ENTERPRISE ACCESS SWITCHES
QN-SW-225-SERIES

PRODUCT OVERVIEW

o QN-SW-225 Switch Series provides robust Layer 2 switching and Layer 3 routing features to meet the diverse needs of enterprise/campus networks.

o On-device management ports include a dedicated console port, an Out of Band management port, and a USB flash drive port for storage.

o Centralized device management options -Cloud hosted Quantum Rudder Network and Services Controller (NSC), on premises Rudder NSC, Device GUI/CLI, SNMP.

o PoE budget options to power advanced devices with the option of PoE / PoE+ / PoE++ (60W/90W) per port.

o 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.

o Three-year limited liability manufacturer's warranty from day one.

HIGHLIGHTS

o **Simplified network management.**
Unified management stacks (Rudder, Network and Service Controller) to deploy, monitor, and troubleshoot wired as well as wireless networks.

o **Centralized network observability.**
Dashboards and reporting logs for various network events.

o **Reliable performance.**
Delivers Stability, Scalability, and Effortless handling of diverse workloads.
  - o 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.
  - o 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

Communication Ports	Specifications								
Models	10/100/1000 Mbps RJ45 Downlinks	1G Fiber Downlinks	10G Fiber Uplinks	1G Combo 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	16	–	4	–	–	–	–	–	–
12 Ports									
QN-SW-225-12P-2SFPP	12	–	2	–	–	188	12	6	–
QN-SW-225-12	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-225-8P-4C	8	–	–	4	–	140	–	–	–
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
Active VLANs support	4096	4096	4096	4096	4096
IPv4 Route	480	480	480	480	480
IPv6 Route	120	120	120	120	120

[*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.

Maximum jumbo frame size	9,216 bytes	9,216 bytes	9,216 bytes	9,216 bytes	9,216 bytes
Link aggregation groups	Max 32	Max 32	Max 32	Max 32	Max 32
Link aggregation ports per group	Max 8	Max 8	Max 8	Max 8	Max 8
QoS priority queues	8 per port	8 per port	8 per port	8 per port	8 per port
ACL	1024	1024	1024	1024	1024

Quality of Service

Port and VLAN based QoS (802.1P)	Single Rate Three Color Marker (srTCM)
QoS based on IP/MAC/Port	Two Rate Three Color Marker (trTCM)
Traffic shaping	Strict priority support
DiffServ	Weighted Round Robin (WRR) support
Class-map & Policy-map	Queue assignment based on DSCP & CoS
QoS aggregate-policer	Traffic classification based on COS/DSCP
QoS Mapping on Queue	

Security

RADIUS, TACACS+	Downloadable ACL
Port security	Dynamic ACL
DHCP Snooping	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 (DAI & SAI)	Kerberos
SSL	

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	NTP authentication
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)
SNTP	sFlow
Management: RUDDER (Controller)/Standalone	REST API
NetConf/RestConf	Manual/schedule reboot

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)

Physical

Model	Net Weight	Dimensions (H x W x D)	Fan	MTBF
QN-SW-225-48P	4.46 KG	44 x 440 x 300mm	Yes	1,00,000 hrs
QN-SW-225-48	3.52 KG	44 x 440 x 300mm	Yes	1,00,000 hrs
QN-SW-225-24FP	3.72 KG	44 x 440 x 350mm	Yes	1,00,000 hrs
QN-SW-225-24P	3.56 KG	44 x 440 x 350mm	Yes	1,00,000 hrs
QN-SW-225-24	2.81 KG	44 x 440 x 245mm	No	1,00,000 hrs
QN-SW-225-16P-2SFPP	3.42 KG	44 x 440 x 250mm	Yes	1,00,000 hrs
QN-SW-225-16	2.62 KG	44 x 440 x 245mm	No	1,00,000 hrs
QN-SW-225-8FPU	1.48 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8FP	1.48 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8P	1.38 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8P-4C	1.50 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8	1.09 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8-4SFP	1.38 KG	44x 210 x 210 mm	No	1,00,000 hrs

Environment

Operating temperature	-5°C (23°F) to 65°C (149°F)
Humidity	5% ~ 95% non-condensing
RoHS	Compliant
Voltage input	100-240V. Frequency: 50/60Hz
Power consumption	Internal PSU ≤40W, External PSU ≤100W

Packaging Content

Switch with type D power cord with rack mounting kit

CERTIFICATION & COMPLIANCES*

Certifications	Parameter	Standards
Environmental Compliances	CE, RoHS	EU safety, health, and environmental protection
Regulatory (USA)	FCC	A product has been tested and found to comply with relevant FCC standards.
Regulatory (IN)	BIS	IS-13252, IEC-60950 (Ensuring safety and reliability of IT and telecom equipment.)
	IEC-62368	Compliance with the IEC 62368-1 standard
	MTCTE (ER)	EMI/EMC (IEC / EN-61000* & CISPR 32)
		Safety (IS-13252 & IEC-60950)
		Technical (IPv4 & IPv6)
	IPv6 Ready	Certified for next-generation network compatibility
	IEC 61000-3-2	Limits for Harmonic Current Emissions
	EN 55032	EMC Standard for Multimedia Equipment
	EN 55024	EMC Immunity Requirements for ICT Equipment
	IEC 62368	Safety Standard for Audio/Video, ICT, and Communication Equipment
	IEC 60825	Laser Product Safety

*For detailed information on certifications apply to each model within the series mentioned in this datasheet, please 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-year online activation warranty.
QN-SW-225-48	Networking Switch, 48×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3-year 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-year 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-year online activation warranty.
QN-SW-225-24	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3-year 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-year online activation warranty.
QN-SW-225-16	Networking Switch, 16×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-12P	Networking Switch, 12×10/100/1000 Base-T ports with 2x10G Fiber uplinks,188 Watts PoE Budget, Includes 3-year online activation warranty.
QN-SW-225-12	Networking Switch, 12×10/100/1000 Base-T ports with 2x10G Fiber uplinks, Includes 3-year 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-year 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-year 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-year online activation warranty.
QN-SW-225-8P-4C	Networking Switch, 8×10/100/1000 Base-T ports with 4x1G Combo uplinks, 140 Watts PoE Budget, Includes 3-year online activation warranty.
QN-SW-225-8	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-8-4SFP	Networking Switch, 8×10/100/1000 Base-T ports with 4x1G Fiber uplinks, Includes 3-year online activation warranty.

For more information, visit system upgrade reference details.

Rev: 4.2