DY-9000RGSP
Cyber-Secure Routing

Layer 3, 28 Port, 10 Gigabit, OSPF, GRE, Fanless, Outdoor, Modular Public Safety Router

- IEC 61850 & IEEE1616 - Public Safety / Railway / Substations
  4 X 10 Gigabit SFP+ Slots
- Supports IPv6, RIPv2, OSPF, IP, PIM-SM/DM,
  PIM-Bidirectional, DVMRP , IPv4 & IPv6
- 4G LTE, Broadband Wireless Support, VRRP,
  Static Routing and Route Redistribution for IPv4 & IPv6
- EMC performance: Industrial level 4 / JUMBO FRAME
- Supports AC & DC power input / Dual Inputs
- Cyber-Secure Public Safety Routing Certified



Overview

The DY-9000RGSP is a Layer 3, High Security & High Performance Ethernet router. The 19" inch rack mount switch is modular (4 Module slots), and is designed to have redundant power supplies to accommodate a variety of power inputs. Temperature hardened - the switch is fanless - convection cooled in its design. It is a true Layer 3 router designed for outdoor and harsh environment usage. Perfect for Municipal, Public Safety, Railwat and Power Substation Networks. The router supports both IPv4 and IPv6 Protocols, including IP, RIP, OSPF, GRE, Multicast and many others. Certified IEEE 1613 & IEC61850-3 for rugged applications. The device also supports 4G LTE Wireless Modules for routing and backup via LTE technology. The LTE Module supports standard public infrastrcture networks as well as the municipal safety bands set aside exclusively for Public use by the FCC with no monthly recurring costs for the network (Private Municipal Networks). Small carbon footprint - low power - saving money - easy battery backup!

Features

1. Redundancy Technology: supports MRP Ring (Media Redundancy Protocol) IEC - 62439-2 / IPv4 & IPv6 Routing protocols / MPLS / 4G LTE
2. Multicast Protocol: supports IGMP Snooping, GMRP and static multicast
3. Network Partition: supports VLAN, PVLAN
4. Application Based Service Quality: QoS
5. Bandwidth Management: supports port trunking, port speed limit, broadcast storm control
6. Network Management and Monitoring: supports CLI, Telnet, WEB management methods,SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP
7. Network Security: supports,:SSH, SSL, ACL's
8. Device Management: supports FTP upgrade / Solar Winds
9. Device Maintenance: supports port mirroring
10. Alarm Output: Supports IP/MAC Conflicts, Power Port, & Ring alarms
11. MVR - MultiCast VLAN Registration, IEEE 802.1Q with GVRP

Technical Specifications:

Standards:

IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ad IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.3x, IEEE 802.1AB, IEEE 802.3-2012, IEEE 802.16m

Protocols:

Layer 3 Routing / IPv4 & IPv6 / GRE / RIPv2, OSPFv2, / Static Routing / Multicast Routing / PIM-Bidirectional, DVMRP / PIM-SM/DM / VRRP / MRP IEEE 1588v2 Timing . Modbus TCP Protocol

IEC 62439-2 MRP (Media Redundancy Protocol);

Telnet, HTTP, HTTPS, SNMPv1/v2/v3, RMON, LLDP, SNTP, DHCP server; Sec, SSH, SSL, ACL, IGMP, Broadcast Storm Control, GVRP, NTP Server; FTP; Cyber-Secure Routing (CSR), LLDP, Jumbo Frame ARP, QoS, MVR, SysLog, Clean Code Technology (CCT)

Router Properties:

Priority Queues: 64
Number of VLANs: 4K
VLAN ID: 1-4094
Number of Multicast Groups: 256
MAC Table: 16K per Segment
Packet Buffer: 32M Per Segment
Packet Forwarding Rate: 45 Gbps Fabric, Wire Speed -All Ports
Switching Delay: <5µs

Interfaces:

10 Gigabit SFP+ / Ethernet Ports: max 4 X 10000Base(X) SFP+ Slots
Up to 3 Modules 8 X 10/100/100 Base(T)X RJ-45 or
8 X 100/1000 Base(X) SFP Slots

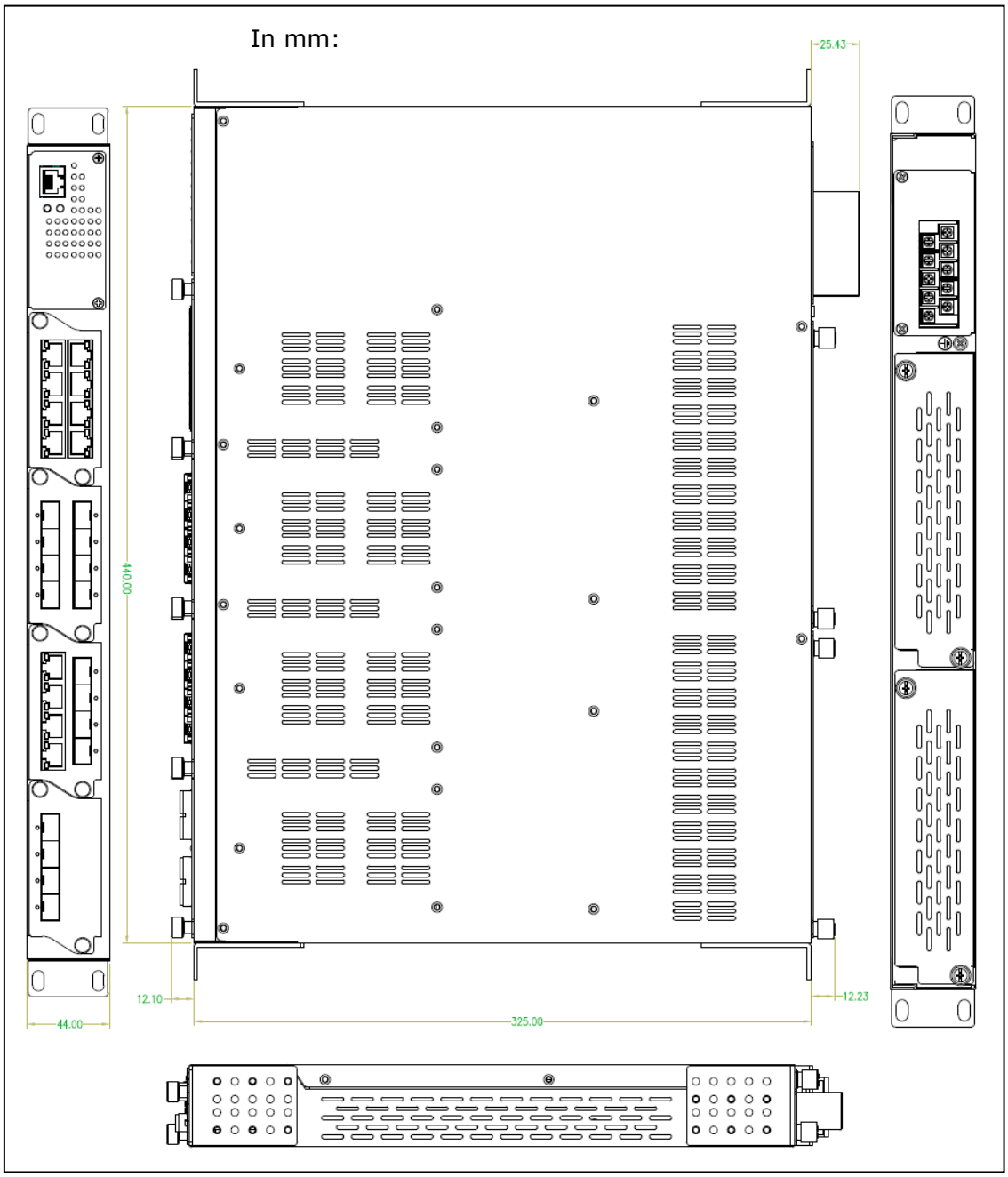
Console Port: RS232 (RJ45 connector)
Alarm Contact: 2-pin 3.81mm-spacing plug-in terminal block, 250VAC/350VDC Max, 120mA Max

Specifications:

DYMEC Switch Model	DY-9000RGSP	
Physical Ports		
Slot Number	4 (up to 3 slots for 8x1G ports and 1 slot for 4x10G port)	
Technology		
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.z for 1000Base-X IEEE 802.3ae for 10Gigabit Ethernet IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)	
CPU	Core clock 850MHz	
SDRAM Size	DDR2 256Mbytes	
Flash ROM Size	128Mbytes NAND SuperFAST Flash	
MAC Table	8k	
Priority Queues	8	
Processing	Store-and-Forward	
Switch Properties	Switching latency: 6us Switching bandwidth: 128Gbps Max. Number of Available VLANs: 256 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Defined	
Jumbo frame	Up to 9.6K Bytes	
Security Features	Device Binding security feature Enable/disable ports, MAC based port security / Security Queues Port based network access control (802.1x) Single 802.1x and Multiple 802.1x MAC-based authentication QoS assignment Guest VLAN MAC address limit VLAN (802.1Q) to segregate and secure network traffic Port-based VLAN Protocol-based VLAN MAC address-based VLAN Subnet-based VLAN Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH / SSL enhance network security Web and CLI authentication and authorization IP source guard	
Software Features	IPv4 routing protocols – RIP v1/v2, OSPF v2, BGP4, PIM-SM/DM, PIM-Bidirectional, DVMRP IPv6 routing protocols – RIP v6, OSPF v3, BGP4+, MLD v1/v2, PIM-SM/DM, PIM-Bidirectional VRRP for router redundancy IEEE 1588v2 clock synchronization IEEE 802.1D Bridge, auto MAC address learning/aging and MAC address (static) MRP, MMRP and MVRP MSTP/RSTP/STP Ethernet redundancy Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units TCP/IP stack for IPv4 and IPv6 (including ARP, ICMP, ND, UDP) GARP, GMRP and GVRP TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic Private VLANs PVRST+ (Per VLAN Rapid Spanning Tree Protocol – enhanced) Q-in-Q VLAN tunneling and provider bridging IGMP snooping/filtering/Proxy	

	RADIUS client for IPv4 and IPv6 SNMP v1/v2c/v3 agent and MIB support RMON v1/v2 and DSMON support IGMP v2/v3 Snooping IP-based bandwidth management Application-based QoS management Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay for IPv4 Modbus TCP DNS client proxy SMTP Client NTP Server TFP	
Network Redundancy	-Ring Open-Ring -Chain MRP PVRST+ MSTP/RSTP/STP	
RS-232 Serial Console Port	RS-232 in RJ-45 connector with console cable. 115200bps, 8, N, 1, and support backup unit	
Management LAN Port	The 10/100/1000Base-T(X) copper port is used for system management that is out-of-band from the switch fabric.	
LED Indicators		
System Ready Indicator (PWR)	Green: Indicates that the system ready. The LED is blinking when the system is upgrading firmware	
Power Indicator (PWR1 / PWR2)	Green: Power LED x 2	
Ring Master Indicator (R.M.)	Green: Indicates that the system is operating in -Ring Master mode	
-Ring Indicator (Ring)	Green : Indicates that the system operating in -Ring mode Green Blinking: Indicates that the Ring is broken.	
Fault Indicator (Fault)	Amber: Indicate unexpected event occurred	
Reset To Default Running Indicator (DEF)	Green: System resets to default configuration	
Supervisor Login Indicator (RMT)	Green: System is accessed remotely	
Smart LED Display system	Link/Act(LINK) / Speed(SPD) / Duplex(FDX) / Remote (RMT) green LED indicator x 4 Mode select Button (MODE) : Link/Act(LINK) / Speed(SPD) / Duplex(FDX) / Remote (RMT) mode select button Port 1 ~ 28 Link/Act(LK/ACT) LED show : Green x 28	
Fault Contact		
Relay	Relay output to carry capacity of 1A at 24VDC	
Power		
Redundant power input modular	Dual 24/48VDC (20~72VDC) power inputs at terminal block	Dual 88~264VAC / 100~370VDC power inputs at terminal block
Power consumption (Typ.)	46watts	43.5watts
Overload current protection	Present	
Physical Characteristic		
Enclosure	19 inches rack mountable	
Weight (g) without modules	5250	5400
Dimension (W x D x H)	440(W) x 325(D) x 44(H) mm (17.32x12.8x1.73 inches)	
MTBF(mean time between failures)		
Time	130,66hrs	
Environmental		
Storage Temperature	-40 to 85°C	
Operating Temperature	-40 to 85°C	
Operating Humidity	5% to 97% Non-condensing	
Regulatory Approvals		
Power Automation	IEC 61850-3, IEEE 1613	
EMI	FCC Part 15, CISPR (EN55022) class A	

Dimensions:



Railway	EN50121-4(EN50121-1)
Vibration	IEC 60068-2-6
EMS	EN61000-4-2 (ESD) EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Warranty	5 years

Ordering Information

Model Name	Description
DY-9000RGSP	Industrial Layer-3 IEC 61850-3 modular rack mount managed Gigabit Ethernet switch with 4 slots, advanced version, -

Optional Gigabit Ethernet Modules



For 10G slot:

KY-SWM-04GP+-A_4

Industrial 4-port 10G SFP+ module with 4x1000/10GBase-X SFP+ ports

Weight: 275g



For 1G slot:

KY-SWM-80GT-A

Industrial 8-port Gigabit Ethernet switch module with 8x10/100/1000Base-T(X) ports

Weight: 272g



For 1G slot:

KY-SWM-08GP-A

Industrial 8-port Gigabit fiber module with 8x100/1000Base-X, SFP socket

Weight: 192g



For 1G slot:

KY-SWM-44GTP-A

Industrial 8-port Gigabit Ethernet switch module with 4x10/100/1000Base-T(X) and 4x100/1000Base-X, SFP socket

Weight: 232g

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