ENTERPRISE ACCESS SWITCHES
QN-SW-230-SERIES

With Redundant Power Supply

PRODUCT OVERVIEW

- QN-SW-230 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.
- 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.
- 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

Communication Ports	Specifications					
Model	**230-48FP**	**230-48P**	**230-48**	**230-24FP**	**230-24P**	**230-24**
10/100/1000 Mbps RJ45 Downlinks	48	48	48	24	24	24
1G/10G Fiber Uplinks	4 (Expandable up to 8 ports with system upgrade)					
PoE Budget (Watt)[*1]	1480 Watt	740 Watt	--	740 Watt	400 Watt	--
Max PoE (802.3af)	48	48	--	24	24	--
Max PoE+ (802.3at)	48	24	--	24	12	--
Management Ports	48 Ports			24 Ports		
Console (RJ45)	1			1		
Management (OOB)	1			1		
Storage (USB Type A)	1			1		
Capacity	48 Ports			24 Ports		
Switching capacity	176 Gbps			128 Gbps		
Forwarding rate	131 Mpps			95 Mpps		
MAC address table	Max 16K			Max 16K		
Active VLANs support	4094			4094		
IPv4 Route	480			480		
IPv6 Route	120			120		
Maximum jumbo frame size	9,216 bytes			9,216 bytes		
Link aggregation groups	Max 32			Max 32		
Link aggregation ports per group	Max 8			Max 8		
QoS priority queues	8 per port			8 per port		
ACL	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	

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

Security	
RADIUS, TACACS+	ARP inspection (DAI & SAI)
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)	Management ACL
IP source guard	DoS prevention
Protected port	Secure copy (SCP)
802.1x authentication (Port Based, MAC Based, Web Based)	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)
VRF support	
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
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
Fan Airflow **	Front to back
Packaging Content	
Switch with 2 x type D power cord with rack mounting kit	
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)	

** FAN Airflow: Default airflow of fans is front-to-back. Specify back-to-front airflow while placing the order (applicable only for QN-SW-230 series with HSR models).

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-230-48FP	7.80Kg	44 x 440 x 354 mm	Yes	1,00,000 hrs
QN-SW-230-48P	6.24Kg	44 x 440 x 350 mm	Yes	1,00,000 hrs
QN-SW-230-48	3.56Kg	44 x 440 x 350 mm	No	1,00,000 hrs
QN-SW-230-24FP	5.60 Kg	44 x 440 x 354 mm	Yes	1,00,000 hrs
QN-SW-230-24P	5.15 Kg	44 x 440 x 350 mm	Yes	1,00,000 hrs
QN-SW-230-24	3.3 Kg	44 x 440 x 258 mm	No	1,00,000 hrs

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-230-48FP	Networking Switch, 48×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 1480 Watts PoE Budget &In-built Redundant Power supply, includes 3-year 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 3-year 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 3-year online activation warranty.
QN-SW-230-24FP	Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 740 Watts PoE Budget &In-built Redundant Power supply, includes 3-year online activation warranty.
QN-SW-230-24P	Networking Switch, 24×10/100/1000Base-T ports with 4x10G Fiber uplink ports, 400 Watts PoE Budget &In-built Redundant Power supply, includes 3-year 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 3-year online activation warranty.

For more information, visit system upgrade reference details.