

Fortinet AP Series

Controller-Managed Access Points

Fortinet AP series Access Points (APs) provide a high-performance, premise-managed WiFi network with a broad range of 802.11ac Wave 1 and Wave 2 APs that ease deployment and scaling and offer a number of compelling quality-of-experience advantages. They also provide a complete portfolio of security services that offer additional means of protection to combat the ever-evolving threat landscape. **Fortinet also offers an RF technology that uniquely manages the spectrum utilization, allowing it to dramatically simplify deployment vs competing solutions.**



Application Control

Provides administrators with Application Visibility to prioritize applications to improve the user experience by guaranteeing more capacity to select groups, such as mission-critical applications or mobile point-of-sale (mPoS) devices.



Air Traffic Control

Provides sophisticated air traffic control mechanisms to govern station airtime so every client gets a fair turn on-air, which prevents the slowest, or the fastest, devices from hogging resources.



Single Channel Technology

Unique technology that manages spectrum utilization to overcome the interference-related deployment barriers commonly encountered in high density environments.

Product Offerings

AP822i	802.11ac APs with Dual 2.4 GHz and 5 GHz radios, 2x2 MIMO
AP822e	
AP832i	802.11ac APs with Dual 2.4 GHz and 5 GHz radios, 3x3 MIMO
AP832e	
OAP832e	Outdoor 802.11ac AP with Dual 2.4 GHz and 5 GHz radios, 3x3 MIMO
AP122	Wall Plate 802.11ac AP with Dual 2.4 GHz and 5 GHz radios
AP1010i	802.11n APs with a single dual-band 2.4 GHz/5 GHz radio
AP1010e	
AP1020i	802.11n APs with Dual 2.4 GHz and 5 GHz radios
AP1020e	



HIGHLIGHTS

Fortinet AP822i and AP822e

The AP822 catalyzes the migration to Gigabit WiFi by bringing the power of enterprise-wide, full channel 802.11ac to more customers. The AP822 is a cost-effective solution designed to meet the mid-range performance requirements of offices, schools, universities, hospitals, hotels, and retail stores, and it supports up to an aggregate 1.17 Gbps data rate for the most demanding business applications such as video and voice.



 **802.11ac Wave 1 | Dual Radio 2.4 GHz and 5 GHz | 4 Internal/External Antennas**

 **Up to 300 + 867 Mbps**

The AP822 is positioned to accelerate the adoption of 802.11ac into more cost-sensitive market segments. For schools, this provides a very cost-effective solution which can be deployed to meet the growing throughput demand from on-campus wireless devices. Hotels can more easily offer a richer WiFi experience where availability of high-quality wireless services is often the primary criterion — above other amenities — for making reservations. Providing high-speed, high-capacity wireless LAN services for the small and medium business is now more attainable with the AP822.

The AP822 access point allows administrators to prioritize applications to improve the user experience based on Fortinet's unique ability to associate specific applications with deployed channel layers. For schools, this means Learning Management System applications can be assigned to one dedicated channel layer, while online classroom video feeds can be dedicated to another channel layer. For healthcare, life-critical applications such as patient monitoring can be assigned to one channel layer, doctor and nursing applications can be assigned to a second layer, and patient applications can be placed on a third channel layer.

Fortinet's single-channel option uniquely allows the AP822 to support wide WiFi channels in real-world deployments, effectively doubling the data rate over 802.11n and dramatically increasing throughput for Fortinet customers. The AP822 also provides unique roaming support. Fortinet's patented Air Traffic Control® technology enables the network to control client roams, resulting in the industry's lowest roaming latency figures — a true zero-handoff.



Benefits

- Provides an optimized 802.11ac experience, with VHT capabilities
- Only vendor to recommend one or two 80 MHz channel usage for maximum 802.11ac throughput
- No channel planning, and delivers seamless mobility
- Offers flexible deployment options for diverse customer requirements

SPECIFICATIONS FOR AP822i AND AP822e

OPERATING MODES
Centralized deployment mode
Distributed deployment mode
MESH mode
Bridge mode
Remote VPN tunnel mode
SECURITY
WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)
802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory
RADIUS-assisted per-user and per-SSID access control via MAC filtering
MANAGEMENT
Centrally managed by any Fortinet controller running System Director 6.1 or later
Automatically discovers controllers and downloads configuration settings for plug-and-play deployment
Upgrades and management via System Director / Network Manager
Support for SNMP
Concurrent Clients Per Radio (Maximum / Recommended) — 128 / 40
WIRELESS SPECIFICATIONS
Model Introduction
AP822i dual-radio, single-band IEEE Std 802.11b/g/n for 2.4 GHz band and IEEE Std 802.11a/n/ac for 5.x GHz band access point with four internal omnidirectional antennas
AP822e dual-radio, single-band IEEE Std 802.11b/g/n for 2.4 GHz band and IEEE Std 802.11a/n/ac for 5.x GHz band access point with four RP-SMA connectors and four external omnidirectional antennas
Supported Radio Technologies
Dual-radio access point for indoor environment
2x2-2SS (two spatial streams)
Supported 2.4 GHz and 5.x GHz for single-band, dual-radio operation; data rate up to 1167 Mbps
Supported transmit beam-forming (TxBF)
IEEE Std 802.11n/a/g/ac with Orthogonal Frequency Division Multiplexing (OFDM)
IEEE Std 802.11b with 22 MHz channels and Direct Sequence Spread Spectrum (DSSS)
IEEE Std 802.11ac WAVE1 with 20/40/80 MHz (HT20/HT40/VHT80) channel width
IEEE Std 802.11n with 40 MHz (HT40) channel width
IEEE Std 802.11a/g with 20 MHz channel
Supported Modulation
IEEE Std 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM
IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, and 64-QAM
IEEE Std 802.11b: BPSK, QPSK, CCK
Supported MCS Index
Supported MCS0–MCS9 for IEEE Std 802.11ac (NSS=1–2)
Supported MCS0–MCS15 for IEEE Std 802.11n
Supported Frequency Bands
2.400–2.4835 GHz (ISM)
5.150–5.250 GHz (UNII-1)
5.250–5.350 GHz (UNII-2, DFS)
5.470–5.725 GHz (UNII-2 Extended, DFS)
5.725–5.825 GHz (UNII-3)
Country-specific restrictions apply; adjusted by controller upon approval
Data Rates Supported (Mbps)
IEEE Std 802.11ac two streams: 13.0–866.7 Mbps (MCS0-HT20 @ 800 nS to MCS9-VHT80 @ 400 nS)
IEEE Std 802.11ac per stream: 6.5–433.3 Mbps (MCS0-HT20 @ 800 nS to MCS9-VHT80 @ 400 nS)
IEEE Std 802.11n Two streams: 13.0–300.0 Mbps (MCS8-HT20@800nS to MCS15-HT40@400nS)
IEEE Std 802.11n per stream: 6.5–150.0 Mbps (MCS0-HT20 @ 800nS to MCS7-HT40@400nS)
IEEE Std 802.11a/g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps
IEEE Std 802.11b: 1, 2, 5.5, and 11 Mbps
TRANSMIT POWER (TX) AND RECEIVE SENSITIVITY (RX) PER STREAM
Antennas
Four integrated and external single-band omnidirectional antennas for 2x2 MIMO with maximum antenna gain of 3.3 dBi in 2.4 GHz and 6 dBi in 5 GHz. Internal antennas on the 822i are optimized for vertical wall-mounted orientation of the AP.

CONFIGURATION	MAXIMUM CONDUCTIVE POINT TRANSMIT POWER PER STREAM (DBM)	MAXIMUM EIRP PER STREAM (DBM), EXTERNAL ANTENNA SKU	MAXIMUM EIRP PER STREAM (DBM), INTERNAL ANTENNA SKU	RX (DBM)
802.11b	20.0	24.0	23.0	-91
802.11g	19.0	23.0	22.0	-77
802.11n, 2.4 GHz HT20	18.0	22.0	21.0	-73
802.11n, 2.4 GHz HT40	18.0	21.3	21.0	-71
802.11a	18.0	24.0	22.0	-77
802.11n, 5 GHz, HT20	17.0	23.0	21.0	-73
802.11n, 5 GHz, HT40	17.0	23.0	21.0	-70
802.11ac, 5 GHz, HT20	17.0	23.0	21.0	-71
802.11ac, 5 GHz, HT40	16.0	22.0	20.0	-65
802.11ac, 5 GHz, VHT80	16.0	22.0	20.0	-63

PHYSICAL SPECIFICATIONS

Power

Operated at IEEE Std 802.3af power, powered by IEEE Std 802.3af or 802.3 at PoE (Power over Ethernet) injector or switch

12V external power adapter (sold separately)

Other Interfaces

Networks: One 10/100/1000 BASE-T Ethernet RJ45 uplink (G1), one 10/100/1000 BASE-T Ethernet RJ45 (G2) (disabled when powered with 802.3af), auto-sensing link speed and MDI/MDX

Four RPSMA RF connectors (For AP822e, external antenna SKU)

One RJ45 port (G1) support IEEE Std 802.3af or 802.3 at PoE

One USB 2.0 port (Type-A) (disabled when powered with 802.3af)

One console port

One reset button

One Kensington security slot

LED Indicators

One tri-color LED for AP status

Additional LEDs for Ethernet activity over two RJ45 ports (G1 & G2)

Mounting

Wall mount: junction box wall mount bracket included

Three mounting kits included with access point:

650-00232, 15/16" T-bar & wall-mount combo adapter

650-00233, 9/16" T-bar adapter

Flat-surface wall-mount bracket (used with 650-00232)

840-00126, Wall Mount Hardware Kit (including to 669-00004 space, 665-00085 M3x10 screws, & 665-00102-M3x30 screws)

Option (ordered separately)

One RJ45 Console

CBL-RJ45-ADAPT-X5, GbE extension adapter

MNT-FEET-SET-X5, rubber feet for desktop staging

Installation in the Air-Handling Space

AP822e metal enclosure only by removing plastic façade

Dimensions

AP822i or AP822e (with mounting bracket): 7.1 x 7.1 x 2.7 inches (18.0 x 18.0 x 6.8 cm)

AP822e without plastic façade: 6.3 x 6.3 x 2.1 inches (16.1 x 16.0 x 5.2 cm)

Weight

AP822i (with mounting bracket): 2.3 lbs (1.1 kg)

AP822e (with mounting bracket): 1.9 lbs (0.9 kg)

AP822e without façade and mounting bracket: 1.5 lbs (0.7 kg)

SPECIFICATIONS FOR AP822i AND AP822e

Environmental

Operating temperature: 32–122°F (0–50°C)

Operating humidity: 5–95% non-condensing

Storage temperature: -40–158°F (-40–70°C) ambient

Storage humidity: 5–95% non-condensing

REGULATORY APPROVAL

FCC (United States of America)

CE Mark (European Community)

Industry Canada (Canada)

TELEC (Japan)

Safety Approval (worldwide)

For more country-specific regulatory approval, please contact your Fortinet representative

CERTIFICATIONS

WiFi CERTIFIED™

EU RoHS

CB Report

WARRANTY

Limited lifetime warranty

PART NUMBERS

AP822i

Four integrated dual-band omnidirectional metal PIFA antennas

AP822e

Four reverse polarity SMA connectors; shipment comes with four omnidirectional antennas

SPECIFICATION OF DEFAULT ANTENNA

	MODEL NUMBER	DESCRIPTION
1	ANT-01ABGN-0406-0	External antenna (Default in AP822e): ANT-01ABGN-0406-0, 2.4/5 GHz 3.3/6 dBi omnidirectional antenna with a single RP-SMA jack

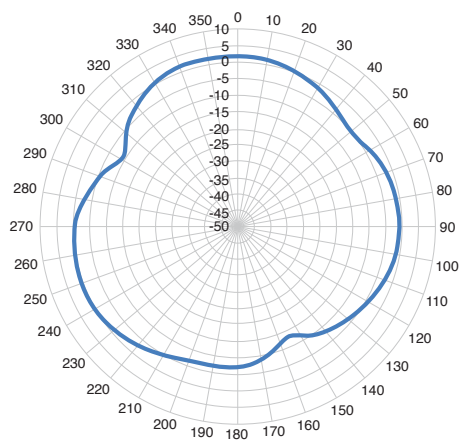
SPECIFICATION OF OPTIONAL EXTERNAL ANTENNAS (SOLD SEPARATELY)

	MODEL NUMBER	DESCRIPTION
1	ANT-ABGN230-W	2.4/5.x GHz 2/3 dBi omnidirectional rubber ducky antenna with a single RP-SMA jack
2	ANT-ABGN-470	2.4/5.x GHz 4.7/4.7 dBi omnidirectional rubber ducky antenna with a single RP-SMA jack
3	ANT-I2ABGN-0304-0	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 2x RP-SMA jacks

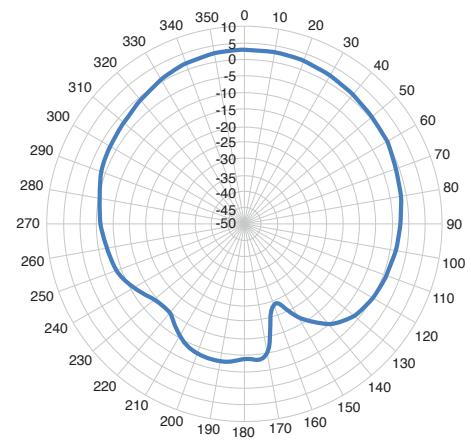
ANTENNA MODEL

AP822i

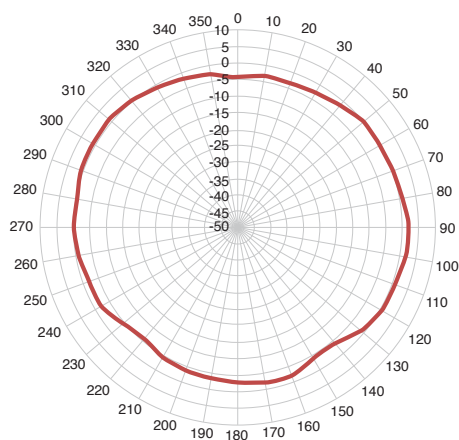
Internal Antenna	2.4–2.5 GHz	4.9–5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5



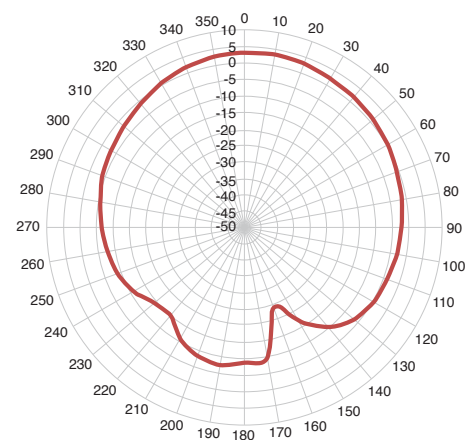
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane

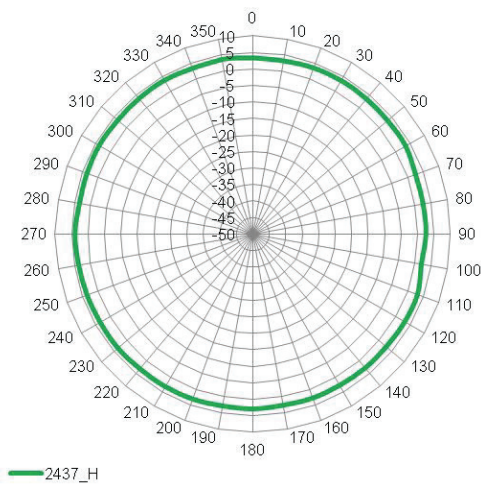


5 GHz E-plane

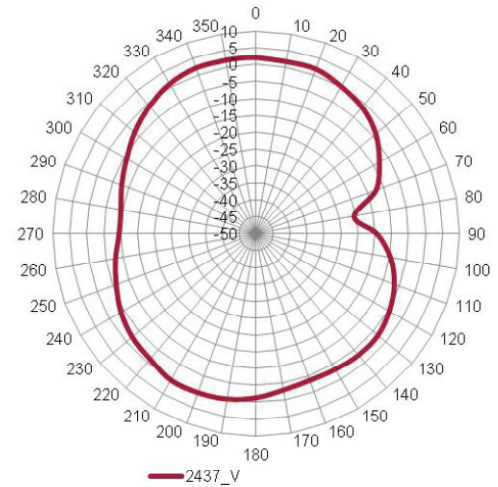
ANTENNA MODEL

AP822e

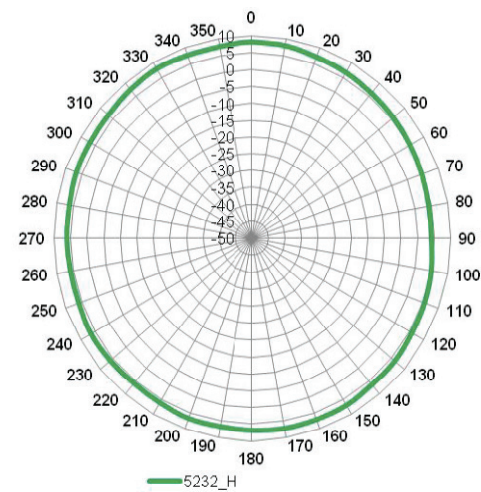
External Antenna	2.4–2.5 GHz	4.9–5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5



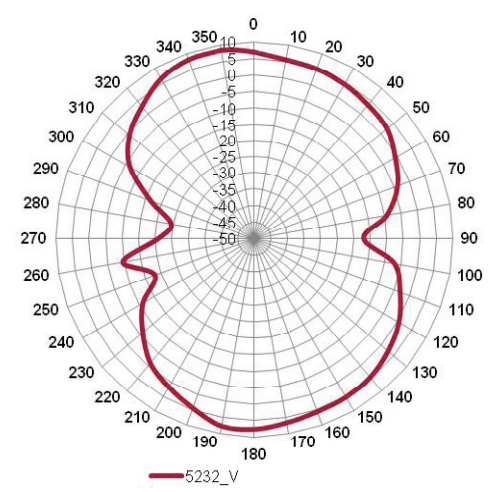
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane



5 GHz E-plane

HIGHLIGHTS

Fortinet AP832i and AP832e

The AP832 is the industry's first 802.11ac access point capable of supporting two concurrent 5 GHz 3x3:3 radios. It is designed for high-density deployments in large offices, schools, universities, hospitals, hotels, and large retail stores. The AP832 supports an aggregate 2.6 Gbps data rate for the most demanding business applications like video and voice.



 **802.11ac Wave 1 | Dual Radio 2.4 and 5 GHz | 6 Internal/External Antennas**

 **Up to 1,300 + 1,300 Mbps**

The AP832 access point allows administrators with Application Visibility to prioritize applications to improve the user experience. For schools, Learning Management System applications can be assigned to one dedicated channel layer, while online classroom video feeds can be dedicated to another channel layer, with Fortinet's unique Virtual Cell channel layering technology. For healthcare, life-critical applications such as patient monitoring can be dynamically assigned to one channel layer, doctor and nursing applications can be assigned to a second layer, and patient applications can be placed on a third channel layer.

The AP832 also provides unique roaming support because Fortinet enables the network (not the client) to control AP client hand-off, resulting in the industry's lowest roaming latency figures — a true zero-handoff.

Additionally, Fortinet's Virtual Cell, single-channel technology allows the AP832 to leverage the 802.11ac design for pervasive, real-world deployments of 80 MHz channels, effectively doubling the available data rate and dramatically increasing throughput availability for Fortinet customers.

Like other Fortinet access points, the AP832 integrates seamlessly with our FortiConnect, Spectrum Manager, and other application solutions to bring intelligent management and resilient wireless services to your network.



Benefits

- Provides an optimized 802.11ac experience with very high throughput capabilities
- Delivers seamless mobility, while minimizing channel planning
- Offers flexible deployment options for different customer requirements
- Offers full management and security assurances
- Provides a choice of two models to suit your needs

SPECIFICATIONS FOR AP832i AND AP832e

QoS

802.11E support (including WMM)
Dynamic WMM rate adaptation
Configurable QoS rules per user and application

OPERATING MODES

Centralized deployment mode
Distributed deployment mode
Remote VPN tunnel mode
MESH mode
Bridge mode

SECURITY

WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)
802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory
RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT

Centrally managed by any Fortinet controller running System Director
Automatically discovers controllers and downloads configuration settings for plug-and-play deployment
Upgrades and management using System Director/Network Manager
Support for SNMP
Concurrent Clients Per Radio (Maximum / Recommended) — 128 / 40

WIRELESS SPECIFICATIONS

Model Introduction

AP832i dual-radio, dual-band IEEE Std 802.11a/b/g/n/ac access point with six internal omnidirectional antennas
AP832e dual-radio, dual-band IEEE Std 802.11a/b/g/n/ac access point with six RP-SMA connectors and six external omnidirectional antennas

Supported Radio Technologies

Dual-band, dual-radio access point
3x3:3SS (three spatial streams)
Indoor application
Supported 2.4 GHz (TurboQAM Mode) and 5.x GHz for dual-band, dual-radio operation, data rate up to 1.9 Gbps
Supported dual 5.x GHz IEEE Std 802.11ac operation with RF collocation (FCC Permit by Ask provision), data rate up to 2.6 Gbps
Supported transmit beam-forming (TxBF)
IEEE Std 802.11ac standard
IEEE Std 802.11n/ac with Orthogonal Frequency Division Multiplexing (OFDM)
IEEE Std 802.11b with Direct Sequence Spread Spectrum (DSSS)
IEEE Std 802.11ac with 20/40/80 MHz (VHT20/40/80) channel width
IEEE Std 802.11n with 40 MHz (HT40) channel width
IEEE Std 802.11a/g with 20 MHz channel
IEEE Std 802.11b with 22 MHz channel

Supported Modulation

IEEE Std 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
IEEE Std 802.11b: BPSK, QPSK, CCK
Featured 256-TurboQAM modulation for 2.4 GHz and 5 GHz operations

Supported MCS Index

Supported MCS0–MCS9 (NSS=1-3) for IEEE Std 802.11ac
Supported MCS0–MCS23 for IEEE Std 802.11n

Supported Frequency Bands

2.400–2.4835 GHz (ISM)
5.150–5.250 GHz (UNII-1)
5.250–5.350 GHz (UNII-2, DFS)
5.470–5.725 GHz (UNII-2 Extended, DFS)
5.725–5.825 GHz (UNII-3)
Country-specific restrictions apply; adjusted by controller upon approval

Operating Channels

2.4 GHz Channels
CH1–11 for U.S., Canada
CH1–13 for Japan, Europe, rest of world
5 GHz HT20 (20 MHz) Channel
Non-DFS Channel: CH36, 40, 44, 48, 144, 149, 153, 161, 165
DFS Channel upon approval: CH 52, 56, 60, 64, 100, 104, 108, 112, 116, 120*, 124*, 128*, 132*, 136, 140, 144 (*weather radar)
5 GHz HT40 (40 MHz) Center Channel
Non-DFS channel: CH38, 46, 151, 159
DFS channel upon approval: CH54, 62, 102, 110, 118*, 116*, 134* 134, 142 (*weather radar)
5 GHz VHT80 (80 MHz) Center Channel
Non-DFS channel: CH42, 155
DFS channel upon approval: CH58, 106, 122* (*weather channel)
Platform supports Dynamic Frequency Selection (DFS & DFS/TPC)
Country-specific restrictions apply; adjusted by controller upon approval

Supported Data Rate (Mbps)

IEEE Std 802.11ac three streams: 19.5–1300 Mbps (MCS0-HT20@800nS to MCS9-HT40@400nS)
IEEE Std 802.11ac per stream: 6.5–433.3 Mbps (MCS0-HT20@800nS to MCS9-HT40@400nS)
IEEE Std 802.11n Three streams: 13–450 Mbps (MCS9-HT20@800nS to MCS23-HT40@400nS)
IEEE Std 802.11n Per stream: 6.5–150 Mbps (MCS0-HT20 @ 800nS to MCS7-HT40@400nS)
IEEE Std 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
IEEE Std 802.11b: 1, 2, 5.5, 11 Mbps

TRANSMIT POWER (TX) AND RECEIVE SENSITIVITY (RX) AGGREGATE EIRP

CONFIGURATION	MAXIMUM CONDUCTIVE POINT TRANSMIT POWER PER STREAM (DBM)	MAXIMUM AGGREGATE EIRP (DBM), EXTERNAL ANTENNA SKU	MAXIMUM AGGREGATE EIRP (DBM), INTERNAL ANTENNA SKU	RX (DBM)
802.11b	21.0	25.0	24.0	-85
802.11g	20.0	24.0	23.0	-70
802.11n, 2.4 GHz HT20	19.0	23.0	22.0	-65
802.11n, 2.4 GHz HT40	18.0	22.0	21.0	-64
802.11a	18.0	24.0	22.0	-69
802.11n, 5 GHz, HT20	17.0	23.0	21.0	-67
802.11n, 5 GHz, HT40	16.0	22.0	20.0	-64
802.11ac, 5 GHz, HT20	17.0	23.0	21.0	-69
802.11ac, 5 GHz, HT40	16.0	22.0	20.0	-67
802.11ac, 5 GHz, VHT80	16.0	22.0	20.0	-64

SPECIFICATIONS FOR AP832i AND AP832e

PHYSICAL SPECIFICATIONS

Power

Operates at IEEE 802.3af power

Powered by IEEE Std 802.3af or 802.3at PoE (Power over Ethernet) injector or switch

12V external power adapter (sold separately)

Other Interfaces

Networks:

One 10/100/1000 Mbps Base-T Ethernet RJ-45 port for Data uplink (G1) supports only 802.3af PoE.

One 10/100/1000 Mbps Base-T Ethernet RJ-45 port for Data uplink (G2) requires 802.3at PoE.

Six RPSMA RF connectors for external antenna SKU (AP832e)

One console port

One reset button

One Kensington security slot

LED Indicators

One tri-color LED over façade for AP status

Additional LEDs for Ethernet activity over two RJ45 ports (G1 and G2)

Mounting

Wall, desktop, or ceiling mount

Three mounting kits included with access point:

– 650-00232, 15/16" T-bar and wall-mount combo adapter

– 650-00233, 9/16" T-bar adapter

– Flat-surface wall-mount bracket (used with 650-00232)

Option (ordered separately)

CBL-SERIAL-DB9-35, DB9 stereo console cable

CBL-RJ45-ADAPT-X5, GE extension adapter

MNT-FEET-SET-X5, rubber feet for desktop staging

Installation in the Air-Handling Space

AP832e metal enclosure only by removing plastic façade

Dimensions

AP832i or AP832e (with mounting bracket): 7.1 x 7.1 x 2.7 inches (18.0 x 18.0 x 6.8 cm)

AP832e without plastic façade: 6.3 x 6.3 x 2.1 inches (16.1 x 16.0 x 5.2 cm)

Weight

AP832i (with mounting bracket): 2.3 lbs (1.1 kg)

AP832e (with mounting bracket): 1.9 lbs (0.9 kg)

AP832e without façade and mounting bracket: 1.5 lbs (0.7 kg)

Environmental

Operating temperature: 32–122°F (0–50°C)

Operating humidity: 5–95% non-condensing

Storage temperature: -40–158°F (-40–70°C) ambient

Storage humidity: 5–95% non-condensing

REGULATORY APPROVAL

FCC (United States of America)

CE Mark (European Community)

Industry Canada (Canada)

TELEC (Japan)

Safety Approval (worldwide)

EU RoHS

For more country-specific regulatory approval, please contact your Fortinet representative

CERTIFICATIONS

WiFi certified IEEE Std 802.11a/b/g/n (ac)

WARRANTY

Limited lifetime warranty

PART NUMBERS

AP832i

Six integrated dual-band omnidirectional PIFA antennas optimized for vertical wall-mounted orientation of the AP.

AP832e

Six extended reverse polarity SMA connectors; shipment comes with six omnidirectional rubber ducky antennas

SPECIFICATION OF DEFAULT ANTENNA

	MODEL NUMBER	DESCRIPTION
1	ANT-6ABGN-24	2.4/5.x GHz 2.5/4 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks
2	ANT-I3ABGN-0304	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 3x RP-SMA male jacks

SPECIFICATION OF OPTIONAL EXTERNAL ANTENNAS (SOLD SEPARATELY)

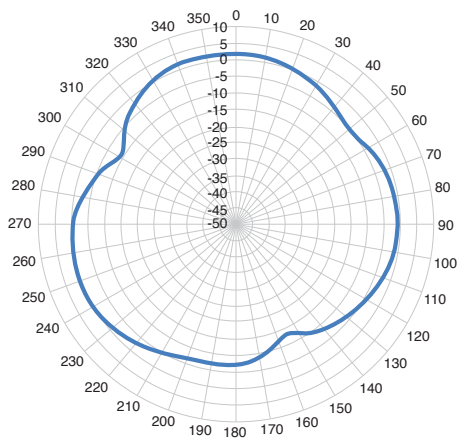
	MODEL NUMBER	DESCRIPTION
1	ANT-6ABGN-24	2.4/5.x GHz 2.5/4 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks
2	ANT-I3ABGN-0304	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 3x RP-SMA male jacks
3	ANT-ABGN-23	2.4/5.x GHz 3/4 dBi directional patch wall/pole-mount antenna, with 60-inch external coaxial cables and 6x RP-SMA male jacks
4	ANT-ABGN230-W	2.4/5.x GHz 2/3 dBi omnidirectional rubber ducky antenna with 1x RP-SMA male jacks
5	ANT-ABGN470	2.4/5.x GHz 4.7/4.7 dBi omnidirectional rubber ducky antenna with 1x RP-SMA male jack
6	ANT-I2ABGN-0304-0	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 2x RP-SMA male jacks
7	ANT-O6ABGN-0607-PT	2.4/5.x GHz 6/7 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks
8	ANT-O6ABGN-0606-0	2.4/5.x GHz 6/6 dBi omnidirectional wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks

Please note the range of Fortinet controller-managed access points are supported by a combination of specific controller firmware and hardware and are not designed to function with third-party controllers. Specific supported access point and controller combinations will change from time to time and such changes are detailed in the respective firmware release notes. The Fortinet range of controllers, whether they are standalone or integrated into FortiOS, only support Fortinet provided access points. Note that not all access points are supported by all controller types.

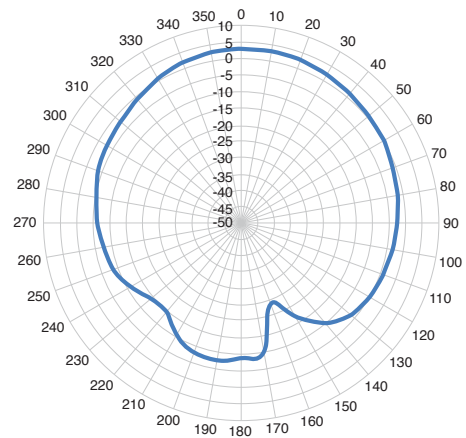
ANTENNA MODEL

AP832i

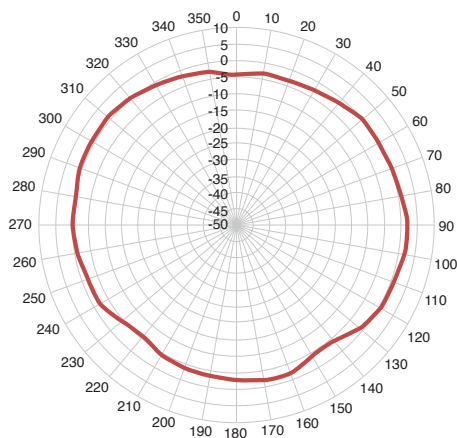
Internal Antenna	2.4–2.5 GHz	4.9–5.9 GHz
Average Antenna Gain	3.0 dBi	4.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	195°	190°
Elevation Beam-width	98°	100°
VSWR	1:2.0	1:2.0



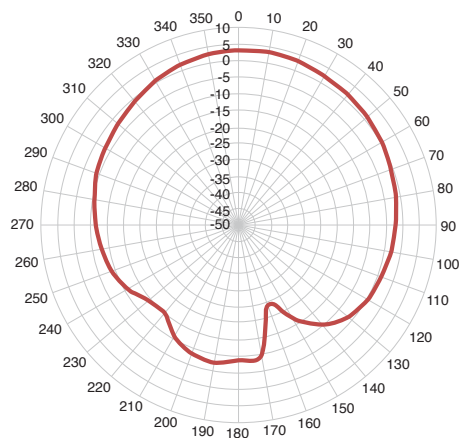
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane

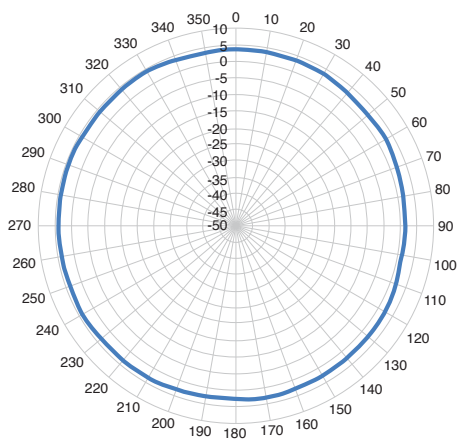


5 GHz E-plane

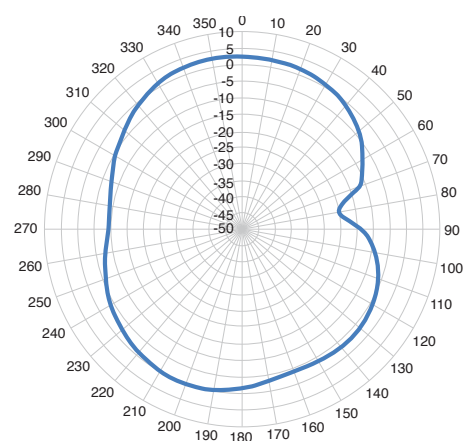
ANTENNA MODEL

AP832e

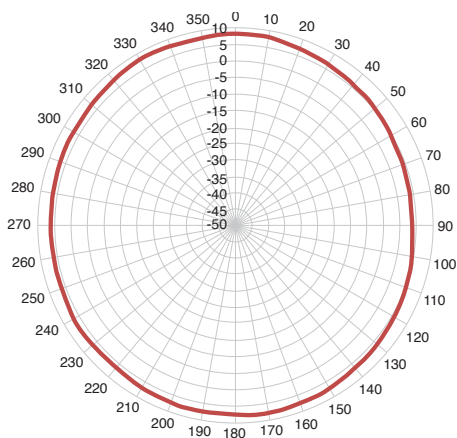
External Antenna	2.4–2.5 GHz	4.9–5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5



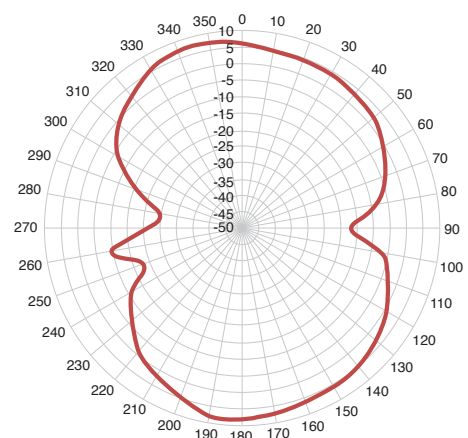
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane



5 GHz E-plane

HIGHLIGHTS

Fortinet OAP832e

The OAP832e is an 802.11ac outdoor access point (AP) capable of supporting a variety of external antennas. Designed for high-density deployments such as stadiums, arenas, university campuses, hospitals, convention centers, and warehouses. The OAP832e supports an aggregate 1.75 Gbps data rate for demanding business applications like video and voice.



 **802.11ac Wave 1 | Dual Radio 2.4 and 5 GHz | 6 External Antennas**

 **Up to 450 + 1,300 Mbps**

The OAP832e access point allows administrators to prioritize applications with Fortinet's unique channel-layering technology to improve the user experience. For schools, this means Learning Management System applications can be assigned to a dedicated channel layer, while online classroom video feeds can be carried on another channel layer. For healthcare, life-critical applications such as patient monitoring can be dynamically assigned to one channel layer, doctor and nursing applications to a second layer, and patient applications to a third.

The OAP832e also provides unique roaming support because Fortinet enables the network (not the client) to control AP client hand-off via our Air Traffic Control® technology, resulting in the industry's lowest roaming latency figures — a true zero-handoff.

Additionally, Fortinet's single-channel technology allows the OAP832e to leverage the 802.11ac design for pervasive, real-world deployments of 80 MHz channels, effectively doubling the available data rate and dramatically increasing throughput. It should be noted that all the Fortinet APs in this document can operate in multi channel mode as well as virtual cell mode.

As with other Fortinet APs, the OAP832e integrates seamlessly with FortiConnect and other applications to bring intelligent management and resilient wireless services to your network.



Benefits

- Provides an optimized 802.11ac experience with Very High Throughput (VHT) capabilities
- Delivers seamless mobility, with no channel planning
- Offers flexible deployment options for different customer requirements
- Offers full management and security assurances

SPECIFICATIONS FOR OAP832e

QoS

802.11E support (including WMM)
 Dynamic WMM rate adaptation
 Configurable QoS rules per user and application

OPERATING MODES

Centralized deployment mode
 Distributed deployment mode
 Remote VPN tunnel mode

SECURITY

WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)
 802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory
 RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT

Centrally managed by any Fortinet controller running System Director
 Automatically discovers controllers and downloads configuration settings for plug-and-play deployment
 Upgrades and management using System Director / Network Manager
 Support for SNMP

WIRELESS SPECIFICATIONS

Model Introduction

OAP832e IEEE802.11a/b/g/n/ac access point, dual radio with six N-type connectors for external antennas

Supported Radio Technologies

2.4 GHz and 5 GHz radio access point
 3x3:3SS (three spatial streams)
 Outdoor application
 Supported 2.4 GHz (TurboQAM Mode)
 Supported transmit beam-forming (TxBF)
 IEEE Std 802.11ac standard
 IEEE Std 802.11n/ac with Orthogonal Frequency Division Multiplexing (OFDM)
 IEEE Std 802.11b with Direct Sequence Spread Spectrum (DSSS)
 IEEE Std 802.11ac with 20/40/80 MHz (VHT20/40/80) channel width
 IEEE Std 802.11n with 40 MHz (HT40) channel width
 IEEE Std 802.11a/g with 20 MHz channel
 IEEE Std 802.11b with 22 MHz channel

Supported Modulation

IEEE Std 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
 IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
 IEEE Std 802.11b: BPSK, QPSK, CCK
 Featured 256-TurboQAM modulation for 2.4 GHz and 5 GHz operations

Supported MCS Index

Supported MCS0–MCS9 (NSS=1-3) for IEEE Std 802.11ac
 Supported MCS0–MCS23 for IEEE Std 802.11n

Supported Frequency Bands

2.400–2.4835 GHz (ISM)
 5.150–5.250 GHz (UNII-1)
 5.250–5.350 GHz (UNII-2, DFS)
 5.470–5.725 GHz (UNII-2 Extended, DFS)
 5.725–5.825 GHz (UNII-3)
 Country-specific restrictions apply; adjusted by controller upon approval

Operating Channels

2.4 GHz channels
 CH1–11 for U.S., Canada
 CH1–13 for Japan, Europe, rest of world
 5 GHz HT20 (20 MHz) Channel
 Non-DFS Channel: CH36, 40, 44, 48, 144, 149, 153, 161, 165
 DFS Channel upon approval: CH 52, 56, 60, 64, 100, 104, 108, 112, 116, 120*, 124*, 128*, 132*, 136, 140, 144 (*weather radar)
 5 GHz HT40 (40 MHz) Center Channel
 Non-DFS channel: CH38, 46, 151, 159
 DFS channel upon approval: CH54, 62, 102, 110, 118*, 116*, 134* 134, 142 (*weather radar)
 5 GHz VHT80 (80 MHz) Center Channel
 Non-DFS channel: CH42, 155
 DFS channel upon approval: CH58, 106, 122* (*weather channel)
 Platform supports Dynamic Frequency Selection (DFS & DFS/TPC) for future 5 GHz channel adoption
 Country-specific restrictions apply; adjusted by controller upon approval

Supported Data Rate (Mbps)

IEEE Std 802.11ac three streams: 19.5–1300 Mbps (MCS0-HT20@800nS to MCS9-HT40@400nS)
 IEEE Std 802.11ac per stream: 6.5–433.3 Mbps (MCS0-HT20@800nS to MCS9-HT40@400nS)
 IEEE Std 802.11n three streams: 13–450 Mbps (MCS9-HT20@800nS to MCS23-HT40@400nS)
 IEEE Std 802.11n per stream: 6.5–150 Mbps (MCS0-HT20@800nS to MCS7-HT40@400nS)
 IEEE Std 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
 IEEE Std 802.11b: 1, 2, 5.5, 11 Mbps

TRANSMIT POWER (TX) AND RECEIVER SENSITIVITY (RX) PER STREAM

CONFIGURATION	MAXIMUM CONDUCTIVE POINT TRANSMIT POWER PER STREAM (DBM)	MAXIMUM EIRP WITH EXTERNAL ANTENNAS	RECEIVER SENSITIVITY (DBM)
802.11b	25.0	29.0	-90
802.11g	24.0	28.0	-76
802.11n, 2.4 GHz HT20	23.0	28.0	-73
802.11n, 2.4 GHz HT40	23.0	27.0	-70
802.11a	22.0	23.0	-75
802.11n, 5 GHz, HT20	22.0	23.0	-73
802.11n, 5 GHz, HT40	22.0	23.0	-70
802.11ac, 5 GHz, HT20	22.0	23.0	-69
802.11ac, 5 GHz, HT40	22.0	22.0	-64
802.11ac, 5 GHz, VHT80	21.0	21.0	-61

Note: Maximum EIRP is country specific and based on the country regulatory approvals.

Configurable Transmission Power

Transmission power configurable in 1.0 dBm increments
 Unused radios can be disabled via software for lower power consumption

Antennas

6 external omnidirectional antennas for 3x3 MIMO with maximum antenna gain of 6 dBi in 2.4 GHz and 7 dBi in 5 GHz.

SPECIFICATIONS FOR OAP832e

PHYSICAL SPECIFICATIONS

Power

Operates at IEEE 802.3at power

Powered by IEEE Std 802.1at PoE (Power over Ethernet) injector or switch

Other Interfaces

Networks: One 10/100/1000 Base-T Ethernet RJ45 uplink (G1), one 10/100/1000 Base-T Ethernet RJ45 (G2) for downlink and future expansion purposes, auto-sensing link speed and MDI/MDX

Six N-Type connectors for external antenna SKU (AP832e)

One RJ45 port (G1) support IEEE Std 802.3af or 802.3at PoE

One USB 2.0 port (Type-A) for future feature

One reset button

One Kensington security slot

LED Indicators

1 LED for AP Power ON status

2 LEDs for Ethernet activity over two RJ45 ports (LAN1 & LAN2)

2 LEDs for the 2.4 GHz and 5.0 GHz radio status indicator

Mounting

1.5–1.6 inch (5–7.5 cm) diameter pole-mounting kit (included).

Wall-mounting kit (included).

Dimensions

11.0 x 8.54 x 2.0 inches (28.0 x 21.7 x 5.0 cm)

Weight

OAP832e (without mounting bracket): 5 lbs (2.27 kg)

OAP832e (with mounting bracket): 7 lbs (3.18 kg)

Environmental

Operating temperature: -40°–149°F (-40–65°C)

Operating humidity: 5–95% non-condensing

Storage temperature: -40–158° F (-40–70°C) ambient

Storage humidity: 5–95% non-condensing

REGULATORY APPROVAL

FCC (United States of America)

CE Mark (European Community)

Industry Canada (Canada)

TELEC (Japan)

Safety Approval (worldwide)

EU RoHS

For more country-specific regulatory approval, please contact your Fortinet representative.

CERTIFICATIONS

WiFi certified IEEE Std 802.11a/b/g/n (ac)

IP67

CB Report

WARRANTY

One year hardware warranty

PART NUMBER

OAP832e

Six extended Type N female connectors

SPECIFICATION OF OPTIONAL EXTERNAL ANTENNAS (SOLD SEPARATELY)

	MODEL NUMBER	DESCRIPTION
1	ANT-06ABGN-0606-O	2.4/5.x GHz 6/6 dBi omnidirectional wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male connector
2	ANT-06ABGN-0607-PT	2.4/5.x GHz 6/7 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male connector
3	ANT-BG080-NM	2.4 GHz 8 dBi omnidirectional outdoor antenna with 1 N-type male connector
4	ANT-A080-NM-2	5.0 GHz UNII-2 & 3 Band 8 dBi omnidirectional outdoor antenna with 1 N-type male connector
5	ANT-06ABGN-0606-PN	Dual band panel 6-lead antenna for MIMO applications. Features 3 integrated 2.4 GHz panel antennas and 3 integrated 5 GHz panel antennas. 6 dBi at 2.4 GHz, 6 dBi at 5 GHz.

Please note the range of Fortinet infrastructure access points are supported by a combination of specific controller firmware and hardware and are not designed to function with third-party controllers. Specific supported access point and controller combinations will change from time to time and such changes are detailed in the respective firmware release notes. The Fortinet range of controllers, whether they are infrastructure or integrated into FortiOS, only support Fortinet provided access points. Note that not all access points are supported by all controller types.

HIGHLIGHTS

Fortinet AP122

The AP122 is the first wall plate access point specifically designed to meet the ever-increasing mobile data needs of hotel guests and resident college and university students. With gigabit-data rates, the AP122 is perfectly suited for in-room deployment needs of the hotel, cruise line and higher-education residence-hall markets.



 **802.11ac Wave 1 | Dual Radio 2.4 GHz and 5 GHz | 4 Internal Antennas**

 **Up to 300 + 867 Mbps**

Designed to be placed in any location flush to a wall, the AP122 can be installed by standard service personnel using existing CAT5/6 cabling connected from a standard wall junction box. For wired connectivity, it features two 10/100 BASE-T switch ports to support a range of in-room IP device and user connectivity options. Additionally, one of the wired ports can operate as an IEEE 802.3af-compliant PoE Out port offering up to 13 watts of power, capable of powering devices such as IP telephones. This reduces costs in additional cabling, switch ports, and power sourcing equipment. An additional pass-through port allows connectivity for digital phones and a USB port offers options for future uses.

Like other Fortinet access points, the AP122 integrates seamlessly with our Network Manager, Fortinet Connect, and other application solutions to bring intelligent management and resilient wireless services to your network. The AP122 is ideal for supporting IP-based services such as VoIP, IPTV, high-speed Internet access and in-room device connectivity.

Additionally, Fortinet's Virtual Cell, single-channel option uniquely allows the AP122 to support pervasively, full channel 802.11ac in real-world deployments, which more than double the data rate over legacy 802.11n solutions. This architecture also greatly simplifies RF coverage planning and significantly reduces wireless LAN (WLAN) deployment costs.



Benefits

- Support for in-room, IP-based services such as VoIP, streaming video, and high-speed Internet access
- Support for in-room IP devices and digital phones with native access to in-house PBX system
- Maximizes full-channel 802.11ac throughout the enterprise
- No infrastructure upgrades

SPECIFICATIONS FOR AP122

OPERATING MODES

Centralized deployment mode
 Distributed deployment mode
 Remote VPN tunnel mode

SECURITY

WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)

802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory

RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT

Automatically discovers controllers and downloads configuration settings for plug-and-play deployment

Upgrades and management using System Director/ErzRF[®] Network Manager

Support for SNMP

WIRELESS SPECIFICATIONS

Model Introduction

AP122 is at dual-radio architecture with:

- 2.4 GHz Std 802.11b/g/n
- 5.6 GHz 802.11a/n/ac

Supported radio technologies

2x2:2SS (two spatial streams)

Supported transmit beam-forming (TxBF)

IEEE Std 802.11b with Direct Sequence Spread Spectrum (DSSS)

IEEE Std 802.11ac with 20/40/80 MHz (HT20/HT40/VHT80) channel width

IEEE Std 802.11n with 40 MHz (HT40) channel width

IEEE Std 802.11a/g with 20 MHz channel

Supported Modulation

IEEE Std 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM

IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, and 64-QAM

IEEE Std 802.11b: BPSK, QPSK, CCK

Supported MCS Index

Supported MCS0 to MCS9 for IEEE Std 802.11ac (NSS=1 to 2)

Supported MCS0 to MCS15 for IEEE Std 802.11n

Supported Frequency Bands

2.400 to 2.4835 GHz (ISM)

5.150 to 5.250 GHz (UNII-1)

5.250 to 5.350 GHz (UNII-2, DFS)

5.470 to 5.725 GHz (UNII-2 Extends, DFS)

DEFAULT TRANSMIT POWER

Default transmit power per antenna 2.4 GHz: 10 dBm 5.2 GHz: 13 dBm

Maximum available transmit power per antenna 2.4 GHz: 20 dBm 5.2 GHz: 20 dBm

Transmit power adjustment 1 dBm increments

Actual Tx power dependent on national regulatory limits

RECEIVER SENSITIVITY

Standard	Data rate (Mbps)	Receiver sensitivity (dBm)
2.4 GHz, IEEE 802.11b	1	-97
	11	-89
2.4 GHz, IEEE 802.11g	6	-94
	54	-76
2.4 GHz, IEEE 802.11n HT20	MCS0/8	-93
	MCS7/15	-72
2.4 GHz, IEEE 802.11n HT40	MCS0/8	-91
	MCS7/15	-70
5 GHz, IEEE 802.11a	6	-92
	54	-72
5 GHz, IEEE 802.11n HT20	MCS0/8	-90
	MCS7/15	-72
5 GHz, IEEE 802.11n HT40	MCS0/8	-86
	MCS7/15	-68
5 GHz, IEEE 802.11AC HT20	MCS0NSS1/2	-89
	MCS8NSS1/2	-68
5 GHz, IEEE 802.11AC HT40	MCS8NSS1/2	-88
	MCS8NSS1/2	-62
5 GHz, IEEE 802.11AC HT80	MCS8NSS1/2	-82
	MCS8NSS1/2	-60

Antennas

Four integrated Single band omni-directional antennas for 2x2 MIMO with maximum antenna gain of 3.6 dBi in 2.4 GHz and 5 dBi in 5 GHz. Antennas are optimized for vertical wall-mounted orientation of the AP.

PHYSICAL SPECIFICATIONS

Power

IEEE PoE (Power over Ethernet) 802.3af/802.3at injector or switch

48V external power adapter (sold separately)

Other Interfaces

One 10/100/1000 Mbps BASE-T Ethernet RJ45 for Data uplink (G1)

One 10/100 Mbps BASE-T Ethernet RJ45 port with PoE Out support.

One 10/100 Mbps BASE-T Ethernet RJ45 port

One USB 2.0 port (Type-A)

One reset button

One RJ45 Passthrough port: RJ45 to RJ45

LED Indicators

One tri-color LED for AP status

Mounting

Wall mount: junction box wall mount bracket included

Dimensions

5.51 x 5.35 x 1.18 inches (14.0 x 13.6 x 3.0 cm)

Environmental

Operating temperature: 32–104°F (0–40°C)

Operating humidity: 5–95% non-condensing

Storage temperature: -40–158°F (-40–70°C) ambient

Storage humidity: 5–95% non-condensing

SPECIFICATIONS FOR AP122

REGULATORY COMPLIANCE

Unintentional Radiation Compliance Requirements

FCC Part 15.107 – 47CFR15.107 October 1, 2008 Class B

FCC Part 15.109 – 47CFR15.109 October 1, 2008 Class B

ICES-003 Class B – issue 4, February 2004

EN 301 489-1

EN 301 489-17

EN55022 Class B – 2006

EN55024 / AS/NZS CISPR 24 / Immunity

EN61000-4-2,3,4,5,6

Japan VCCI Class B

EN60601-1-2

Radio Compliance Requirements

FCC Part 15.247 – 47 CFR Ch. I (10–1–00 Edition)

FCC Part 15.407 – 47 CFR15.407 October 1, 2008

RSS-210 Issue 8, December 2010

RSS-210 W52, W53 and W56

EN 300 328 v1.7.1 (2006-05)

EN 301 893 v1.7.1 (2008-12)

Japan Radio Law 38-24-1 (Ninsho) – WW 2.4 GHz band

Japan Radio Law 38-24-1 (Ninsho) – XW 5.3 GHz band and YX 5.6 GHz band

Safety Compliance Requirements

UL 60950-1, 2nd Edition, 2011-12-19

CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12

EN 60950-1:2006+A11:2009+A1:2010+A12:2011

IEC 60950-1(ed. 2), IEC 60950-1(ed. 2);am1

Environmental Compliance Requirements

ROHS, Directive 2011/65/EU (RoHS 2)

WEEE, Directive 2012/19/EU

REACH, Regulation (EC) No 1907/2006

Ethernet Standards

Ethernet IEEE 802.3

Power Over Ethernet IEEE 802.3at PD

Power Over Ethernet IEEE 802.3af PSE

Wireless IEEE 802.11a/b/g/n/ac

CERTIFICATION

WiFi Certified — IEEE Std 802.11a/b/g/n/ac

WARRANTY

Limited lifetime warranty

PART NUMBER

AP122: 802.11ac 2x2:2 dual radio, dual concurrent wall plate access point

Please note the range of Fortinet controller-managed access points are supported by a combination of specific controller firmware and hardware and are not designed to function with third-party controllers. Specific supported access point and controller combinations will change from time to time and such changes are detailed in the respective firmware release notes. The Fortinet range of controllers, whether they are standalone or integrated into FortiOS, only support Fortinet provided access points. Note that not all access points are supported by all controller types.

HIGHLIGHTS

Fortinet AP1010i, AP1010e, AP1020i and AP1020e

The AP1010 and AP1020 are 802.11a/b/g/n enterprise wireless access points with a 2x2:2 MIMO design. The AP1010 features a single radio and operates on either the 2.4 GHz or 5 GHz band to deliver a maximum data rate of 300 Mbps. The AP1020 features dual radios and operates on the 2.4 GHz and 5 GHz bands to deliver a maximum data rate of 300 Mbps per radio. Both access points offer a choice between internal and external antenna models.



 **802.11n | Single/Dual Radio 2.4/5 GHz | 2 Internal/External Antennas**

 **Up to 300 or 600 Mbps**

The AP1010 and AP1020 simultaneously support data, voice, and video applications with superior reliability and predictability in moderate-density environments. They are designed for a broad range of general purpose uses, including classrooms, dormitories, and branch offices.

Radio frequency virtualization delivers plug-and-play deployment, easy capacity expansion, and seamless mobility. Multiple operating modes give you the flexibility to design a wireless network suited to your specific needs. The access points support centralized, distributed and mesh modes.

As key elements of Fortinet's Virtualized Wireless LAN solution, the AP1010 and AP1020 WiFi access points deliver a superior end-user experience. As with other Fortinet access points, they integrate seamlessly with the System Director wireless operating system and the Fortinet network management suite to bring intelligent management and resilient wireless services to your network.



Benefits

- Supports resource-intensive applications in moderate-density environments
- Simplifies deployment and delivers seamless mobility
- Lets you select from a range of options to suit your needs
- Offers flexible deployment options for diverse uses
- Delivers wireless connectivity with superior reliability and predictability

SPECIFICATIONS FOR AP1010i, AP1010e, AP1020i AND AP1020e

QoS

WMM support
Dynamic WMM rate adaptation
Configurable QoS rules per user and application

OPERATING MODES

Centralized deployment mode
Distributed deployment mode
Remote VPN tunnel mode
Mesh mode

SECURITY

WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)
802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory
RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT

Centrally managed by any Fortinet controller running System Director
Automatically discovers controllers and downloads configuration settings for plug-and-play deployment
Upgrades and management using System Director/Network Manager
Support for SNMP

WIRELESS SPECIFICATIONS

Radio Technologies

AP1010: Single-radio, selectable dual-band 802.11n indoor access point; 2x2 MIMO with two spatial streams; supports both 20 MHz and 40 MHz channel widths
AP1020: Dual-radio, concurrent dual-band 802.11n indoor access point; 2x2 MIMO with two spatial streams; supports both 20 MHz and 40 MHz channel widths

Supported radio technologies:

802.11b: Direct-sequence spread-spectrum (DSSS)
802.11a/g/n: Orthogonal frequency division multiplexing (OFDM)
802.11n: 2x2 MIMO with two spatial streams

Modulation

Supported modulation types: 802.11b: BPSK, QPSK, CCK
802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM

Supported Frequency Bands

2.400–2.485 GHz
5.150–5.250 GHz
5.250–5.350 GHz
5.470–5.725 GHz
5.725–5.875 GHz
Country-specific restrictions apply; adjusted by controller upon approval
Platform supports Dynamic Frequency Selection (DFS)

Supported Data Rate (Mbps)

802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
802.11b: 1, 2, 5.5, 11
802.11n: 6.5–300 (MCS0 to MCS15)

Configurable Transmission Power

Transmission power configurable in 1.0 dBm increments

TRANSMIT POWER AND RECEIVE SENSITIVITY (INTERNAL ANTENNA MODEL)

CONFIGURATION	MAXIMUM TRANSMIT POWER (EIRP)	RECEIVE SENSITIVITY AT LOWEST DATA RATE
IEEE 802.11b	23 dBm	-83 dBm
IEEE 802.11g	20 dBm	-83 dBm
IEEE 802.11a	19 dBm	-86 dBm
2.4 GHz IEEE 802.11n (HT20)	19 dBm	-83 dBm
2.4 GHz IEEE 802.11n (HT40)	19 dBm	-83 dBm
5 GHz IEEE 802.11n (HT20)	17 dBm	-86 dBm
5 GHz IEEE 802.11n (HT40)	16 dBm	-83 dBm

TRANSMIT POWER AND RECEIVE SENSITIVITY (EXTERNAL ANTENNA MODEL)

CONFIGURATION	MAXIMUM TRANSMIT POWER (EIRP)	RECEIVE SENSITIVITY AT LOWEST DATA RATE
IEEE 802.11b	22 dBm	-82 dBm
IEEE 802.11g	19 dBm	-82 dBm
IEEE 802.11a	17 dBm	-84 dBm
2.4 GHz IEEE 802.11n (HT20)	18 dBm	-82 dBm
2.4 GHz IEEE 802.11n (HT40)	18 dBm	-82 dBm
5 GHz IEEE 802.11n (HT20)	15 dBm	-84 dBm
5 GHz IEEE 802.11n (HT40)	14 dBm	-81 dBm

PHYSICAL SPECIFICATIONS

Antenna

AP1010i: Two integrated dual-band omnidirectional antennas with typical gain of 4.0 dBi for 2.4 GHz and 5.0 dBi for 5 GHz
AP1010e: Two extended reverse polarity SMA connectors. Ships with two omnidirectional rubber duck antennas with typical gain of 2.0 dBi for 2.4 GHz and 3.0 dBi for 5 GHz. Other external antenna options are available.
AP1020i: Four integrated dual-band omnidirectional antennas with typical gain of 4.0 dBi for 2.4 GHz and 5.0 dBi for 5 GHz
AP1020e: Four extended reverse polarity SMA connectors. Ships with four omnidirectional rubber duck antennas with typical gain of 2.0 dBi for 2.4 GHz and 3.0 dBi for 5 GHz. Other external antenna options are available.

Power

802.3af PoE and 802.3at PoE
5V external power adapter (sold separately)

Interfaces

One 10/100/1000 BASE-T Ethernet (RJ45), auto-sensing link speed and MDI/MDX, with 802.3af PoE
One RJ45 console
One USB 2.0 port (Type-A connector)
One built-in Kensington security slot (included in AP1010e and AP1020e)
AP1010i: Two reverse polarity SMA connectors
AP1020e: Four reverse polarity SMA connectors

Indicators

Two status LEDs (on front cover) for power, Ethernet activity, and wireless activity

Mounting

Wall or ceiling mount
Access point includes:
Mount over 15/16" T-bar (no tools required)
Lockable wall-mount kit (included in AP1010e and AP1020e)
Lock key to lock the access point to a ceiling (for AP1010i and AP1020i)
Other mounting kits sold separately:
MNT-SCRMKIT-03, mounting adapter for recessed ceiling or narrow T-bars (5-pc package)
MNT-SCRMKIT-04, mounting adapter for Interlude/Silhouette T-bars (5-pc package)
MNT-WMKIT-01, optional lockable wall-mount kit for AP1010i and AP1020i (5-pc package)

Dimensions

AP1010i: 6.75 x 6.50 x 2.50 inches (17.10 x 17.10 x 5.70 cm)
AP1010e: 6.33 x 4.50 x 1.50 inches (16.10 x 11.40 x 3.80 cm)
AP1020i: 6.75 x 6.50 x 2.50 inches (17.10 x 17.10 x 5.70 cm)
AP1020e: 6.50 x 4.50 x 1.50 inches (16.10 x 11.40 x 3.80 cm)

Weight

AP1010i: 0.95 lbs (0.44 kg) AP1020i: 1.01 lbs (0.46 kg)
AP1010e: 1.08 lbs (0.49 kg) AP1020e: 1.12 lbs (0.51 kg)

Environmental

Operating temperature: 32–122°F (0–50°C)
Operating humidity: 5–95% non-condensing
Storage temperature: -40–158°F (-40–70°C) ambient
Storage humidity: 5–95% non-condensing

SPECIFICATIONS FOR AP1010i, AP1010e, AP1020i AND AP1020e

REGULATORY APPROVAL

FCC
 EU R&TTE Directive 1995/5/EC
 RS-210
 ICES-003
 VCCI
 ARIB-STD33 & STD66
 For more country-specific regulatory approval, please contact your Fortinet representative.

CERTIFICATIONS

WiFi certified 802.11a/b/g/n
 RoHS Compliant
 WEEE Compliant
 REACH Compliant
 UL2043 Compliant (AP1010e and AP1020e only)

WARRANTY

Limited lifetime warranty

PART NUMBERS

AP1010i
 Dual-band, selectable single-radio 802.11a/b/g/n access point; includes integrated dual-band antennas

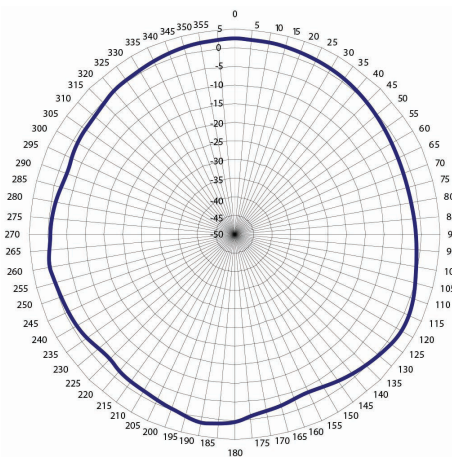
AP1010e
 Dual-band, selectable single-radio 802.11a/b/g/n access point with two external RPSMA antenna connectors; includes two dual-band rubber duck antennas

AP1020i
 Dual-band, concurrent dual-radio 802.11a/b/g/n access point; includes integrated dual-band antennas

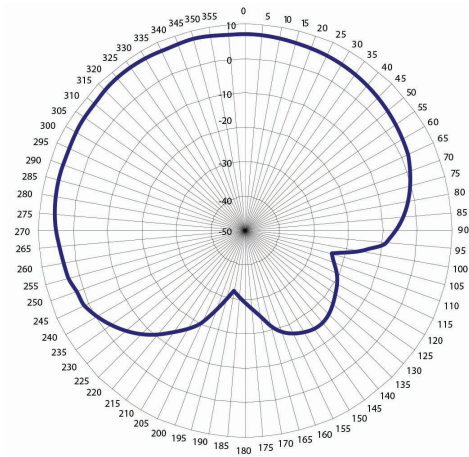
AP1020e
 Dual-band, concurrent dual-radio 802.11a/b/g/n access point with four external RPSMA antenna connectors; includes four dual-band rubber duck antennas

ANTENNA MODEL

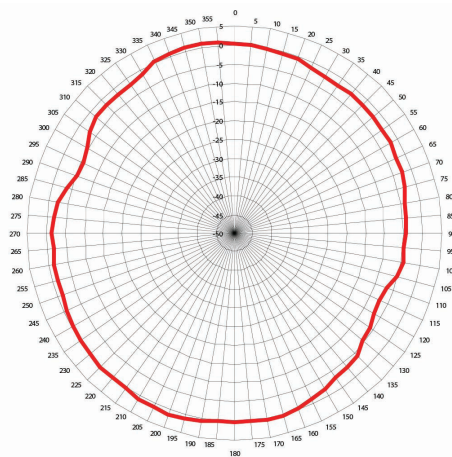
AP1010i and AP1020i



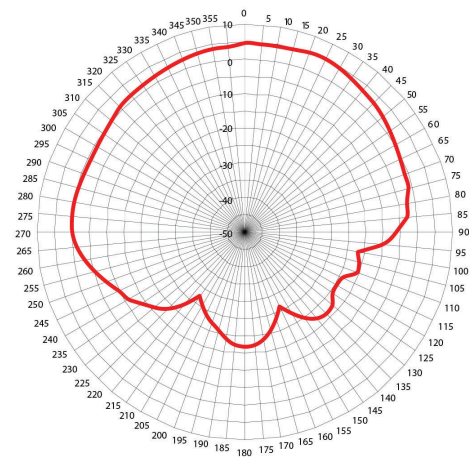
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane



5 GHz E-plane



GLOBAL HEADQUARTERS
Fortinet Inc.
899 KIFER ROAD
Sunnyvale, CA 94086
United States
Tel: +1.408.235.7700
www.fortinet.com/sales

EMEA SALES OFFICE
905 rue Albert Einstein
06560 Valbonne
France
Tel: +33.4.8987.0500

APAC SALES OFFICE
300 Beach Road 20-01
The Concourse
Singapore 199555
Tel: +65.6395.2788

LATIN AMERICA SALES OFFICE
Sawgrass Lakes Center
13450 W. Sunrise Blvd., Suite 430
Sunrise, FL 33323
United States
Tel: +1.954.368.9990