Nokia AirScale Wi-Fi Access Point AC400i

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

Nokia Wi-Fi Access Point AC400i is a compact, robust, high performance, highly secure Indoor Access Point that delivers lowest cost per bit while assuring great wireless experience for end users. It provides simplified yet secured 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 environment
- 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 superior 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 and almost invisible once installed on-site

Security
• Nokia Wi-Fi Access Point AC400i 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
• Flexible mounting options with specially designed mounting kit for ceiling/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

Smart Wi-Fi
• Smart Wi-Fi is Nokia’s end-to-end solution that integrates carrier grade Wi-Fi as part of Heterogeneous Networks

Features & Benefits of Nokia Wi-Fi Access Point AC400i

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
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 and 12V DC adapter
• PoE
  – 802.3at standard PoE with all features and performance
  – 802.3af standard PoE with reduced feature set
• Power Adapter
  – 12V DC / 2,5A
• Power Consumption
  – ≤25,5W

Environment
• Operating Temp.
  – 0°C to +40°C
• Storage Temperature
  – -40°C to +85°C
• Operating Humidity
  – 5% to 95% non-condensing
• Elevations
  – 86kPa to 106kPa
• Dust & Water proof
  – IP20
• Surge
  – GigE port with PoE supports 4KV common mode surge with 10-700us / 40Ohm waveform

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Physical
• Size (WxHxD) / Weight
  – 19cm x 19cm x 3.5cm / 730g
• Mounting
  – Ceiling mount & Wall mount
• Locking option
  – 1 Kensington key hole
• Ethernet Port
  – 2 x GigE RJ-45 10/100/1000Base-T port supporting link aggregation
  – Auto-sensing MDI/MDX
  – Supports IEEE 802.3at PoE on one port
• USB Port
  – 1 x USB 2.0
• LED
  – 6 x Dual-Color LEDs for visual indication of 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
  – Integrated Internal Dual Band Antennas
• Antenna Gain
  – 2.4GHz: 5.2dBi, 5GHz: 6.3dBi
• Radio Chains
  – 4 chains per band
• Maximum RF Power
  – 2.4GHz: 30dBm
  – 5GHz: 32dBm
• 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
• 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:
  – WI4A-AC400i
• Wi-Fi Regulatory Certification:
  (Finished, ongoing)
  – FCC (US), FCC/DFS (US), IC (Canada)
  – CE (EU & Countries CH, FL, TR), FCA (Russia)
  – NTC (Thailand), CTC (Japan), SRCC (China)
• Safety
  – IEC60950-1/-22 CB