RHG7528 Series

10/1GbE Modular Layer2 Managed PoE Rackmount Switch

FEATURE HIGHLIGHTS

- 128 Gbps max. switching capacity and 95.23 Mbps max. switching fabric
- Designed to operate in harsh environments of -40°C to 75°C
- Flexible modular configuration, 3 Module-dedicated slots
- Swappable modules for flexibility to work in all kinds of scenarios
- Up to 24x PoE ports, max. power budget 720 W
- 4x 10 GbE /1 GbE uplink SFP slots
- 4 kinds of power input available for different harsh environments
- ITU-T G.8032 ERPS Ring, RSTP, or MRP (Manager/Client) redundancy
- EN50155 / EN50121-4 certified for railway applications
- Precision time synchronization with IEEE1588v2 P2P/E2E TC, delay within 50ns
- Compliant with IEC 62443-4-1 and IEC 62443-4-2 security standards

PRODUCT DESCRIPTION

Flexible and powerful

ATOP's high-density RHG7528 layer2-managed rackmount switch provides the flexibility to meet all kinds of requirements. Customization is made easy with 8 different switch cores, differing in power supply and uplink ports, and 3 swappable modules of different port types.

Of these, PoE ports allow both power and data transmission to wherever the Ethernet cable can reach. With 3 modules of 8 ports each, RHG7528 supports up to 24 Gigabit PoE/PoE+ (IEEE 802.3af/at) ports, so has at maximum 720W total power budget.

Rugged and resilient

Designed to work in all kinds of harsh environments, RHG7528 is EN 60950-1:2006 certified, available in 4 types of power input, fanless, and provides EMC level-3 protection. Reliable operation is guaranteed in the wide-range temperature of -40°C to +75°C.
Various supported ring protocols enable self-healing ability for your network. ITU-T G.8032 ERPS Ring can even recover the network within 25 ms on full load of 250 devices. User-friendly WUI allows simple setup of basic functions like VLAN, QoS, IGMP, as well as network diagnostics via Port Mirroring.

Proven quality

The RHG7528 Series is compliant with IEC 62443-4-1 and IEC 62443-4-2 standards, which means that its development process as well as product features achieve world-class industrial network security. In addition, ACL by IP/MAC and 802.1x port access control with RADIUS filters unauthorized hosts, helping to keep your network safe.

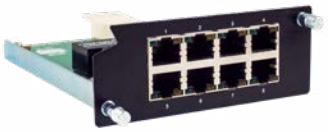
Furthermore, the RHG7528 Series is EN 50155-certified to ensure reliable performance under a wide range of power supply conditions, and complies with essential sections of EN 50121-4 for railway ground equipment.

+ 886-3-5508137
+ 886-3-5508131
info@atop.com.tw
www.atoponline.com

AVAILABLE MODULES

RHG7528-CPU-410GSFP-R
Main unit, with 4x 10 Gb/1Gb uplink SFP slots and redundant AC power input

RHG7X28-M1
Module with 8x Gb PoE RJ-45

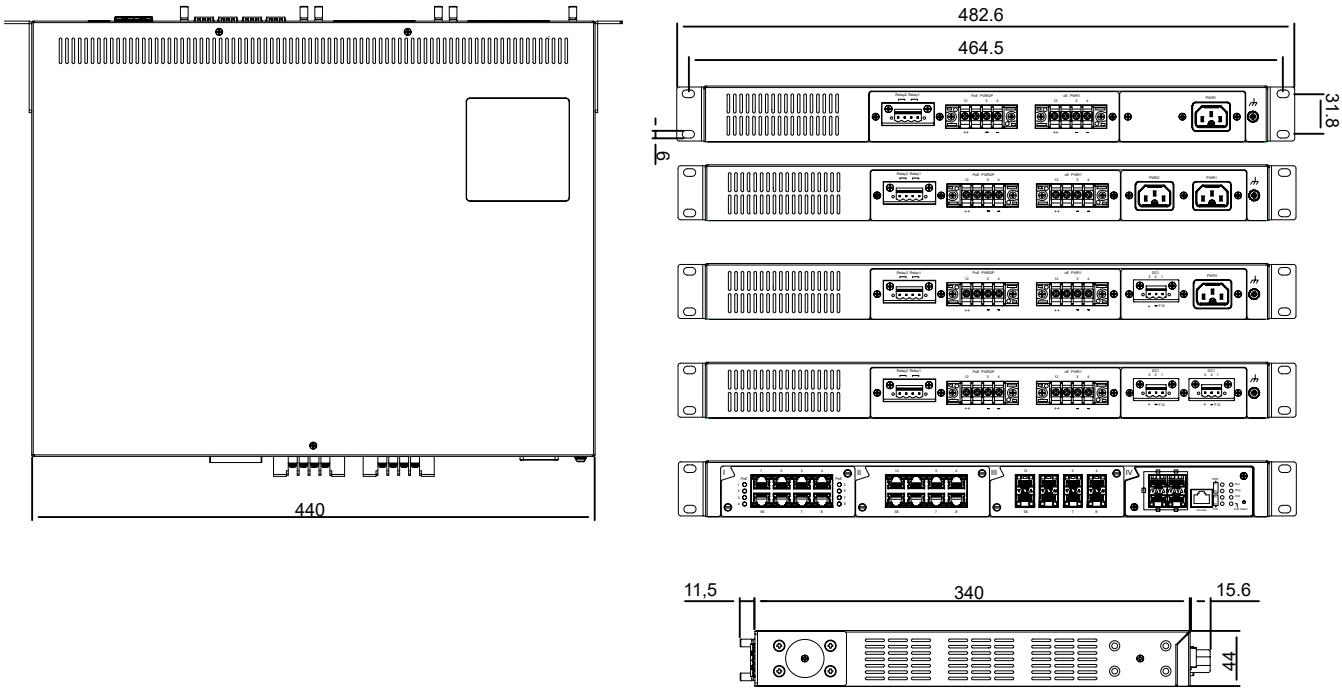


RHG7X28-M2
Module with 8x Gb non-PoE RJ-45

RHG7X28-M3
Module with 8x Gb SFP

28-Port 10/1Gb L2-Managed Switch including 4x 1/10 Gbps SFP Slots, 8x 100/1000BASE-FX SFP, 8x PoE RJ-45, and 8x non-PoE RJ-45

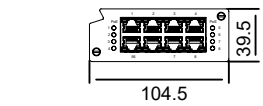
DIMENSIONS & LAYOUT

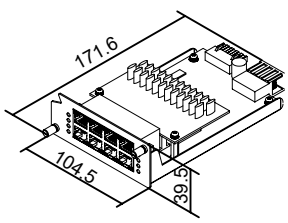


Switch Core Module

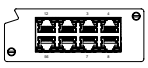
RHG7X28-M1
RHG7X28-M2
RHG7X28-M3

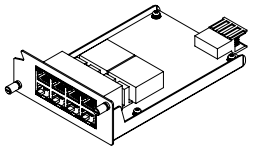
M1



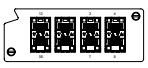


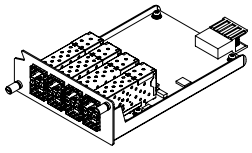
M2





M3





SPECIFICATIONS

Switch Core

Technical Specifications

Model Name	RHG7528
Switch Properties	
Priority Queues	8
VLAN Table	4096
MAC-Based VLAN	512
VLAN ID Range	VID 1 to 4094
Static IGMP Groups	128
Dynamic IGMP Groups	256
MAC Table Size	16k
Packet Buffer Size	1.5 Mb
Jumbo Frame	9 K (9216 Bytes)
Switching Capacity	56 Gbps (4SFP model) / 128 Gbps (410GSFP model)
Switching Fabric	41.67 Mpps (4SFP model) / 95.24 Mpps (410GSFP model)
Ethernet	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3ae for 10 Gigabit Ethernet Fiber IEEE 802.3x for Flow Control with back pressure flow control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP IEEE 802.3az for Energy Efficient Ethernet
Protocols	IPv4, IPv6, IGMPv1/v2/v3, IGMP snooping, GARP, GMRP, GVRP, SNMPv1/v2c/v3, SNMP Trap, ICMP, Telnet, SSH, Client/IP-port-mapping, BootP, TFTP, SMTP, SMTP (Gmail), RMON, HTTP, HTTPS, Syslog, MRP (Manager/Client), LLDP, 802.1x, EAP, RADIUS,TACACS+, Mirror port, QoS, ACL, ITU-T G.8032 ERPS Ring, STP, RSTP, MSTP, Compatible Ring/Chain, U-Ring, NTP Server/Client, Serial Console, Modbus/TCP, IEEE 1588 PTP V1/V2, UDLD, Security, PoE, Trunk, LACP, MLD, 802.1Q VLAN, Port-Based VLAN,MAC-Based VLAN, IP-Subnet-Based VLAN, Protocol-Based VLAN, QinQ, 802.1x, ARP spoof Prevention, DHCP snooping, IP source Guard, Dynamic ARP Inspection, DHCP relay Agent, Voice VLAN, sFlow, PoE continue

Redundancy	ITU-T G.8032 ERPS, STP, RSTP, MSTP, MRP(Manager/Client), Compatible Ring/Chain, U-Ring	
Time Synchronization	Network Synchronization	NTP Server/Client, SNTP
	Precision Network Synchronization	IEEE1588 PTP v1/v2 IEEE1588 Hardware-based end-to-end transparent clock
Automation Profiles	Modbus/TCP status registers	
MIB	MIB II, IF-MIB, SNMPv2 MIB, BRIDGE-MIB, RMON MIB Group 1,2,3,9, RFC RFC 1157, RFC 1213, RFC 1215, RFC 1493, RFC 1643, RFC 1757, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2571, RFC 2742, RFC 2819, RFC 2863, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2674	
Power		
Input Voltage	Switch Core	DC version: redundant 48-57 VDC AC version: single 110-220 VAC Redundant AC version: dual 110-220 VAC Mixed AC/DC -Redundant: 1x 110-220VAC & 1x 48-57VDC
	PoE	2x 48-57 VDC
Max. Input Current	CPU board AC/ redundant AC: 64 W@110 VDC (with input current 0.58 A) CPU board redundand DC : 32.7 W@48 VDC (with input current 0.68 A) Full load of 802.3af PoE: 370 W@45 VDC (with input current 8.2 A) Full load of 802.3at PoE+: 720 W@51 VDC (with input current 14.1 A)	
Connectors	2x Lockable 5-pin terminal blocks for PoE power input (all models) 2x Lockable 3-pin terminal blocks for DC power input (DC models) 1-2x AC power input (1x for non-redundant/-MR models; 2x for -R model) 1x Lockable 3-pin terminal blocks for DC power input (-MR model)	
Reverse Polarity Protection	Yes	
Physical Characteristics		
Housing Dimension (W x H x D) Weight Installation	IP30 SPCC metal housing 440 x 44 x 340 mm (not including screws and rack-mount kit) 5 kg (not including module but module cover only) 1U Rack-mount, Rack-mount kit included	
Environmental Limits		
Operating Temperature Storage Temperature Ambient Relative Humidity	-40°C to +75°C (-40°F to +167°F) -40°C to +85°C (-40°F to +185°F) 5% to 95% (Non-condensing test @ 55°C)	

Switch Modules

RHG7X28-M1

RHG7X28-M2

RHG7X28-M3

Technical Specifications

Description	8-Port RJ45 PoE module	8-Port RJ45 module	8-Port SFP module
Model Name	RHG7X28-M1	RHG7X28-M2	RHG7X28-M3
Properties			
PoE Power per port	15.4/30W (802.3af/at)	-	-
Total Max Power	240 W	-	-
Number of ports	8	8	8
Port speed	10/100/1000 BASE-T(X)	10/100/1000 BASE-T(X)	100/1000 BASE-F(X)
Interface	RJ45	RJ45	SFP slot
Dimensions	104.5 x 171.6 x 39.5mm	104.5 x 171.6 x 39.5mm	104.5 x 171.6 x 39.5mm
Weight	550 g	500 g	450 g
Fixing	2 x screws (included)	2 x screws (included)	2 x screws (included)

REGULATORY APPROVALS

Regulatory Approvals	
Safety	UL 60950-1 2nd Ed. /CSA C22.2 No.60950-1-07 2nd Ed. / EN 60950-1 / UL 62368-1 / IEC 62368-1
EMC	FCC Part 15, Subpart B, Class A EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4
Rail Traffic	EN50155 / EN50121-4

Test	Item		Value	Level
IEC 61000-4-2	ESD	Contact Discharge Air Discharge	±8KV ±15KV	4 4
IEC 61000-4-3	RS	Enclosure Port	10(V/m), 80-1000MHz	3 *
IEC 61000-4-4	EFT	AC Power Port DC Power Port Signal Port	±2.0KV ±2.0KV ±2.0KV	3 3 4
IEC 61000-4-5	Surge	AC Power Port AC Power Port DC Power Port DC Power Port Signal Port	Line-to-Line±1.0KV Line-to-Earth±2.0KV Line-to-Line±1.0KV Line-to-Earth±2.0KV Line-to-Earth±2.0KV	3 3 3 3 3
IEC 61000-4-6	CS	0.15-80MHz	10V rms	3 *
IEC 61000-4-8	PFMF	Enclosure	AC 50Hz 10A/m	3
IEC 61000-4-11	DIP	AC Power Port	-	-
Shock Drop Vibration	MIL-STD-810G Method 516.5 MIL-STD-810F Method 516.5 MIL-STD-810F Method 514.5 C-1 & C-2			
RoHS2	Yes			
MTBF	12.20 Years			
Warranty	5 years			

** EMC level 3 on CS/RS pass conditional to the use of Shielded Ethernet Cable*

ORDERING INFORMATION

Core Switch Ordering Information

Model Name	Part Number	Description
RHG7528-CPU-4SFP	1P1RHG7528CPU1G	4* 1Gb Uplink SFP; 1* AC + 2* DC(PoE-dedicated)
RHG7528-CPU-4SFP-R	1P1RHG7528CPU2G	4* 1Gb Uplink SFP; 2* AC + 2* DC(PoE-dedicated)
RHG7528-CPU-4SFP-DC	1P1RHG7528CPU3G	4* 1Gb Uplink SFP; 2* DC + 2* DC(PoE-dedicated)
RHG7528-CPU-410GSFP	1P1RHG7528CPU4G	4* 10Gb Uplink SFP; 1* AC + 2* DC(PoE-dedicated)
RHG7528-CPU-410GSFP-R	1P1RHG7528CPU5G	4* 10Gb Uplink SFP; 2* AC + 2* DC(PoE-dedicated)
RHG7528-CPU-410GSFP-DC	1P1RHG7528CPU6G	4* 10Gb Uplink SFP; 2* DC+2* DC(PoE-dedicated)
RHG7528-CPU-4SFP-MR	1P1RHG7528CPU7G	4* 1Gb Uplink SFP; 1* AC+1* DC + 2* DC(PoE-dedicated)
RHG7528-CPU-410GSFP-MR	1P1RHG7528CPU8G	4* 10Gb Uplink SFP; 1* AC+1* DC + 2* DC(PoE-dedicated)

Module Ordering Information

Model name	Part Number	Description
RHG7X28-M1	1P1RHG7X28M101G	Module with 8x Gb PoE RJ-45
RHG7X28-M2	1P1RHG7X28M201G	Module with 8x Gb RJ-45
RHG7X28-M3	1P1RHG7X28M301G	Module with 8x Gb SFP Slots

Optional Accessories

Model Name	Part Number	Description
AC Power Cable for RHG7X28 (US)	50801341G	AC power cable (SS004-240) for US region
AC Power Cable for RHG7X28 (EU)	50801351G	AC power cable (SS004-241) for EU region
SDR-240-48	505024014800001G	DIN-rail power supply; 48-55 VDC, 100-240 VAC; 240 W@48 VDC (w/ input current 5 A)
SDR-480-48	505048014800001G	DIN-rail power supply; 48-55 VDC, 100-240 VAC; 480 W@48 VDC (w/ input current 10 A)
AXFD-1314-0523	522AXFD1314001G	SFP Transceiver, 155Mbps, Multi-mode, 1310nm, 2km, -40°C to +85°C, DDMI
AXFD-1314-0553	522AXFD1314011G	SFP Transceiver, 155Mbps, Single-mode,1310nm, 30km, -40°C to +85°C, DDMI
AXGD-5854-0513	522AXGD5854001G	SFP Transceiver, 1250Mbps, 850nm, Multi-mode, 550m, 3.3V, -40°C to +85°C, DDMI
AXGD-1354-0523	522AXGD1354001G	SFP Transceiver, 1250Mbps, 1310nm, Multi-mode, 2km, 3.3V, -40°C to +85°C, DDMI
AXGD-1354-0533	522AXGD1354011G	SFP Transceiver, 1250Mbps, 1310nm, Single-mode, 10km, 3.3V, -40°C to +85°C, DDMI
AXGD-3354-0593	522AXGD3354001G	SFP Transceiver, 1250Mbps, 1310nm, Single-mode, 40km, 3.3V, -40°C to +85°C, DDMI
AXXE-5886-05B3	522AXXE5886001G	SFP Transceiver, 10Gbps Multi, 850nm, 300m, -40°C to +85°C