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Nokia AirScale Wi-Fi Access Point AC400 (variant with external antennas)

High Performance Outdoor Wi-Fi Access Point with 802.11ac Wave2 and 4x4 MIMO

Nokia Wi-Fi Access Point AC400 is a rugged, robust, high performance, highly secure Outdoor Access Point that delivers lowest cost per bit while assuring great wireless experience for end users. The product comes with different variants of antenna assembly that suits various outdoor deployment scenarios.

It provides simplified yet secure means of Wi-Fi network access for a multitude of client devices ranging from legacy to latest. The Access Point utilizes Hotspot 2.0 technology to offer seamless cellular-like experience over Wi-Fi. It also presents flexible options for traffic forwarding and can provide uninterrupted roaming across access points under a mobility zone. The QoS support helps establish a QoS-aware network that smartly handles priorities of different types of traffic such as VoWiFi. Fast and easy network rollouts of these Access Points can be realized through plug & play.

Performance

- Offers very high data throughput and better end user experience even in adverse radio environments

- Operates concurrently in both 2.4GHz and 5GHz frequency bands

- Supports 802.11a/b/g/n/ac standard, SU and MU-MIMO, and advanced radio technologies to deliver high performance

- Supports multiple SSID configurations and advanced traffic segregation

Quality of Service (QoS)

- Handles QoS towards client devices as well as infrastructure network to deliver high quality end-to-end service for voice and video over Wi-Fi (VoWiFi)

Compactness

- One of the smallest packages in the industry

Security

- Nokia Wi-Fi Access Point AC400 utilizes industry proven standard based communication mechanisms to secure interfaces:
- 802.11i based encryption for air interface
- Multiple end user authentication mechanisms: 802.1X, PSK and Open authentication (including Captive Portal and MAC-based authentication)
- TLS for management interface

Plug & Play

- Automatic discovery of Controller
- Automatic configuration and operation (Requires less than 5 minutes to be up and running)

Flexibility

- Nokia's universal mounting bracket kit for pole/wall mounting.
- Configuration for the user data traffic to either undergo Local Breakout at Access Point or be forwarded to a Wireless Access Gateway
- Provision to place custom logo for promoting customer branding
- Flexible antenna configurations via Omni-directional antenna, Directional antenna, or customer defined external antennas.

Smart Wi-Fi

- Smart Wi-Fi is Nokia's end-to-end solution that integrates carrier grade Wi-Fi as part of Heterogeneous Networks
- Latest addition to Smart Wi-Fi is Nokia AirScale Wi-Fi, Access Points that combine high performance with easy deployment.

Features & Benefits of Nokia Wi-Fi Access Point AC400

Radio Management
- Automatic interference detection and classification
- Automatic Channel switching and interference mitigation
- Client load balancing to utilize RF spectrum properly
- RSSI based admission control for reliable connection

End-to-End QoS
- WMM based End-to-End QoS, Packet classification and CoS mapping
- Support for Voice and Video over Wi-Fi
- Band steering of clients, Dynamic airtime fairness
- Rate limiting per user level, per SSID level, per AP level

Plug & Play setup
- Quick and easy setup through auto discovery and configuration
- Facilitates mass rollout

Integrated IDS
- Detection of unauthorized Rouge Access Points
- Dynamic Client Blacklisting based on MAC address

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Location Services

- Position information of Access Points
- Display of fault indication which includes AP status and Network details.

Security

- Secure connection with Controller over TLS
- 802.11i based secure transport of data over air interface
- Support IPsec, L2GRE, L2TP

Client Mobility

- Fast handover of client across access points through 802.11r, 802.11k support and Opportunistic Key Caching (OKC) mechanism

HotSpot 2.0

- Network discovery and selection, IEEE 802.11u support
- Online signup and Policy provisioning

Advanced traffic segregation

- Dynamic VLAN assignment per user for segregation of data traffic at user level
- Automatic VLAN discovery for control and management packets

IPv6 Dual stack client support

- IPv6, IPv4 and dual stack client support
- Support for IPv6 traffic forwarding in tunnel and bridge modes

Network Management

- Support for Inbuild and third party captive portal
- Client Fingerprinting to analyze the device details.
- Statistics Reporting for client devices

Product Specifications

Input Power

- Method
    - PoE injector
- PoE
    - PoE++ Injector required
- Power Consumption
    - ≤35W

Environment

- Operating Temp
    - -40°C to +65°C
- Storage Temperature
    - -40°C to +85°C
- Operating Humidity
    - 5% to 95% non-condensing
- Elevations
    - -60 ~ 4000m
- Wind Resistance
    - ≤165mph (256 km/h) wind
- Ice Resistance
    - ≤ 13mm of ice buildup (density 8.8 kN/m3) with 50 m/s wind load wind
- Dust & Water proof
    - IP67
- Surge
    - GigE port with PoE++ supports 6KV common mode surge with 10-700us / 40Ohm waveform
- Surge for external antenna ports
    - Support lightning protection criteria per GR-1089 4.11, Lightning Criteria standard for Equipment
    - Suitable lightning arrestors needed for external antennas

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Physical

- Size (WxHxD) / Weight

  – 25cm x 24cm x 6cm(*) / ≤ 2.7kg
  (*) not incl. connector protrusions)

- Mounting

  – Pole mount & Wall mount

- Ethernet Port

  – 2 x GigE RJ-45 10/100/1000Base-T port supporting link aggregation, Auto-sensing MDI/MDX

  – Supports on one port PoE++ with full functionality and IEEE 802.3at PoE with reduced functionality

- USB Port

  – 1 x USB 3.0

- Antenna Port

  – 4 x RP-SMA connectors

- LED

  – 1 x Tri-Color LED for visual indication of operation status

Wi-Fi Radio

- Frequency & Band *
  (* May be limited by country specific regulations)

  – Supports 2.4GHz and 5GHz concurrent operation

  – 2.4GHz: 2.400 to 2.4835GHz

  – 5GHz: 4.9425 to 4.9825GHz, 5.150 to 5.350GHz, 5.470 to 5.850 GHz

- Antenna / Ant. Gain

  – External / depending on external antenna type used

- Radio Chains

  – 4 chains per band

- Maximum total conducted RF power

  – 2.4GHz: 29dBm (23dBm on each of the 4 RF ports)

  – 5GHz: 29dBm (23dBm on each of the 4 RF ports)

- Standards

  – 802.11a/b/g/n/ac, 802.11d/h

Wi-Fi Radio Features

MIMO (Multiple Input Multiple Output) of 4x4, SU-MIMO (Single user MIMO) and MU-MIMO (Multiuser MIMO), SM (Spatial Multiplexing: up to 4 spatial streams), A-MPDU (Aggregation-MAC Protocol Data Unit), A-MSDU (Aggregation-MAC Service Data Unit), DFS (Dynamic Frequency Selection), LDPC (Low-Density Parity Check), MLD (Maximum Likelihood Demodulation), MRC (Maximum Ratio Combining), STBC (Space-Time Block Code), TxBF (Transmit Beam-forming), Channel Bonding to 40MHz bandwidth, SGI (Short Guard Interval) of 400ns, TPC (Transmit Power Control), Blacklisting of radio channels

Wi-Fi Feature

- Max SSID

  – 16 per radio (15 configurable)

- Max BSSID

  – 16 per radio (15 configurable)

- Max clients connected

  – 255 per radio

- Simultaneous VoIP clients

  – 20 per AP

- Max physical channel rate

  – 2.4GHz: 802.11n: 600Mbps

  – 5GHz: 802.11ac: 1.733Gbps

- Encryption

  – AES, TKIP, CCMP

- Traffic Forwarding

  – Local Breakout, L2oGRE Tunnel

  – Dynamic 802.1q VLAN tagging

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- Authentication methods

  - RADIUS Based: 802.1X (EAP-SIM, EAP-AKA, EAP-PEAP/MSCHAPv2, EAP-TLS, EAP-TTLS, EAP-FAST), UE MAC address

  - PSK (Pre Shared Key), Open, Captive Portal

Wi-Fi Standards

802.1X-2004: Port based network access control, 802.11i-2004: MAC Security enhancements, 802.11k-2008 (Amendment 1): Radio Resource Meas. of Wireless LANs, 802.11r-2008 (Amendment 2): Fast Basic Service Set (BSS) Transition, 802.11u-2011 (Amendment 9): Interworking with External Networks, RFC 2865: Remote Authentication Dial In User Service (RADIUS), RFC 2869: RADIUS Extensions, RFC 3580: IEEE 802.1X RADIUS Usage Guidelines, RFC 4186: EAP-SIM Authentication, RFC

4187: EAP-AKA Authentication, RFC 5176: Dynamic Authorization Extensions to RADIUS, RFC 5216: EAP-TLS Authentication Protocol

Regulatory Compliance

- Model:

  - WO4C-AC400

- Wi-Fi Regulatory Certification: (Finished, ongoing)

  - FCC (US), FCC/DFS (US), IC (Canada)

  - CE (EU & Countries CH, FL, TR), FCA (Russia)

  - NTC (Thailand), SRCC (China), NOM Mexico

- Safety

  - IEC60950-1/-22 CB

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