korenix
A Beijer Electronics Group Company

INDUSTRIAL ETHERNET RACKMOUNT SWITCH

Industrial 28G L3 Full Gigabit Managed Ethernet Switch

JetNet 6828Gf

The JetNet 6828Gf series is a 19-inch Full Gigabit Layer 3 Industrial switch and is specially designed for power substation application that operate in extremely harsh environments. With full Gigabit capability, the JetNet 6828Gf increases bandwidth to provide high performance and the ability to quickly transfer large amounts of video, voice, and data across a network.

In addition, the JetNet 6828Gf provides the Korenix cyber security+, the Korenix cyber redundancy+, and the isolated redundant power supplies to ensure the high secure and high availability for mission critical industrial applications.

Layer 3 | Gigabit | IEC61850-3 IEEE1613 | EN50121-4 | IEEE1588 PTP | Cyber Security | Wide Temp (+75 / -40)

Features

▸ 16 10/100/1000Base-TX, 8 100/1000 RJ-45/SFP combo ports, 4 Gigabit SFP ports

▸ Advanced Cyber Security – DHCP Snooping, IP Source Guard, Dynamic ARP Inspection, L2/L3/L4 Access Control List (ACL)

▸ Advanced Cyber Redundancy – MSR, SuperChain, ITU-T G.8032 ERPS

▸ USB Firmware upgrade and configuration backup and restore

▸ EEE Energy saving

▸ Friendly Device and Auto Network Topology utility

▸ Isolated redundant power inputs with universal 24/48VDC power or 110/220 VAC power

▸ Compliance with EN50121-4, IEEE1613, and IEC61850-3

▸ -40 to 85°C operating temperature, fanless

▸ Broadcast Storm Control

▸ Plug and Play

Specification

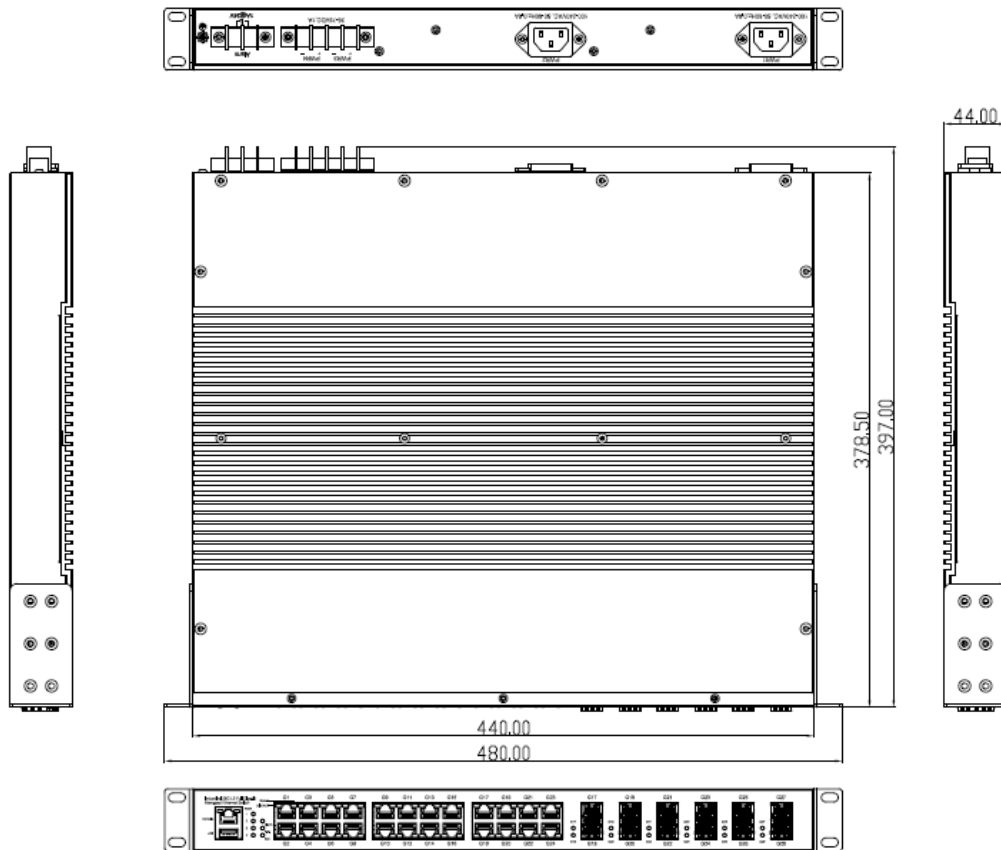| Technology	
Standard	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3u 100Base-FX Fast Ethernet Fiber IEEE 802.3ab 1000Base-T Gigabit Ethernet copper IEEE 802.3z Gigabit Ethernet Fiber IEEE 802.3x Flow Control and back-pressure IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.1p Class of Service (CoS) IEEE 802.1Q VLAN and GVRP IEEE 802.1Q Double Tag VLAN (QinQ) IEEE 802.1D Rapid Spanning Tree (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 PTPv1/v2

Performance	
Switch Technology	Store and Forward Technology with 56Gbps Non-Blocking wire speed
CPU Performance	400Mhz ARM9 CPU with 10 Seconds Hardware Based Watchdog Timer
System Memory	256Mbytes RAM, 32Mbytes Flash ROM
Transfer packet Size	64Bytes ~ 9728Bytes (include double Tag VLAN)
MAC address Table	16K
Packet Buffer Transfer performance	1.5Mbytes shared memory 14,880pps for Ethernet, 148,800pps for Fast Ethernet, 1488,100pps for Gigabit Ethernet

Management	
Configuration, monitoring interface	• In-Band Management: Telnet with SSH, Web-Browser with SSL, IPv6, SNMP V1/V2c/V3 with SNMP Trap (4 Trap Stations), RMON Group 1,2,3,9, Modbus/TCP, EtherNet/IP • Out-Band Management: Local RJ-45/RS-232 connector with Cisco like command • USB Firmware upgrade and configuration backup and restore • Multiple management: WEB GUI,RS-232 console (RJ-45 connector)
System Manage Secure	• Telnet/Local Console support command like interface with Cisco like commands, and offers 4 management sessions; the system supports SSL for HTTP security, SSH for Telnet security • Supports Manage Station with IP Secure function, up to 4 Manage Stations • Management Device Login Switch System by Remote RADIUS account/password, key for RADIUS Server authentication • Broadcast storm control
SNMP MIB	MIB II, Bridge MIB, Ethernet Like MIB, VLAN MIB, IGMP MIB, Private MIB,RMON MIB
Management Utility	Management utility with IEEE 802.1AB link Layer Protocol for Device finding and Link Topology Discovery
Network Time Protocol	NTP protocol with daylight saving and localize time sync function
IEEE 1588 PTP	IEEE 1588 Precision Time Protocol v1/v2
E-mail Warning	4 receipt E-mail accounts with mail server authentication
System log	Local or remote log server with authentication

Network Performance

Port Configuration	Port Link Speed, Link Mode, Link Status and Port Enable/Disable
Port Trunk/ Link Aggregation	IEEE 802.3ad port aggregation and static port trunk, Trunk member up to 8 ports, maximum 8 trunk groups
VLAN	IEEE 802.1Q tag VLAN with 4K VLAN/GVRP entries 3 VLAN modes – Trunk, Hybrid and Link access
Private VLAN	Direct Client ports in isolated /community VLAN to promiscuous port in primary VLAN
IEEE 802.1 QinQ	Double Tag for Private VLAN Access
Class of Service	IEEE 802.1p class of service, 8 priority queues/port
Traffic Prioritize	Supports 8 physical queues with weighted fair queuing (WRR) or Strict Priority Schemer, which follows IEEE 802.1p CoS tag and IPv4 Type of Service/Differ information to prioritize the traffic of your industrial network
IGMP Snooping	IGMP Snooping v1/v2/v3 for multicast filtering and IGMP Query mode, also support unknown multicast forwarding policies- Drop, Flooding and Forward to route port
Rate Control	Ingress/Egress filtering for Broadcast, Multicast, Unknown DA or All packets
Port Mirroring	On-line traffic monitoring on multiple selected target ports
DHCP	DHCP Client/Server with IP & MAC address binding, DHCP Relay Agent function and DHCP Server with Static port based IP assigned function
Advanced Cyber Security	Port security, IEEE 802.1x, DHCP Snooping, IP Source Guard, Dynamic ARP Inspection, L2/L3/L4 Access Control List (ACL), TACACS+
Industrial Protocol	Modbus/TCP, EtherNet/IP

Network Redundancy

Redundancy	Multiple Super Ring^{TM} Technology(Recovery time less than 50 ms), Includes Rapid Super Ring, Rapid Dual Homing, TrunkRing^{TM}, MultiRing^{TM}, SuperChain^{TM}
Dual Homing	Multiple uplink paths to one or multiple upper Switch, up to 256 Groups RDH Peer protection
TrunkRing^{TM}	Integrate port aggregate function in ring path to get higher throughput ring architecture
MultiRing^{TM}	Couple or multiple up to 14 Rapid Super Rings in one device, supports up to 14 Gigabit rings
SuperChain^{TM}	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

L3 Protocols

L3 Routing	Static Routing, Dynamic Routing: RIP V1/V2, OSFP V1/V2, VLAN Routing
L3 Gateway Redundancy	VRRP V2

Power Requirement

System Power	Input voltage: AC110/220 (90-264VAC), DC24(18~36VDC), DC48(36-75VDC) by request
Power Consumption	Max. 29Watts (DC mode) Max. 48Watts (AC mode 110V) Max. 64Watts (AC mode 220V)

Mechanical

Installation	19", 1U Rackmount
Enclosure Material	Aluminum/Steel Metal
Dimension	44mm(H) x 440mm (W) x 378.5mm (D)
Weight	6.7 kg with package
Ingress Protection	Robust IP40

Environmental	
Operating Temperature	-40°C~85°C
Operating Humidity	10%~95%, Non-Condensing
Storage Temperature	-40°C~85°C
Hi-Pot Insulation	AC 1.5KV for Ethernet Interface to Power, Power to Case
MTBF(hrs)	>445,000
Approvals	
Power Substations	IEC61850-3, IEEE1613
Rail Traffic	EN50121-4
EMC	EMI: IEC/EN61000-3-2, EN61000-3-3, EN55022, EN/IEC61000-6-4 　　FCC Class A, CE 　　Radiation, Conduction EMS: IEC/EN55024 　　IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8 　　IEC61000-4-11, EN/IEC61000-6-2
Vibration	IEC 60068-2-6, IEC 60068-2-36
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Warranty	5 Years

Dimension (Unit = mm)

Ordering Information

Model	PW1	PW2	Connector
JetNet 6828Gf-AC	90~264VAC/ 88~300VDC	-	Standard 3 pronged AC plug
JetNet 6828Gf-2AC	90~264VAC/ 88~300VDC	90~264VAC/ 88~300VDC	2x Standard 3 pronged AC plug
JetNet 6828Gf-AC-DC24	90~264VAC/ 88~300VDC	18~36VDC	Standard 3 pronged AC plug, Terminal Connector
JetNet 6828Gf-2DC24	18~36VDC	18~36VDC	Terminal Connector
JetNet 6828Gf-2DC48 (by request)	36-75VDC	36-75VDC	Terminal Connector

JetNet 6828Gf-AC
16 10/100/1000TX, 8 100/1000 RJ-45/SFP combo ports, 4 GbE SFP ports, Ind. L3 Full Gigabit Managed Ethernet Switch, -40~85°C, AC power

JetNet 6828Gf-2AC
16 10/100/1000TX, 8 100/1000 RJ-45/SFP combo ports, 4 GbE SFP ports, Ind. L3 Full Gigabit Managed Ethernet Switch, -40~85°C, dual AC power

JetNet 6828Gf-AC-DC24
16 10/100/1000TX, 8 100/1000 RJ-45/SFP combo ports, 4 GbE SFP ports, Ind. L3 Full Gigabit Managed Ethernet Switch, -40~85°C, AC and DC24V power

JetNet 6828Gf-2DC24
16 10/100/1000TX, 8 100/1000 RJ-45/SFP combo ports, 4 GbE SFP ports, Ind. L3 Full Gigabit Managed Ethernet Switch, -40~85°C, dual DC24V power

JetNet 6828Gf-2DC48 (by request)
16 10/100/1000TX, 8 100/1000 RJ-45/SFP combo ports, 4 GbE SFP ports, Ind. L3 Full Gigabit Managed Ethernet Switch, -40~85°C, dual DC48V power