



PRODUCT OVERVIEW

- QN-SW-225 Switch Series provides robust Layer 2 switching and Layer 3 routing features to meet the diverse needs of enterprise/campus networks.
- On-device management ports include a dedicated console port, an Out of Band management port, and a USB flash drive port for storage.
- Centralized device management options –Cloud hosted Quantum Rudder Network and Services Controller (NSC), On premises Rudder NSC, Device GUI/CLI, SNMP.
- PoE budget options to power advanced devices with the option of PoE / PoE+ / PoE++ (60W/90W) per port.
- This switch provides a flexible range of downlink ports, from 8 to 48, to accommodate your network needs. It also offers 2 or 4 SFP+ uplink ports for high-speed connections.
- 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 56 Gbps to 176 Gbps of wire-speed switching capacity and from 42 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-225-Series

Communication Ports	Specifications							
Models	10/100/1000 Mbps RJ45 Downlinks	1G Fiber Downlinks	10G Fiber Uplinks	1G Fiber Uplinks ^{*1}	PoE Budget ^{*2} (Watt)	Max PoE (802.3af)	Max PoE+ (802.3at)	Max PoE++ (802.3bt)
48 Ports								
QN-SW-225-48P	48	-	4		740	48	24	-
QN-SW-225-48	48	-	4		-	-	-	-
24 Ports								
QN-SW-225-24FP	24	-	4		740	24	24	-
QN-SW-225-24P	24	-	4		400	24	12	-
QN-SW-225-24	24	-	4		-	-	-	-
16 Ports								
QN-SW-225-16P-2SFPP	16	-	2		240	16	8	-
QN-SW-225-16-4SFPP	16	-	4		-	-	-	-
12 Ports								
QN-SW-225-12P-2SFPP	12	-	2		188	12	6	-
QN-SW-225-12-2SFPP	12	-	2		-	-	-	-
8 Ports								
QN-SW-225-8FPU	8	-	2		240	8	8	2
QN-SW-225-8FP	8	-	2		240	8	8	-
QN-SW-225-8P	8	-	2		120	8	4	-
QN-SW-225-8F	-	8	2		-	-	-	-
QN-SW-225-8	8	-	2		-	-	-	-
QN-SW-225-8-4SFP	8	-	-	4	-	-	-	-
Management Ports	48 Ports	24 Ports	16 Ports	12 Ports	8 Ports			
Console (RJ45)	1	1	1	1	1			
Management (OOB)	1	1	1	1	1			
Storage (USB Type A)	1	1	1	1	1			
Capacity	48 Ports	24 Ports	16 Ports	12 Ports	8 Ports			
Switching capacity	176 Gbps	128 Gbps	112 Gbps	64 Gbps	56 Gbps			
Forwarding rate	131 Mpps	95 Mpps	84 Mpps	48 Mpps	42 Mpps			
MAC address table	Max 16K	Max 16K	Max 16K	Max 16K	Max 16k			
Packet buffer size	3 MB	3 MB	3 MB	3 MB	3 MB			
Active VLANs support	4096	4096	4096	4096	4096			
Maximum jumbo frame size	9,216 bytes	9,216 bytes	9,216 bytes	9,216 bytes	9,216 bytes			

*1 The switch model with a 1G SFP uplink port does not support the stacking feature.

*2 The PoE power budget will be -30 or +30 watts, depending on the current power budget.

Quality of Service

DiffServ (Differentiated services)	Strict priority support
Priority queue	Traffic shaping/policing
ACL mapping to priority queue	WRR support
Flow mirror, 802.1p Support	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
QoS based on classification (Based on IP, MAC and VLAN)	

Security

RADIUS, TACACS+	MACsec*3
Port security	Downloadable ACL
DHCP Snooping	Dynamic ACL
AAA (Authentication, Authorization, and Accounting)	Role based access control
ACL (Based On IP, Port, Protocol, MAC, Time Based)	802.1x authentication (Port Based, MAC Based, Web Based)
IP source guard	Management ACL
Protected port	DoS prevention
ARP inspection (DAI & SAI)	Secure copy (SCP)
SSL	Kerberos

Multicast

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 3

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, Gratuitous ARP	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

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

Layer 2	
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
High Availability	
Stacking (Up-to 8 members)	Ring Redundancy Protocol (RRP)
Equal-Cost Multi Path (ECMP)	Virtual Router Redundancy Protocol (VRRP)
Storm control (Broadcast, Multicast, Unicast)	
Management	
Local GUI	Management: RUDDER (Controller)/Standalone
Industrial standard CLI	SPAN/RSPAN
Telnet support	SSHv1/v2
Storage & File management with USB	Firmware auto install support
TFTP support	Syslog server
SNMP v1/v2c/v3	RMON (All 4 Groups 1,2,3,9)
Standard Compliance	
IEEE Standards Compliance	
802.1AB LLDP/ LLDP-MED	802.3ae 10 gigabit Ethernet
802.1D MAC bridging	802.3at power over Ethernet Plus
802.1p Mapping to priority queue	802.3u 100Base-TX
802.1s Multiple Spanning Tree (MST)	802.3x flow control
802.1w Rapid Reconfiguration of Spanning Tree (RSTP)	802.3z 1000Base-SX/LX
802.1x Port-based Network Access Control (PNAC)	802.3 MAU MIB (RFC 2239)
802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD)	802.1Q VLAN tagging
802.3ab 1000Base-T	802.3az Energy Efficient Ethernet
802.3 10Base-T	802.3af Power over Ethernet
802.3ad link aggregation (Dynamic and Static)	

Monitoring and Troubleshooting

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

Environment

Operating temperature	-5°C (23°F) to 65°C (149°F)
Humidity	5% ~ 95% non-condensing

Packaging Content

Switch with type D power cord with rack mounting kit
--

CERTIFICATION & COMPLIANCES^{*4}

Regulatory	FCC
	BIS
	TEC
Environmental	RoHS
	CE

^{*4} For more information, visit www.qntmnet.com/certification or email us at sales@qntmnet.com.

ORDERING INFORMATION

Part Number	Description
QN-SW-225-48P	Networking Switch, 48×10/100/1000 Base-T ports with 4x10G Fiber uplinks, 740 Watts PoE Budget, Includes 3 Years online activation warranty.
QN-SW-225-48	Networking Switch, 48×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3 Years online activation warranty.
QN-SW-225-24FP	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, 740 Watts PoE Budget Includes 3 Years online activation warranty.
QN-SW-225-24P	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, 400 Watts PoE Budget Includes 3 Years online activation warranty.
QN-SW-225-24	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3 Years online activation warranty.
QN-SW-225-16P-2SFPP	Networking Switch, 16×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 240 Watts PoE Budget, Includes 3 Years online activation warranty.
QN-SW-225-16-4SFPP	Networking Switch, 16×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3 Years online activation warranty.
QN-SW-225-12P-2SFPP	Networking Switch, 12×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 188 Watts PoE Budget, Includes 3 Years online activation warranty.
QN-SW-225-12-2SFPP	Networking Switch, 12×10/100/1000 Base-T ports with 2x10G Fiber uplinks, Includes 3 Years online activation warranty.
QN-SW-225-8FPU	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 1-2 Port Support PoE++ (60W) Support, 240 Watts PoE Budget. Includes 3 Years online activation warranty.
QN-SW-225-8FP	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 240 Watts PoE Budget, Includes 3 Years online activation warranty.
QN-SW-225-8P	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 120 Watts PoE Budget, Includes 3 Years online activation warranty.
QN-SW-225-8F	Networking Switch, 8×10/100/1000 1G SFP ports with 2x10G Fiber uplinks, Includes 3 Years online activation warranty.
QN-SW-225-8	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, Includes 3 Years online activation warranty.
QN-SW-225-8-4SFP	Networking Switch, 8×10/100/1000 Base-T ports with 4x1G Fiber uplinks, Includes 3 Years online activation warranty.

SYSTEM UPGRADE PART CODES

(TO BE ORDERED AT THE TIME OF HARDWARE PURCHASE)

Part Number	Description
QN-225-2DSPU	System upgrades to add additional 2x10G SFP+ uplink/dedicated stacking ports for QN-SW-225 series 24 port and 48 port switches.
QN-225-4DSPU	System upgrades to add additional 4x10G SFP+ uplink/dedicated stacking ports for QN-SW-225 series 24 port and 48 port switches.

SECURITY SCALE UPGRADE^{*3}

Part Number	Description
QN-225-SEC-U	System upgrade for enabling MACsec.

NETWORKING SCALE UPGRADE

Part Number	Description
QN-225-NSU2	System upgrade for networking scale level 2.

For system Upgrade detail, please refer: [System Upgrade Detail](#)