

FortiAP™ Series

FortiAP Cloud or FortiOS-managed Access Points

FortiAP access points are managed centrally by the integrated WLAN controller of any FortiGate® security appliance or through the FortiAP Cloud provisioning and management portal. With the integration of the wireless controller functionality into the market-leading FortiGate appliance, these APs are perfect for protecting your LAN Edge from the campus to branch deployments. Fortinet’s Security Fabric enables you to easily manage wired and wireless security from a single pane-of-glass management console and protects your network from the latest security threats.



Unified Management

Unified management console simplifies operations, ensuring consistency in effective policy enforcement and compliance.



Advanced Security Protection

Wireless LAN security done right, from the leader in network security. Integrated Firewall, IPS, Application Control, and Web Filtering protect the wireless LAN from the latest security threats.



Built-in Wi-Fi Security

Protects the network from advanced wireless threats and satisfies PCI DSS compliance.

Product Offerings

802.11ax Wi-Fi 6

FAP-431F
FAP-433F 4x4 Indoor tri-radio 11ax APs

FAP-432F 4x4 Outdoor tri-radio 11ax AP, external antennas

FAP-231F 2x2 Indoor tri-radio 11ax AP, internal antennas

FAP-234F 2x2 Outdoor tri-radio 11ax AP, internal antennas

FAP-23JF 2x2 Wall-mount tri-radio AP, internal antennas

802.11ac (Wave 2) Wi-Fi 5

FAP-421E
FAP-423E 4x4 Indoor dual-radio APs

FAP-321E 3x3 Indoor dual-radio AP, internal antennas

FAP-221E
FAP-223E 2x2 Indoor dual-radio APs

FAP-231E 2x2 Indoor tri-radio AP, internal antennas

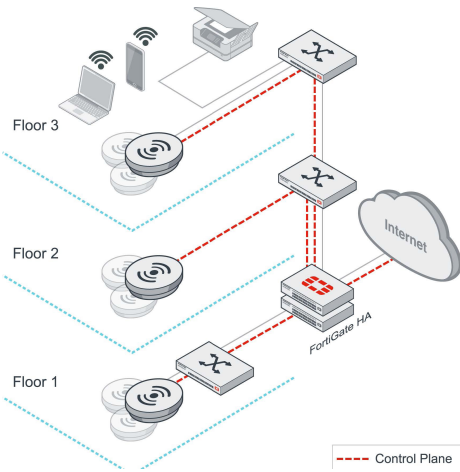
FAP-222E 2x2 Outdoor dual-radio AP, IP67 rated, external antennas

FAP-224E 2x2 Outdoor dual-radio AP, IP67 rated, internal antennas

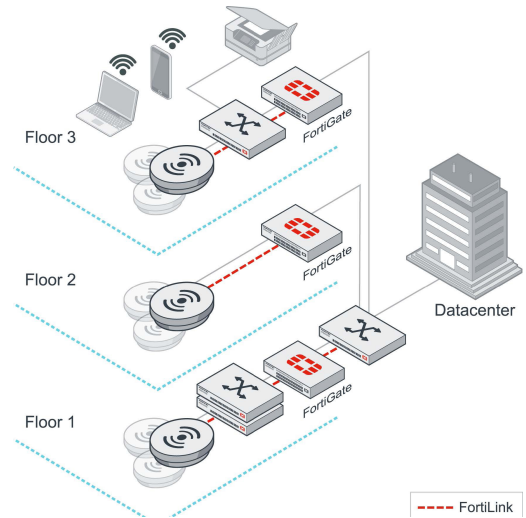
FAP-C24JE 2x2 Wall-mount dual-radio AP, internal antennas

Deployment

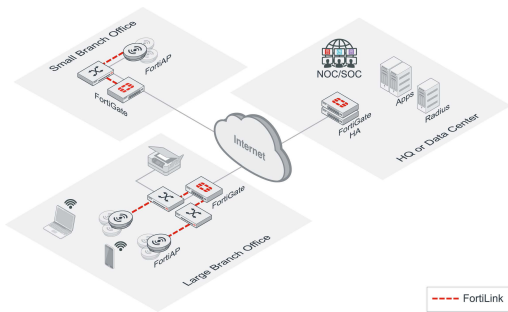
FortiAPs allow for a versatile collection of installation topologies with options to fit any enterprise.



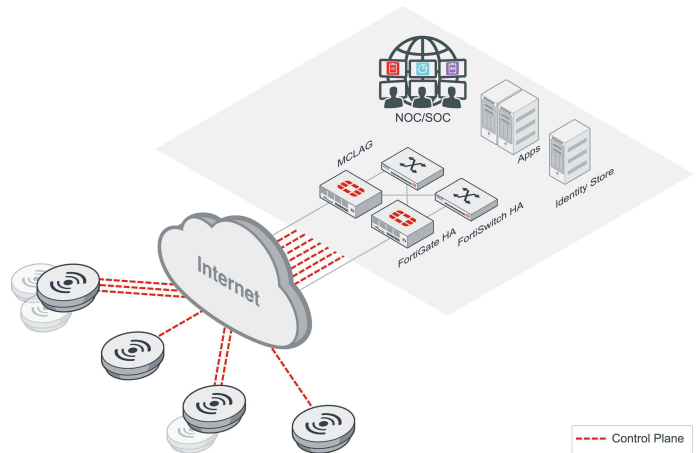
Central pair of FortiGates managing a large site



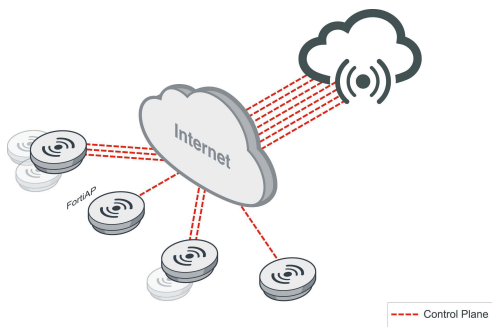
Distributed FortiGates throughout a large campus



Distributed branches via SD-Branch



Centralized FortiGates managing remote teleworkers




FortiAP Cloud managing standalone FortiAPs

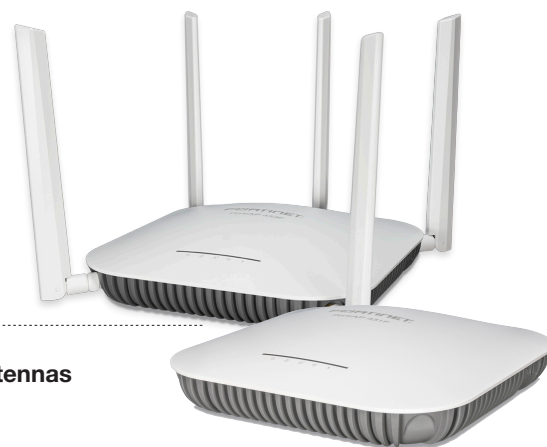
Highlights

FortiAP 431F and 433F

These enterprise class 802.11ax indoor APs provide three radios. These top-of-the-line access points provide OFDMA, a 2.5 Gigabit Ethernet port, plus an additional 1 Gbps Ethernet port for PoE diversity. The APs can provide 24/7 scanning across both bands while still providing access on both the 2.4 and 5 GHz bands. The integrated BLE radio can be used for beacons and locationing applications.

 **802.11ax | Tri-Radio 2.4 GHz + 5 GHz + scanning | 5 Internal/External Antennas**

 **4x4 MU-MIMO | Up to 1,147 Mbps + 2,402 Mbps**



Specifications

| | FORTIAP 431F | FORTIAP 433F |
|------------------------------|--|--|
| Hardware | | |
| Hardware Type | Indoor AP | Indoor AP |
| Number of Radios | 3 + 1 BLE | 3 + 1 BLE |
| Number of Antennas | 5 Internal + 1 BLE Internal | 5 External (RP-SMA) + 1 BLE Internal |
| Antenna Type and Peak Gain | PIFA: 4 dBi for 2.4 GHz, 5 dBi for 5 GHz | Omni directional rubber duck antenna: 4 dBi for 2.4 GHz, 6 dBi for 5 GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 | |
| Radio 1 Capabilities | Frequency Band: 2.4 GHz Channel width: 4x4 20/40 MHz Modulation: BPSK, QPSK, QAM64, QAM256, and QAM1024 MIMO chains: 4x4 service | |
| Radio 2 Capabilities | Frequency Band: 5.0 GHz Channel width: 4x4 20/40/80MHz and 2x2 160MHz contiguous Modulation: BPSK, QPSK, QAM64, QAM256, and QAM1024 Mimo chains: 4x4 service | |
| Radio 3 Capabilities | Frequency band: 2.4/5.0 GHz MIMO chains: 1x1 frequency scanning | |
| Maximum Data Rate | Radio 1: up to 1147 Mbps Radio 2: up to 2402 Mbps Radio 3: scan only | Radio 1: up to 1147 Mbps Radio 2: up to 2402 Mbps Radio 3: scan only |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 6 dBm max TX power | |
| Interfaces | 1x 10/100/1000/2500 Base-T RJ45, 1x 10/100/1000 Base-T RJ45, 1x Type A USB, 1x RS-232 RJ45 Serial Port | |
| Power over Ethernet (PoE) | 1 port powered by 802.3af No USB support, Operate in 2x2 mode with reduced power R1/R2 17dBm(Tx power) or Single 802.3af PoE: 2x2, max TX power 17dBm, no USB | |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) | |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/ EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST | |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or Preshared key, WEP, Web Captive Portal, MAC blacklist and whitelist | |
| Maximum Tx Power (Conducted) | Radio 1: 2.4 GHz 24 dBm / 251 mW (4 chains combined)* Radio 2: 5 GHz 23 dBm / 200 mW (4 chains combined)* Radio 3: NA | |
| Kensington Lock | Yes | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bz | |
| SSID Types Supported | Local-Bridge, Mesh, Tunnel | Local-Bridge, Mesh, Tunnel |
| Per Radio Client Capacity | 512 per Radio1 and Radio2 | 512 per Radio1 and Radio2 |
| Cellular Co-existence | Yes | Yes |
| Reset Button | Yes | Yes |

| | FORTIAP-431F | FORTIAP-433F |
|---|---|--|
| LED Off Mode | Yes | Yes |
| Advanced 802.11 Features | | |
| OFDMA | Yes (UL and DL) | Yes (UL and DL) |
| 2.4 GHz OFDMA | Yes | Yes |
| Spatial Reuse (BSS Coloring) | Yes | Yes |
| HE-MU-MIMO | Yes | Yes |
| UL-MU-MIMO 802.11ax mode | Yes | Yes |
| DL-MU-MIMO | Yes | Yes |
| Enhanced Target Wake Time (TWT) | Yes | Yes |
| ZeroWait DFS /Agile DFS | No | No |
| Wireless Monitoring Capabilities | | |
| Rogue Scan Radio Mode | Background, Dedicated | Background, Dedicated |
| WIPS / WIDS RAdio Modes | Background, Dedicated (recommended) | |
| Packet Sniffer Mode | Yes | Yes |
| Spectrum Analyzer | Yes | Yes |
| Dimensions | | |
| Length x Width x Height | 8.27 x 8.27 x 2.22 inches (210 x 210 x 56.5 mm) | |
| Weight | 2.16 lbs (0.98 kg) | 2.19 lbs (0.995 kg) |
| Package (shipping) Weight | 3.97 lbs (1.8 kg) | 4.4 lbs (2 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall | Ceiling, T-Rail, and Wall |
| Included Accessories | Mount kit for Ceiling, T-Rail and Wall | Mount kit for Ceiling, T-Rail and Wall, 5 RP-SMA Male dual-band dipole antenna |
| Environment | | |
| Power Supply | SP-FAP400-PA-XX or GPI-130 | SP-FAP400-PA-XX or GPI-130 |
| Power Consumption (Max) | 24.5 W | 24.5 W |
| Humidity | 5–90% Non-Condensing | 5–90% Non-Condensing |
| Operating / Storage Temperature | 32–113°F (0–45°C) / -31–94°F (-35–70°C) | |
| Directives | Low Voltage Directive • RoHS | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No | No |
| Mean Time Between Failures | >10 Years | >10 Years |
| IP Rating | — | — |
| Surge Protection Built In | Yes | Yes |
| Hit-less PoE Failover | Yes | Yes |
| Certifications | | |
| Wi-Fi Alliance Certified | Yes | Yes |
| DFS | FCC, IC, CE, Japan, Korea, Taiwan | FCC, IC, CE, Japan, Korea, Taiwan |
| Warranty | | |
| Limited Lifetime Warranty | Yes | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

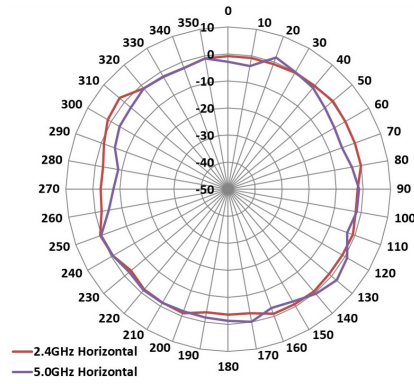
| FORTIAP 431F / 433F | | | | | | | | |
|-----------------------|----------------------------------|----------------------|--------------------------------|----------------------|----------------------------------|----------------------|--------------------------------|----------------------|
| | Radio 1 | | Radio 2 | | Radio 3 | | | |
| | 2.4 GHz Tx Power per chain (dBm) | Rx Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rx Sensitivity (dBm) | 2.4 GHz Tx Power per chain (dBm) | Rx Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rx Sensitivity (dBm) |
| 802.11b | | | | | | | | |
| 1 Mbps | 23 | -98 | — | — | 20 | -96 | — | — |
| 11 Mbps | 23 | -89 | — | — | 18 | -87 | — | — |
| 802.11g | | | | | | | | |
| 6 Mbps | 23 | -94 | — | — | 20 | -92 | — | — |
| 54 Mbps | 22 | -75 | — | — | 18 | -73 | — | — |
| 802.11n HT20 | | | | | | | | |
| MCS0 | 22 | -93 | — | — | 20 | -91 | — | — |
| MCS7 | 20 | -74 | — | — | 17 | -72 | — | — |
| 802.11n HT40 | | | | | | | | |
| MCS0 | 20 | -92 | — | — | 19 | -90 | — | — |
| MCS7 | 18 | -73 | — | — | 17 | -71 | — | — |
| 802.11ax HE20 | | | | | | | | |
| MCS0 | 22 | -90 | — | — | — | — | — | — |
| MCS11 | 17 | -71 | — | — | — | — | — | — |
| 802.11ax HE40 | | | | | | | | |
| MCS0 | 19 | -88 | — | — | — | — | — | — |
| MCS11 | 17 | -68 | — | — | — | — | — | — |
| 802.11a | | | | | | | | |
| 6 Mbps | — | — | 20 | -92 | — | — | 20 | -90 |
| 54 Mbps | — | — | 20 | -72 | — | — | 17.5 | — |
| 802.11n HT20 | | | | | | | | |
| MCS0 | — | — | 20 | -91 | — | — | 20 | -90 |
| MCS7 | — | — | 19 | -72 | — | — | 17.5 | -71 |
| 802.11n HT40 | | | | | | | | |
| MCS0 | — | — | 20 | -88 | — | — | 19 | -88 |
| MCS7 | — | — | 18 | -69 | — | — | 16.5 | -69 |
| 802.11ac VHT20 | | | | | | | | |
| MCS0 | — | — | 20 | -91 | — | — | 19 | -90 |
| MCS9 | — | — | 19 | -67 | — | — | 17.5 | -67 |
| 802.11ac VHT40 | | | | | | | | |
| MCS0 | — | — | 20 | -88 | — | — | 19 | -88 |
| MCS9 | — | — | 18 | -62 | — | — | 16 | -62 |
| 802.11ac VHT80 | | | | | | | | |
| MCS0 | — | — | 18 | -85 | — | — | 18 | -85 |
| MCS9 | — | — | 17 | -59 | — | — | 16 | -58 |
| 802.11ax HE20 | | | | | | | | |
| MCS0 | — | — | 20 | -90 | — | — | — | — |
| MCS11 | — | — | 18 | -66 | — | — | — | — |
| 802.11ac HE40 | | | | | | | | |
| MCS0 | — | — | 20 | -87 | — | — | — | — |
| MCS11 | — | — | 18 | -61 | — | — | — | — |
| 802.11ac HE80 | | | | | | | | |
| MCS0 | — | — | 18 | -94 | — | — | — | — |
| MCS11 | — | — | 17 | -58 | — | — | — | — |

Antenna Radiation Patterns

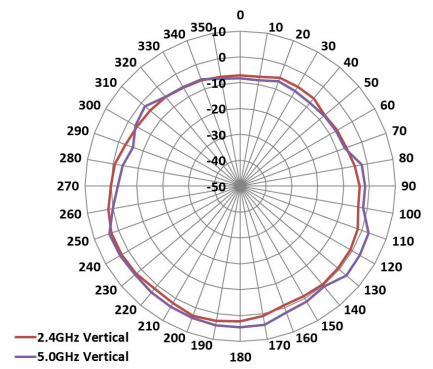
FAP-431F



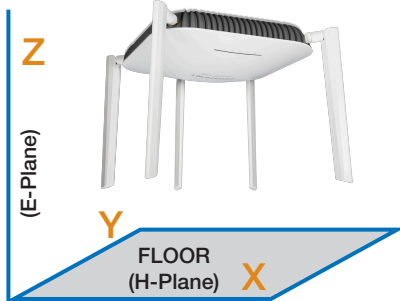
H-Plane Pattern



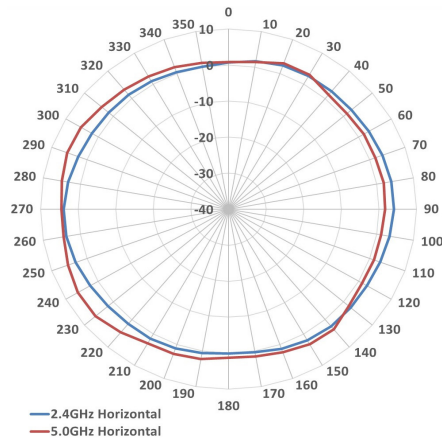
E-Plane Pattern



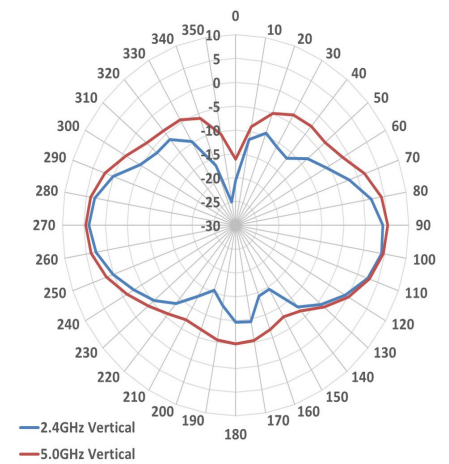
FAP-433F



H-Plane Pattern



E-Plane Pattern




Highlights

FortiAP 432F

This enterprise class 802.11ax outdoor AP provides three radios. As a top-of-the-line Wi-Fi 6 access point it provides OFDMA, a 2.5 Gigabit Ethernet port, plus an additional 1 Gbps Ethernet port with PoE out. The AP can provide 24/7 scanning across both bands while still providing access on both the 2.4 and 5 GHz bands. The integrated BLE radio can be used for beacons and locationing applications.



 **802.11ax | Tri-Radio 2.4 GHz + 5 GHz + scanning | 5 External Antennas**

 **4x4 MU-MIMO | Up to 1,147 Mbps + 2,402 Mbps**

Specifications

| FORTIAP 432F | |
|------------------------------|---|
| Hardware | |
| Hardware Type | Outdoor AP |
| Number of Radios | 3 + 1 BLE |
| Number of Antennas | 4 dual band WiFi + 1 dual band scanning + 1 single band 2.4 GHz BLE/ZigBee |
| Antenna Type and Peak Gain | WiFi and scanning radio dual band antenna: 5.5 dBi in 2.4 GHz and 7.2 dBi in 5 GHz band BLE antenna: 5.0 dBi in 2.4 GHz band |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | Frequency band: 2.4 GHz Channel width: 20/40MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 4x4 Service |
| Radio 2 Capabilities | Frequency band: 5.0 GHz Channel width: 4x4 20/40/80MHz and 2x2 160 MHz contiguous Modulation: BPSK, QPSK, QAM64, QAM256, and QAM1024 MIMO Chains: 4x4 Service |
| Radio 3 Capabilities | Frequency bands: 2.4 GHz and 5.0 GHz MIMO Chains: 1x1 Frequency Scanning |
| Maximum Data Rate | Radio 1: up to 1147 Mbps Radio 2: up to 2402 Mbps Radio 3: Frequency scanning only |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 10 dBm max TX power |
| Interfaces | 1 x 10/100/1000/2500 Base-T RJ45, 1 x 10/100/1000 Base-T RJ45 (802.3af PoE PSE), 1x Type A USB, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | 1 x 802.3bt PoE default Operational modes: No 802.3af support ; 1 x 802.at Operates in reduced power (17dBm) R1 & R2 in 4x4 chain. |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power (Conducted) | Radio 1: 2.4 GHz 30 dBm / 1000 mW (4 chains combined)* Radio 2: 5 GHz 26 dBm / 398 mW (4 chains combined)* Radio 3: N/A |
| Kensington Lock | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bt, 802.3bz |
| Per Radio Client Capacity | Up to 512 clients per radio (Radio1 and Radio2) |

| FORTIAP 432F | |
|---|--|
| Cellular Co-existence* | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| OFDMA | Yes (UL and DL) |
| Spatial Reuse (BSS Coloring) | Yes |
| UL MU-MIMO | Yes |
| DL-MU-MIMO | Yes |
| Enhanced Target Wake Time (TWT) | Yes |
| ZeroWait DFS | Yes |
| Wireless Monitoring Capabilities | |
| Rogue Scan radio modes | Background, Dedicated |
| WIPS / WIDS radio modes | Background, Dedicated (recommended) |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 8.23 x 8.23 x 2.38 inches (209 x 209 x 60.5 mm) |
| Weight | 5.12 lbs (2.325 kg) |
| Package (shipping) Weight | 12.56.93 lbs (5.7 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall |
| Included Accessories | Standard Mount kit for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | 802.3bt PoE, ships with PoE injector (reset functionality) |
| PSE functionality | Yes (while powered by PoE injector shipped with product) |
| Power Consumption (Maximum) | 25 W without PSE out and 37.9 W with PSE out |
| Humidity | 10 - 90% non condensing |
| Operating / Storage Temperature | -22–140°F (-30 - 60°C) / -40–176°F (-40–80°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | > 10 Years |
| IP Rating | IP67 |
| Surge Protection Built In | Yes |
| Hit-less PoE Failover | N/A |
| Certifications | |
| WiFi Alliance Certified | No |
| DFS | No |
| Warranty | |
| Limited Lifetime Warranty | Yes |

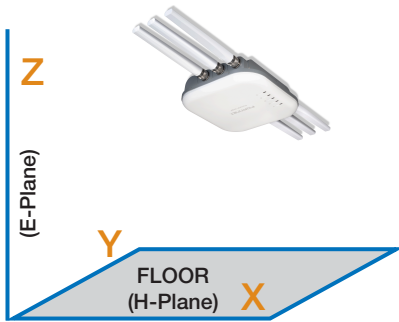
* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

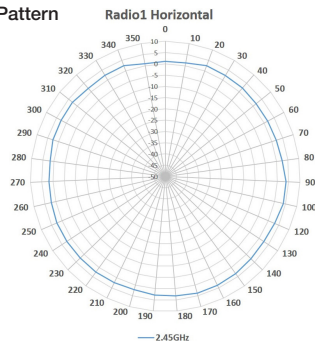
| FORTIAP 432F | | | | | | | |
|-----------------------|----------------------------------|----------------------|--------------------------------|----------------------|----------------------------------|--------------------------------|----------------------|
| | Radio 1 | | Radio 2 | | Radio 3 Scanning | | |
| | 2.4 GHz Tx Power per chain (dBm) | Rz Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) | 2.4 GHz Tx Power per chain (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) |
| 802.11b | | | | | | | |
| 1 Mbps | 24 | -99 | — | — | 20 | — | -92 |
| 11 Mbps | 24 | -91 | — | — | 18 | — | -91 |
| 802.11g | | | | | | | |
| 6 Mbps | 24 | -94 | — | — | 20 | — | -92 |
| 54 Mbps | 23 | -78 | — | — | 18 | — | -77 |
| 802.11n HT20 | | | | | | | |
| MCS0 | 24 | -94 | — | — | 20 | — | -92 |
| MCS7 | 23 | -75 | — | — | 17 | — | -74 |
| 802.11n HT40 | | | | | | | |
| MCS0 | 23 | -92 | — | — | 19 | — | -90 |
| MCS7 | 22 | -73 | — | — | 17 | — | -72 |
| 802.11ax HE20 | | | | | | | |
| MCS0 | 23 | -90 | — | — | — | — | — |
| MCS11 | 21 | -71 | — | — | — | — | — |
| 802.11ax HE40 | | | | | | | |
| MCS0 | 21 | -91 | — | — | — | — | — |
| MCS11 | 19 | -72 | — | — | — | — | — |
| 802.11a | | | | | | | |
| 6 Mbps | — | — | 22 | -92 | — | 20 | -93 |
| 54 Mbps | — | — | 22 | -76 | — | 19 | -76 |
| 802.11n HT20 | | | | | | | |
| MCS0 | — | — | 22 | -93 | — | 20 | -93 |
| MCS7 | — | — | 21 | -74 | — | 19 | -73 |
| 802.11n HT40 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | 19 | -90 |
| MCS7 | — | — | 21 | -72 | — | 18 | -71 |
| 802.11ac VHT20 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | 19 | -93 |
| MCS9 | — | — | 20 | -72 | — | 18 | -69 |
| 802.11ac VHT40 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | 19 | -90 |
| MCS9 | — | — | 19 | -72 | — | 16 | -64 |
| 802.11ac VHT80 | | | | | | | |
| MCS0 | — | — | 20 | -86 | — | 17 | -88 |
| MCS9 | — | — | 17 | -62 | — | 17 | -61 |
| 802.11ax HE20 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | — | — |
| MCS11 | — | — | 19 | -72 | — | — | — |
| 802.11ac HE40 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | — | — |
| MCS11 | — | — | 19 | -72 | — | — | — |
| 802.11ac HE80 | | | | | | | |
| MCS0 | — | — | 20 | -87 | — | — | — |
| MCS11 | — | — | 18 | -58 | — | — | — |

Antenna Radiation Patterns

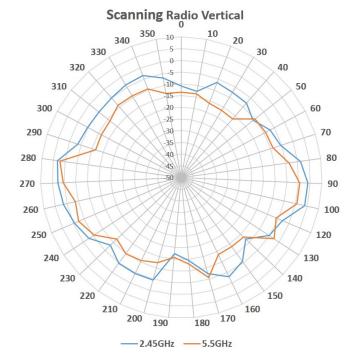
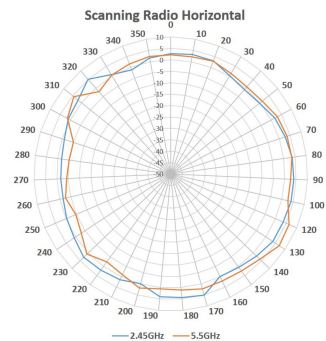
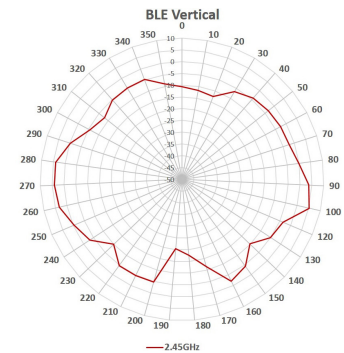
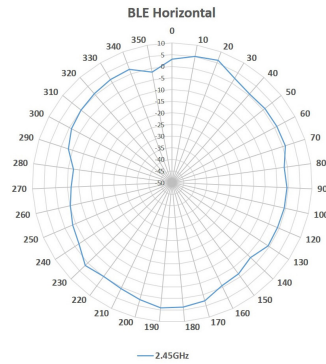
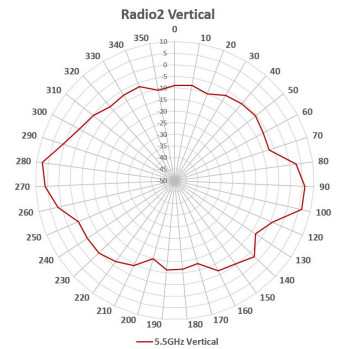
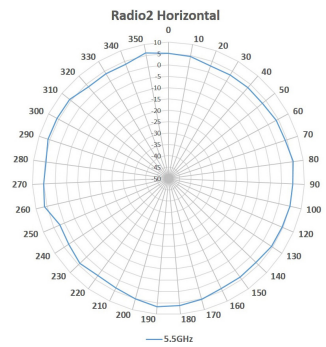
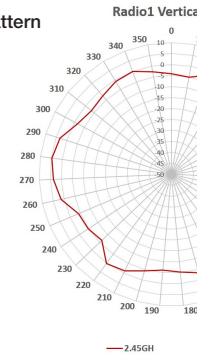
FAP-432F



H-Plane Pattern



E-Plane Pattern




Highlights

FortiAP 231F

This enterprise class Wi-Fi 6 indoor AP provides three radios as well as features such as OFDMA and dual 1 Gbps Ethernet ports. The AP can provide 24/7 scanning across both bands while still providing access on both the 2.4 and 5 GHz bands. The integrated BLE radio can be used for beacons and locationing applications.



 **802.11ax | Tri-Radio 5 GHz + 2.4 GHz + scanning | 3 Antennas**

 **2x2 MU-MIMO | Up to 574 Mbps + 1,201 Mbps + scanning**

Specifications

| FORTIAP 231F | |
|------------------------------|---|
| Hardware | |
| Hardware Type | Indoor AP |
| Number of Radios | 3 + 1 BLE |
| Number of Antennas | 3 Dual band Internal Wi-Fi + 1 BLE/ZigBee |
| Antenna Type and Peak Gain | PIFA antenna Dual band: 4.5dBi for 2.4GHz and 5.5dBi for 5GHz BLE antenna 4.0dBi at 2.4GHz band |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | Frequency band: 2.4GHz Channel width: 20/40MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service |
| Radio 2 Capabilities | Frequency band: 5.0GHz Channel width: 20/40/80MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service |
| Radio 3 Capabilities | Frequency bands: 2.4GHz and 5.0GHz MIMO Chains: 1x1 Frequency Scanning |
| Maximum Data Rate | Radio 1: up to 574 Mbps Radio 2: up to 1201 Mbps Radio 3: Frequency scanning only |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 10 dBm max TX power |
| Interfaces | 2x 10/100/1000 Base-T RJ45, 1x Type 2.0 USB, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | 1 x 802.3af PoE default 1 x 802.3af PoE no USB function |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or Pre-shared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power (Conducted) | Radio 1: 2.4GHz: 23 dBm / 200 mW (2 chains combined)* Radio 2: 5GHz: 22 dBm / 158 mW (2 chains combined)* Radio 3: NA |
| Kensington Lock | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11ax, 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az |
| SSID Types Supported | Local, Bridge, Tunnel, and Mesh |
| Per Radio Client Capacity | Up to 512 clients per radio (Radio1 and Radio2) |
| Cellular Co-existence* | Yes |

| FORTIAP 231F | |
|---|---|
| Reset Button | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| OFDMA | Yes (UL and DL) |
| Spatial Reuse (BSS Coloring) | Yes |
| UL MU-MIMO 802.11ax mode | Yes |
| DL-MU-MIMO | Yes |
| Enhanced Target Wake Time (TWT) | Yes |
| ZeroWait DFS/Agile DFS | No |
| Wireless Monitoring Capabilities | |
| Rogue Scan radio modes | Background, Dedicated |
| WIPS / WIDS radio modes | Background, Dedicated (recommended) |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 6.0 x 6.0 x 2.86 inches (153.2 x 153.2 x 53.0 mm) |
| Weight | 1.0 lbs (0.543 kg) |
| Package (shipping) Weight | 2.1 lbs (0.95 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall |
| Included Accessories | Standard Mount kit for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | 802.3at PoE GPI-130 |
| Power Consumption (Maximum) | 17W |
| Humidity | 5 - 90% non condensing |
| Operating / Storage Temperature | 32–122°F (0 - 50°C) / -22–158°F (-30–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | > 10 Years |
| IP Rating | N/A |
| Surge Protection Built In | Yes |
| Hit-less PoE Failover | N/A |
| Certifications | |
| WiFi Alliance Certified | Yes |
| DFS | CE, FCC, IC, Taiwan |
| Warranty | |
| Limited Lifetime Warranty | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

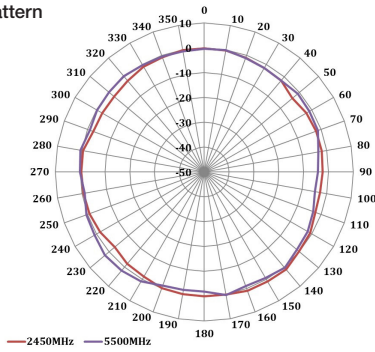
| FORTIAP 231F | | | | |
|-----------------------|----------------------------------|----------------------|--------------------------------|----------------------|
| | Radio 1 | | Radio 2 | |
| | 2.4 GHz Tx Power per chain (dBm) | Rx Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rx Sensitivity (dBm) |
| 802.11b | | | | |
| 1 Mbps | 21 | -99 | — | — |
| 11 Mbps | 21 | -90 | — | — |
| 802.11g | | | | |
| 6 Mbps | 20 | -94 | — | — |
| 54 Mbps | 20 | -77 | — | — |
| 802.11n HT20 | | | | |
| MCS0 | 19 | -94 | — | — |
| MCS7 | 18 | -76 | — | — |
| 802.11n HT40 | | | | |
| MCS0 | 19 | -92 | — | — |
| MCS7 | 19 | -73 | — | — |
| 802.11ax HE20 | | | | |
| MCS0 | 19 | -94 | — | — |
| MCS11 | 17 | -65 | — | — |
| 802.11ax HE40 | | | | |
| MCS0 | 19 | -91 | — | — |
| MCS11 | 16 | -63 | — | — |
| 802.11a | | | | |
| 6 Mbps | — | — | 22 | -94 |
| 54 Mbps | — | — | 21 | -77 |
| 802.11n HT20 | | | | |
| MCS0 | — | — | 21 | -94 |
| MCS7 | — | — | 19 | -76 |
| 802.11n HT40 | | | | |
| MCS0 | — | — | 21 | -91 |
| MCS7 | — | — | 19 | -73 |
| 802.11ac VHT20 | | | | |
| MCS0 | — | — | 21 | -94 |
| MCS9 | — | — | 18 | -72 |
| 802.11ac VHT40 | | | | |
| MCS0 | — | — | 21 | -91 |
| MCS9 | — | — | 18 | -68 |
| 802.11ac VHT80 | | | | |
| MCS0 | — | — | 19 | -88 |
| MCS9 | — | — | 17 | -64 |
| 802.11ax HE20 | | | | |
| MCS0 | — | — | 21 | -94 |
| MCS11 | — | — | 17 | -64 |
| 802.11ac HE40 | | | | |
| MCS0 | — | — | 21 | -91 |
| MCS11 | — | — | 17 | -62 |
| 802.11ac HE80 | | | | |
| MCS0 | — | — | 19 | -88 |
| MCS11 | — | — | 16 | -58 |

Antenna Radiation Patterns

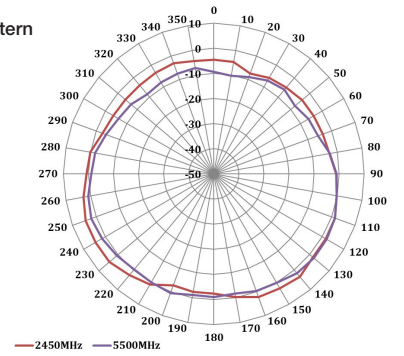
FAP-231F



H-Plane Pattern



E-Plane Pattern




Highlights

FortiAP 234F

This enterprise class Wi-Fi 6 outdoor AP provides three radios with internal antennas as well as features such as OFDMA and dual 1 Gbps Ethernet ports. The AP can provide 24/7 scanning across both bands while still providing access on both the 2.4 and 5 GHz bands. The integrated BLE radio can be used for beacons and locationing applications.



 **802.11ax | Tri-Radio 5 GHz + 2.4 GHz + scanning | 3 Antennas**

 **2x2 MU-MIMO | Up to 574 Mbps + 1,201 Mbps + scanning**

Specifications

| FORTIAP 234F | |
|------------------------------|--|
| Hardware | |
| Hardware Type | Outdoor AP |
| Number of Radios | 3 + 1 BLE |
| Number of Antennas | 2 dual band WiFi + 1 dual band scanning + 1 single band 2.4 GHz BLE/ZigBee |
| Antenna Type and Peak Gain | Directional patch antenna Single band antennas: 10 dBi in 2.4 GHz band, 10 dBi in 5.0 GHz band Scanning radio: 3.5 dBi in 2.4 GHz band and 4.5 dBi in 5 GHz band BLE antenna: 3.5 dBi in 2.4 GHz band |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | Frequency band: 2.4GHz Channel width: 20/40MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service |
| Radio 2 Capabilities | Frequency band: 5.0GHz Channel width: 20/40/80MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service |
| Radio 3 Capabilities | Frequency bands: 2.4 GHz and 5.0 GHz MIMO Chains: 1x1 Frequency Scanning |
| Maximum Data Rate | Radio 1: up to 574 Mbps Radio 2: up to 1200 Mbps Radio 3: Frequency scanning only |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 10 dBm max TX power |
| Interfaces | 2x 10/100/1000 Base-T RJ45, 1x Type 2.0 USB, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | 1 x 802.3at PoE default Operational modes: powered by 2 x 802.af PoE - full functionality support; 1 port 802.3af - operates in reduced power (17dBm) R1 & R2 |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or Preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power (Conducted) | Radio 1: 2.4 GHz: 27 dBm / 500 mW (2 chains combined)* Radio 2: 5 GHz: 25.5 dBm / 354 mW (2 chains combined)* Radio 3: N/A |
| Kensington Lock | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bz |

| FORTIAP 234F | |
|---|--|
| SSID Types Supported | Local-Bridge, Tunnel, and Mesh |
| Per Radio Client Capacity | Up to 512 clients per radio (Radio1 and Radio2) |
| Cellular Co-existence* | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| OFDMA | Yes (UL and DL) |
| Spatial Reuse (BSS Coloring) | Yes |
| UL MU-MIMO | Yes |
| DL-MU-MIMO | Yes |
| Enhanced Target Wake Time (TWT) | Yes |
| ZeroWait DFS | Yes |
| Wireless Monitoring Capabilities | |
| Rogue Scan radio modes | Background, Dedicated |
| WIPS / WIDS radio modes | Background, Dedicated (recommended) |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 12.45 x 8.6 x 1.66 inches (316 x 218 x 42 mm) |
| Weight | 2.88 lbs (1.307 kg) |
| Package (shipping) Weight | 7.93 lbs (3.6 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall |
| Included Accessories | Standard Mount kit for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | 802.3at PoE: GPI-130 ; ships with PoE Injector (reset functionality) |
| PSE functionality | No |
| Power Consumption (Maximum) | 15.5 W |
| Humidity | 10 - 90% non condensing |
| Operating / Storage Temperature | -22–140°F (-30 - 60°C) / -40–176°F (-40–80°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | > 10 Years |
| IP Rating | IP67 |
| Surge Protection Built In | Yes |
| Hit-less PoE Failover | N/A |
| Certifications | |
| WiFi Alliance Certified | No |
| DFS | CE |
| Warranty | |
| Limited Lifetime Warranty | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

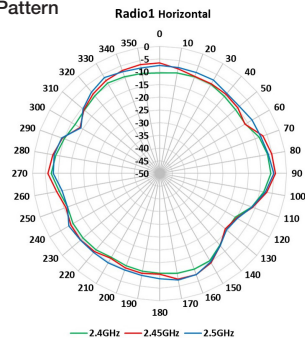
| FORTIAP 234F | | | | | | | |
|-----------------------|----------------------------------|----------------------|--------------------------------|----------------------|----------------------------------|--------------------------------|----------------------|
| | Radio 1 | | Radio 2 | | Radio 3 Scanning | | |
| | 2.4 GHz Tx Power per chain (dBm) | Rz Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) | 2.4 GHz Tx Power per chain (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) |
| 802.11b | | | | | | | |
| 1 Mbps | 24 | -99 | — | — | 20 | — | -92 |
| 11 Mbps | 24 | -91 | — | — | 18 | — | -91 |
| 802.11g | | | | | | | |
| 6 Mbps | 24 | -95 | — | — | 20 | — | -92 |
| 54 Mbps | 23 | -78 | — | — | 18 | — | -77 |
| 802.11n HT20 | | | | | | | |
| MCS0 | 24 | -94 | — | — | 20 | — | -92 |
| MCS7 | 23 | -78 | — | — | 17 | — | -74 |
| 802.11n HT40 | | | | | | | |
| MCS0 | 23 | -92 | — | — | 19 | — | -90 |
| MCS7 | 22 | -74 | — | — | 17 | — | -72 |
| 802.11ax HE20 | | | | | | | |
| MCS0 | 23 | -90 | — | — | — | — | — |
| MCS11 | 21 | -71 | — | — | — | — | — |
| 802.11ax HE40 | | | | | | | |
| MCS0 | 21 | -91 | — | — | — | — | — |
| MCS11 | 19 | -72 | — | — | — | — | — |
| 802.11a | | | | | | | |
| 6 Mbps | — | — | 21 | -93 | — | 20 | -93 |
| 54 Mbps | — | — | 21 | -77 | — | 19 | -76 |
| 802.11n HT20 | | | | | | | |
| MCS0 | — | — | 21 | -91 | — | 20 | -93 |
| MCS7 | — | — | 20 | -72 | — | 19 | -73 |
| 802.11n HT40 | | | | | | | |
| MCS0 | — | — | 21 | -91 | — | 19 | -90 |
| MCS7 | — | — | 20 | -72 | — | 18 | -71 |
| 802.11ac VHT20 | | | | | | | |
| MCS0 | — | — | 20 | -91 | — | 19 | -93 |
| MCS9 | — | — | 18 | -72 | — | 18 | -69 |
| 802.11ac VHT40 | | | | | | | |
| MCS0 | — | — | 19 | -87 | — | 19 | -90 |
| MCS9 | — | — | 17 | -64 | — | 16 | -64 |
| 802.11ac VHT80 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | 17 | -88 |
| MCS9 | — | — | 19 | -72 | — | 17 | -61 |
| 802.11ax HE20 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | — | — |
| MCS11 | — | — | 19 | -72 | — | — | — |
| 802.11ac HE40 | | | | | | | |
| MCS0 | — | — | 22 | -91 | — | — | — |
| MCS11 | — | — | 19 | -72 | — | — | — |
| 802.11ac HE80 | | | | | | | |
| MCS0 | — | — | 20 | -89 | — | — | — |
| MCS11 | — | — | 18 | -59 | — | — | — |

Antenna Radiation Patterns

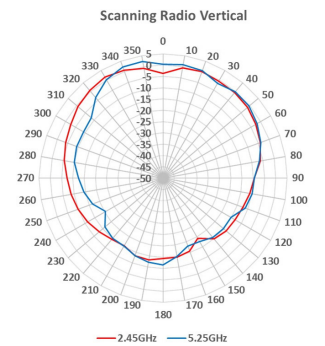
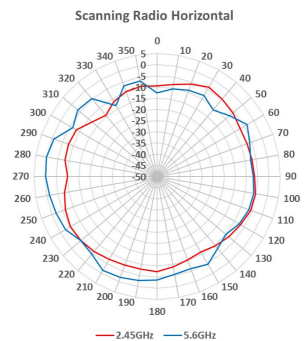
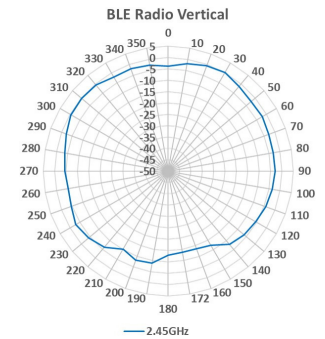
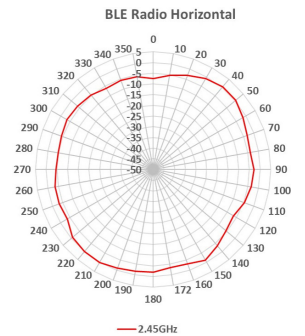
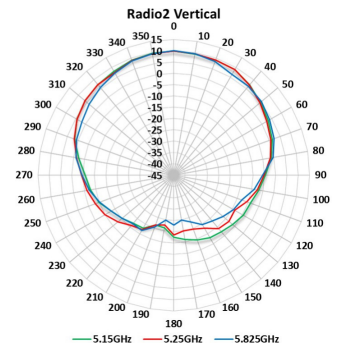
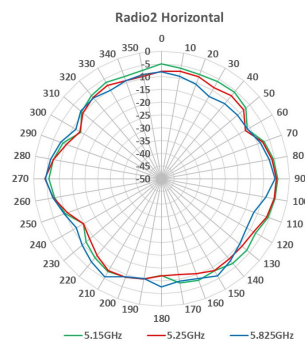
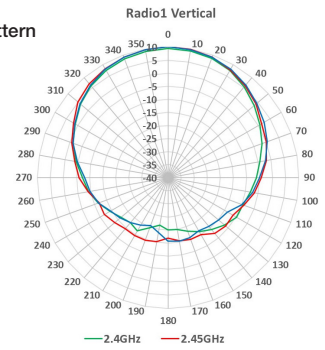
FAP-234F



H-Plane Pattern



E-Plane Pattern




Highlights

FortiAP 23JF

This enterprise class Wi-Fi 6 wall plate AP provides three radios with internal antennas as well as features such as OFDMA and is PSE-capable. The AP can provide 24/7 scanning across both bands while still providing access on both the 2.4 and 5 GHz bands. The integrated BLE radio can be used for beacons and locationing applications. Additional features include PoE out for downstream devices and RJ45 passthrough. This access point can be installed in minutes, right over the existing wall plate.



 **802.11ax | Tri-Radio 5 GHz + 2.4 GHz + scanning | 3 Antennas**

 **2x2 MU-MIMO | Up to 574 Mbps + 1,200 Mbps + scanning**

Specifications

| FORTIAP 23JF | |
|------------------------------|---|
| Hardware | |
| Hardware Type | Indoor walljack/desktop AP |
| Number of Radios | 3 + 1 BLE |
| Number of Antennas | 4 single band WiFi + 1 dual band scanning + 1 single band 2.4 GHz BLE/ZigBee |
| Antenna Type and Peak Gain | PCB antenna Dual band: 4.0 dBi in 2.4 GHz band and 4.0 dBi in 5 GHz band BLE antenna: 3.5 dBi in 2.4 GHz band |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | Frequency band: 2.4 GHz Channel width: 20/40 MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service |
| Radio 2 Capabilities | Frequency band: 5.0 GHz Channel width: 20/40/80 MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service |
| Radio 3 Capabilities | Frequency bands: 2.4 GHz and 5.0 GHz MIMO Chains: 1x1 Frequency Scanning |
| Maximum Data Rate | Radio 1: up to 574 Mbps Radio 2: up to 1200 Mbps Radio 3: Frequency scanning only |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 10 dBm max TX power |
| Interfaces | 7x 10/100/1000 Base-T RJ45 Ports (1x 802.3at PoE (PD), 1x 802.3af PoE (PSE), 2x Non-PoE Ports, 1x Pass-through in, 1x Pass-through out, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | 1 x 802.3at PoE default Operational modes: powered by 802.af PoE - Only Radio functionality ; powered by 802.3at - All radio+ PSE (7W); Powered by DC power adaptor - All radio's + USB + PSE (802.3af) |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power (Conducted) | Radio 1: 2.4 GHz: 25 dBm / 158 mW (2 chains combined)* Radio 2: 5 GHz: 21 dBm / 158 mW (2 chains combined)* Radio 3: N/A |
| Kensington Lock | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bz |

| FORTIAP 23JF | |
|---|--|
| SSID Types Supported | Local-Bridge, Tunnel, and Mesh |
| Per Radio Client Capacity | Up to 512 clients per radio (Radio1 and Radio2) |
| Cellular Co-existence* | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| OFDMA | Yes (UL and DL) |
| Spatial Reuse (BSS Coloring) | Yes |
| UL MU-MIMO | Yes |
| DL-MU-MIMO | Yes |
| Enhanced Target Wake Time (TWT) | Yes |
| ZeroWait DFS | No |
| Wireless Monitoring Capabilities | |
| Rogue Scan radio modes | Background, Dedicated |
| WIPS / WIDS radio modes | Background, Dedicated (recommended) |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 6.6 x 4.6 x 1.1 inches (168 x 117 x 28 mm) |
| Weight | 0.99 lbs (0.45 kg) |
| Package (shipping) Weight | 1.54 lbs (0.7 kg) |
| Mounting Options | Wall Plate, Optional Desk Mount FAP-MNT-WJ-20 |
| Included Accessories | Standard Mount kit for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | 802.3at PoE: GPI-130 Optional DC power adaptor SP-FAP23J-PAX-10 |
| PSE functionality | Yes |
| Power Consumption (Maximum) | 17.5W without PSE out and 31W with PSE out |
| Humidity | 10 - 90% non condensing |
| Operating / Storage Temperature | 32–122°F (0 - 50°C) / -22–158°F (-30–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | > 10 Years |
| IP Rating | N/A |
| Surge Protection Built In | Yes |
| Hit-less PoE Failover | N/A |
| Certifications | |
| WiFi Alliance Certified | No |
| DFS | No |
| Warranty | |
| Limited Lifetime Warranty | Yes |

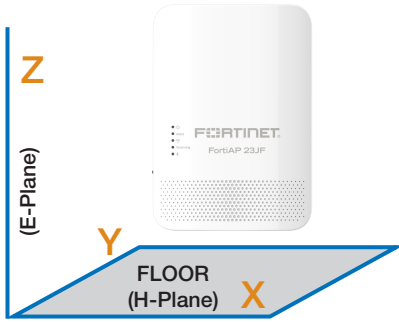
* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

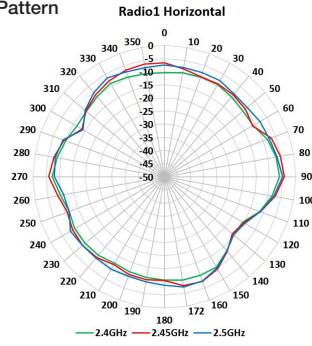
| FORTIAP 23JF | | | | | | | |
|-----------------------|----------------------------------|----------------------|--------------------------------|----------------------|----------------------------------|--------------------------------|----------------------|
| | Radio 1 | | Radio 2 | | Radio 3 Scanning | | |
| | 2.4 GHz Tx Power per chain (dBm) | Rz Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) | 2.4 GHz Tx Power per chain (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) |
| 802.11b | | | | | | | |
| 1 Mbps | 22 | -98 | — | — | 20 | — | -92 |
| 11 Mbps | 20 | -90 | — | — | 18 | — | -91 |
| 802.11g | | | | | | | |
| 6 Mbps | 22 | -93 | — | — | 20 | — | -92 |
| 54 Mbps | 20 | -77 | — | — | 18 | — | -77 |
| 802.11n HT20 | | | | | | | |
| MCS0 | 22 | -94 | — | — | 20 | — | -92 |
| MCS7 | 20 | -76 | — | — | 17 | — | -74 |
| 802.11n HT40 | | | | | | | |
| MCS0 | 22 | -92 | — | — | 19 | — | -90 |
| MCS7 | 20 | -73 | — | — | 17 | — | -72 |
| 802.11ax HE20 | | | | | | | |
| MCS0 | 22 | -90 | — | — | — | — | — |
| MCS11 | 20 | -71 | — | — | — | — | — |
| 802.11ax HE40 | | | | | | | |
| MCS0 | 20 | -90 | — | — | — | — | — |
| MCS11 | 18 | -70 | — | — | — | — | — |
| 802.11a | | | | | | | |
| 6 Mbps | — | — | 18 | -93 | — | 20 | -91 |
| 54 Mbps | — | — | 18 | -77 | — | 19 | -75 |
| 802.11n HT20 | | | | | | | |
| MCS0 | — | — | 19 | -94 | — | 20 | -90 |
| MCS7 | — | — | 19 | -75 | — | 19 | -72 |
| 802.11n HT40 | | | | | | | |
| MCS0 | — | — | 21 | -91 | — | 19 | -90 |
| MCS7 | — | — | 20 | -72 | — | 18 | -71 |
| 802.11ac VHT20 | | | | | | | |
| MCS0 | — | — | 21 | -91 | — | 19 | -93 |
| MCS9 | — | — | 20 | -72 | — | 18 | -69 |
| 802.11ac VHT40 | | | | | | | |
| MCS0 | — | — | 20 | -91 | — | 19 | -90 |
| MCS9 | — | — | 18 | -72 | — | 16 | -64 |
| 802.11ac VHT80 | | | | | | | |
| MCS0 | — | — | 19 | -87 | — | 17 | -88 |
| MCS9 | — | — | 17 | -64 | — | 17 | -61 |
| 802.11ax HE20 | | | | | | | |
| MCS0 | — | — | 20 | -91 | — | — | — |
| MCS11 | — | — | 18 | -72 | — | — | — |
| 802.11ac HE40 | | | | | | | |
| MCS0 | — | — | 19 | -91 | — | — | — |
| MCS11 | — | — | 17 | -62 | — | — | — |
| 802.11ac HE80 | | | | | | | |
| MCS0 | — | — | 18 | -89 | — | — | — |
| MCS11 | — | — | 16 | -60 | — | — | — |

Antenna Radiation Patterns

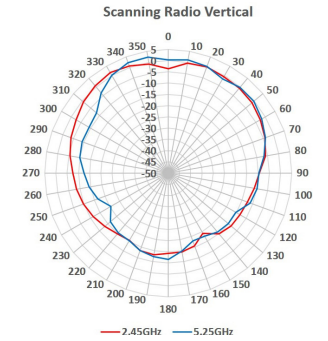
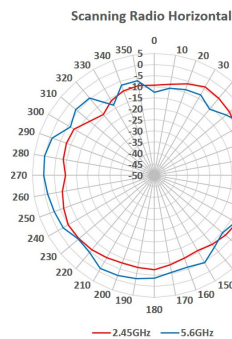
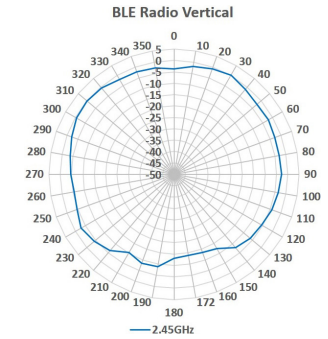
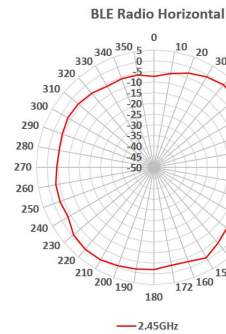
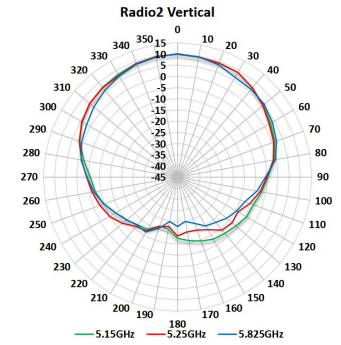
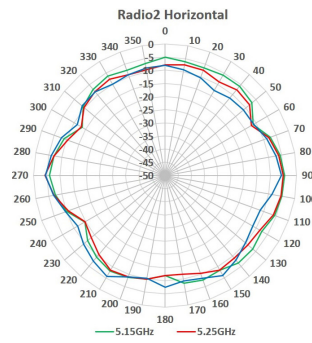
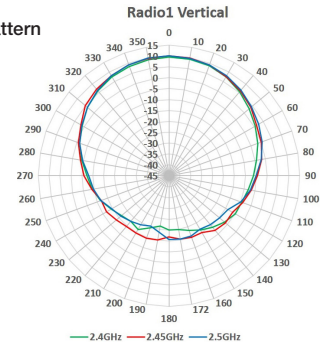
FAP-23JF



H-Plane Pattern



E-Plane Pattern



Highlights

FortiAP 421E and 423E

The FortiAP 421E and 423E access points support the latest 802.11ac Wave 2 standard. Additional features include 802.11ac explicit transmit beamforming (TxBF), multiuser MIMO (MU-MIMO), and more.

 **802.11ac Wave 2 | Dual Radio 2.4 and 5 GHz | 8 Internal/External Antennas**

 **4x4 MU-MIMO | Up to 800 + 1,733 Mbps**



Specifications

| | FORTIAP 421E | FORTIAP 423E |
|--|--|--|
| Hardware | | |
| Hardware Type | Indoor AP | Indoor AP |
| Number of Radios | 2 | 2 |
| Number of Antennas | 8 Internal | 8 External (RP-SMA) |
| Antenna Type and Peak Gain | PIFA: 4 dBi for 2.4 GHz, 5 dBi for 5 GHz | Dipole: 3 dBi for 2.4 GHz, 3 dBi for 5 GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 | |
| Radio 1 Capabilities | 2.4 GHz b/g/n (4x4:4 stream) 20/40 MHz (256 QAM) | |
| Radio 2 Capabilities | 5 GHz a/n/ac (4x4:4 stream) 20/40/80 MHz (256 QAM) | |
| Maximum Data Rate | Radio 1: up to 800 Mbps Radio 2: up to 1,733 Mbps | Radio 1: up to 800 Mbps Radio 2: up to 1,733 Mbps |
| Bluetooth Low Energy Radio | — | — |
| Interfaces | 2x 10/100/1000 Base-T RJ45, 1x Type A USB, 1x RS-232 RJ45 Serial Port | |
| Power over Ethernet (PoE) | Dual redundant PoE power ports with support for IEEE 802.3af (2x2 operation, disable USB with 802.3af) | |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) | |
| EAP Type(s) | EAP-TLS, EAP-TLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST | |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or preshared key, WEP, Web Captive Portal, MAC blocklist & allowlist | |
| Maximum Tx Power | 2.4 GHz: 24 dBm / 251 mW (4 chains combined)* 5 GHz: 25 dBm / 316 mW (4 chains combined)* | |
| Kensington Lock | Yes | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11q, 802.11x, 802.3ad, 802.3af, 802.3at, 802.3az | |
| SSID Types Supported | Local-Bridge, Tunnel, Mesh | Local-Bridge, Tunnel, Mesh |
| Per Radio Client Capacity | Up to 512 | Up to 512 |
| Cellular Co-existence | No | No |
| Reset Button | Yes | Yes |
| LED Off Mode | Yes | Yes |
| Advanced 802.11 Features | | |
| 802.11ac MU-MIMO Wave 2 | Yes | Yes |
| Transmit Beam Forming (TxBF) | Yes | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes | Yes |
| Maximum Likelihood Demodulation (MLD) | Yes | Yes |

| | FORTIAP 421E | FORTIAP 423E |
|---|---|--|
| Maximum Ratio Combining (MRC) | Yes | Yes |
| A-MPDU and A-MSDU Packet Aggregation | Yes | Yes |
| MIMO Power Save | Yes | Yes |
| Short Guard Interval | Yes | Yes |
| Wireless Monitoring Capabilities | | |
| Rogue Scan Radio Modes | Background, Dedicated | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated | Background, Dedicated |
| Packet Sniffer Mode | Yes | Yes |
| Spectrum Analyzer | Yes | Yes |
| Dimensions | | |
| Length x Width x Height | 8.5 x 8.5 x 2.2 inches (215 x 215 x 56 mm) | |
| Weight | 3.53 lbs (1.6 kg) | 3.57 lbs (1.62 kg) |
| Package (shipping) Weight | 4.95 lbs (2.2 kg) | 5.3 lbs (2.4 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall | Ceiling, T-Rail, and Wall |
| Included Accessories | Mount kits for Ceiling, T-Rail, and Wall | Mount kits for Ceiling, T-Rail, and Wall, 8 dipole antennas |
| Environment | | |
| Power Supply | SP-FAP400-PA-XX, GPI-115, or GPI-130 | |
| Power Consumption (Max.) | 23 W max power draw in 802.3at mode and 12.95 W max power draw when in 802.3af power mode (operates in 2x2 mode) | |
| Humidity | 5–90% non-condensing | 5–90% non-condensing |
| Operating / Storage Temperature | -4–122°F (-20–50°C) / -40–158°F (-40–70°C) | |
| Directives | Low Voltage Directive • RoHS | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | Yes | Yes |
| Mean Time Between Failures | >30 Years | >30 Years |
| IP Rating | — | — |
| Surge Protection Built In | — | — |
| Hit-less PoE Failover | Yes | Yes |
| Certifications | | |
| Wi-Fi Alliance Certified | Yes | Yes |
| DFS | FCC, IC, CE, Japan, Taiwan, Korea | FCC, IC, CE, Japan, Taiwan, Korea |
| Warranty | | |
| Limited Lifetime Warranty | Yes | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

| FORTIAP 421E / 423E | | | | |
|---------------------|-------------------------------------|----------------------|-----------------------------------|----------------------|
| | RADIO 1 | | RADIO 2 | |
| 802.11 a/g | 2.4 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) |
| 6 Mbps | 18 | -93 | 19 | -86 |
| 9 Mbps | 18 | -91 | 19 | -83 |
| 12 Mbps | 18 | -88 | 19 | -81 |
| 18 Mbps | 18 | -85 | 19 | -78 |
| 24 Mbps | 18 | -80 | 19 | -76 |
| 36 Mbps | 18 | -77 | 18 | -74 |
| 48 Mbps | 18 | -76 | 18 | -70 |
| 54 Mbps | 18 | -75 | 16 | -66 |
| 802.11 HT20 | | | | |
| MSC 0/8/16 | 18 | -87 | 18 | -84 |
| MSC 1/9/17 | 17 | -84 | 17 | -81 |
| MSC 2/10/18 | 17 | -81 | 17 | -79 |
| MSC 3/11/19 | 16 | -78 | 16 | -76 |
| MSC 4/12/20 | 16 | -73 | 16 | -72 |
| MSC 5/13/21 | 15 | -70 | 15 | -68 |
| MSC 6/14/22 | 15 | -69 | 15 | -67 |
| MSC 7/15/23 | 15 | -67 | 15 | -66 |
| 802.11 HT40 | | | | |
| MSC 0/8/16 | 18 | -84 | 18 | -83 |
| MSC 1/9/17 | 17 | -80 | 17 | -80 |
| MSC 2/10/18 | 17 | -77 | 17 | -78 |
| MSC 3/11/19 | 16 | -74 | 16 | -75 |
| MSC 4/12/20 | 16 | -71 | 16 | -73 |
| MSC 5/13/21 | 15 | -67 | 15 | -72 |
| MSC 6/14/22 | 15 | -65 | 15 | -70 |
| MSC 7/15/23 | 15 | -65 | 15 | -69 |
| MSC 8/16/24 | — | — | 15 | -65 |
| MSC 9/17/25 | — | — | 15 | -63 |
| 802.11 HT80 | | | | |
| MSC 0 | — | — | 18 | -83 |
| MSC 1 | — | — | 17 | -80 |
| MSC 2 | — | — | 17 | -78 |
| MSC 3 | — | — | 16 | -75 |
| MSC 4 | — | — | 16 | -73 |
| MSC 5 | — | — | 15 | -72 |
| MSC 6 | — | — | 15 | -70 |
| MSC 7 | — | — | 15 | -69 |
| MSC 8 | — | — | 15 | -65 |
| MSC 9 | — | — | 15 | -63 |

Performance Matrix

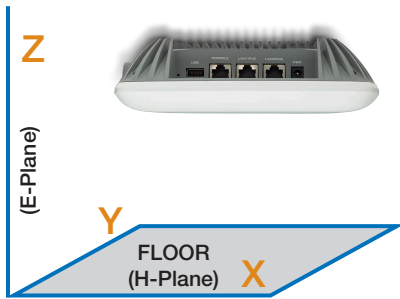
| FORTIAP 421E / 423E | | | | | | | | |
|--|--------------|-----------|----------|-----------|----------|-----------|----------|--|
| 802.11AC PERFORMANCE — DATA RATES (MBPS) | | | | | | | | |
| Descriptor | Data Streams | VHT20 | | VHT40 | | VHT80 | | |
| | | Normal GI | Short GI | Normal GI | Short GI | Normal GI | Short GI | |
| MCS 0 | 1 | 6.5 | 7.2 | 13.5 | 15 | 29.3 | 32.5 | |
| MCS 1 | 1 | 13 | 14.4 | 27 | 30 | 58.5 | 65 | |
| MCS 2 | 1 | 19.5 | 21.7 | 40.5 | 45 | 87.8 | 97.5 | |
| MCS 3 | 1 | 26 | 28.9 | 54 | 60 | 117 | 130 | |
| MCS 4 | 1 | 39 | 43.3 | 81 | 90 | 175.5 | 195 | |
| MCS 5 | 1 | 52 | 57.8 | 108 | 120 | 234 | 260 | |
| MCS 6 | 1 | 58.5 | 65 | 121.5 | 135 | 263.3 | 292.5 | |
| MCS 7 | 1 | 65 | 72.2 | 135 | 150 | 292.5 | 325 | |
| MCS 8 | 1 | 78 | 86.7 | 162 | 180 | 351 | 390 | |
| MCS 9 | 1 | NA | NA | 180 | 200 | 390 | 433.3 | |
| | | | | | | | | |
| MCS 0 | 2 | 13 | 14.4 | 27 | 30 | 58.5 | 65 | |
| MCS 1 | 2 | 26 | 28.9 | 54 | 60 | 117 | 130 | |
| MCS 2 | 2 | 39 | 43.3 | 81 | 90 | 175.5 | 195 | |
| MCS 3 | 2 | 52 | 57.8 | 108 | 120 | 234 | 260 | |
| MCS 4 | 2 | 78 | 86.7 | 162 | 180 | 351 | 390 | |
| MCS 5 | 2 | 104 | 115.6 | 216 | 240 | 468 | 520 | |
| MCS 6 | 2 | 117 | 130 | 243 | 270 | 526.5 | 585 | |
| MCS 7 | 2 | 130 | 144.4 | 270 | 300 | 585 | 650 | |
| MCS 8 | 2 | 156 | 173.3 | 324 | 360 | 702 | 780 | |
| MCS 9 | 2 | NA | NA | 360 | 400 | 780 | 866.7 | |
| | | | | | | | | |
| MCS 0 | 3 | 19.5 | 21.7 | 40.5 | 45 | 87.8 | 97.5 | |
| MCS 1 | 3 | 39 | 43.3 | 81 | 90 | 175.5 | 195 | |
| MCS 2 | 3 | 58.5 | 65 | 121.5 | 135 | 263.3 | 292.5 | |
| MCS 3 | 3 | 78 | 86.7 | 162 | 180 | 351 | 390 | |
| MCS 4 | 3 | 117 | 130 | 243 | 270 | 526.5 | 585 | |
| MCS 5 | 3 | 156 | 173.3 | 324 | 360 | 702 | 780 | |
| MCS 6 | 3 | 175.5 | 195 | 364.5 | 405 | NA | NA | |
| MCS 7 | 3 | 195 | 216.7 | 405 | 450 | 877.5 | 975 | |
| MCS 8 | 3 | 234 | 260 | 486 | 540 | 1053 | 1170 | |
| MCS 9 | 3 | 260 | 288.9 | 540 | 600 | 1170 | 1300 | |
| | | | | | | | | |
| MCS 0 | 4 | 26 | 28.9 | 54 | 60 | 117 | 130 | |
| MCS 1 | 4 | 52 | 57.8 | 108 | 120 | 234 | 260 | |
| MCS 2 | 4 | 78 | 86.7 | 162 | 180 | 351 | 390 | |
| MCS 3 | 4 | 104 | 115.6 | 216 | 240 | 468 | 520 | |
| MCS 4 | 4 | 156 | 173.3 | 324 | 360 | 702 | 780 | |
| MCS 5 | 4 | 208 | 231.1 | 432 | 480 | 936 | 1040 | |
| MCS 6 | 4 | 234 | 260 | 486 | 540 | 1053 | 1170 | |
| MCS 7 | 4 | 260 | 288.9 | 540 | 600 | 1170 | 1300 | |
| MCS 8 | 4 | 312 | 346.7 | 648 | 720 | 1404 | 1560 | |
| MCS 9 | 4 | NA | NA | 720 | 800 | 1560 | 1733.3 | |

Performance Matrix

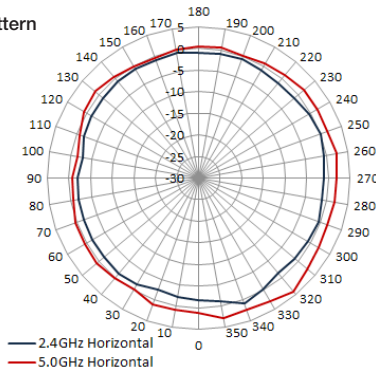
| FORTIAP 421E / 423E | | | | | | |
|---|-----------------|-----------|----------|-----------|----------|--|
| 802.11N PERFORMANCE — DATA RATES (MBPS) | | | | | | |
| Descriptor | Spatial Streams | HT20 | | HT40 | | |
| | | Normal GI | Short GI | Normal GI | Short GI | |
| MCS 0 | 1 | 6.5 | 7.2 | 13.5 | 15 | |
| MCS 1 | 1 | 13 | 14.4 | 27 | 30 | |
| MCS 2 | 1 | 19.5 | 21.7 | 40.5 | 45 | |
| MCS 3 | 1 | 26 | 28.9 | 54 | 60 | |
| MCS 4 | 1 | 39 | 43.3 | 81 | 90 | |
| MCS 5 | 1 | 52 | 57.8 | 108 | 120 | |
| MCS 6 | 1 | 58.5 | 65 | 121.5 | 135 | |
| MCS 7 | 1 | 65 | 72.2 | 135 | 150 | |
| MCS 8 | 2 | 13 | 14.4 | 27 | 30 | |
| MCS 9 | 2 | 26 | 28.9 | 54 | 60 | |
| MCS10 | 2 | 39 | 43.3 | 81 | 90 | |
| MCS 11 | 2 | 52 | 57.8 | 108 | 120 | |
| MCS 12 | 2 | 78 | 86.7 | 162 | 180 | |
| MCS 13 | 2 | 104 | 115.6 | 216 | 240 | |
| MCS 14 | 2 | 117 | 130 | 243 | 270 | |
| MCS 15 | 2 | 130 | 144.4 | 270 | 300 | |
| MCS 16 | 3 | 19.5 | 21.7 | 40.5 | 45 | |
| MCS 17 | 3 | 39 | 43.3 | 81 | 90 | |
| MCS 18 | 3 | 58.5 | 65 | 121.5 | 135 | |
| MCS 19 | 3 | 78 | 86.7 | 162 | 180 | |
| MCS 20 | 3 | 117 | 130 | 243 | 270 | |
| MCS 21 | 3 | 156 | 173.3 | 324 | 360 | |
| MCS 22 | 3 | 175.5 | 195 | 364.5 | 405 | |
| MCS 23 | 3 | 195 | 216.7 | 405 | 450 | |

Antenna Radiation Patterns

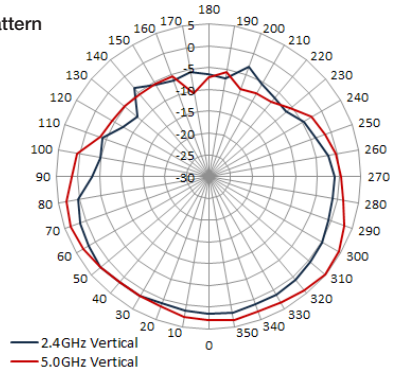
FAP-421E



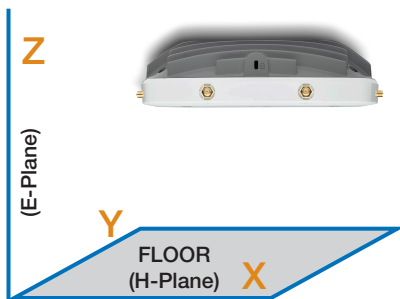
H-Plane Pattern



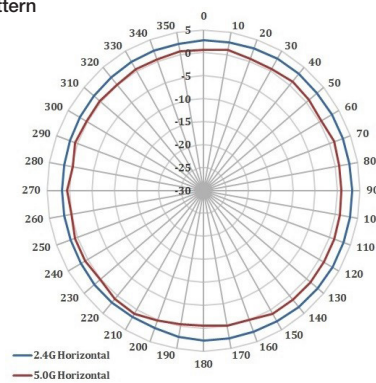
E-Plane Pattern



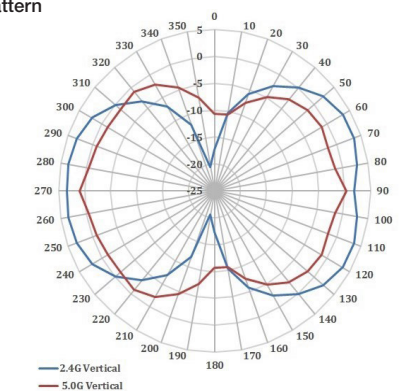
FAP-423E



H-Plane Pattern



E-Plane Pattern



Highlights

FortiAP 321E

The FortiAP 321E is a dual-radio medium-density 3x3 802.11ac Wave 2 access point. This Enterprise-class access point is ideal for environments such as offices, classrooms, or retail establishments with performance throughput of up to 1,300 Mbps at 5GHz. The AP can support MU-MIMO and clients that utilize 3 streams for increased data throughput.



 **802.11ac Wave 2 | Dual Radio 5 GHz and 2.4 GHz | 6 Internal Antennas**

 **3x3 MIMO | Up to 450 + 1,300 Mbps**

Specifications

| FORTIAP 321E | |
|--|---|
| Hardware | |
| Hardware Type | Indoor AP |
| Number of Radios | 2 + 1 BLE |
| Number of Antennas | 6 Internal + 1 BLE internal |
| Antenna Type and peak Gain | PIFA: 3 dBi for 2.4 GHz, 4 dBi for 5 GHz |
| Frequency Bands (GHz) | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | 2.4 GHz b/g/n (3x3:3 stream) 20/40 MHz (256 QAM) |
| Radio 2 Capabilities | 5 GHz a/n/ac (3x3:3 stream) 20/40/80 MHz (256 QAM) |
| Maximum Data Rate | Radio 1: up to 450 Mbps Radio 2: up to 1,300 Mbps |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 4 dBm max TX power |
| Interfaces | 1x 10/100/1000 Base-T RJ45, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | IEEE 802.3af & 802.3at |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCVAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or Pre-shared key, WEP, Web Captive Portal, MAC blocklist & allowlist |
| Maximum Tx Power | 2.4 GHz: 27.7 dBm/588 mW (3 chains combined)* 5 GHz: 27.7 dBm / 588 mW (3 chains combined)* |
| Kensington Lock | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.1Q, 802.1X, 802.3af, 802.3at |
| SSID Types Supported | Local-Bridge, Mesh, & Tunnel |
| Per Radio Client Capacity | Up to 128 for Radio 1, Up to 512 for Radio 2 |
| Cellular Co-existence** | Yes |
| Reset Button | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| 802.11ac MU-MIMO Wave 2 | Yes |
| Transmit Beam Forming (TxBF) | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes |
| Maximum Likelihood Demodulation (MLD) | Yes |
| Maximum Ratio Combining (MRC) | Yes |

| FORTIAP 321E | |
|---|---|
| A-MPDU and A-MSDU | Yes |
| Packet Aggregation | |
| MIMO Power Save | Yes |
| Short Guard Interval | Yes |
| OFDMA | No |
| Wireless Monitoring Capabilities | |
| Rogue Scan Radio Modes | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 7.08 x 7.08 x 1.50 inches (180 x 180 x 38 mm) |
| Weight | 1.0 lbs (0.454 kg) |
| Package (shipping) Weight | 1.60 lbs (0.73 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall |
| Included Accessories | Mount kits for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | SP-FAP200-PA-XX, GPI-115, or GPI-130 |
| Power Consumption (Maximum) | 16.8 W |
| Humidity | 10–90% non-condensing |
| Operating / Storage Temperature | 14–113°F (-10–45°C) / -22–158°F (-30–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | >10 Years |
| IP Rating | N/A |
| Surge Protection Built In | — |
| Hit-less PoE Failover | No |
| Certifications | |
| WiFi Alliance Certified | No |
| DFS | FCC, CE |
| Warranty | |
| Limited Lifetime Warranty | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

** Additional filtration added to reduce interference in 2.4 GHz band from nearby cellular equipment.

RF Rx/Tx Performance Table

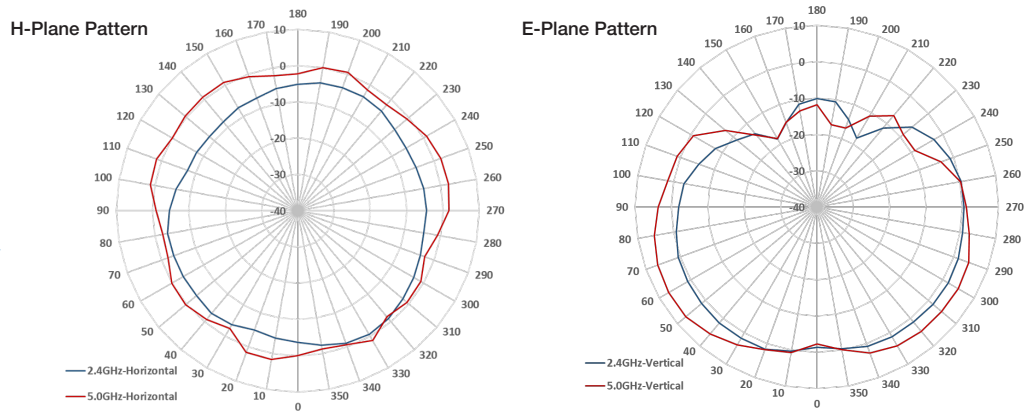
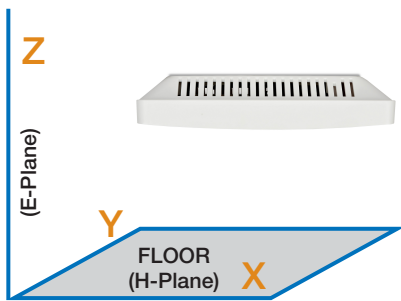
| FORTIAP 321E | | | | |
|-----------------------|-------------------------------------|----------------------|-----------------------------------|----------------------|
| | RADIO 1 | | RADIO 2 | |
| | 2.4 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) |
| 802.11b | | | | |
| 1 | 20 | -96 | — | — |
| 2 | 20 | -95 | — | — |
| 5.5 | 20 | -92 | — | — |
| 11 | 20 | -89 | — | — |
| 802.11g/a | | | | |
| 6 | 20 | -93 | 20 | -91 |
| 9 | 20 | -91 | 20 | -90 |
| 12 | 20 | -90 | 20 | -89 |
| 18 | 19 | -88 | 19 | -86 |
| 24 | 19 | -85 | 19 | -83 |
| 36 | 18 | -82 | 18 | -80 |
| 48 | 18 | -77 | 18 | -76 |
| 54 | 17 | -75 | 18 | -74 |
| 802.11n HT20 | | | | |
| MCS0 | 20 | -91 | 20 | -91 |
| MCS1 | 20 | -89 | 20 | -88 |
| MCS2 | 20 | -88 | 19 | -86 |
| MCS3 | 20 | -83 | 19 | -83 |
| MCS4 | 19 | -80 | 19 | -79 |
| MCS5 | 18 | -75 | 18 | -75 |
| MCS6 | 17 | -73 | 18 | -74 |
| MCS7 | 17 | -71 | 18 | -72 |
| 802.11n HT40 | | | | |
| MCS0 | 20 | -89 | 19 | -88 |
| MCS1 | 20 | -86 | 19 | -85 |
| MCS2 | 20 | -84 | 18 | -82 |
| MCS3 | 20 | -81 | 18 | -79 |
| MCS4 | 19 | -77 | 18 | -76 |
| MCS5 | 18 | -73 | 18 | -72 |
| MCS6 | 17 | -71 | 18 | -70 |
| MCS7 | 17 | -68 | 17 | -69 |
| 802.11ac VHT20 | | | | |
| MCS0 | — | — | 20 | -91 |
| MCS1 | — | — | 20 | -88 |
| MCS2 | — | — | 19 | -86 |
| MCS3 | — | — | 18 | -83 |
| MCS4 | — | — | 18 | -79 |
| MCS5 | — | — | 18 | -75 |
| MCS6 | — | — | 18 | -74 |
| MCS7 | — | — | 18 | -72 |
| MCS8 | — | — | 18 | -69 |
| 802.11ac VHT40 | | | | |
| MCS0 | — | — | 19 | -88 |
| MCS1 | — | — | 19 | -85 |
| MCS2 | — | — | 18 | -82 |
| MCS3 | — | — | 18 | -79 |
| MCS4 | — | — | 18 | -76 |
| MCS5 | — | — | 18 | -72 |
| MCS6 | — | — | 18 | -70 |
| MCS7 | — | — | 17 | -69 |
| MCS8 | — | — | 17 | -65 |
| MCS9 | — | — | 17 | -64 |

RF Rx/Tx Performance Table

| STANDARD / DATA RATE | FORTIAP 321E | | | |
|----------------------|-------------------------------------|----------------------|-----------------------------------|----------------------|
| | RADIO 1 | | RADIO 2 | |
| 802.11ac VHT80 | 2.4 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) |
| MCS0 | — | — | 19 | -88 |
| MCS1 | — | — | 19 | -85 |
| MCS2 | — | — | 18 | -82 |
| MCS3 | — | — | 18 | -79 |
| MCS4 | — | — | 18 | -76 |
| MCS5 | — | — | 18 | -72 |
| MCS6 | — | — | 18 | -70 |
| MCS7 | — | — | 17 | 69 |
| MCS8 | — | — | 17 | -65 |
| MCS9 | — | — | 17 | -64 |

Antenna Radiation Patterns

FAP-321E



Highlights

FortiAP 221E and 223E

The FortiAP 221E and 223E are medium-density 802.11ac Wave 2 access points. These enterprise-class access points are ideal for medium-density environments such as an office or classroom with performance throughput of up to 867 Mbps.



 **802.11ac Wave 2 | Dual Radio 2.4 and 5 GHz | 4 Internal/External Antennas**

 **2x2 MU-MIMO | Up to 400 + 867 Mbps**

Specifications

| | FORTIAP 221E | FORTIAP 223E |
|--|--|--|
| Hardware | | |
| Hardware Type | Indoor AP | Indoor AP |
| Number of Radios | 2 + 1 BLE | 2 + 1 BLE |
| Number of Antennas | 4 Internal + 1 Internal BLE | 4 External + 1 Internal BLE |
| Antenna Type and Peak Gain | Patch: 4 dBi for 2.4 GHz, 5 dBi for 5 GHz | Dipole: 4 dBi for 2.4 GHz, 5 dBi for 5 GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 | |
| Radio 1 Capabilities | 2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (256 QAM) | 2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (256 QAM) |
| Radio 2 Capabilities | 5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) | 5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) |
| Maximum Data Rate | Radio 1: up to 400 Mbps Radio 2: up to 867 Mbps | Radio 1: up to 400 Mbps Radio 2: up to 867 Mbps |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 4 dBm max TX power | |
| Interfaces | 1x 10/100/1000 Base-T RJ45 | 1x 10/100/1000 Base-T RJ45 |
| Power over Ethernet (PoE) | IEEE 802.3af | IEEE 802.3af |
| Simultaneous SSIDs | 16 (14 if background scanning enabled) | |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST | |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist | |
| Maximum Tx Power | 2.4 GHz: 23 dBm / 200 mW (2 chains combined)* 5 GHz: 24 dBm / 251 mW (2 chains combined)* | |
| Kensington Lock | Yes | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.1Q, 802.1X, 802.3af, 802.3az | |
| SSID Types Supported | Local-Bridge, Tunnel, Mesh | Local-Bridge, Tunnel, Mesh |
| Per Radio Client Capacity | Up to 512 | Up to 512 |
| Cellular Co-existence | Yes | Yes |
| Reset Button | Yes | Yes |
| LED Off Mode | Yes | Yes |
| Advanced 802.11 Features | | |
| 802.11ac Wave 2 MU-MIMO | Yes | Yes |
| Transmit Beam Forming (TxBF) | Yes | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes | Yes |
| Maximum Likelihood Demodulation (MLD) | Yes | Yes |
| Maximum Ratio Combining (MRC) | Yes | Yes |

| | FORTIAP 221E | FORTIAP 223E |
|---|---|---|
| A-MPDU and A-MSDU Packet Aggregation | Yes | Yes |
| MIMO Power Save | Yes | Yes |
| Short Guard Interval | Yes | Yes |
| Wireless Monitoring Capabilities | | |
| Rogue Scan Radio Modes | Background, Dedicated | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated | Background, Dedicated |
| Packet Sniffer Mode | Yes | Yes |
| Spectrum Analyzer | Yes | Yes |
| Dimensions | | |
| Length x Width x Height | 6.3 x 6.3 x 1.85 inches (160 x 160 x 47 mm) | |
| Weight | 1.1 lbs (0.5 kg) | 1.1 lbs (0.5 kg) |
| Package (shipping) Weight | 4.95 lbs (2.2 kg) | 5.3 lbs (2.4 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall | Ceiling, T-Rail, and Wall |
| Included Accessories | Mount kits for Ceiling, T-Rail, and Wall | Mount kits for Ceiling, T-Rail, and Wall, 4 dipole antennas |
| Environment | | |
| Power Supply | SP-FAP200-PA-XX, GPI-115, or GPI-130 | |
| Power Consumption (Max.) | 12.36 W | 12.36 W |
| Humidity | 5–90% non-condensing | 5–90% non-condensing |
| Operating / Storage Temperature | -4–113°F (-20–45°C) / -40–158°F (-40–70°C) | |
| Directives | Low Voltage Directive • RoHS | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No | No |
| Mean Time Between Failures | >30 Years | >30 Years |
| IP Rating | — | — |
| Surge Protection Built In | — | — |
| Hit-less PoE Failover | No | No |
| Certifications | | |
| Wi-Fi Alliance Certified | Yes | Yes |
| DFS | FCC, IC, CE, Japan, Taiwan, Korea | FCC, IC, CE, Japan, Taiwan, Korea |
| Warranty | | |
| Limited Lifetime Warranty | Yes | Yes |

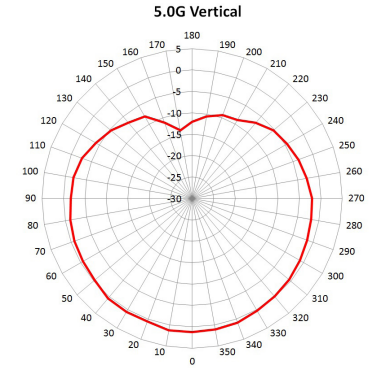
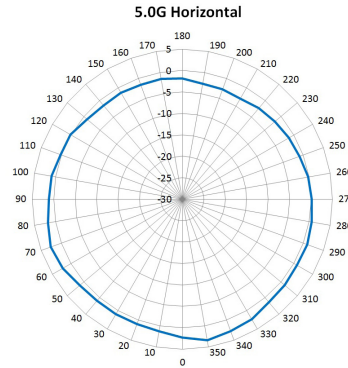
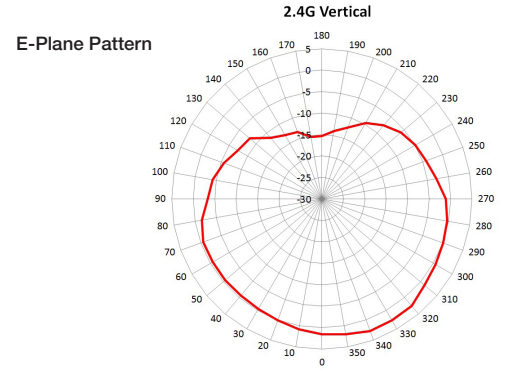
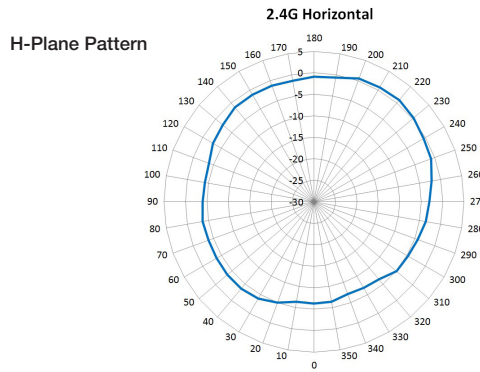
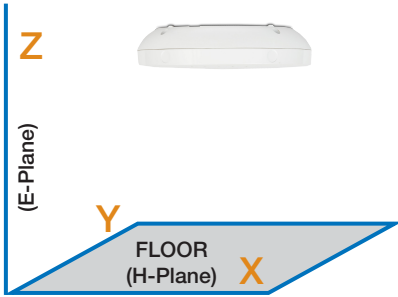
* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

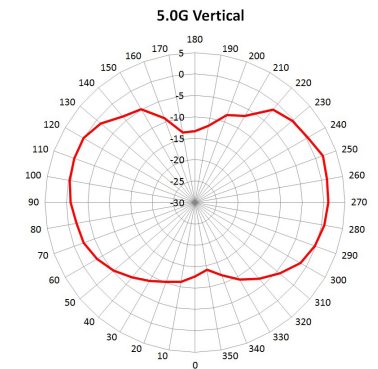
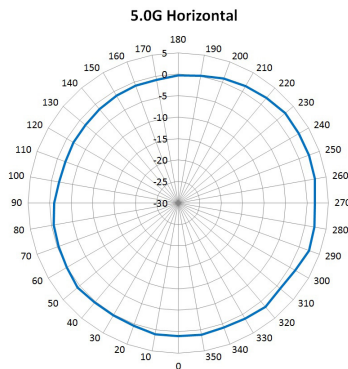
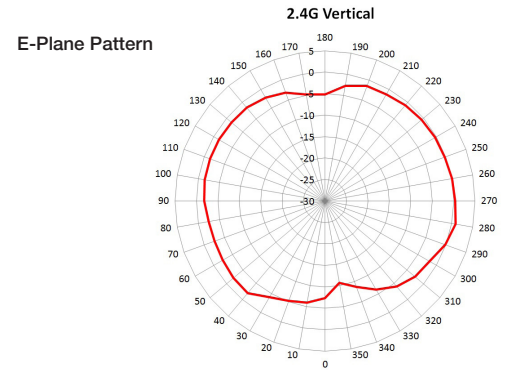
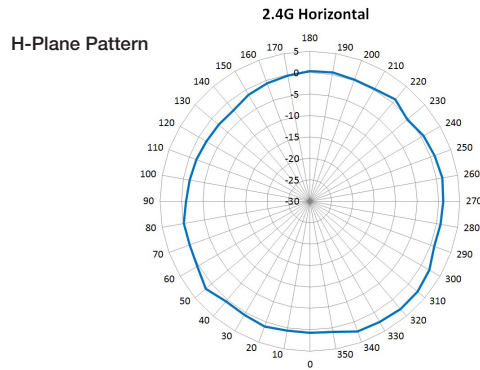
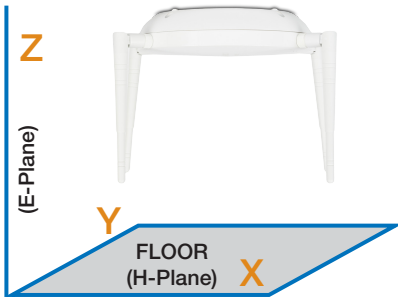
| FORTIAP 221E / 223E | | | | |
|-----------------------|---------------------------|----------------------|-------------------------|----------------------|
| | RADIO 1 | | RADIO 2 | |
| 802.11 a/g | 2.4 GHz Tx Power (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power (dBm) | RX Sensitivity (dBm) |
| 6 Mbps | 20 | -93 | 21 | -91 |
| 9 Mbps | 20 | -91 | 21 | -90 |
| 12 Mbps | 20 | -90 | 21 | -89 |
| 18 Mbps | 19 | -88 | 21 | -86 |
| 24 Mbps | 19 | -85 | 21 | -83 |
| 36 Mbps | 18 | -82 | 21 | -80 |
| 48 Mbps | 18 | -77 | 19 | -76 |
| 54 Mbps | 17 | -75 | 19 | -74 |
| 802.11n HT20 | | | | |
| MCS 0/8/16 | 20 | -91 | 21 | -91 |
| MCS 1/9/17 | 19 | -89 | 21 | -88 |
| MCS 2/10/18 | 19 | -86 | 21 | -86 |
| MCS 3/11/19 | 18 | -83 | 21 | -83 |
| MCS 4/12/20 | 18 | -80 | 21 | -79 |
| MCS 5/13/21 | 17 | -75 | 21 | -75 |
| MCS 6/14/22 | 17 | -73 | 19 | -74 |
| MCS 7/15/23 | 16 | -71 | 19 | -72 |
| 802.11n HT40 | | | | |
| MCS 0/8/16 | 19 | -89 | 20 | -88 |
| MCS 1/9/17 | 19 | -86 | 20 | -85 |
| MCS 2/10/18 | 18 | -84 | 20 | -82 |
| MCS 3/11/19 | 18 | -81 | 20 | -79 |
| MCS 4/12/20 | 17 | -77 | 20 | -76 |
| MCS 5/13/21 | 17 | -73 | 20 | -72 |
| MCS 6/14/22 | 16 | -71 | 19 | -70 |
| MCS 7/15/23 | 16 | -69 | 19 | -69 |
| 802.11ac VHT20 | | | | |
| MCS 0 | 19 | -91 | 21 | -91 |
| MCS 1 | 19 | -89 | 21 | -88 |
| MCS 2 | 19 | -86 | 21 | -86 |
| MCS 3 | 18 | -83 | 21 | -83 |
| MCS 4 | 18 | -80 | 21 | -79 |
| MCS 5 | 18 | -76 | 21 | -75 |
| MCS 6 | 18 | -73 | 19 | -74 |
| MCS 7 | 18 | -71 | 19 | -72 |
| MCS 8 | 18 | -68 | 18 | -69 |
| 802.11ac VHT40 | | | | |
| MCS 0 | 19 | -89 | 20 | -88 |
| MCS 1 | 19 | -86 | 20 | -85 |
| MCS 2 | 19 | -84 | 20 | -82 |
| MCS 3 | 18 | -81 | 20 | -79 |
| MCS 4 | 17 | -77 | 20 | -76 |
| MCS 5 | 17 | -73 | 20 | -72 |
| MCS 6 | 17 | -71 | 19 | -70 |
| MCS 7 | 17 | -69 | 19 | -69 |
| MCS 8 | 17 | -68 | 18 | -65 |
| MCS 9 | 16 | -66 | 17 | -64 |
| 802.11ac VHT80 | | | | |
| MCS 0 | — | — | 19 | -85 |
| MCS 1 | — | — | 19 | -83 |
| MCS 2 | — | — | 19 | -80 |
| MCS 3 | — | — | 19 | -77 |
| MCS 4 | — | — | 19 | -74 |
| MCS 5 | — | — | 19 | -71 |
| MCS 6 | — | — | 18 | -69 |
| MCS 7 | — | — | 18 | -68 |
| MCS 8 | — | — | 17 | -63 |
| MCS 9 | — | — | 17 | -61 |

Antenna Radiation Patterns

FAP-221E



FAP-223E




Highlights

FortiAP 231E

The FortiAP 231E is a tri-radio medium-density 802.11ac Wave 2 access point. This enterprise-class access point is ideal for environments such as offices, classrooms, or retail establishments with performance throughput of up to 867 Mbps per radio. The AP can be configured for dual 5 GHz band access while still providing coverage for devices on the 2.4 GHz band or can be configured to offer dedicated scanning with the third radio.



 **802.11ac Wave 2 | Tri Radio 5 GHz + 2.4 GHz + scanning or 5 GHz + 5 GHz + scanning or 5 GHz + 5 GHz + 2.4 GHz | 6 Internal Antennas**

 **2x2 MIMO | Up to 867 + 867 + 400 Mbps**

Specifications

| FORTIAP 231E | |
|--|--|
| Hardware | |
| Hardware Type | Indoor AP |
| Number of Radios | 3 + 1 BLE |
| Number of Antennas | 6 Internal + 1 BLE internal |
| Antenna Type and peak Gain | PIFA: 4 dBi for 2.4 GHz, 5 dBi for 5 GHz |
| Frequency Bands (GHz) | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | 2.4 GHz or 5.0 GHz (high band) a/b/g/n/ac W2 (2x2:2 stream) 20/40/80 MHz (256 QAM) |
| Radio 2 Capabilities | 5.0 GHz a/n/ac W2 (2x2:2 stream) 20/40/80 MHz (256 QAM) |
| Radio 3 Capabilities | 2.4/5.0 GHz dual band b/g/n (2x2:2 stream) 20/40 MHz (256 QAM) |
| Maximum Data Rate | Radio 1: up to 867 Mbps Radio 2: up to 867 Mbps Radio 3: up to 400 Mbps |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 6 dBm max TX power |
| Interfaces | 2x 10/100/1000 Base-T RJ45, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | IEEE 802.3af or 802.3at |
| Simultaneous SSIDs | Up to 24 (21 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or Pre-shared key, WEP, Web Captive Portal, MAC blacklist and allowlist |
| Maximum Tx Power | 2.4 GHz: 24 dBm / 251 mW (2 chains combined)* 5 GHz: 25 dBm / 316 mW (2 chains combined)* |
| Kensington Lock | Yes |
| IEEE Standards | 802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at |
| SSID Types Supported | Local-Bridge, Mesh, & Tunnel |
| Per Radio Client Capacity | Up to 512 for Radio 1 & 2, Up to 128 for Radio 3 |
| Cellular Co-existence** | Yes |
| Reset Button | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| 802.11ac MU-MIMO Wave 2 | Yes |
| Transmit Beam Forming (TxBF) | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes |

| FORTIAP 231E | |
|---|--|
| Maximum Likelihood Demodulation (MLD) | Yes |
| Maximum Ratio Combining (MRC) | Yes |
| A-MPDU and A-MSDU Packet Aggregation | Yes |
| MIMO Power Save | Yes |
| Short Guard Interval | Yes |
| OFDMA | No |
| Wireless Monitoring Capabilities | |
| Rogue Scan Radio Modes | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 7.87 x 7.87 x 1.81 inches (200 x 200 x 46 mm) |
| Weight | 1.2 lbs (0.55 kg) |
| Package (shipping) Weight | 2.5 lbs (1.15 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall |
| Included Accessories | Mount kits for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | SP-FAP200-PA-XX, GPI-130 |
| Power Consumption (Maximum) | 17 W with 802.3at PoE, 12.9 W with 802.3af PoE- reduced TX power (13dBm per radio) |
| Humidity | 5–93% non-condensing |
| Operating / Storage Temperature | 32–104°F (0–40°C) / -31–158°F (-35–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | >10 Years |
| IP Rating | — |
| Surge Protection Built In | — |
| Hit-less PoE Failover | No |
| Certifications | |
| WiFi Alliance Certified | Yes |
| DFS | FCC, CE |
| Warranty | |
| Limited Lifetime Warranty | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

** Additional filtration added to reduce interference in 2.4 GHz band from nearby cellular equipment.

RF Rx/Tx Performance Table

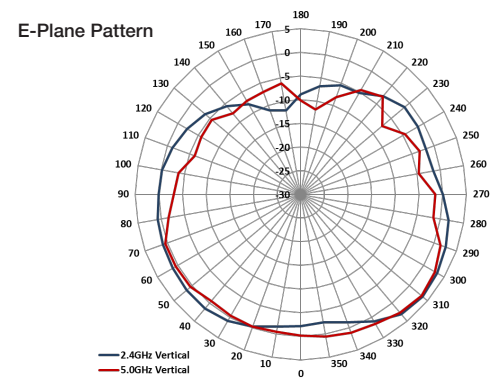
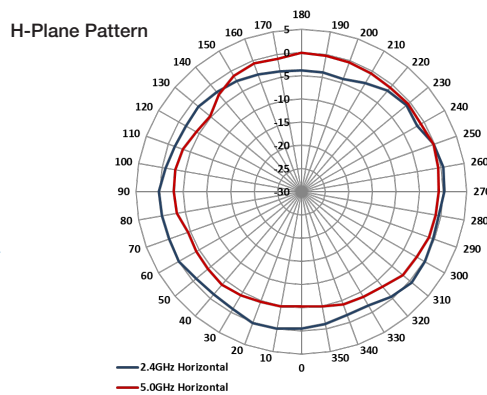
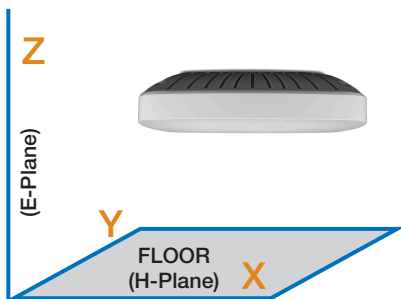
| FORTIAP 231E | | | | |
|-----------------------|-------------------------------------|----------------------|-----------------------------------|----------------------|
| 802.11b | 2.4 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) |
| 1 | 20 | -98 | — | — |
| 2 | 20 | -97 | — | — |
| 5.5 | 20 | -94 | — | — |
| 11 | 20 | -91 | — | — |
| 802.11g/a | | | | |
| 6 | 20 | -96 | 20 | -94 |
| 9 | 20 | -94 | 20 | -93 |
| 12 | 20 | -93 | 20 | -92 |
| 18 | 19 | -91 | 20 | -89 |
| 24 | 24 | -87 | 20 | -86 |
| 36 | 18 | -84 | 19 | -83 |
| 48 | 17 | -79 | 18 | -78 |
| 54 | 17 | -78 | 17 | -76 |
| 802.11n HT20 | | | | |
| MCS0 | 20 | -95 | 19 | -94 |
| MCS1 | 20 | -93 | 19 | -91 |
| MCS2 | 18 | -90 | 19 | -89 |
| MCS3 | 18 | -87 | 19 | -86 |
| MCS4 | 17 | -84 | 19 | -82 |
| MCS5 | 17 | -79 | 18 | -77 |
| MCS6 | 17 | -77 | 17 | -76 |
| MCS7 | 16 | -76 | 17 | -74 |
| 802.11n HT40 | | | | |
| MCS0 | 19 | -93 | 19 | -90 |
| MCS1 | 19 | -90 | 19 | -88 |
| MCS2 | 19 | -88 | 19 | -86 |
| MCS3 | 18 | -84 | 19 | -82 |
| MCS4 | 18 | -81 | 19 | -79 |
| MCS5 | 17 | -76 | 18 | -75 |
| MCS6 | 17 | -75 | 17 | -73 |
| MCS7 | 16 | -73 | 17 | -71 |
| 802.11ac VHT20 | | | | |
| MCS0 | — | — | 19 | -90 |
| MCS1 | — | — | 19 | -87 |
| MCS2 | — | — | 19 | -85 |
| MCS3 | — | — | 19 | -82 |
| MCS4 | — | — | 19 | -79 |
| MCS5 | — | — | 18 | -73 |
| MCS6 | — | — | 17 | -72 |
| MCS7 | — | — | 17 | -73 |
| MCS8 | — | — | 17 | -67 |
| 802.11ac VHT40 | | | | |
| MCS0 | — | — | 19 | -87 |
| MCS1 | — | — | 19 | -83 |
| MCS2 | — | — | 19 | -81 |
| MCS3 | — | — | 19 | -78 |
| MCS4 | — | — | 19 | -75 |
| MCS5 | — | — | 18 | -73 |
| MCS6 | — | — | 17 | -70 |
| MCS7 | — | — | 17 | -68 |
| MCS8 | — | — | 17 | -64 |
| MCS9 | — | — | 16 | -62 |

RF Rx/Tx Performance Table

| FORTIAP 231E | | | | |
|----------------|-------------------------------------|----------------------|-----------------------------------|----------------------|
| 802.11ac VHT80 | 2.4 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | RX Sensitivity (dBm) |
| MCS0 | — | — | 18 | -84 |
| MCS1 | — | — | 18 | -80 |
| MCS2 | — | — | 18 | -78 |
| MCS3 | — | — | 18 | -75 |
| MCS4 | — | — | 18 | -72 |
| MCS5 | — | — | 17 | -70 |
| MCS6 | — | — | 16 | -67 |
| MCS7 | — | — | 16 | -65 |
| MCS8 | — | — | 16 | -61 |
| MCS9 | — | — | 15 | -59 |

Antenna Radiation Patterns

FAP-231E



Highlights

FortiAP 222E

The FAP-222E is a new member of our 802.11ac Wave 2 family with MU-MIMO capability and transmit beamforming capable of handling an astounding 512 clients per radio. This high-performance dual-band AP is ruggedized with an Ingress Protection IP67-rated enclosure capable of withstanding extended temperature ranges. The FAP-222E is suitable for deployment in harsh conditions. It has 4 external antennas for Wi-Fi and one Bluetooth and is suitable for mission-critical bridging or mesh deployments.



 **802.11ac Wave 2 | Dual Radio 2.4 and 5 GHz | High Gain Omnidirectional Antennas**

 **2x2 MU-MIMO | Up to 400 + 866.7 Mbps**

Specifications

| FORTIAP 222E | |
|--|---|
| Hardware | |
| Hardware Type | Outdoor AP |
| Number of Radios | 2 + 1 BLE |
| Number of Antennas | 4 External (Type N) + 1 BLE External (RP-SMA) |
| Antenna Type and Peak Gain | Dipole: 5 dBi for 2.4 GHz, 7 dBi for 5 GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | 2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (256 QAM) |
| Radio 2 Capabilities | 5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) |
| Maximum Data Rate | Radio 1: up to 400 Mbps, Radio 2: up to 867 Mbps |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 4 dBm max TX power |
| Interfaces | 1x 10/100/1000 Base-T RJ45 |
| Power over Ethernet (PoE) | IEEE 802.3af/at |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, EAPV0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, WPA3™ and with 802.1x or Preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power | 2.4 GHz: 27.2 dBm / 525 mW (2 chains combined)* 5 GHz: 29.5 dBm / 891 mW (2 chains combined)* |
| Kensington Lock | No |
| IEEE Standards | 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.1Q, 802.1X, 802.3af, 802.3at, 802.3az |
| SSID Types Supported | Local-Bridge, Tunnel & Mesh (when managed by controller) |
| Per Radio Client Capacity | Up to 512 |
| Cellular Co-existence | Yes |
| Reset Button | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| 802.11ac Wave2 MU-MIMO | Yes |
| Transmit Beam Forming (TxBF) | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes |
| Maximum Likelihood Demodulation (MLD) | Yes |

| FORTIAP 222E | |
|---|--|
| Maximum Ratio Combining (MRC) | Yes |
| A-MPDU and A-MSDU Packet Aggregation | Yes |
| MIMO Power Save | Yes |
| Short Guard Interval | Yes |
| Wireless Monitoring Capabilities | |
| Rogue Scan Radio Modes | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 9.8 x 8.66 x 2 inches (249 x 220 x 53 mm) |
| Weight | 3.40 lbs (1.54 kg) |
| Package (shipping) Weight | 8.40 lbs (3.81 kg) |
| Mounting Options | Wall Mount or Pole Mount |
| Included Accessories | Mounting kit for Wall or Pole, Grounding cable, 4 dipole Wi-Fi antennas, 1 BLE antenna |
| Environment | |
| Power Supply | GPI-115, or GPI-130 |
| Power Consumption (Maximum) | 12.95 W |
| Humidity | 5–90% non-condensing |
| Operating / Storage Temperature | -40–140°F (-40–60°C) / -40–158°F (-40–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | >10 Years |
| IP Rating | IP67 |
| Surge Protection Built In | Yes |
| Hit-less PoE Failover | No |
| Certifications | |
| Wi-Fi Alliance Certified | Yes |
| DFS | FCC, IC, CE, Japan, Taiwan |
| Warranty | |
| Limited Lifetime Warranty | Yes |

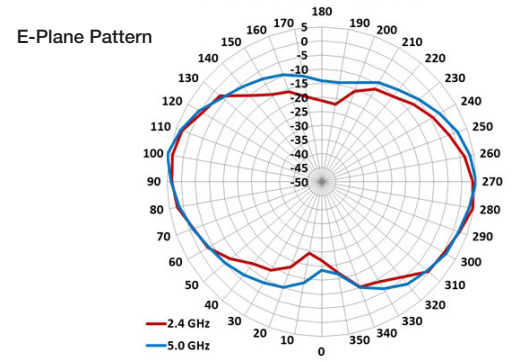
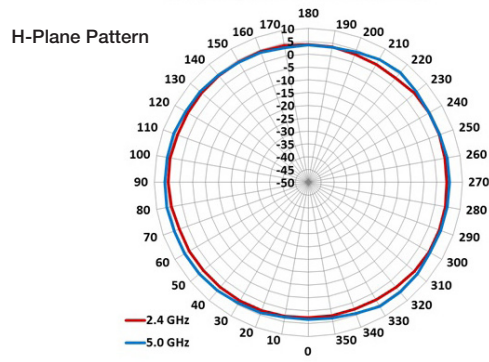
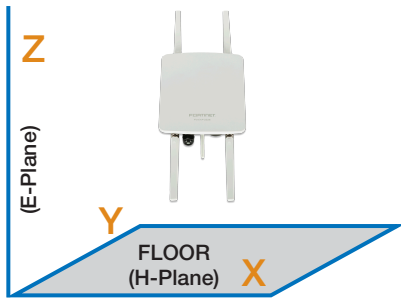
* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF Rx/Tx Performance Table

| FORTIAP 222E | | | | |
|-----------------------|-------------------------------------|--------------------------------|-----------------------------------|--------------------------------|
| | RADIO 1 | | RADIO 2 | |
| 802.11 a/g | 2.4 GHz Tx Power (dBm) per Chain | RX Sensitivity (dBm) per Chain | 5 GHz Tx Power (dBm) per Chain | RX Sensitivity (dBm) per Chain |
| 6 Mbps | 24.2 | -91 | 26.5 | -90 |
| 9 Mbps | 24.2 | -90 | 26.5 | -89 |
| 12 Mbps | 24.2 | -88 | 26.5 | -88 |
| 18 Mbps | 24.1 | -86 | 26.4 | -85 |
| 24 Mbps | 24.1 | -83 | 26.4 | -82 |
| 36 Mbps | 23.5 | -79 | 24.2 | -79 |
| 48 Mbps | 23.5 | -75 | 23.3 | -75 |
| 54 Mbps | 23.5 | -74 | 23.3 | -73 |
| 802.11n HT20 | | | | |
| MSC 0/8/16 | 24.5 | -91 | 26.5 | -90 |
| MSC 1/9/17 | 24.5 | -88 | 26.5 | -87 |
| MSC 2/10/18 | 24.5 | -86 | 26.5 | -85 |
| MSC 3/11/19 | 24.2 | -82 | 26.4 | -82 |
| MSC 4/12/20 | 24.2 | -78 | 26.4 | -78 |
| MSC 5/13/21 | 23.6 | -75 | 24.2 | -74 |
| MSC 6/14/22 | 23.1 | -74 | 23.2 | -72 |
| MSC 7/15/23 | 23.1 | -73 | 23.2 | -70 |
| 802.11n HT40 | | | | |
| MCS 0/8/16 | 23.8 | -89 | 26.4 | -87 |
| MCS 1/9/17 | 23.8 | -86 | 26.4 | -84 |
| MCS 2/10/18 | 23.8 | -84 | 26.4 | -82 |
| MCS 3/11/19 | 23.8 | -80 | 26.3 | -79 |
| MCS 4/12/20 | 23.8 | -77 | 26.3 | -75 |
| MCS 5/13/21 | 23.2 | -74 | 25.4 | -71 |
| MCS 6/14/22 | 22.6 | -73 | 24.5 | -69 |
| MCS 7/15/23 | 22.6 | -72 | 23.5 | -68 |
| 802.11ac VHT20 | | | | |
| MCS 0 | — | — | 26.4 | -90 |
| MCS 1 | — | — | 26.4 | -86 |
| MCS 2 | — | — | 26.4 | -84 |
| MCS 3 | — | — | 26.3 | -82 |
| MCS 4 | — | — | 26.3 | -80 |
| MCS 5 | — | — | 25.3 | -75 |
| MCS 6 | — | — | 23.3 | -73 |
| MCS 7 | — | — | 22.5 | -71 |
| MCS 8 | — | — | 22.4 | -68 |
| 802.11ac VHT40 | | | | |
| MCS 0 | — | — | 26.3 | -87 |
| MCS 1 | — | — | 26.3 | -85 |
| MCS 2 | — | — | 26.3 | -83 |
| MCS 3 | — | — | 26.3 | -80 |
| MCS 4 | — | — | 26.3 | -77 |
| MCS 5 | — | — | 25.3 | -73 |
| MCS 6 | — | — | 23.3 | -72 |
| MCS 7 | — | — | 22.2 | -70 |
| MCS 8 | — | — | 22.1 | -66 |
| MCS 9 | — | — | 21.9 | -64 |
| 802.11ac VHT80 | | | | |
| MCS 0 | — | — | 25.4 | -84 |
| MCS 1 | — | — | 25.4 | -81 |
| MCS 2 | — | — | 25.4 | -78 |
| MCS 3 | — | — | 25.4 | -74 |
| MCS 4 | — | — | 25.3 | -70 |
| MCS 5 | — | — | 24.2 | -66 |
| MCS 6 | — | — | 23.6 | -65 |
| MCS 7 | — | — | 22.3 | -64 |
| MCS 8 | — | — | 22.1 | -60 |
| MCS 9 | — | — | 22.1 | -60 |

Antenna Radiation Patterns

FAP-222E



Highlights

FortiAP 224E

The FAP-224E is a new member of our 802.11ac Wave 2 family with MU-MIMO capability and transmit beamforming capable of handling an astounding 512 clients per radio. This high-performance dual-band AP is ruggedized with an Ingress Protection IP67-rated enclosure capable of withstanding extended temperature ranges. The FAP-224E is suitable for deployment in harsh conditions. It has 4 internal antennas for Wi-Fi and one Bluetooth and also provides SFP cage to allow for long-distance fiber connectivity and is suitable for mission-critical bridging or mesh deployments.



 **802.11ac Wave 2 | Dual Radio 2.4 and 5 GHz | 4 Internal Antennas**

 **2x2 MU-MIMO | Up to 400 + 867 Mbps**

Specifications

| FORTIAP 224E | |
|--|---|
| Hardware | |
| Hardware Type | Outdoor AP |
| Number of Radios | 2 |
| Number of Antennas | 4 Internal + 1 BLE Internal |
| Antenna Type and Peak Gain | Dipole: 6 dBi for 2.4 GHz, 8 dBi for 5 GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | 2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (256 QAM) |
| Radio 2 Capabilities | 5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) |
| Maximum Data Rate | Radio 1: up to 400 Mbps Radio 2: up to 867 Mbps |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 4 dBm max TX power |
| Interfaces | 1x 10/100/1000 Base-T RJ45, 1x 10/100/1000 Base-T RJ45 (PoE), 1x optical fiber SFP cage |
| Power over Ethernet (PoE) | IEEE 802.3af/at |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™, WPA2™, and WPA3™ with 802.1x or Preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power | 2.4 GHz: 24 dBm / 251 mW (2 chains combined)* 5 GHz: 24 dBm / 251 mW (2 chains combined)* |
| Kensington Lock | No |
| IEEE Standards | 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.1Q, 802.1X, 802.3af, 802.3at, 802.3az |
| SSID Types Supported | Local-Bridge, Tunnel & Mesh (when managed by controller) |
| Per Radio Client Capacity | Up to 512 |
| Cellular Co-existence | No |
| Reset Button | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| 802.11ac MU-MIMO Wave 2 | Yes |
| Transmit Beam Forming (TxBF) | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes |

| FORTIAP 224E | |
|---|--|
| Maximum Likelihood Demodulation (MLD) | Yes |
| Maximum Ratio Combining (MRC) | Yes |
| A-MPDU and A-MSDU Packet Aggregation | Yes |
| MIMO Power Save | Yes |
| Short Guard Interval | Yes |
| Wireless Monitoring Capabilities | |
| Rogue Scan Radio Modes | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 8.4 x 8.4 x 2.66 inches (214 x 214 x 67.5 mm) |
| Weight | 3.8 lbs (1.7 kg) |
| Package (shipping) Weight | 5.82 lbs (2.64 kg) |
| Mounting Options | Wall Mount or Pole Mount |
| Included Accessories | Mounting kit for Wall or Pole, Grounding cable |
| Environment | |
| Power Supply | GPI-115, or GPI-130 |
| Power Consumption (Maximum) | 12.95 W |
| Humidity | 5–90% non-condensing |
| Operating / Storage Temperature | -4–149°F (-20–65°C) / -4–158°F (-20–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | >10 Years |
| IP Rating | IP67 |
| Surge Protection Built In | Yes |
| Hit-less PoE Failover | No |
| Certifications | |
| Wi-Fi Alliance Certified | Yes |
| DFS | CE |
| Warranty | |
| Limited Lifetime Warranty | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

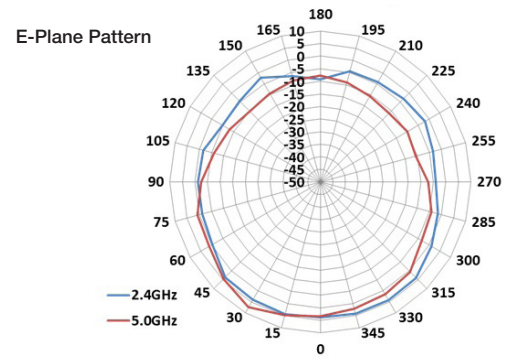
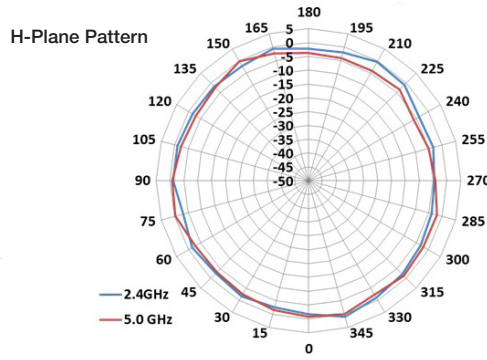
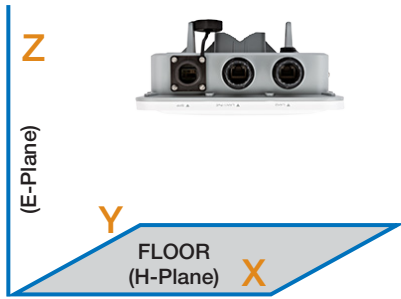
RF Rx/Tx Performance Table

| FORTIAP 224E | | | | |
|--------------------|-------------------------------------|--------------------------------|-----------------------------------|--------------------------------|
| 802.11 a/b/g | RADIO 1 | | RADIO 2 | |
| | 2.4 GHz Tx Power (dBm) per Chain | RX Sensitivity (dBm) per Chain | 5 GHz Tx Power (dBm) per Chain | RX Sensitivity (dBm) per Chain |
| 1 Mbps | 24 | -96 | — | — |
| 6 Mbps | 24 | -93 | 24 | -93 |
| 9 Mbps | 24 | -92 | 24 | -91 |
| 12 Mbps | 24 | -90 | 24 | -90 |
| 18 Mbps | 24 | -88 | 24 | -88 |
| 24 Mbps | 24 | -85 | 24 | -85 |
| 36 Mbps | 23 | -82 | 23 | -82 |
| 48 Mbps | 22 | -78 | 22 | -77 |
| 54 Mbps | 22 | -76 | 22 | -76 |
| 802.11 HT20 | | | | |
| MCS 0 (BPSK) | 24 | -92 | 24 | -91 |
| MCS 1 (QPSK) | 24 | -89 | 24 | -88 |
| MCS 2 (QPSK) | 24 | -87 | 23 | -85 |
| MCS 3 (16-QAM) | 24 | -84 | 23 | -83 |
| MCS 4(16-QAM) | 23 | -81 | 22 | -80 |
| MCS 5 (64-QAM) | 23 | -76 | 22 | -75 |
| MCS 6 (64-QAM) | 23 | -74 | 21 | -74 |
| MCS 7 (64-QAM) | 22 | -73 | 20 | -72 |
| MCS 8 (256-QAM) | — | — | 18 | -68 |
| MCS 9 (256-QAM) | — | — | — | — |
| 802.11 HT40 | | | | |
| MCS 0 (BPSK) | 23 | -90 | 23 | -89 |
| MCS 1 (QPSK) | 23 | -87 | 22 | -86 |
| MCS 2 (QPSK) | 23 | -85 | 22 | -83 |
| MCS 3 (16-QAM) | 23 | -81 | 21 | -80 |
| MCS 4(16-QAM) | 23 | -78 | 21 | -77 |
| MCS 5 (64-QAM) | 23 | -74 | 21 | -73 |
| MCS 6 (64-QAM) | 22 | -73 | 20 | -72 |
| MCS 7 (64-QAM) | 22 | -71 | 19 | -70 |
| MCS 8 (256-QAM) | — | — | 18 | -66 |
| MCS 9 (256-QAM) | — | — | 17 | -64 |
| 802.11 HT80 | | | | |
| MCS 0 (BPSK) | — | — | 22 | -86 |
| MCS 1 (QPSK) | — | — | 22 | -83 |
| MCS 2 (QPSK) | — | — | 22 | -81 |
| MCS 3 (16-QAM) | — | — | 21 | -78 |
| MCS 4(16-QAM) | — | — | 21 | -74 |
| MCS 5 (64-QAM) | — | — | 21 | -70 |
| MCS 6 (64-QAM) | — | — | 20 | -69 |
| MCS 7 (64-QAM) | — | — | 19 | -67 |
| MCS 8 (256-QAM) | — | — | 17 | -63 |
| MCS 9 (256-QAM) | — | — | 16 | -60 |

Maximum capability of the hardware provided (excluding antenna gain).

Antenna Radiation Patterns

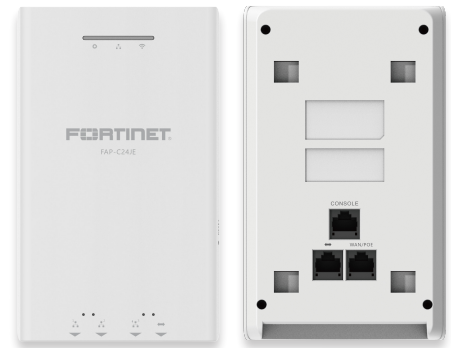
FAP-224E



Highlights

FortiAP C24JE

The FAP-C24JE is a performance/price-competitive 2.4 GHz/5 GHz concurrent MU-MIMO wall plate AP with support of PoE IP phone and RJ45 pass-through. This access point can be installed in minutes, right over the existing wall plate.



 **802.11 ac Wave 2 | Dual Radio 2.4 & 5 GHz | 4 Internal Antennas**

 **Up to 300 + 867 Mbps**

Specifications

| FORTIAP C24JE | |
|--|---|
| Hardware | |
| Hardware Type | Wall Plate AP |
| Number of Radios | 2 |
| Number of Antennas | 4 Internal |
| Antenna Type and Peak Gain | Chip: 1.5 dBi for 2.4 GHz, 2 dBi for 5 GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850 |
| Radio 1 Capabilities | 2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (64 QAM) |
| Radio 2 Capabilities | 5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) |
| Maximum Data Rate | Radio 1: up to 300 Mbps Radio 2: up to 867 Mbps |
| Bluetooth Low Energy Radio | — |
| Interfaces | 6x 10/100/1000 Base-T RJ45 Ports (1x 802.3at PoE (PD), 1x 802.3af PoE (PSE), 2x Non-PoE Ports, 1x Pass-through in, 1x Pass-through out, 1x RS-232 RJ45 Serial Port) |
| Serial Console Port | 1x RJ45 RS232 |
| Power over Ethernet (PoE) | 802.3af (max PSE output of 4W) or 802.3at (full 802.3af PSE output) PSE functionality is only supported when powered via PoE/PoE+ |
| Simultaneous SSIDs | Up to 8 (4 per radio) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-FAST |
| User/Device Authentication | WPA™ and WPA2™ with 802.1x or preshared key, WEP, Web Captive Portal, MAC blacklist & allowlist |
| Maximum Tx Power | 23 dBm / 100mW (2 chains combined)* |
| Kensington Lock | No |
| IEEE Standards | 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.1Q, 802.1X, 802.3af, 802.3at, 802.3az |
| SSID Types Supported | Local-Bridge, Tunnel |
| Per Radio Client Capacity | Up to 64 |
| Cellular Co-existence | No |
| Reset Button | Yes |
| LED Off Mode | Yes |
| Advanced 802.11 Features | |
| 802.11ac MU-MIMO Wave 2 | Yes |
| Transmit Beam Forming (TxBF) | Yes |
| Low-Density Parity Check (LDPC) Encoding | Yes |

| FORTIAP C24JE | |
|---|--|
| Maximum Likelihood Demodulation (MLD) | Yes |
| Maximum Ratio Combining (MRC) | Yes |
| A-MPDU and A-MSDU Packet Aggregation | Yes |
| MIMO Power Save | Yes |
| Short Guard Interval | Yes |
| Wireless Monitoring Capabilities | |
| Rogue Scan Radio Modes | Background, Dedicated |
| WIPS / WIDS Radio Modes | Background, Dedicated |
| Packet Sniffer Mode | No |
| Spectrum Analyzer | No |
| Dimensions | |
| Length x Width x Height | 6.69 x 4.04 x 1.08 inches 170 x 102.5 x 27.5 mm |
| Weight | 1.3 lbs (0.6 kg) |
| Package (shipping) Weight | 1.6 lbs (0.74 kg) |
| Mounting Options | Wall Plate, Optional Desk Mount FAP-MNT-WJ-20 |
| Included Accessories | Mounting kit for Wall Plate |
| Environment | |
| Power Supply | GPI-115, GPI-130, or SP-FAP400-PA |
| Power Consumption (Maximum) | Depends on PoE connected |
| Humidity | 5–90% non-condensing |
| Operating / Storage Temperature | 32–104°F (0–40°C) / -4–158°F (-20–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Between Failures | >10 Years |
| IP Rating | — |
| Surge Protection Built In | — |
| Hit-less PoE Failover | No |
| Certifications | |
| Wi-Fi Alliance Certified | No |
| DFS | No |
| Warranty | |
| Limited Lifetime Warranty | Yes |

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

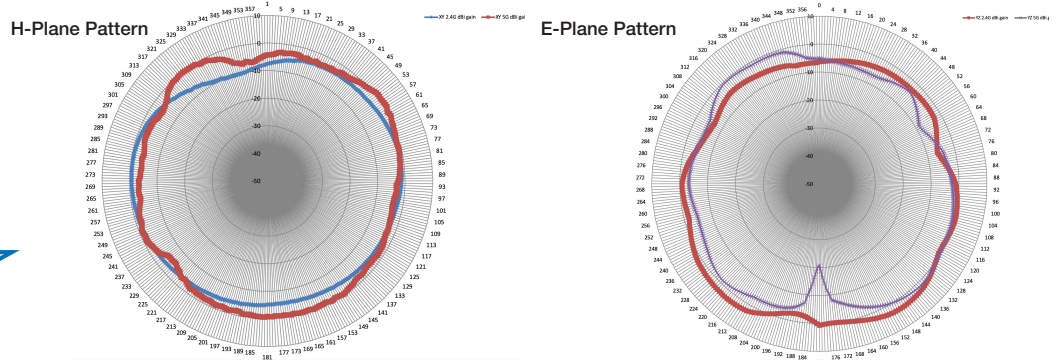
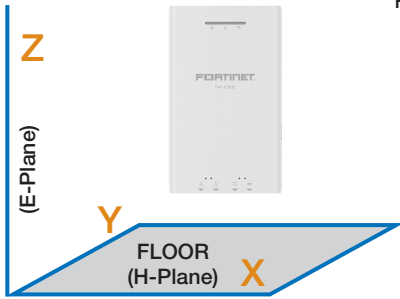
RF Rx/Tx Performance Table

| FORTIAP C24JE | | | | |
|-----------------------|--|--|--|--|
| 802.11 a/g | Radio 1 2.4 GHz | | Radio 2 5 GHz | |
| | Maximum TX Power per Transmit Chain (dBm) | RX Sensitivity (dBm) per Receiver Chain | Maximum TX Power per Transmit Chain (dBm) | RX Sensitivity (dBm) per Receiver Chain |
| 6 Mbps | 21 | -91 | 21 | -91 |
| 9 Mbps | 20 | -89 | 20 | -89 |
| 12 Mbps | 20 | -87 | 20 | -87 |
| 18 Mbps | 20 | -85 | 19 | -84 |
| 24 Mbps | 19 | -82 | 19 | -80 |
| 36 Mbps | 19 | -76 | 19 | -76 |
| 48 Mbps | 18 | -75 | 18 | -74 |
| 54 Mbps | 17 | -74 | 18 | -73 |
| 802.11 HT20 | | | | |
| MSC 0/8/16 (BPSK) | 20 | -90 | 19 | -91 |
| MSC 1/9/17 (QPSK) | 19 | -88 | 18 | -88 |
| MSC 2/10/18 (QPSK) | 19 | -85 | 18 | -84 |
| MSC 3/11/19 (16-QAM) | 19 | -83 | 17 | -80 |
| MSC 4/12/20 (16-QAM) | 19 | -76 | 17 | -76 |
| MSC 5/13/21 (64-QAM) | 18 | -72 | 17 | -73 |
| MSC 6/14/22 (64-QAM) | 17 | -72 | 16 | -71 |
| MSC 7/15/23 (64-QAM) | 16 | -71 | 16 | -70 |
| 802.11 HT40 | | | | |
| MSC 0/8/16 (BPSK) | 20 | -89 | 19 | -87 |
| MSC 1/9/17 (QPSK) | 19 | -87 | 18 | -84 |
| MSC 2/10/18 (QPSK) | 19 | -84 | 18 | -81 |
| MSC 3/11/19 (16-QAM) | 19 | -82 | 18 | -78 |
| MSC 4/12/20 (16-QAM) | 18 | -77 | 17 | -75 |
| MSC 5/13/21 (64-QAM) | 18 | -72 | 17 | -72 |
| MSC 6/14/22 (64-QAM) | 17 | -71 | 17 | -70 |
| MSC 7/15/23 (64-QAM) | 17 | -70 | 17 | -68 |
| MSC 8/16/24 (256-QAM) | 16 | -69 | 16 | -66 |
| MSC 9/17/25 (256-QAM) | 16 | -69 | 16 | -64 |
| 802.11 HT80 | | | | |
| MSC 0 (BPSK) | | | 19 | -85 |
| MSC 1 (QPSK) | | | 18 | -82 |
| MSC 2 (QPSK) | | | 18 | -80 |
| MSC 3 (16-QAM) | | | 18 | -77 |
| MSC 4 (16-QAM) | | | 17 | -75 |
| MSC 5 (64-QAM) | | | 17 | -74 |
| MSC 6 (64-QAM) | | | 17 | -72 |
| MSC 7 (64-QAM) | | | 17 | -69 |
| MSC 8 (256-QAM) | | | 16 | -65 |
| MSC 9 (256-QAM) | | | 16 | -61 |

Maximum capability of the Hardware provided (Excluding antenna gain)

Antenna Radiation Patterns

FAP-C24JE



Order Information

| Product | SKU | Description |
|----------------------|-----------------------|---|
| FortiAP 431F | FAP-431F | Indoor Wireless AP - Tri radio (2x 802.11 a/b/g/n/ac/ax, 4x4 MIMO and 1x 802.11 a/b/g/n/ac Wave 2, 1x1 MU-MIMO), internal antennas, 1x 10/100/1000/2500 Base-T RJ45, 1x 10/100/1000 Base-T RJ45, BT/BLE, 1x Type A USB, 1x RS-232 RJ45 Serial Port. Ceiling/wall mount kit included. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP400-PA. |
| | FC-10-F431F-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 433F | FAP-433F | Indoor Wireless AP - Tri radio (2x 802.11 a/b/g/n/ac/ax, 4x4 MIMO and 1x 802.11 a/b/g/n/ac Wave 2, 1x1 MU-MIMO), external antennas included, 1x 10/100/1000/2500 Base-T RJ45, 1x 10/100/1000 Base-T RJ45, BT/BLE, 1x Type A USB, 1x RS-232 RJ45 Serial Port. Ceiling/wall mount kit included. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP400-PA. |
| | FC-10-F433F-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 432F | FAP-432F | Outdoor Wireless FortiAP - Tri radio (1x 802.11b/g/n/ax 4x4 radio, 1 x 802.11a/n/ac/ax 4x4 Radio and 1x 802.11 a/b/g/n/ac Wave 2, 2x2), 1x 10/100/1000/2500 Base-T RJ45, 1x 10/100/1000 Base-T RJ45, BT/BLE + Zigbee, 1x Type A USB, 1x RS-232 RJ45 Serial Port. External Dual Band N-Type Omnidirectional antennas. Integrated mounting bracket for Antenna included + Wall/Pole Mount mounting kit. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP400-PA. |
| | FC-10-PF432-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 231F | FAP-231F | Indoor Wireless AP - Tri radio (802.11 b/g/n/ax 2x2 MU-MIMO, 802.11 a/n/ac/ax 2x2 MU-MIMO and 1x 802.11 a/b/g/n/ac Wave 2, 1x1), internal antennas, 2x 10/100/1000 RJ45 port, BT/BLE, 1x Type A USB, 1x RS-232 RJ45 Serial Port. Ceiling/wall mount kit included. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP200-PA. |
| | FC-10-PF231-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 234F | FAP-234F | Outdoor Wireless AP - Tri radio (802.11 b/g/n/ax 2x2 MU-MIMO, 802.11 a/n/ac/ax 2x2 MU-MIMO and 1x 802.11 a/b/g/n/ac Wave 2, 1x1), external antennas included, 2x 10/100/1000 RJ45 port, BT/BLE, 1x Type A USB, 1x RS-232 RJ45 Serial Port. Pole/wall mount kit included. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP400-PA. |
| | FC-10-P234F-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 23JF | FAP-23JF | Wall Plate AP - Dual radio (802.11 b/g/n/ax 2x2 MU-MIMO and 802.11 a/n/ac/ax 2x2 MU-MIMO), internal antennas, 7 x 10/100/1000 RJ45 port (1x 802.3at PoE PD, 1x 802.3af PoE PSE, 2x Non-PoE Ports), BT / BLE, 1x RS-232 RJ45 Serial Port. Wall plate mounting kit included For power order: 802.3af PoE injector GPI-130. |
| | FC-10-P23JF-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 421E | FAP-421E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 4x4 MU-MIMO), internal antennas, 2 x 10/100/1000 RJ45 port, . Ceiling/wall mount kit included. For power order: 802.3af PoE injector GPI-115 (limited features) or 802.3at PoE injector GPI-130 or AC adapter SP-FAP400-PA. |
| | FC-10-P421E-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 423E | FAP-423E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 4x4 MU-MIMO), external antennas included, 2 x 10/100/1000 RJ45 port, . Ceiling/wall mount kit included. For power order: 802.3af PoE injector GPI-115 (limited features) or 802.3at PoE injector GPI-130 or AC adapter SP-FAP400-PA. |
| | FC-10-P423E-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 321E | FAP-321E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 3x3 MIMO), internal antennas, 1 x 10/100/1000 RJ45 port, BT / BLE. Ceiling/wall mount kit included. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP200-PA. |
| | FC-10-P321E-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 221E | FAP-221E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2x2 MU-MIMO), internal antennas, 1 x 10/100/1000 RJ45 port, BT / BLE. Ceiling/wall mount kit included. For power order: 802.3af PoE injector GPI-115 or AC adapter SP-FAP200-PA. |
| | FC-10-PE221-247-02-DD | 24x7 Comprehensive FortiCare |
| FortiAP 223E | FAP-223E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2x2 MU-MIMO), external antennas included, 1 x 10/100/1000 RJ45 port, BT / BLE. Ceiling/wall mount kit included. For power order: 802.3af PoE injector GPI-115 or AC adapter SP-FAP200-PA. |
| | FC-10-PE223-247-02-DD | 24x7 Comprehensive FortiCare |
| FortiAP 231E | FAP-231E | Indoor Wireless AP - Tri-radio (802.11 a/b/g/n/ac Wave 2, 802.11a/n/ac Wave 2, 802.11 b/g/n, 2x2 MU-MIMO), internal antennas, 2 x 10/100/1000 RJ45 port, BT / BLE. Ceiling/wall mount kit included. For power order: 802.3at PoE injector GPI-130 or AC adapter SP-FAP200-PA. |
| | FC-10-P231E-247-02-DD | 24x7 FortiCare Contract |
| FortiAP 222E | FAP-222E | Outdoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2x2 MU-MIMO), external antennas included, 1 x 10/100/1000 RJ45 port, BT / BLE. Pole / wall mount, lightning grounding wire, and PoE injector included. |
| | FC-10-PE222-247-02-DD | 24x7 Comprehensive FortiCare |
| FortiAP 224E | FAP-224E | Outdoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac/ax Wave 2, 2x2 MU-MIMO), internal antennas, 2 x 10/100/1000 RJ45 port, 1 SFP port, BT / BLE, IP67 rated. Pole / wall mount, lightning grounding wire included. For power order: 802.3af PoE injector GPI-115. |
| | FC-10-PE224-247-02-DD | 24x7 Comprehensive FortiCare |
| FortiAP C24JE | FAP-C24JE | Wall Plate AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2x2 MU-MIMO), internal antennas, 4 x 10/100/1000 RJ45 port (1x 802.3at PoE PD, 1x 802.3af PoE PSE, 2x Non-PoE Ports), . Wall plate mounting kit included For power order: 802.3af PoE injector GPI-115 (limited features) or 802.3at PoE injector GPI-130. Optional accessory (desktop stand): FAP-MNT-WJ-20. |
| | FC-10-PC24E-247-02-DD | 24x7 FortiCare Contract |
| Gigabit PoE Injector | GPI-115 | 1-Port Gigabit PoE Power Injector, 802.3af 15.4 W, 10/100/1000. |
| | GPI-130 | 1-Port Gigabit PoE Power Injector, 802.3at up to 30 W. |
| Power Adapter | SP-FAP400-PA | AC Power Adapter for FAP-431F, FAP-433F, FAP-421E, FAP-423E, and FAP-C24JE. |
| | SP-FAP200-PA | AC Power Adapter for FAP-231F, FAP-221E, FAP-223E, FAP-231E, and FAP-321E. |
| Desktop Stand | FAP-MNT-WJ-20 | Desktop stand for FAP/FAP-C/FAP-U wall jack style APs. Converts wall mounting hardware included with unit to desktop mounting - 20 pack. |

Note: Additional external antenna options available for some models. See antenna datasheet for details.

Order Information

| REGION/COUNTRY SKU SUFFIX* | | | | | | | | |
|----------------------------|-------------------|------------------|---------------|--------------------|--------------------------|----------------------|--------------|--------------|
| Americas-FCC | Bangladesh | China | India | Europe ETSI | Indonesia | International | Japan | Korea |
| -A | -B | -C | -D | -E | -F | -I | -J | -K |
| Non-FFCA | Russia | Singapore | Taiwan | Ukraine | Vietnam, Thailand | World 2.4G | Egypt | |
| -N | -P | -S | -T | -U | -V | -W | -Y | |

Note: Additional countries may apply to given suffix codes. Please work with your local supplier for the correct model in your regulatory domain.



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