# INDOOR ACCESS POINT
## QN-I-280

**QUANTUM® NETWORKS**

## PRODUCT OVERVIEW

QN-I-280 is a Wi-Fi 6 access point offering high-performance connectivity for any organization experiencing largely growing numbers of IoT and mobility requirements. With a maximum real-world data rate of up to 3 Gbps, it delivers high-speed, secure, reliable and seamless performance for any enterprise environment.

QN-I-280 provides concurrent dual-band 802.11ax wireless networking solutions. OFDMA technology offers highly efficient fast speed, awesome coverage and smooth performance in high-density areas like railway stations, hospitals, malls, public places, universities etc. It is managed by Quantum Rudder.

Quickly deploy futuristic customer engagement solutions using BLE Beacon.

Each access point comes with a three-year limited-liability manufacturer's warranty from the date of activation and theft prevention functionality to protect assets from misuse.

Up to 3 Gbps
Data Rate

2.5 GbE
Connectivity

2.4 GHz 5 GHz

2.4 GHz - 2x2,
5 GHz - 2x2

MU-MIMO
With OFDMA

3 Years
Warranty

## KEY FEATURES

**Packed with the latest 802.11ax technology**
QN-I-280 has all the advantages of a high-efficiency supported 11ax Access Point. It supports Wi-Fi 6 features such as OFDMA, Target Wake Time, and BSS coloring and spatial reuse.

**Phenomenal Wi-Fi performance**
It is engineered for phenomenal Wi-Fi performance even in high-density environments for demanding voice and video applications. Provides improved coverage, increased capacity and seamless performance in dense environments.

**Build next-generation guest Wi-Fi networks**
Deploy next-generation customer service hotspots with an integrated splash portal and BLE Beacons.

**Theft prevention functionality**
Access Point is locked for deployment in any other network until decommissioned from the existing network.

**Three-year warranty**
Three-year limited liability manufacturer's warranty from the date of activation of the device.

| Wi-Fi | | |
|---|---|---|
| Wi-Fi Standards | 5 GHz | IEEE 802.11a/n/ac/ax |
| | 2.4 GHz | IEEE 802.11b/g/n/ax |
| Operating Mode | Access point, Router, Mesh mode | |
| Networking Mode | IPv4, IPv6, IPv4v6 (Dual stack), Gateway mode(NAT), Bridge mode | |
| Maximum Data Rates | 5 GHz | 802.11ax@ 160 MHz:2400 Mbps |
| | | 802.11ax@ 80 MHz:1201 Mbps |
| | | 802.11ax@ 40 MHz: 600 Mbps |
| | | 802.11ax@ 20 MHz: 286.8 Mbps |
| | | 802.11ac@ 80 MHz: 1083.3 Mbps |
| | | 802.11ac@ 40 MHz: 500 Mbps |
| | | 802.11ac@ 20 MHz: 240.5 Mbps |
| | 2.4 GHz | 802.11ax@ 40 MHz: 600 Mbps |
| | | 802.11ax@ 20 MHz: 286.8 Mbps |
| | | 802.11n@ 40 MHz: 500 Mbps |
| | | 802.11a/g@ 20 MHz: 54 Mbps |
| | | 802.11b@ 20 MHz: 11 Mbps |
| Maximum Receiver Sensitivity | 5 GHz | -98 dBm |
| | 2.4 GHz | -93 dBm |
| Supported Channels | 5 GHz | 36-64, 100-144, 149-165 (UNII-1, UNII-2, UNII-2e, UNII-3 compliant)  (As per country regulations) |
| | 2.4 GHz | 1-13 (As per country regulations) |
| | | Dynamic frequency selection (DFS) optimizes the use of available RF spectrum |
| Channel Bands | 5 GHz | 5.15-5.25 GHz (U-NII-1), 5.25-5.35 GHz (U-NII-2A), 5.47-5.725 GHz (U-NII-2C), 5.725-5.85 GHz (U-NII-3) |
| | 2.4 GHz | 2.4-2.484GHz (ISM) |
| Modulation Schemes | 802.11ax | BPSK, QPSK, 16-QAM, 64-QAM, 256- QAM, 1024-QAM |
| | 802.11ac | BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM |
| | 802.11a/g/n | BPSK, QPSK, 16-QAM, 64-QAM |
| | 802.11b | BPSK, QPSK, CCK |
| Radio Chains and Spatial Streams | 2x2:2 | Streams in 5GHz-OFDMA with MU-MIMO |
| | 2x2:2 | Streams in 2.4GHz- OFDMA with MU-MIMO |
| Channel Size | 802.11n | 20/40 (HT) MHz |
| | 802.11ac | 20/40/80 (VHT) MHz |
| | 802.11ax | 20/40/80/160 (HE) MHz |
| Wireless Security | WPA3-AES personal, Enhanced open ( OWE ) | |
| | WPA3-Enterprise (802.1x/EAP-TLS, EAP-TTLS) | |
| | WPA3-WPA2 Mixed- AES personal, Open | |
| | WPA2-TKIP/AES personal, Open | |
| | WPA2-Enterprise (802.1x/EAP-PEAP,EAP-TLS, EAP-TTLS) | |
| | WPA personal,  WPA Mixed-Enterprise (802.1x/EAP-PEAP) | |

| Wireless Security | WEP-64, WEP-128, | |
| --- | --- | --- |
| | 802.11 w MFP(Management Frame Protection) | |
| | MAC based authentication | |
| | Captive portal based authentication | |
| | 802.11i | |
| | Quantum Secure | |
| | Hide SSID in beacons | |
| WIPS/WIDS for Various Attack Signatures | Rogue Station Detection | |
| | Deauth attack detection, RTS and CTS abuse attack detection | |
| | Assoc attack detection, Fata jack tool detection | |
| | DHCP snooping server detection, Honeypot / Evil Twin attacks detection | |
| | Misconfigured AP detection | |
| | SSH Brute force attacks detection, Man in the middle attacks detection | |
| | Port scanning detection, Ad-Hoc connection detection, Password guessing attacks detection | |
| External DB Support | Radius, Active directory, LDAP | |
| Web Authentication | QN-Secure+, RADIUS, Active directory, LDAP | |
| User Authentication | Methods | Captive portal, QN-Secure+, 802.1x (Radius) |
| | Directory | QIM, Microsoft active directory, LDAP, G suite, Oauth |
| | Mode | Via Controller /Access points |
| Roaming | IEEE 802.11k (Assisted Roaming) | |
| | IEEE 802.11v (BSS Transition Management) | |
| | IEEE 802.11r (Fast BSS Transition (FT)) | |
| | Pairwise Master Key (PMK) caching | |
| | Opportunistic key caching | |
| | Seamless roaming for captive portal users | |
| Channel / Tx Power Management | Auto / Manual channel selection | |
| | Speedy channel for RF optimization | |
| | Channel switch for RF optimization | |
| | ATP-Automatic Transmit Power management | |
| Client Management | Band steering | |
| | Band balancing | |
| | Airtime fairness | |
| Guest Management | WISPr – Captive portal, HotSpot 2.0 | |
| Native Guest Portal | Customized Template | Yes (User define, Theme based) |
| | Authentication Method | Click-through, Access code, Self-sign-up (SMS, Email), Sponsor based (Domain-based, Individual Email ID based) |
| | Guest Profile Support | Pass validity, Bandwidth restriction, Quota based |

| Diagnostics | Ping, Traceroute, Nslookup, Internet speed, Host discovery, Port connectivity, PCAP capture (Wired and Wireless), ARP scanner |
|---|---|
| Access Control List | Force DHCP |
| | URL & Application filtering |
| | Full Client Isolation, Deny inter-user bridging, Deny intra-VLAN traffic |
| | Bandwidth Restriction per SSID/User |
| | OS restriction |
| | L2 (MAC) filtering |
| | L3 (IP) / L4 (Port)  filtering |
| | MAX clients per radio |
| | Internet freeze per SSID/User |
| Meshing | Wireless (singlehop / multihop) |
| | Wired |
| Radio Management | DTIM interval |
| | OFDM Only (Disables 802.11b) |
| | BSS Rate and management rate |
| | UAPSD ( Power save ) |
| | Inactivity timeout |
| Network Management | IEEE 802.11d/h (DFS) support |
| | LLDP discovery, SFlow |
| | Proxy ARP |
| | DHCP options 60 and 82 |
| | Port forwarding in router mode |
| Administration | WLAN scheduling |
| | Internet speed test |
| | Schedule reboot |
| Wi-Fi 6 Features | Target wake time |
| | BSS coloring |
| | Spatial reuse |
| | Orthogonal frequency division multiple access (OFDMA) |
| | Preamble puncturing |
| Advance Features | Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks |
| | Cyclic delay/shift diversity (CDD/CSD) to enable the use of multiple transmit antennas |
| | Short guard interval for 20-MHz, 40-MHz, 80-MHz and 160-MHz |
| | Space-time block coding (STBC) for increased range and improved reception |
| | Low-density parity check (LDPC) for high-efficiency error correction and increased throughput |
| | Transmit beam-forming (TxBF) for increased signal reliability and range |

| Networking | |
|---|---|
| Ethernet WAN | WAN (DHCP/Static/PPPoE) |
| USB WAN | USB dongle (3G/4G), Mobile tethering (USB ) |
| Protocols | Static, RIP v2, OSPF v2 |
| Tunneling | GRE, IPSec, Wire guard, OVPN |
| Multi-WAN | Yes, Auto-Failover |
| DHCP Server | 4 Scope, DHCP lease, DHCP MAC reservation, DNS proxy |
| WAN Security | Ethernet / USB port block management |
| PPP Interface | PPPoE, L2TP, L2TP with IPSec |
| DNS | Static, Caching, Dynamic DNS |
| NAT | Masquerade (SNAT), Port forwarding (DNAT) |
| VLAN Support | 802.1Q (1 per BSSID) |
| | Port-based (Tagged, untagged), IoT Capable |

| Quality of Service |
|---|
| Auto QoS, 802.11e, |
| Manual QoS (DSCP based, Voice, Video, BE and BK) |
| WMM |
| 802.1p |

| Performance & Capacity | | |
|---|---|---|
| Peak PHY Rates | 5 GHz | 2400 Mbps  ( 802.11ax ) |
| | 2.4 GHz | 600 Mbps  ( 802.11ax ) |
| Client Capacity | Up to 512 clients per access point | |
| SSID | Up to 32 per access point (16 per Radio) | |

| RF | | |
|---|---|---|
| Maximum Aggregate Transmit Power (Adjusted as per country regulations) | 5 GHz | 26 dBm |
| | 2.4 GHz | 27 dBm |
| Antenna Type | | Built-in integrated antenna for both radios and BLE |
| Antenna Gain (Max) | 5 GHz | 6 dBi |
| | 2.4 GHz | 6 dBi |
| | BLE | 5 dBi |
| EIRP  (Adjusted as per country regulations) | 5 GHz | 32 dBm |
| | 2.4 GHz | 33 dBm |

| Power | |
|---|---|
| Rating | 802.3 af PoE / at PoE+ (Class 4) ( Fully functional with all components) |
| | 12V DC 2A Type C – Fully functional with all components |

| Physical Interfaces | QN-I-280 | QN-I-280 IoT | QN-I-280 FR |
|---|---|---|---|
| Ethernet ports | WAN:<br>1 x 10/100/1000/2.5G N Base -T Ethernet, Auto-MDIX, RJ-45 with 802.3at PoE port | WAN:<br>1 x 10/100/1000/2.5G N Base -T Ethernet, Auto-MDIX, RJ-45 with 802.3at PoE port | ---- |
| | LAN:1 x 1G Base-T Ethernet | LAN:1 x 1G Base-T Ethernet with PoE out | LAN: 1 x 1G Base-T Ethernet |
| | 802.3bz specifications, 802.3az Energy Efficient Ethernet (EEE) | | |
| Optical port | ---- | ---- | WAN:<br>1 x 1000 Base-X (SX / LX) SFP port |
| IoT | No | Yes ( Bluetooth/Zigbee/Thread) | |
| USB /Console | ---- | 1 | ---- |
| RJ11 (FXS/FXO) port | ---- | ---- | 1 |
| Buttons | Restart/Reset | | |
| Kensington security slot | Available | | |
| LED indicators | Power, 2.4 GHz , 5 GHz , Standalone/Cloud | | |
| **Management** | | | |
| Device Management | Standalone, Local (web UI), SSH (CLI) | | |
| | Quantum Rudder (Controller based) | | |
| | Quantum Rudder (On-premises VM ) | | |
| | Quantum Rudder appliances (RR-200, RR-300, RR400) | | |
| | Through NMS using SNMP MIBs | | |
| | Local device web management | | |
| Device /System monitoring | SNMP v1, v2c, v3, Syslog | | |
| Controller DR (Disaster Recovery) | Supported | | |
| **Device Security** | | | |
| Certificate | Locally-significant certificates using PKI | | |
| Controller Communication | Encrypted | | |
| Port Access | 802.1x RADIUS supplicant | | |
| **Application Integration** | | | |
| PM WANI, | | | |
| NMS Integration - ZABBIX, PRTG Monitor, Open NMS | | | |
| **Environmental** | | | |
| Operating Temperature | 0°C (32°F) to 55°C (131°F) | | |
| Humidity | Up to 95%, Non-condensing | | |
| Standard | Plenum-rated (UL2043) | | |

| Physical | |
|---|---|
| Dimensions | 19.5 cm x 19.5 cm x 3.9 cm |
| Weight | 0.65 kg (1.44 lbs) |
| Mounting Kit | Suspended ceiling mount, Ceiling mount, Wall mount |
| **Certifications** | |
| Regulatory | FCC |
| Standard | IEC-60950 |
| Environmental | CE |
| | RoHS |
| **Firmware Management** | |
| Cloud-managed firmware update | |
| Scheduled firmware and security update | |
| Firmware upgrade via Access Point local GUI | |