

ENTERPRISE ACCESS SWITCHES

QN-SW-230-SERIES



With Redundant Power Supply

PRODUCT OVERVIEW

- QN-SW-230Switch Series provides robust Layer 2 switching and Layer 3 routing features to meet the diverse needs of enterprise/campus networks.
- Centralized device management options -Cloud hosted Quantum Rudder Network and Services Controller (NSC), On premises Rudder NSC, Device GUI/CLI, SNMP.
- Port density of 24/48 Gigabit ports and 4 SFP+ uplink/stacking interfaces with non-blocking switching capabilities.
- PoE budget options to power advanced devices with the option of PoE /PoE+ per port.
- On-device management ports include a dedicated console port, an Out of Band management port, and a USB flash drive port for storage.
- Provides advanced enterprise-class features such as verity of VLAN types (Data, Private, Guest (802.1x) auto-voice VLAN, Multicast TV VLAN), OSPF v2/v3, ISATAP, DHCP server, Strom control, and DoS prevention.
- QN-SW-230-24/48-AD switches have Options of AC and DC power supply.
- Three-year limited liability manufacturer's warranty from day one.

HIGHLIGHTS

- **Simplified Network Management.**
Unified management stacks (Rudder Network and Service Controller) to deploy, monitor, and troubleshoot wired as well as wireless networks.
- **Centralized Network observability.**
Dashboards and reporting logs for various network events.
- **Reliable Performance.**
Delivers Stability, Scalability, and Effortless handling of diverse workloads.
 - The switch supports a non-blocking architecture that provides from 128 Gbps to 176 Gbps of wire-speed switching capacity and from 95 to 131 Mpps of forwarding capacity, allowing it to handle a wide range of workloads.
 - For better network security, the switch supports multiple authentication methods, including 802.1x and MAC authentication. The switch provides identity-driven security and controls via granular Access Control Lists (ACLs).

KEY SPECIFICATION

QN-SW-230-Series

Feature	Specifications					
Communication Ports	48FP (Full PoE)	48P (PoE)	48 (Non PoE)	24FP (Full PoE)	24P (PoE)	24 (Non PoE)
10/100/1000 Mbps RJ45 downlinks	48	48	48	24	24	24
10G SFP+ uplinks	4 (Expandable up to 8 ports with system upgrade)					
PoE Budget (Watt)	1440 Watt	740 Watt	-	740 Watt	410 Watt	-
Max PoE (802.3af)	48	48	-	24	24	-
Max PoE+ (802.3at)	48	24	-	24	12	-
Management Ports						
Console (RJ45)	1					
Management (OOB)	1					
Storage (USB Type A)	1					
Capacity	48 Ports			24 Ports		
	Standard	+2DSPU Upgrade	+4DSPU Upgrade	Standard	+2DSPU Upgrade	+4DSPU Upgrade
Switching capacity	176 Gbps	216 Gbps	256 Gbps	128 Gbps	168 Gbps	208 Gbps
Forwarding rate	131 Mpps	161 Mpps	190 Mpps	95 Mpps	125 Mpps	155 Mpps
MAC address table (Max)	16k / 32k*			16k / 32k*		
Packet buffer size	3 MB / 6 MB*			3 MB / 6 MB*		
Active VLANs support	4096			4096		
Maximum jumbo frame size	9,216 bytes			9,216 bytes		
Link aggregation groups	Max 8			Max 8		
Link aggregation ports per group	Max 8			Max 8		
QoS priority queues	8 per port			8 per port		
Quality of Service						
▪ DiffServ (Differentiated services)			▪ Strict priority support			
▪ Priority queue			▪ Traffic shaping/policing			
▪ ACL mapping to priority queue			▪ WRR support			
▪ QoS based on classification (Based on IP, MAC and VLAN)			▪ SP+WRR			
▪ Flow redirection			▪ Rate limiting (Based on per port and per queue)			
▪ Single Rate Three Color Marker (srTCM)			▪ Class map defines traffic flow with ACLs or support for network traffic management			
▪ Two Rate Three Color Marker (trTCM)			▪ Policy map & route MAP to define the action for a set of classified inbound traffic			
▪ Flow mirror, 802.1p Support						

Security

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|---|--|
| ▪ RADIUS | ▪ TACACS+ |
| ▪ Port security | ▪ Role based access control |
| ▪ AAA (Authentication, Authorization, and Accounting) | ▪ 802.1x authentication (Port Based, MAC Based, Web Based) |
| ▪ ACL (Based On IP, Port, Protocol, MAC, Time Based) | ▪ Management ACL |
| ▪ IP source guard | ▪ DoS prevention |
| ▪ Protected port | ▪ Secure copy (SCP) |
| ▪ ARP inspection | ▪ Kerberos |
| ▪ SSL | |

Multicast

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|---|---|
| ▪ Internet Group Management Protocol -IGMP v1/v2/v3 | ▪ Multicast Listener Discovery- MLD v1/V2 |
| ▪ IGMP snooping | ▪ MLD snooping |
| ▪ PIM-SM/SSM | ▪ Multicast TV VLAN |
| ▪ PIM-SMv6 | ▪ MVR (Multicast VLAN registration) |

Layer 2

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|-----------------------------------|--|
| ▪ Port Tagging/untagged | ▪ BPDU guard |
| ▪ MAC based VLANs | ▪ GVRP |
| ▪ Private VLAN | ▪ LLDP/LLDP MED |
| ▪ Subnet based VLAN | ▪ RADIUS assigned VLAN |
| ▪ Auto MDI/MDIX | ▪ Link aggregation (Ether Channel) |
| ▪ Loopback detection | ▪ Link Aggregation Control Protocol (LACP) |
| ▪ Port isolation | ▪ Port mirroring (Port, ACL, VLAN Based) |
| ▪ Root guard | ▪ Default VLAN |
| ▪ Guest VLAN | ▪ Auto voice VLAN |
| ▪ Energy Efficient Ethernet (EEE) | ▪ Green Ethernet |
| ▪ Link flapping detection | ▪ Flow control |
| ▪ STP/RSTP/MSTP | ▪ Native VLAN |
| ▪ QinQ (802.1Q) | ▪ Loop guard |

Layer 3

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|--|---|
| ▪ IPv4 and IPv6 dual stack | ▪ IPv6 prefix list |
| ▪ Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) | ▪ IP source guard |
| ▪ Policy Based Routing (PBR) | ▪ DHCP server |
| ▪ ARP table (Static / Dynamic learning) | ▪ DHCP relay |
| ▪ DHCP Client | ▪ IPv6 NDRA (Neighbor Discovery Router Advertisement) |
| ▪ ICMP redirect & ICMP unreachable | ▪ Duplicate Address Detection (DAD) |
| ▪ IPv6 SLAAC (Stateless Address Auto configuration) | ▪ IPv6 ND |
| ▪ ARP-Proxy | ▪ DHCP Option 82, 66, 67 |

Layer 3 Routing

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| ▪ Static routing (IPv4, IPv6) | ▪ Inter-VLAN routing |
| ▪ Routing Information Protocol, version 2 (RIPv2) | ▪ OSPFv2/v3 (Open Shortest Path First) |

High Availability

- Stacking (Up-to 8 members)
- Equal-Cost Multi Path (ECMP)
- Storm control (Broadcast, Multicast, Unicast)
- Ring Redundancy Protocol (RRP)
- Ethernet Ring Protection Switching (ERPS)
- Virtual Router Redundancy Protocol (VRRP)

Management

- Local GUI
- Industrial standard CLI
- Telnet support
- Storage & File management with USB
- TFTP support
- SNMP v1/v2c/v3
- SNTP
- Manual/schedule reboot
- Management: RUDDER (Controller)/Standalone
- SPAN/RSPAN
- SSHv1/v2
- Firmware auto install support
- Syslog server
- RMON (All 4 Groups 1,2,3,9)
- sFlow

Standard Compliance

IEEE Standards Compliance

- 802.1AB LLDP/ LLDP-MED
- 802.1D MAC bridging
- 802.1p Mapping to priority queue
- 802.1s Multiple Spanning Tree (MST)
- 802.1w Rapid Reconfiguration of Spanning Tree (RSTP)
- 802.1x Port-based Network Access Control (PNAC)
- 802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD)
- 802.3ab 1000Base-T
- 802.3 10Base-T
- 802.3ad link aggregation (Dynamic and Static)
- 802.3ae 10 gigabit ethernet
- 802.3at power over ethernet Plus
- 802.3u 100Base-TX
- 802.3x flow control
- 802.3z 1000Base-SX/LX
- 802.3 MAU MIB (RFC 2239)
- 802.1Q VLAN tagging
- 802.3az Energy Efficient Ethernet
- 802.3af Power over Ethernet

Monitoring and Troubleshooting

- Errdisable detection and recovery
- Device temp/PSU/FAN/status display & alarm
- Virtual cable test
- ICMPv4/v6
- Traceroute
- CPU Utilization
- User operation logs
- Management logs, alarms
- DDM (Digital Diagnostic Monitoring)
- UDLD (Unidirectional Link Detection)

Physical	48FP (Full PoE)	48P (PoE)	48 (Non PoE)	24FP (Full PoE)	24P (PoE)	24(Non PoE)
Dimensions (L x W x H)	440*392*44 mm	440*385*44 mm	440*355*44 mm	440*385*44 mm	440*380*44 mm	440*350*44 mm
Fan	With Fan	With Fan	With Fan	With Fan	With Fan	With Fan

Environment	
Operating temperature	-5°C (23°F) to 65°C (149°F)
Storage temperature	-40°C (-40°F) to 70°C (158°F)
Humidity	5% ~ 95% non-condensing
RoHS	Compliant
Packaging Content	
▪ Switch with 2 x type D power cord with rack mounting kit	
Certification & Compliances	
Regulatory	FCC
	BIS
Environmental	CE
	RoHS

ORDERING INFORMATION

Part Number	Description
QN-SW-230-48FP	Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 1440 Watts Full PoE Budget & In-built Redundant Power supply, Includes cloud controller license and 3 Years online activation warranty.
QN-SW-230-48P	Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 740 Watts PoE Budget & In-built Redundant Power supply, Includes cloud controller license and 3 Years online activation warranty.
QN-SW-230-48	Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, In-built Redundant Power supply, Includes cloud controller license and 3 Years online activation warranty.
QN-SW-230-24FP	Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 740 Watts Full PoE Budget & In-built Redundant Power supply, Includes cloud controller license and 3 Years online activation warranty.
QN-SW-230-24P	Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 410 Watts PoE Budget & In-built Redundant Power supply, Includes cloud controller license and 3 Years online activation warranty.
QN-SW-230-24	Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, In-built Redundant Power supply, Includes cloud controller license and 3 Years online activation warranty.

SYSTEM UPGRADE INFORMATION

Part Number	Description
QN-230-2DSPU	System upgrades to add additional 2x10G SFP+ uplink/dedicated stacking ports.
QN-230-4DSPU	System upgrades to add additional 4x10G SFP+ uplink/dedicated stacking ports.
QN-230-HSR	System upgrade for Hot Swappable Resiliency includes Hot Swappable Power Supplies and Hot Swappable Fans.
QN-230-NSU2	System upgrade for networking scale level 2.

*Requires additional QN-230-NSU2 system upgrade.