



AVCOMM®

8028GX8-L3

Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.



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Layer 3 Switch with Cyber Security and Enhanced ERPS v2 for Critical Applications

8028GX8-L3

Industrial 28G L3 Rackmount Managed Ethernet Switch

8028GX8-L3 is a power substation compliant rackmount 28G L3 switch with 24 Giga copper ports, 4 Giga combo ports and 4x100M/1G/2.5G fiber SFP ports. Up to 8 fiber Giga ports help to link more field switches with long distance fiber connections. The 28 full giga ports enhance the overall throughput for industrial control room applications. Rugged design and high EMC immunity makes 8028GX8-L3 an ideal solution for roadside and power substation applications.



High Throughput Ethernet Switching

- 28-port Full GbE, by 24-port GbE RJ45 and 4-port GbE RJ45/SFP Combo, and 4-100M/1G/2.5G SFP fiber ports
- Up to 24xGbE copper RJ-45 ports
- Up to 8x100M/1G/2.5GbE fiber ports add more fiber links to field switches
- DDM function for high quality fiber connectivity monitoring Powerful 1.2GHz ARM Cortex-A9 processor
- Less than 12.5W power consumption at full loading
- Energy-Efficient Ethernet for power saving
- Non-blocking switch fabric design
- 8 flexible Class of Service (CoS) queues, 512 L2 Multicast Groups for video applications
- 16K MAC address table, 9Kb Jumbo Frame

ITU-T G.8032 v2 ERPS Ring

Redundancy

- ITU-T G.8032 v1/v2 ERPS Standard Ring Redundancy protocol
- Supports HW-based CFM transmission for overcoming GbE copper physical limitation and providing minimum 20ms recovery time, seamless restoration time
- Inter-Operability with 3rd party industrial switch and still remain fast recovery time
- Replace Ring + Chain + Dual Homing

Enhanced RSTP(eRSTP)

- Enhance the RSTP fault recovery time performance
- Enhance RSTP performance for large ring network topologies with up to 80 switches

IEC62443-4-2 Level 3 / 4 Cyber Security

- L2-L7 IPv4/IPv6* Access Control List (ACL)
- DHCP Snooping, IP Source Guard, Dynamic ARP Inspection
- 802.1Q VLAN, Private VLAN, Advanced Port Security
- Multi-Level user passwords
- HTTPS/SSH/SFTP, 256-bit encryption
- 802.1X MAB for non-802.1X compliant end devices
- RADIUS/TACACS+ centralized password authentication

Industrial IoT LAN & Cloud Management

- Various configuration paths, including CGI WebGUI, CLI, SNMP and RMON
- Support AVCOMM Software Utilities:
 - ANMS Network Management System
 - AIAS for Configuration Management
 - ANMS*, ATMS OTA* for device management over Cloud*
- Support MQTT* protocol, ready to use AWS/Azure and Private Cloud Agent for cloud management
- LLDP for topology control, auto-topology drawing
- USB for easy field configuration and firmware update

Rugged Design for Industrial Control Room and Wayside Network Switching

- EN50121-4 compliance for railway trackside, roadside, industrial control room applications
- Excellent heat dissipation design for operating in -40~75°C environments
- Supports AC, high voltage DC & low voltage DC



Ordering Information

Model Name	Description
8028GX8-L3-AC2	28-Port Fully Managed Layer3 Industrial Ethernet Switch, 24 RJ45 Ports 10/100/1000Base-T(X), 4 Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+), 4 Slots 1000BaseSFP+, Rack Mounting, Dual Power Input 90-264VAC, -40°C-75°C
8028GX8-L3-AC2-2SX	8028GX8-L3-AC2, w/ 2 AVC-SFP-SX
8028GX8-L3-AC2-2LX-10	8028GX8-L3-AC2, w/ 2 AVC-SFP-LX-10
8028GX8-L3-AC2-2LX-40	8028GX8-L3-AC2, w/ 2 AVC-SFP-LX-40
8028GX8-L3-AC2-4SX	8028GX8-L3-AC2, w/ 4 AVC-SFP-SX
8028GX8-L3-AC2-4LX-10	8028GX8-L3-AC2, w/ 4 AVC-SFP-LX-10
8028GX8-L3-AC2-4LX-40	8028GX8-L3-AC2, w/ 4 AVC-SFP-LX-40
8028GX8-L3-AC2-6SX	8028GX8-L3-AC2, w/ 6 AVC-SFP-SX
8028GX8-L3-AC2-6LX-10	8028GX8-L3-AC2, w/ 6 AVC-SFP-LX-10
8028GX8-L3-AC2-6LX-40	8028GX8-L3-AC2, w/ 6 AVC-SFP-LX-40
8028GX8-L3-AC2-8SX	8028GX8-L3-AC2, w/ 8 AVC-SFP-SX
8028GX8-L3-AC2-8LX-10	8028GX8-L3-AC2, w/ 8 AVC-SFP-LX-10
8028GX8-L3-AC2-8LX-40	8028GX8-L3-AC2, w/ 8 AVC-SFP-LX-40

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 802.3az (Energy Efficient Ethernet)
	IEEE 802.1p Class of Service (CoS)
	IEEE 802.1Q VLAN and GVRP
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	IEEE 802.1S Multiple Spanning Tree Protocol (MSTP)
	IEEE 801.1AX/802.3ad Link Aggregation Control Protocol (LACP)
	IEEE 802.1x Port based Network Access Protocol
	IEEE 1588 Precision Time Protocol v2
IEEE 802.3 10Base-T Ethernet	
Performance & Scalability	
Switch Technology	Store and Forward Technology with 56Gbps Non-Blocking Switch Fabric Internal Packet Buffer: 4Mb Forwarding rate: 41.67Mpps (1,488,000pps/port)
CPU	Cortex-A9, max. 1.2GHz
RAM	DDR3 2Gb
Number of MAC Address	16K
Jumbo Frame	9216 Bytes
VLAN	256 VLANs, VLAN ID 1–4094
IGMP Groups	512
Interface	
Ethernet Port	24 x 10/100/1000M RJ45, Auto Negotiation 4 x 100/1000M RJ45/SFP Combo, Auto Negotiation, 4 x 100/1000M SFP, DDM Energy-Efficient Ethernet for power saving
System LED	2 x Power (P1/P2): Green On 1 x System Status: Ready: Green On, Firmware Updating: Green Blinking 1 x DI: Green On, 1 x Alarm: Red On 1 x Ring Status: Node Normal: Green On, Owner Normal: Green Blinking, Owner/Node Abnormal: Amber On, Ring Port Fail: Amber Blinking
Giga Ethernet Port LED	Link (Green On), Activity (Green Blinking), Speed 1000M(Amber On), Speed 10M/100M (Amber Off)
Giga SFP LED	Port: Link (Green On), Activity (Green Blinking) 1000M: Speed 1000M (Amber On), Speed 100M (Off)
Console	1 x RJ45 based RS232 for System Configuration. Baud Rate: 115200.n.8.1
USB	1 x USB for Configuration/Firmware Update

Digital Output (Alarm)	1x Digital Output: Dry Relay Output with 0.5A/24V DC
Digital Input	1x Digital Input. Low: 0~10V, High: 11~30V
Watchdog	Hardware-based 10 seconds timer
Power Requirement	
Operating Voltage	Power Input: AC110/220V (90-264VAC), 88~300VDC 2AC: Dual AC110/220V (90-264VAC), 88~300VDC DC Input: 48V (DC Model only, Other DC Input Range By Request)
Power Consumption	Max: 19.8W @ 110VAC, 24.2W@220VAC (at 20GT+8GSFP) (suggest to reserve 15% tolerance)
Software	
Management	CGI WebGUI, Command Line Interface (CLI), IPv4/IPv6(RFC2460), Telnet, SNMP v1/v2c/v3, SNMP Trap/Informs*, RMON, LLDP, DHCP server/client/Option 82, TFTP, System Log, SMTP
Traffic Management	Flow Control, Rate Control, Port Mirror, CoS, QoS, RFC 2474 DiffServ
Filter	IGMP Snooping v1/v2/v3, IGMP Snooping Fast-Leave/Immediate-Leave, IGMP Query, GMRP, IEEE802.1Q VLAN, QinQ, GVRP, Private VLAN
Security	IEEE 802.1X/RADIUS, TLS v1.2, HTTPs/SSH
Advanced Security	TACACS+, Multi-user authentication, IEEE802.1x MAB, DHCP Snooping/IPSG, Dynamic ARP inspection, DoS/DDoS*, Adv. Port security*, SFTP
Redundancy	ERPSv2 (HW-based CFM), STP/RSTP/MSTP, eRSTP, Loop Protection*, Port Trunk/801.1AX/802.3ad LACP
Time Management	NTP, IEEE 1588 Precision Time Protocol v2
Layer 3	Router: RIPv2, OSPFv2, Static Multicast Routing, DVMPR*, PIM*, VRRPv2 NAT: 1-1 NAT*, NAPT*, R-NAT*, TTDP* Firewall: Stateful Inspection Firewall, DMZ* VPN: IPSec, OpenVPN
IIoT Industrial Protocol	Modbus TCP, EtherNet/IP*, MQTT*, RESTful API*
Private Cloud	ATMS*, ATMS OTA*
Public Cloud	AWS Agent*, Azure Agent*
Utility	AIAS, ANMS
MIB	ERPS MIB, MIB-II, Ethernet-like MIB*, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RMON MIB Group 1, 2, 3, 9*, AVCOMM Private MIB
Mechanical	
Installation	19", 1U rack mounting
Enclosure Material	Steel Metal
Dimension	8028GX8: 480 x 43.7 x 170 mm(W x H x D, include rackmount ear) 8028GX8-L3-AC2/8028GX8-L3-AC: 436 x 44 x 300 mm(W x H x D)
Ingress Protection	IP40
Weight	≈2.5KG (full package)

Environmental		
Operating Temperature & Humidity	-40°C~75°C , 0%~95% Non- Condensing	
Storage Temperature	-40°C~85°C	
MTBF	>2,000,000 hours	
Warranty	5 years	
Standard		
EMI	CISPR 22, FCC part 15B Class A	
EMC	EN50121-4 for Railway Roadside	
100Base FX		
Multi Mode	AVC-SFP-FX-SX (550m)	Wavelength: 850 nm
	AVC-SFP-FX-S (2km)	Wavelength: 1310 nm
Single Mode	AVC-SFP-FX-10 (10km)	Wavelength: 1310 nm
1000Base FX		
Multi Mode	AVC-SFP-SX (550m)	Wavelength: 850 nm
	AVC-SFP-LX-S (2km)	Wavelength: 1310 nm
Single Mode	AVC-SFP-LX-10 (10km)	Wavelength: 1310 nm

Function interface

System LED:

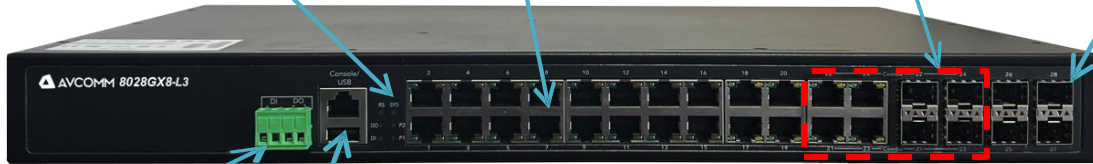
- Power, System & Ring status

24x 100/1000M RJ-45 with LED for Link status

4x 100/1000M Copper / 100/1000M SFP Fiber Combo with LED for Link Status Configured as

- 4 Copper or
- 4 Fiber or
- 2 Copper and 2 Fiber

4x 100/1000M SFP Fiber with LED for Link status



- 1xDigital Input
- 1xDigital Output

Console, USB for management

Power 1 AC Power or DC Power

Power 2 AC Power or DC Power



Installation dimensions

Unit: mm

