VLAN	The Private VLAN is special for group uplink access with independent port security. With the private VLAN function, each VLAN community is isolated and only exchange by high level device with primary VLAN community
IEEE 802.1Q QinQ	Supports Double VLAN tag for VLAN isolation and security
IEEE 802.1p	The Ethernet Switch MAC controller supports IEEE 802.1p Class of Service function; Per interface with 4 queues
IGMP Snooping	IGMP Snooping v1/v2c /v3 for multicast filtering and IGMP Query mode; also support unknown multicasting process forwarding policies- drop, flooding and forward to router port
Rate Control	Ingress and Egress filtering for broadcast, multicast, unknown DA or all packets

Port Mirroring	On-line traffic monitoring on multiple selected ports
DHCP	System supports DHCP Client function for dynamic IP address obtain from DHCP Server, and the Switch also support DHCP Server function with DHCP Relay Agent to forward DHCP request through specified forwarding path. The DHCP Server also offer port based DHCP Server function with predefined IP address or perform MAC&IP address binding function
IEEE 802.1x/ Port Security	Port based network access control, and authenticated by localize pre-defined MAC address or remote RADIUS Server
<b>Network Redundancy</b>	
Multiple Super Ring (MSR™)	New generation Korenix Ring Redundancy Technology, Includes Rapid Super Ring, Rapid Dual Homing, TrunkRing™, MultiRing™, Super Chain™ and backward compatible with legacy Super Ring™
Rapid Dual Homing (RDH™)	Multiple uplink paths to one or multiple upper Switch, up to 256 Groups RDH Peer protection
TrunkRing™	Integrate port aggregate function in ring path to get higher throughput ring architecture
MultiRing™	Couple or multiple up to 10 Rapid Super Rings in one device, system supports up to 10 Gigabit rings
Super Chain	It is new ring technology with flexible and scalability, compatibility, and easy configurable. The ring includes 2 types of node Switch - Border Switch and Member Switch
Rapid Spanning Tree	IEEE 802.1D-2004 Rapid Spanning Tree Protocol. Compatible with Legacy Spanning Tree and IEEE 802.1w
Multiple Spanning Tree	IEEE 802.1s Multiple Spanning Tree, each MSTP instance can include one or more VLANs, and also supports multiple RSTP deployed in a VLAN or multiple VLANs
ITU-T G.8032 ERPS	Support ITU-T G.8032 ERPS V1 single ring topology, and ERPS v2 multiple rings with ladder topology
Loop Protection	The Loop Protection prevents any network looping caused by RSTP and MSR ring topology change
<b>Routing Protocols</b>	
IP Routing	Supports Default Static and Dynamic Route
Virtual LAN Routing	Incorporate both of IEEE802.1Q Bridge and Routing Function
Routing Information Protocol	Hop-Based IP Routing with RIPv1 and RIPv2; 512 entries /256 entries for IPv4/IPv6 routing
IGMP	Multicast Group Management Protocol support IGMP v1,v2
Multicast Routing	128 IP Multicast Routing entries
DVMRP	HOP-Based multicast routing protocol, short of distance vector multicast routing protocol*
PIM-DM	Multicasting Routing Protocol, Short of Protocol Independent Multicast-Dense mode*
VRRP	Short of Virtual Route Redundancy Protocol, Automatically Backup Routing route to specified router
OSPF	Link State based IP routing protocol support OSPFv1 and OSPFv2
<b>Interface</b>	
Enclosure port	<ul style="list-style-type: none"> <li>- 1000Mbps Gigabit Ethernet RJ-45 port (#1-#16): 16 x RJ-45, Auto MDI-X</li> <li>- 1000Mbps Gigabit Ethernet Combo port (#17-#20): 4 x RJ-45/SFP Combo, RJ-45 with Auto MDI-X, SFP supports 100Mbps or 1000Mbps Fiber Transceiver with Auto Negotiation</li> <li>- Serial Console:DB-9 male connector</li> <li>- Power Port: 2 redundant inputs within 7-Pin removable terminal block connector with lock screw</li> <li>- Alarm Relay output: 3-pin output, supports 2 modes output - N.C. and N.O., and within the 7-pin removable terminal block connector, 0.5A/DC24V</li> </ul>
Cables	<ul style="list-style-type: none"> <li>- 100Base-TX: 2 pairs STP Cat.5e/Cat.6 cable (length:100Meters)</li> <li>- 1000Base-T: 4 pairs STP Cat. 5e/Cat.6 cable (length:100Meters)</li> <li>- Optical Fiber: depends on SFP fiber transceiver specification</li> <li>- Power:18-20AWG, Strand Electric power cable</li> </ul>

- LED Indicator
- 1000Mbps RJ-45 port: Link/Activity (Green on, Green Blinking), Speed (Amber on: 1000Mbps Link, Amber off: 10/100Mbps Link)
  - SFP Fiber port: Link/Activity (Green on, Green Blinking), Speed (Amber on: 1000Mbps Fiber Link, Amber off: 100Mbps Link)
  - Power: On applying (Green on)
  - Sys: Ready (Green on)
  - R.S: Green on (Ring Normal)/Blinking (wrong ring port connective), Amber on (ring abnormal)/Blinking (ring port fail)
  - Alarm (Relay Output): Relay Active (Red on), Contactor loading: 0.5A/DC24V

#### Power Requirements

System Power                      Typical Power input DC 24V with polarity reverse protection  
Power Input rating: 10-60V

Power Consumption                25Watts (maximum)

#### Mechanical

Installation                        EN50022 DIN Rail Mounting

Dimensions                        114mm (W) x 147mm (H) x 112mm (D)

Material Housing                 Steel Metal with Aluminum Heat Sink

Ingress Protection               IP-31

#### Environmental

Operating temperature           -40-75°C

Operating humidity               10%-95%, non-condensing

Storage Temperature            -40-85°C

#### Regulatory Approvals

Railway Application              EN50121-4

EMC                                 EMI: IEC/EN61000-6-2, Compliance with EN50121-1/-4 , CE class A, FCC sub part-15 class-A  
EMS: IEC/EN61000-6-4, Compliance with EN50121-1/-4, EN61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-9

Vibration                         Compliance to IEC 60068-2-6, IEC 60068-2-36

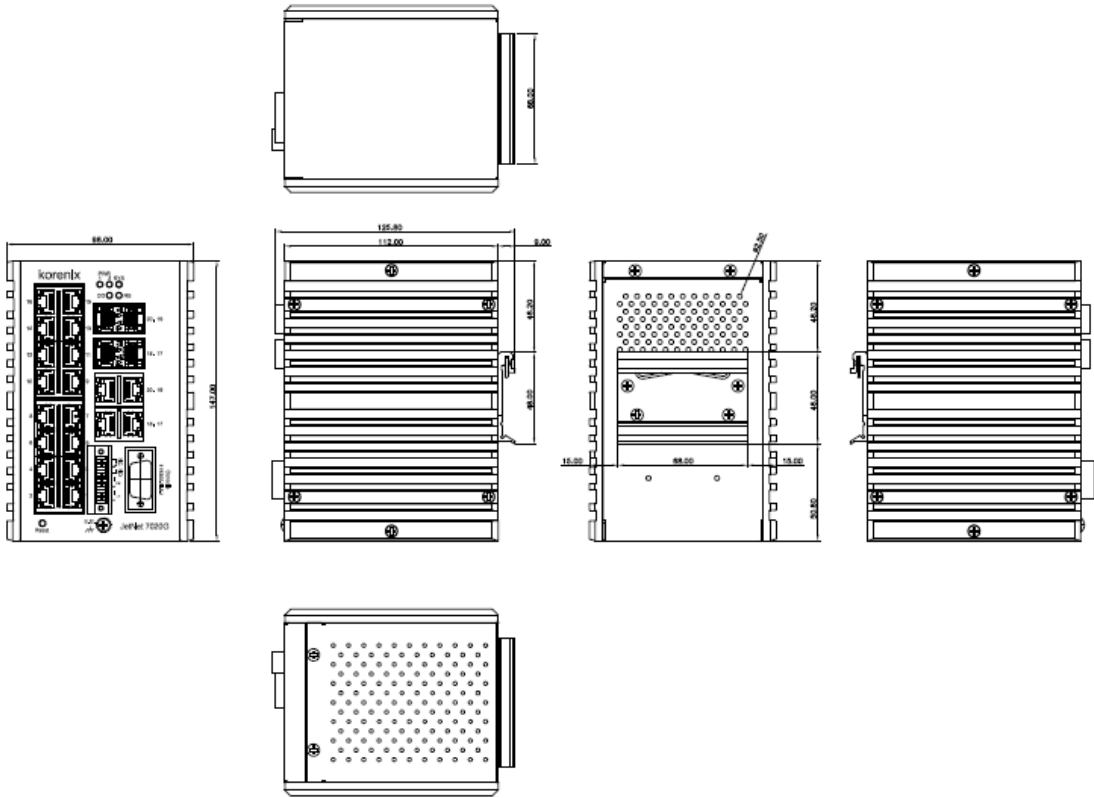
Shock                                Compliance to IEC 60068-2-27

Free Fall                          Compliance to IEC 60068-2-32

Warranty                            5 Years

\* Items by Request

## Dimension (Unit = mm)



## Ordering Information

JetNet 7020G Industrial Gigabit Ethernet L3 Managed Switch, 16 ports GbE RJ-45, 4 ports GbE RJ-45/SFP combo, -40~75°C operating temperature.

Include:

- ▶ JetNet 7020G x1
- ▶ Quick Installation Guide x1
- ▶ DIN Rail Mounting Kit x1