

DATA SHEET

FortiAP™ Series

Available in



Appliance

FortiLAN Cloud or FortiGate-managed Access Points



FortiAP™ access points are managed centrally by the integrated WLAN controller of any FortiGate® security appliance or through the FortiLAN Cloud provisioning and management portal. With the integration of the wireless controller functionality into the market-leading FortiGate appliance, these APs are perfect for campus and 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 console simplifies operations, ensuring consistency in effective policy enforcement and compliance.



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



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

Product Offerings

Wi-Fi 6E

FAP-431G
FAP-433G 4×4 Indoor tri-radio 11ax 6Ghz Capable APs

FAP-231G
FAP-233G 2×2 Indoor tri-radio 11ax 6Ghz Capable APs

802.11ax Wi-Fi 6

FAP-831F 8×8 Indoor tri-radio 11ax AP

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

FAP-432F 4×4 Ruggedized indoor/outdoor tri-radio 11ax AP, external antennas

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

FAP-234F 2×2 Ruggedized indoor/outdoor tri-radio 11ax AP, internal antennas

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

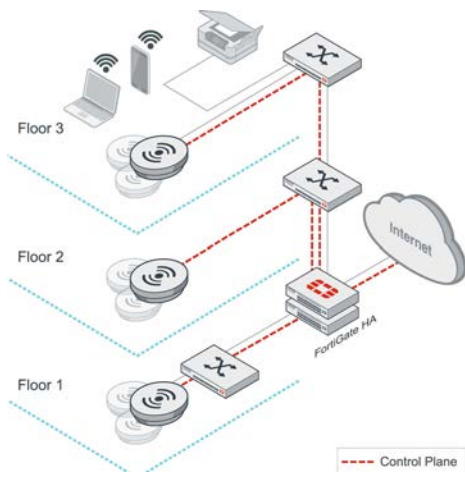
802.11ac (Wave 2) Wi-Fi 5

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

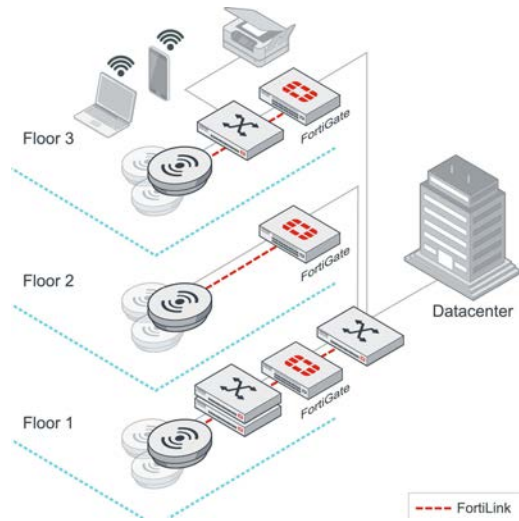
FAP-C24JE 2×2 Wall-mount dual-radio AP, internal antennas

DEPLOYMENT

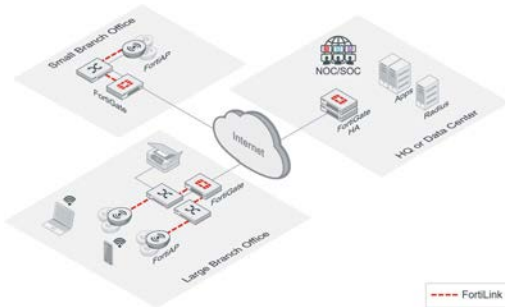
FortiAPs allow for a versatile collection of installation topologies with options to fit any enterprise.



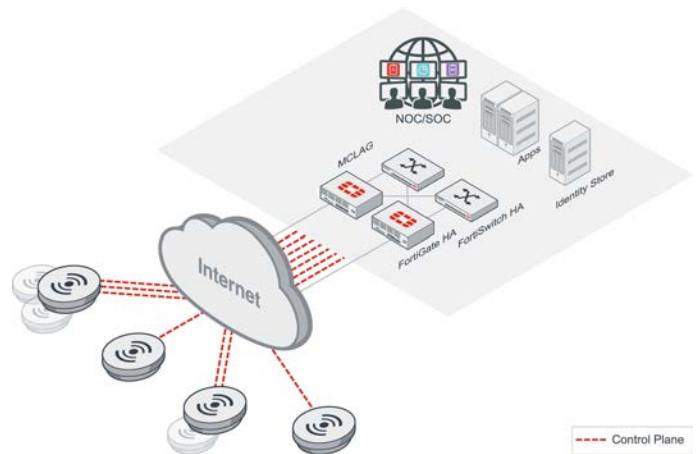
Central pair of FortiGates managing a large site



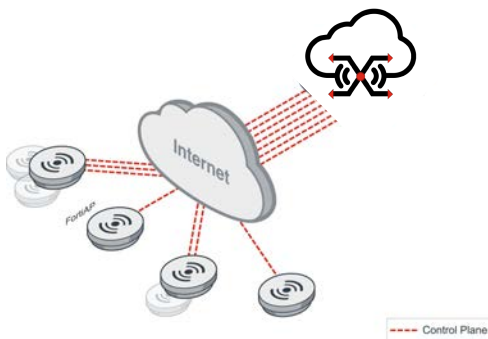
Distributed FortiGates throughout a large campus



Distributed branches via SD-Branch



Centralized FortiGates managing remote teleworkers



FortiLAN Cloud managing standalone FortiAPs




HIGHLIGHTS

FortiAP 431G and 433G

These high performing enterprise class extended frequency band Wi-Fi 6E indoor APs provide three radios and four spatial streams. This access point supports the 6 GHz band, OFDMA, and a 5 Gigabit Ethernet port. The AP can provide 24/7 scanning across all bands while still providing access on both the 2.4 GHz and 5 GHz bands or 2.4 GHz and dual 5 GHz service or the AP can be configured to provide simultaneous access on 2.4 GHz, 5 GHz, and the 6 GHz bands. The integrated BLE/ ZigBee radio can be used for beacons and locationing applications.



 **Wi-Fi 6E | Tri-Radio 2.4 + 5GHz + 5GHz / 6GHz / Scanning | 8 Internal Antennas / 4 External RPSMA Connectors + 4 External Permanently attached Antennas**

SPECIFICATIONS

| FORTIAP 431G | | FORTIAP 433G | | FORTIAP 431G | | FORTIAP 433G | |
|---|---|--------------|--|--------------|--|--------------|--|
| Hardware | | | | | | | |
| Hardware Type | Indoor AP | | | | | | |
| Number of Radios | 3 + 1 BLE | | | | | | |
| Number of Antennas | Internal: x4 Dual band Wi-Fi + x4 Tri-band Wi-Fi & Scanning + 1 Single band 2.4GHz BLE/ ZigBee | | External: x4 Dual band Wi-Fi + x4 Tri-band Wi-Fi & Scanning Internal: 1 Single band 2.4GHz BLE/ZigBee | | | | |
| Antenna Type and Peak Gain | PIFA antenna. Dual band: 4.0 dBi for 2.4GHz, 5.6 dBi for 5 GHz Tr-band: 4.0 dBi for 2.4GHz, 6.0 dBi for 5 GHz & 5.7dBi for 6GHz band BLE antenna: 5.1dBi for 2.4Ghz | | Omni Directional antenna. Dual band: 5.0 dBi for 2.4GHz, 5.0 dBi for 5 GHz Tr-band: 5.0 dBi for 2.4GHz, 5.0 dBi for 5 GHz & 4.0dBi for 6GHz band BLE PIFA antenna Single band: 4.0dBi for 2.4GHz | | | | |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850, 5.925–6.425, 6.425–6.525, 6.525–7, 5.925–6.875, 6.875–7.125 | | | | | | |
| Radio 1 Capabilities | Frequency band: 2.4GHz Channel width: 20/40MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 4x4 Service | | | | | | |
| Radio 2 Capabilities | Frequency band: 5.0GHz Channel width: 20/40/80/80+80MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 4x4 Service | | | | | | |
| Radio 3 Capabilities | Frequency band: 6.0GHz Channel width: 20/40/80/160MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 4X4 Service and 2x2 Scanning | | | | | | |
| Maximum Data Rate | Radio 1: up to 1148 Mbps Radio 2: up to 2402 Mbps Radio 3: Up to 4804 Mbps | | | | | | |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertizement @10 dBm max TX power | | | | | | |
| Interfaces | x2 100/1000/2500/5000 Base-T RJ45, 1 Type 3.0 USB, 1 RS-232 RJ45 Serial Port | | | | | | |
| Power over Ethernet (PoE) | 1 802.3bt PoE default or x2 802.3at PoE (Dual PoE current sharing) | | | | | | |
| Simultaneous SSIDs | Up to 24 | | | | | | |
| 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 allowlist | | | | | | |
| Maximum Tx Power | Radio 1: 2.4GHz: 27 dBm / 501 mW (4 chains combined)* Radio 2: 5GHz: 26 dBm / 400 mW (4 chains combined)* Radio 3: 6GHz: 24 dBm 251 mW (4 chains combined @ 160MHz BW)* | | | | | | |
| 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, 802.11, 802.3ad, 802.3at, 802.3bt, 802.3az | | | | | | |
| SSID Types Supported | Local-Bridge, Mesh, and Tunnel | | | | | | |
| Per Radio Client Capacity | Up to 512 clients per radio (Radio1, Radio2 and Radio3) | | | | | | |
| Cellular Co-existence* | Yes | | | | | | |
| LED Off Mode | Yes | | | | | | |
| Advanced 802.11 Features | | | | | | | |
| OFDMA | Yes | | | | | | |
| 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 | 8.85× 8.85 × 2.12 inches 225.0× 225.0 × 54.0 mm | | | | | | |
| Weight | 3.05 lbs (1.4 kg) | | | | | | |
| Package (shipping) Weight | 5.25 lbs (2.4 kg) | | | | | | |
| Mounting Options | Ceiling, T-Rail, and Wall | | | | | | |
| Included Accessories | Standard Mounting kit for Ceiling, T-Rail and Wall | | | | | | |
| Environment | | | | | | | |
| Power Supply | SP-FAP400-PA-XX or 802.3bt PoE. Also supports Dual PoE sharing with 2× 802.3at PoE (GPI-130) or Single 802.at PoE (GPI-130) with No USB and reduced Transmit power | | | | | | |
| Power Consumption (Maximum) | 31.7 Watts | | | | | | |
| 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 | Yes | | | | | | |
| Mean Time Between Failures | >10 Years | | | | | | |
| IP Rating | N/A | | | | | | |
| Surge Protection Built In | Yes | | | | | | |
| Hit-less PoE Failover | No | | | | | | |
| Certifications | | | | | | | |
| Wi-Fi Alliance Certified | In Progress | | | | | | |
| 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 431G / 433G | | | | | | |
|-------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--|-------------------------|
| Data rate | Radio 1 802.11ax 4x4 | | Radio 2 802.11ax 4x4 | | Radio3 4x4 Tri band Service and 2x2 Scanning radio | |
| | TX power/chain (dBm) | Rz Sensitivity (dBm) | TX power/chain (dBm) | Rz Sensitivity (dBm) | TX power/chain (dBm) | Rx Sensitivity (dBm) |
| 2.4GHz, 802.11b | | | | | | |
| 1 Mbps | 21 | -99 | | | 20 | -99 |
| 11 Mbps | 21 | -91 | | | 18 | -91 |
| 2.4GHz, 802.11g | | | | | | |
| 6 Mbps | 21 | -93 | | | 20 | -95 |
| 54 Mbps | 21 | -77 | | | 18 | -78 |
| 2.4GHz, 802.11n HT20 | | | | | | |
| MCS0 | 21 | -95 | | | 20 | -92 |
| MCS7 | 19 | -77 | | | 17 | -74 |
| 2.4GHz, 802.11n HT40 | | | | | | |
| MCS0 | 20 | -92 | | | 19 | -90 |
| MCS7 | 18 | -74 | | | 17 | -72 |
| 2.4GHz, 802.11ax HE20 | | | | | | |
| MCS0 | 21 | -94 | | | 18 | -90 |
| MCS11 | 19 | -64 | | | 16 | -71 |
| 2.4GHz, 802.11ax HE40 | | | | | | |
| MCS0 | 21 | -91 | | | 18 | -91 |
| MCS11 | 19 | -62 | | | 16 | -72 |
| 5.0GHz, 802.11a | | | | | | |
| 6 Mbps | | | 23 | -93 | 22 | -93 |
| 54 Mbps | | | 21 | -76 | 21 | -76 |
| 5.0GHz, 802.11n HT20 | | | | | | |
| MCS0 | | | 22 | -93 | 21 | -93 |
| MCS7 | | | 20 | -75 | 18 | -73 |
| 5.0GHz, 802.11n HT40 | | | | | | |
| MCS0 | | | 21 | -93 | 21 | -90 |
| MCS7 | | | 18 | -78 | 18 | -71 |
| 5.0GHz, 802.11ac VHT20 | | | | | | |
| MCS0 | | | 22 | -93 | 21 | -93 |
| MCS9 | | | 20 | -72 | 18 | -69 |
| 5.0GHz, 802.11ac VHT40 | | | | | | |
| MCS0 | | | 22 | -91 | 21 | -90 |
| MCS9 | | | 19 | -70 | 18 | -64 |
| 5.0GHz, 802.11ac VHT80 | | | | | | |
| MCS0 | | | 20 | -86 | 19 | -88 |
| MCS9 | | | 18 | -65 | 16 | -61 |
| 5.0GHz, 802.11ax HE20 | | | | | | |
| MCS0 | | | 22 | -93 | 22 | -92 |
| MCS11 | | | 19 | -63 | 19 | -65 |
| 5.0GHz, 802.11ax HE40 | | | | | | |
| MCS0 | | | 21 | -90 | 22 | -88 |
| MCS11 | | | 19 | -70 | 19 | -61 |
| 5.0GHz, 802.11ax HE80 | | | | | | |
| MCS0 | | | 18 | -86 | 20 | -85 |
| MCS11 | | | 16 | -59 | 17 | -58 |
| 5.0GHz, 802.11ax HE160 | | | | | | |
| MCS0 | | | | | 19 | -82 |
| MCS11 | | | | | 16 | -57 |
| 6.0GHz, 802.11ax HE160 | | | | | | |
| MCS0 | | | | | 17 | -82 |
| MCS11 | | | | | 14 | -56 |

Maximum capability of the Hardware provided (Excluding antenna gain)

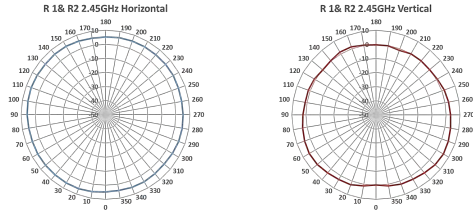


ANTENNA RADIATION PATTERNS

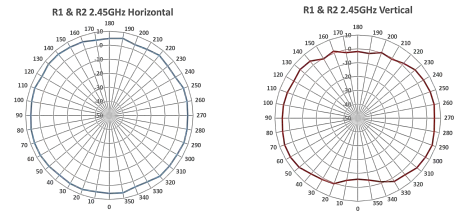
FAP-431G

FAP-433G

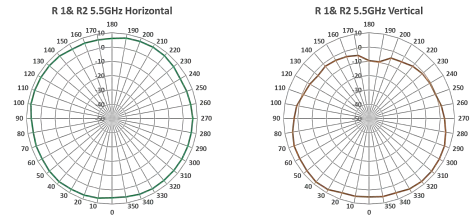
Radio1 and Radio2 2.45GHz plots



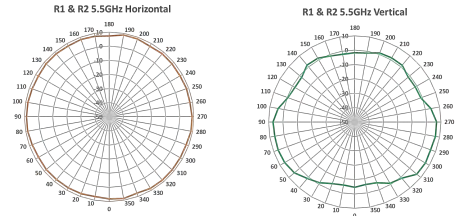
FAP-433G Radio 1&2 antenna plots



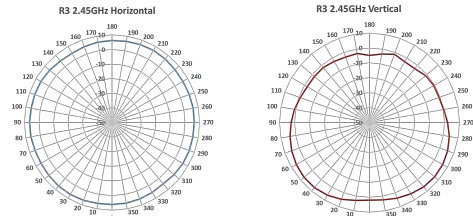
Radio1 and Radio2 5.5GHz plots



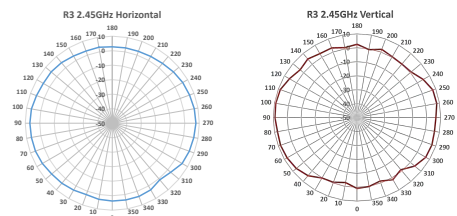
FAP-433G Radio 1&2 antenna plots



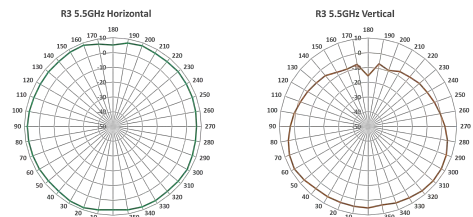
Radio3 2.45GHz plots



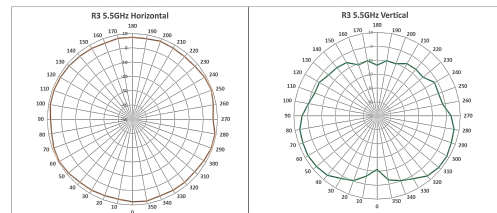
FAP-433G Radio3 antenna plots



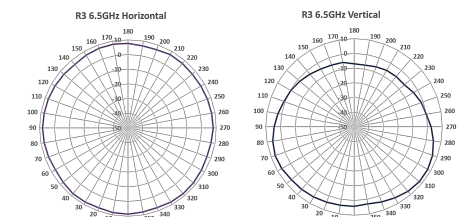
Radio3 5.5GHz plots



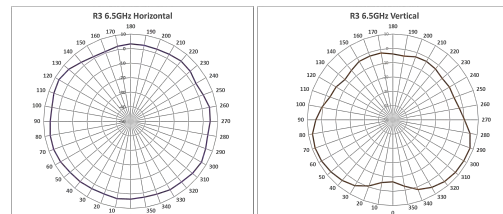
FAP-433G Radio3 antenna plots



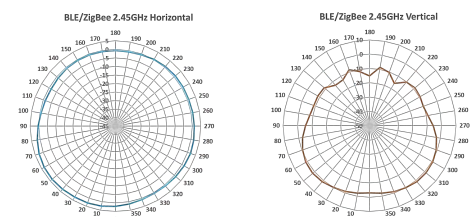
Radio3 6.5GHz plots



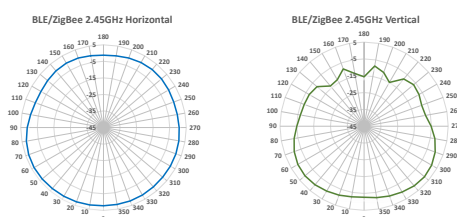
FAP-433G Radio3 antenna plots



BLE/ZigBee 2.45GHz plots



FAP-433G BLE/ZigBee antenna plots



HIGHLIGHTS

FortiAP 231G and 233G

These enterprise class extended frequency band Wi-Fi 6E indoor APs provide three radios and two spatial streams. These access points support the 6 GHz band, 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 all bands while still providing access on both the 2.4 GHz and 5 GHz bands or 2.4 GHz and dual 5 GHz service or the AP can be configured to provide simultaneous access on 2.4 GHz, 5 GHz, and the 6 GHz bands. The integrated BLE/ ZigBee radio can be used for beacons and locationing applications.



Wi-Fi 6E | Tri-Radio 2.4 GHz + 5 GHz + 5 GHz / 6 GHz / scanning | 4 Internal Antennas / 2 External RPSMA Connectors + 2 External Permanently attached Antennas

SPECIFICATIONS

| | FORTIAP 231G | FORTIAP 233G |
|-----------------------------------|--|--|
| Hardware | | |
| Hardware Type | Indoor AP | |
| Number of Radios | 3 + 1 BLE | |
| Number of Antennas | Internal x2 Dual band Wi-Fi + x2 Tri-band Wi-Fi & Scanning + 1 Single band 2.4GHz BLE/ ZigBee | External x2 Dual band Wi-Fi + x2 Tri- band Wi-Fi & Scanning + Internal 1 Single band 2.4GHz BLE/ZigBee |
| Antenna Type and Peak Gain | PIFA antenna. Dual band: 4.5 dBi for 2.4GHz, 5.5 dBi for 5 GHz Tr-band: 4.5 dBi for 2.4GHz, 5.5 dBi for 5 GHz & 5.5dBi for 6GHz band BLE antenna: 4.0dBi for 2.4Ghz | Omni Directional antenna. Dual band: 4.5 dBi for 2.4GHz, 4.5 dBi for 5 GHz. Tr-band: 4.5 dBi for 2.4GHz, 4.5 dBi for 5 GHz & 4.5dBi for 6GHz band BLE PIFA antenna. Single band: 4.0dBi for 2.4GHz |
| Frequency Bands (GHz)* | 2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850, 5.925–6.425, 6.425–6.525, 6.525–7, 5.925–6.875, 6.875–7.125 | |
| 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: 20/40/80/80+80MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service | |
| Radio 3 Capabilities | Frequency band: 6.0GHz Channel width: 20/40/80/160MHz Modulation: BPSK, QPSK, 64/256/1024 QAM MIMO Chains: 2x2 Service and Scanning | |
| Maximum Data Rate | Radio 1: up to 574 Mbps Radio 2: up to 1201 Mbps Radio 3: Up to 2401 Mbps | |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @10 dBm max TX power | |
| Interfaces | 1 100/1000/2500 Base-T RJ45, 1 10/100/1000 Base-T RJ45, 1x Type 3.0 USB, 1 RS-232 RJ45 Serial Port | |
| Power over Ethernet (PoE) | 1 x 802.3at PoE default | |
| Simultaneous SSIDs | Up to 24 | |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCMAPv2, 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 allowlist | |
| Maximum Tx Power | Radio 1: 2.4GHz: 23 dBm / 200 mW (2 chains combined)* Radio 2: 5GHz: 23 dBm / 158 mW (2 chains combined)* Radio 3: 6GHz: 21 dBm 80 mW (2 chains combined @ 160MHz BW)* | |
| 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, 802.11w, 802.11ac, 802.11ax, 802.11x, 802.3ad, 802.3af, 802.3at, 802.3az | |
| SSID Types Supported | Local-Bridge, Mesh, and Tunnel | |
| Per Radio Client Capacity | Up to 512 clients per radio (Radio1, Radio2 and Radio3) | |

| | FORTIAP 231G | FORTIAP 233G |
|---|--|--------------------|
| Cellular Co-existence* | Yes | |
| LED Off Mode | Yes | |
| Advanced 802.11 Features | | |
| OFDMA | Yes | |
| 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 | 7.18 x 7.18 x 2.12 inches (182.4 x 182.4 x 54.0 mm) | |
| Weight | 1.75 lbs (0.8 kg) | 1.95 lbs (0.88 kg) |
| Package (shipping) Weight | 3.05 lbs (1.4 kg) | 3.35 lbs (1.51 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall | |
| Included Accessories | Standard Mounting kit for Ceiling, T-Rail and Wall | |
| Environment | | |
| Power Supply | SP-FAP400-PA-XX or 802.3at PoE (GPI-130) | |
| Power Consumption (Maximum) | Depends on PoE connected | |
| 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 | Yes | |
| Mean Time Between Failures | >10 Years | |
| IP Rating | N/A | |
| Surge Protection Built In | Yes | |
| Hit-less PoE Failover | N/A | |
| Certifications | | |
| Wi-Fi Alliance Certified | Yes | 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 231G / 233G | | | | | | | |
|-------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---|-------------------------|--|
| Data rate | Radio 1 802.11ax 4x4 | | Radio 2 802.11ax 4x4 | | Radio3 Tri band Service and Scanning radio | | |
| | TX power/chain (dBm) | Rz Sensitivity (dBm) | TX power/chain (dBm) | Rz Sensitivity (dBm) | TX power/chain (dBm) | Rx Sensitivity (dBm) | |
| 2.4GHz, 802.11b | | | | | | | |
| 1 Mbps | 23 | -99 | | | 23 | -92 | |
| 11 Mbps | 23 | -91 | | | 23 | -91 | |
| 2.4GHz, 802.11g | | | | | | | |
| 6 Mbps | 23 | -94 | | | 23 | -92 | |
| 54 Mbps | 23 | -78 | | | 21 | -77 | |
| 2.4GHz, 802.11n HT20 | | | | | | | |
| MCS0 | 23 | -94 | | | 23 | -92 | |
| MCS7 | 21 | -75 | | | 20 | -74 | |
| 2.4GHz, 802.11n HT40 | | | | | | | |
| MCS0 | 22 | -92 | | | 21 | -90 | |
| MCS7 | 20 | -73 | | | 18 | -72 | |
| 2.4GHz, 802.11ax HE20 | | | | | | | |
| MCS0 | 23 | -90 | | | 23 | -90 | |
| MCS11 | 21 | -71 | | | 20 | -71 | |
| 2.4GHz, 802.11ax HE40 | | | | | | | |
| MCS0 | 22 | -91 | | | 21 | -91 | |
| MCS11 | 20 | -72 | | | 18 | -72 | |
| 5.0GHz, 802.11a | | | | | | | |
| 6 Mbps | | | 23 | -92 | 19 | -93 | |
| 54 Mbps | | | 23 | -76 | 19 | -76 | |
| 5.0GHz, 802.11n HT20 | | | | | | | |
| MCS0 | | | 23 | -93 | 19 | -93 | |
| MCS7 | | | 21 | -74 | 18 | -73 | |
| 5.0GHz, 802.11n HT40 | | | | | | | |
| MCS0 | | | 22 | -91 | 21 | -90 | |
| MCS7 | | | 21 | -72 | 18 | -71 | |
| 5.0GHz, 802.11ac VHT20 | | | | | | | |
| MCS0 | | | 23 | -91 | 21 | -93 | |
| MCS9 | | | 21 | -72 | 18 | -69 | |
| 5.0GHz, 802.11ac VHT40 | | | | | | | |
| MCS0 | | | 22 | -91 | 21 | -90 | |
| MCS9 | | | 19 | -72 | 18 | -64 | |
| 5.0GHz, 802.11ac VHT80 | | | | | | | |
| MCS0 | | | 21 | -86 | 20 | -88 | |
| MCS9 | | | 18 | -62 | 17 | -61 | |
| 5.0GHz, 802.11ax HE20 | | | | | | | |
| MCS0 | | | 23 | -91 | 19 | -91 | |
| MCS11 | | | 20 | -72 | 17 | -72 | |
| 5.0GHz, 802.11ax HE40 | | | | | | | |
| MCS0 | | | 22 | -91 | 21 | -91 | |
| MCS11 | | | 19 | -72 | 18 | -72 | |
| 5.0GHz, 802.11ax HE80 | | | | | | | |
| MCS0 | | | 21 | -87 | 21 | -87 | |
| MCS11 | | | 18 | -58 | 17 | -58 | |
| 6.0GHz, 802.11ax HE160 | | | | | | | |
| MCS0 | | | | | 18 | -87 | |
| MCS11 | | | | | 16 | -57 | |

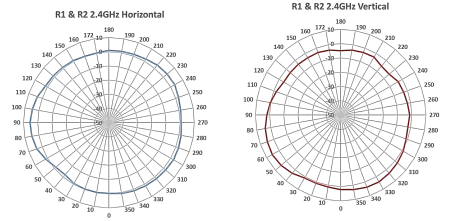
Maximum capability of the Hardware provided (Excluding antenna gain)



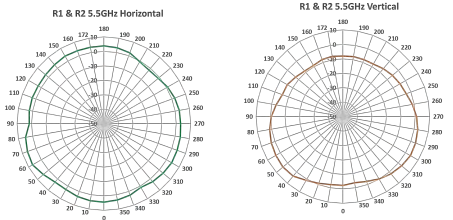
ANTENNA RADIATION PATTERNS

FAP-231G

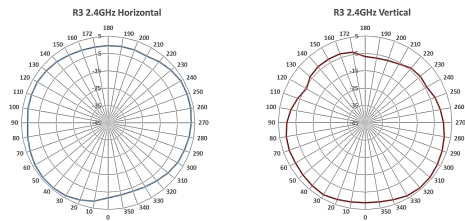
Radio1 and Radio2 2.45GHz plots



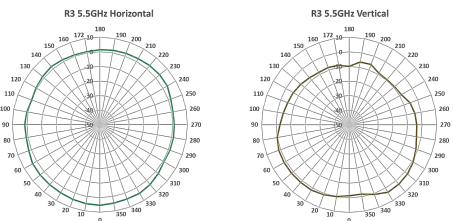
Radio1 and Radio2 5.5GHz plots



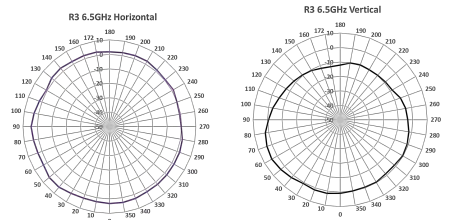
Radio3 2.45GHz plots



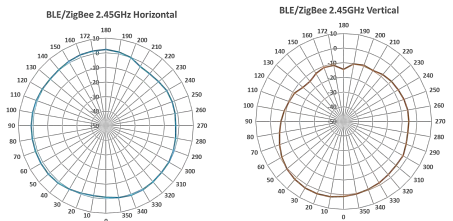
Radio3 5.5GHz plots



Radio3 6.5GHz plots

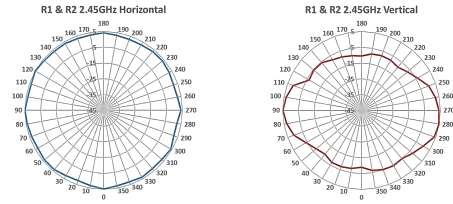


BLE/ZigBee 2.45GHz plots

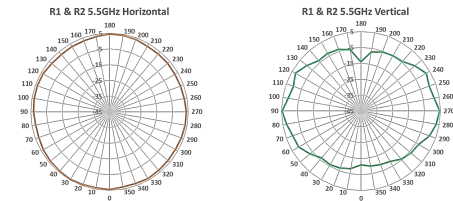


FAP-233G

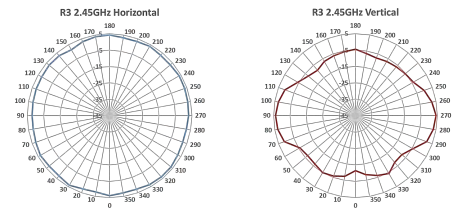
FAP-233G Radio 1&2 antenna plots



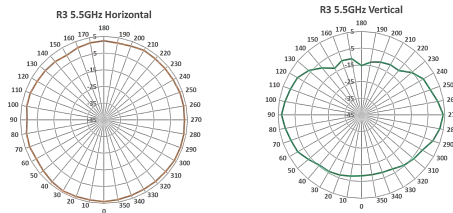
FAP-233G Radio 1&2 antenna plots



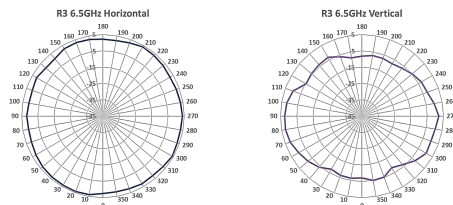
FAP-233G Radio3 antenna plots



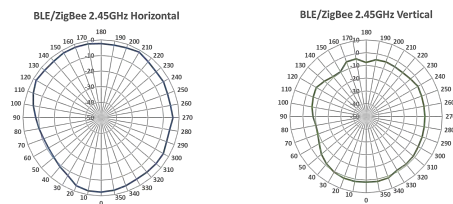
FAP-233G Radio3 antenna plots



FAP-233G Radio3 antenna plots



FAP-233G BLE/ZigBee antenna plots



HIGHLIGHTS

FortiAP 831F

This high throughput enterprise class 802.11ax indoor AP provides three radios and 8 spatial streams. This top-of-the line access point supports OFDMA, a 5.0 Gigabit Ethernet port, plus an additional 1 Gbps Ethernet port for PoE diversity. The AP can provide 24/7 scanning across both bands while still providing access on both the 2.4 GHz 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 | 13 Internal Antennas**

 **8x8 MU-MIMO | Up to 1,147 Mbps + 4,804 Mbps**

SPECIFICATIONS

| FORTIAP 831F | |
|---------------------------------|---|
| Hardware | |
| Hardware Type | Indoor AP |
| Number of Radios | 3 + 1 BLE |
| Number of Antennas | 4 2.4GHz band WiFi + 8 5GHz band WiFi + 1 Dual band Scanning + 1 2.4GHz band BLE |
| Antenna Type and Peak Gain | PIFA: 4.0 dBi for 2.4 GHz band WiFi antennas 6.0 dBi for 5.0 GHz band WiFi antennas 4.0 dBi for dual band Scanning radio antenna 4.5 dBi for 2.4 GHz band BLE antenna |
| 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, QAM64 MIMO chains: 4x4 service |
| Radio 2 Capabilities | Frequency Band: 5.0 GHz Channel width: 20/40/80/80+80/160MHz Modulation: BPSK, QPSK, QAM64, QAM256, and QAM1024 Mimo chains: 8x8 service in mode 1 or 4x4+4x4 service in mode 2 |
| Radio 3 Capabilities | Frequency band: 2.4/5.0 GHz MIMO chains: 1x1 frequency scanning |
| Maximum Data Rate | Radio 1: up to 1147.5 Mbps Radio 2: up to 4.804 Gbps in 8x8 MIMO and in 4x4 + 4x4 MIMO modes |
| Bluetooth Low Energy Radio | Bluetooth scanning and iBeacon advertisement @ 10 dBm max TX power |
| Interfaces | 1x 100/1000/2500/5000 Base-T RJ45 1x 10/100/1000 Base-T RJ45 1x Type 3.0 USB, 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | • 2x 802.3at/bt/30W Passive PoE in (Full function) • 1x 802.3at PoE in (USB3.1 disabled) |
| Simultaneous SSIDs | Up to 24 |
| 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 allowlist |
| Maximum Tx Power (Conducted) | Radio 1: 2.4 GHz 27 dBm / 500 mW (4 chains combined)* Radio 2: 5 GHz 25.5 dBm / 354 mW (4 chains combined)* Radio 3: NA |
| Kensington Lock | 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, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bz |
| SSID Types Supported | Local-Bridge, Mesh, Tunnel |
| 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) |

| FORTIAP-831F | |
|---|---|
| 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 Mode | Dedicated |
| WIPS / WIDS RAdio Modes | Dedicated |
| Packet Sniffer Mode | Yes |
| Spectrum Analyzer | Yes |
| Dimensions | |
| Length x Width x Height | 9.05 × 89.05 × 2.15 inches (230 × 230 × 55 mm) |
| Weight | 2.25 lbs (1.02 kg) |
| Package (shipping) Weight | 4.2 lbs (1.9 kg) |
| Mounting Options | Ceiling, T-Rail, and Wall |
| Included Accessories | Mount kit for Ceiling, T-Rail, and Wall |
| Environment | |
| Power Supply | SP-FAP400-PA-XX or GPI-130 |
| PSE Functionality | No |
| Power Consumption (Max) | 33 W |
| PoE Mode | |
| Single 5G | DC/2at → Full Mode ; Radios will be in (8x8 4x4) & USB Enabled 1at/2af → High Mode ; Radios will be in (8x8 4x4) & USB Disabled 1af → Low Mode ; Radios will be [2x2 2x2], Tx Power 10 dBm & USB Disabled |
| Dual 5G | DC/2at → Full Mode ; Radios will be in [4x4 4x4 4x4] & USB Enabled 1at/2af → High Mode ; Radios will be in [4x4 4x4 4x4] & USB Disabled 1af → Low Mode ; Radios will be [2x2 2x2 2x2], Tx Power 10 dBm & USB Disabled |
| Humidity | 5–90% Non-Condensing |
| Operating / Storage Temp. | 32–122°F (0–50°C) / -22–158°F (-30–70°C) |
| Directives | Low Voltage Directive • RoHS |
| UL2043 Plenum Material | No |
| Mean Time Betw. Failures | >10 Years |
| Surge Protection Built In | Yes |
| Certifications | |
| Wi-Fi Alliance Certified | Yes |
| DFS | FCC, IC, CE, Brazil and Taiwan |
| Warranty | |
| Limited Lifetime Warranty | Yes |

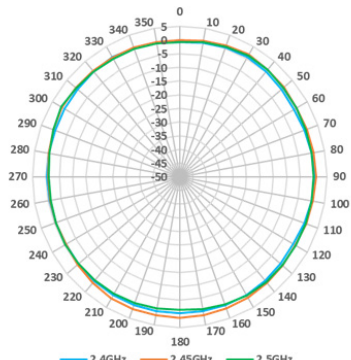


RF RX/TX PERFORMANCE TABLE

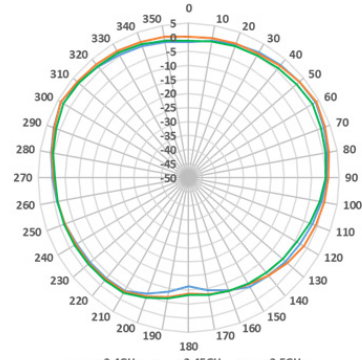
| FORTIAP 831F | | | | | | | | |
|-----------------------|----------------------------------|----------------------|--------------------------------|----------------------|----------------------------------|----------------------|--------------------------------|----------------------|
| | Radio 1 | | Radio 2 | | Radio 3 | | | |
| | 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) | Rz Sensitivity (dBm) | 5 GHz Tx Power per Chain (dBm) | Rz Sensitivity (dBm) |
| 802.11b | | | | | | | | |
| 1 Mbps | 21 | -98 | — | — | 21 | -96 | — | — |
| 11 Mbps | 23 | -89 | — | — | 18 | -87 | — | — |
| 802.11g | | | | | | | | |
| 6 Mbps | 20 | -94 | — | — | 20 | -92 | — | — |
| 54 Mbps | 22 | -75 | — | — | 18 | -73 | — | — |
| 802.11n HT20 | | | | | | | | |
| MCS0 | 20 | -93 | — | — | 20 | -91 | — | — |
| MCS7 | 20 | -74 | — | — | 17 | -72 | — | — |
| 802.11n HT40 | | | | | | | | |
| MCS0 | 17 | -92 | — | — | 19 | -90 | — | — |
| MCS7 | 18 | -73 | — | — | 17 | -71 | — | — |
| 802.11ax HE20 | | | | | | | | |
| MCS0 | 21 | -90 | — | — | — | — | — | — |
| MCS11 | 17 | -71 | — | — | — | — | — | — |
| 802.11ax HE40 | | | | | | | | |
| MCS0 | 17 | -88 | — | — | — | — | — | — |
| MCS11 | 17 | -68 | — | — | — | — | — | — |
| 802.11a | | | | | | | | |
| 6 Mbps | — | — | 20 | -92 | — | — | 20 | -90 |
| 54 Mbps | — | — | 20 | -72 | — | — | 17.5 | -72 |
| 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 | — | — | — | — |



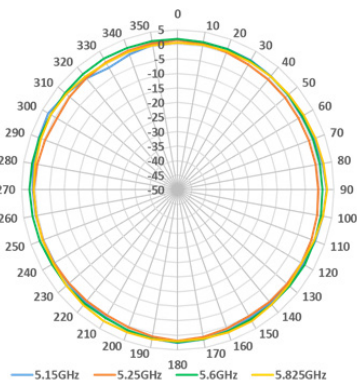
FAP 831F ANTENNA RADIATION PATTERNS



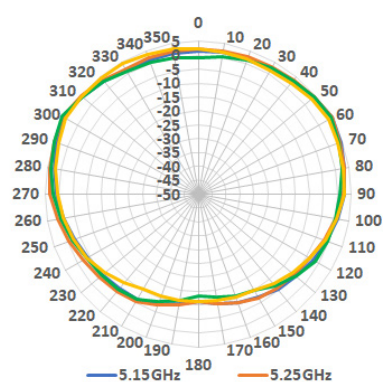
Radio1 2.4 GHz Horizontal



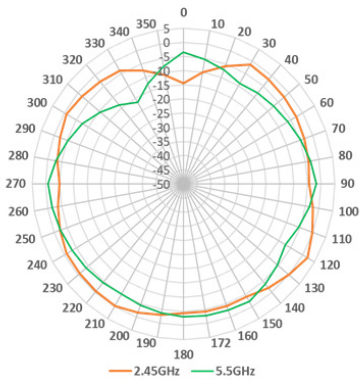
Radio1 2.4 GHz Vertical



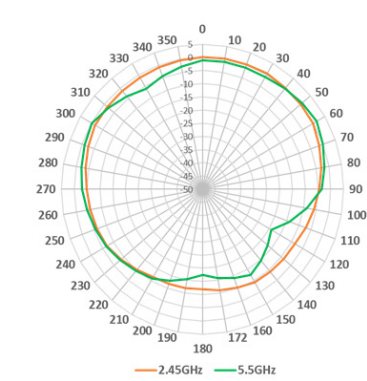
Radio2 5.0 GHz Horizontal



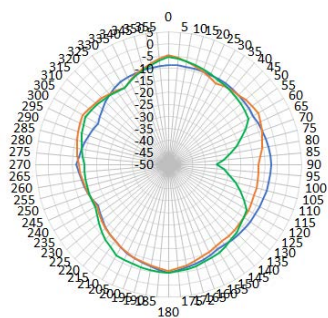
Radio2 5.0 GHz Vertical



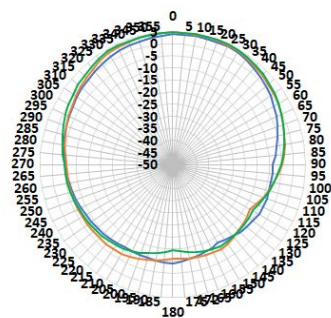
Scanning Radio Horizontal



Scanning Radio Vertical



BLE Radio Horizontal




BLE Radio Vertical



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 GHz 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 100/1000/2500 Base-T RJ45, 1 x 10/100/1000 Base-T RJ45, 1x Type A USB, 1x RS-232 RJ45 Serial Port | |
| Power over Ethernet (PoE) | <ul style="list-style-type: none"> • 802.3at PoE default • 1 port powered by 802.3at or 2 ports powered by 802.3af - Full System functionality + USB support • 1 port is connected to 802.3af - No USB support, Operate in 2x2 mode with reduced power R1/R2 17dBm(Tx power) | |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) | |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/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 allowlist | |
| 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, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11s, 802.11t, 802.11u, 802.11v, 802.11w, 802.11ac, 802.11ax (Wi-Fi 6), 802.11q, 802.11x, 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 |
| LED Off Mode | Yes | Yes |
| Advanced 802.11 Features | | |
| OFDMA | Yes (UL and DL) | Yes (UL and DL) |

| | FORTIAP-431F | FORTIAP-433F |
|---|---|--|
| 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 × 8.27 × 2.22 inches (210 × 210 × 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, Brazil and Taiwan | FCC, IC, CE, Japan, Brazil and 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 | — | — | — | — |

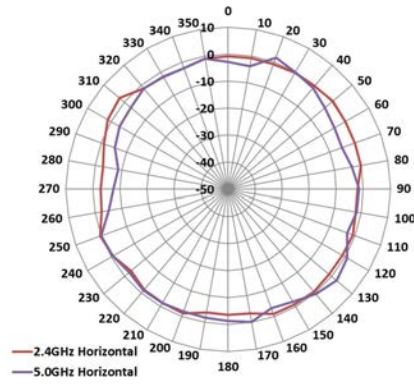


ANTENNA RADIATION PATTERNS

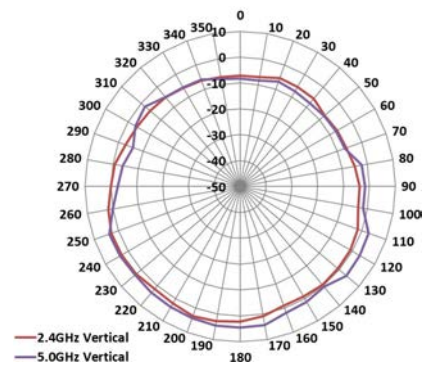
FAP-431F



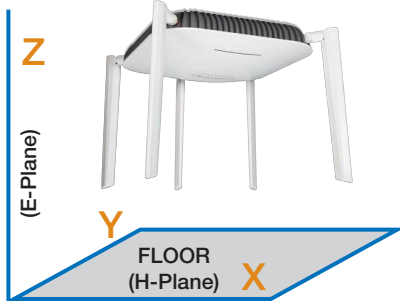
H-Plane Pattern



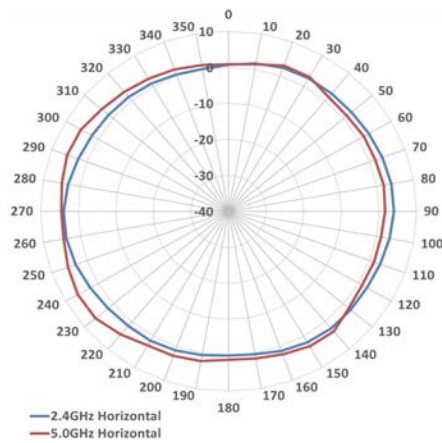
E-Plane Pattern



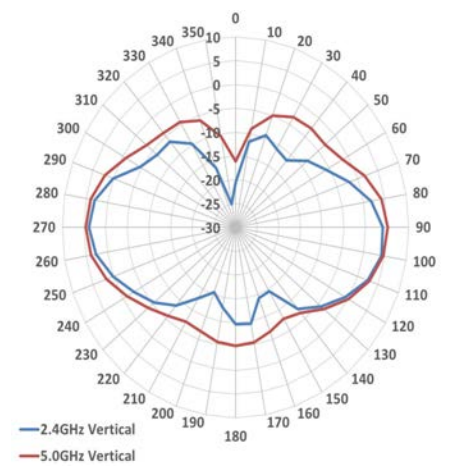
FAP-433F



H-Plane Pattern



E-Plane Pattern



HIGHLIGHTS

FortiAP 432F

This enterprise class 802.11ax ruggedized indoor/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 GHz 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 | 6 External Antennas**

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

SPECIFICATIONS

| FORTIAP 432F | |
|------------------------------|---|
| Hardware | |
| Hardware Type | Ruggedized indoor/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 | 1x 100/1000/2500 Base-T RJ45, 1 x 10/100/1000 Base-T RJ45 (802.3af PoE PSE), 1x RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | <ul style="list-style-type: none"> 802.3bt PoE default (ships with Passive PoE injector) Powered by 802.3at PoE - Operate in 4x4 mode with reduced Tx power Radio1/R2 17dBm This product only supports PSE functionality when it is powered by PoE injector that ships with the product. |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/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, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11w, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az, 802.3bt, 802.3bz |
| SSIDs 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 |

| FORTIAP 432F | |
|---|--|
| 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 | 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 | Wall and Pole |
| Included Accessories | Wall and Pole mounting kit |
| 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 | -40–140°F (-40 - 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 | Yes |
| DFS | FCC, IC, CE, Japan, Brazil and Taiwan |
| Warranty | |
| Limited Lifetime Warranty | Yes |

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



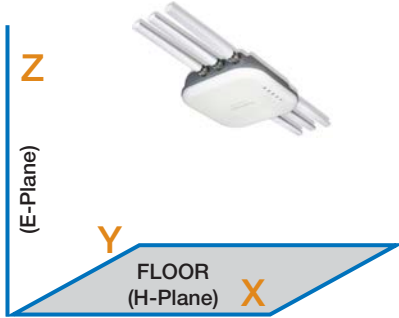
RF RX/TX PERFORMANCE TABLE

| FORTIAP 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 | — | — | — |

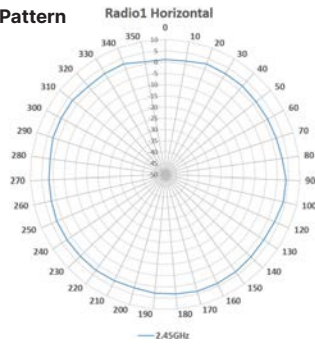


ANTENNA RADIATION PATTERNS

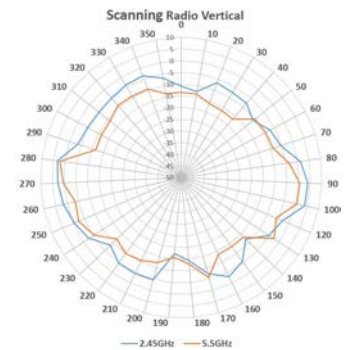
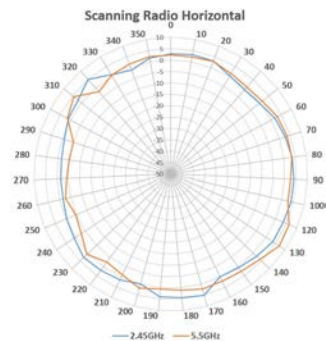
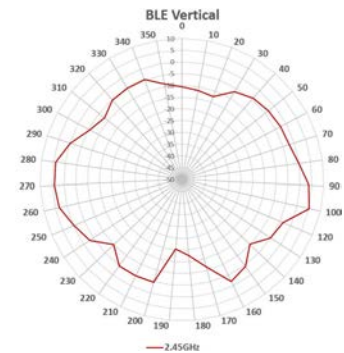
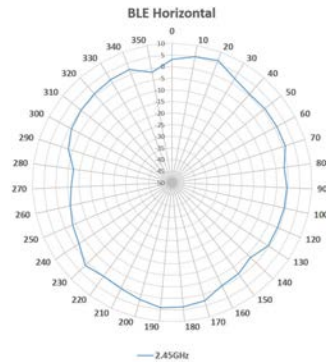
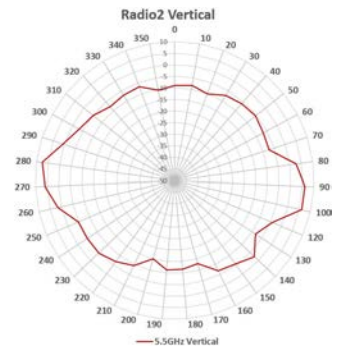
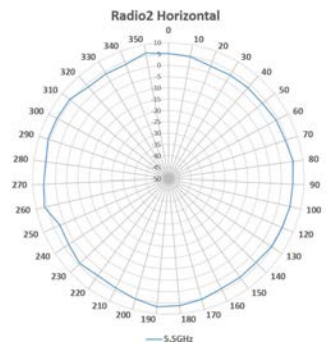
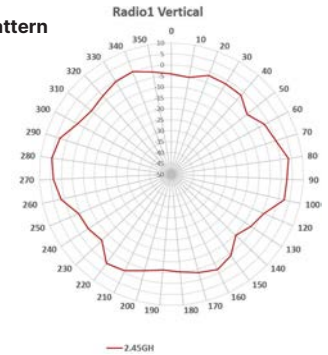
FAP-432F



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 GHz 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) | <ul style="list-style-type: none"> • 802.3at PoE default • 1 port powered by 802.3at - full system functionality + USB support • 1 port is connected to 802.3af - no USB support |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/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 (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, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11w, 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 |
| Reset Button | Yes |

| FORTIAP 231F | |
|---|---|
| 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 | 2.1lbs (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 | FCC, IC, CE, Japan, Brazil, Taiwan and Korea |
| 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 |

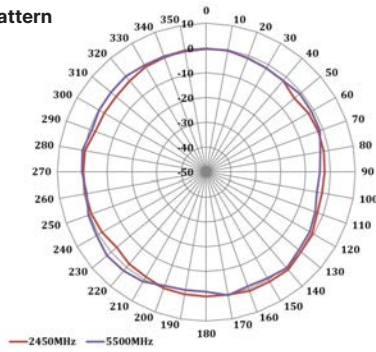


ANTENNA RADIATION PATTERNS

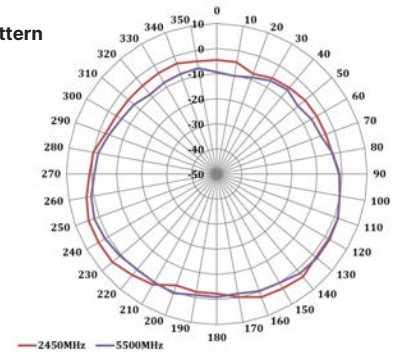
FAP-231F



H-Plane Pattern



E-Plane Pattern




HIGHLIGHTS

FortiAP 234F

This enterprise class Wi-Fi 6 ruggedized indoor/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 GHz 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 | 2 5G antenna + 2 2.4G antenna + 1 dual band antenna + 1 single band 2.4 Ghz BLE/ZigBee**

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

SPECIFICATIONS

| FORTIAP 234F | |
|------------------------------|---|
| Hardware | |
| Hardware Type | Ruggedized indoor/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 |
| Antenna Beam Width | 2.4GHz Horizontal BW 70 degree Vertical BW 30 degree 5.0GHz Horizontal BW 78 degree Vertical BW 25 degree |
| 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 RS-232 RJ45 Serial Port |
| Power over Ethernet (PoE) | • 802.3at PoE default (Ships with Passive PoE injector) • 1 port powered by 802.3at or 2 ports powered by 802.3af - Full System functionality • 1 port is connected to 802.3af - No USB support, Operate in 2x2 mode with reduced Tx power R1/R2 17dBm |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/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 (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, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11w, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az |

| 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 | 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 | 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 | Wall and Pole |
| Included Accessories | Wall and Pole mounting kit |
| 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 | -40–140°F (-40 - 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 | Yes |
| DFS | FCC, IC, CE, Japan, Brazil, Taiwan and Korea |
| Warranty | |
| Limited Lifetime Warranty | Yes |

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



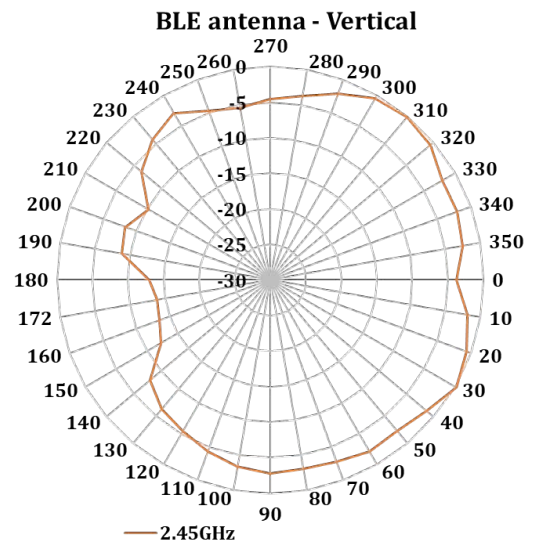
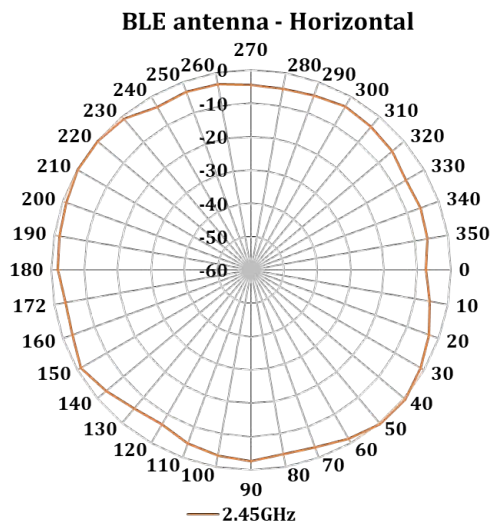
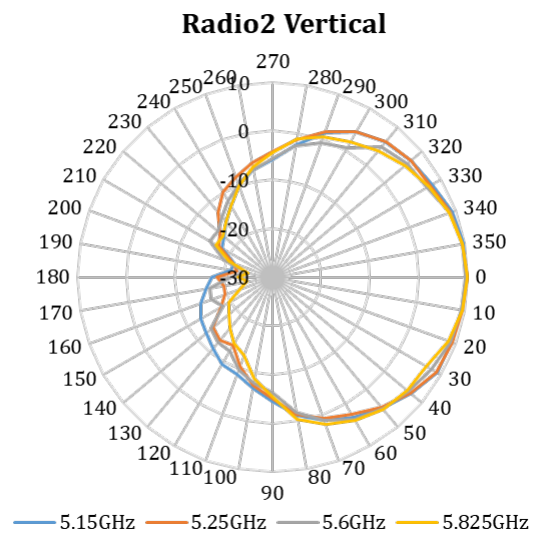
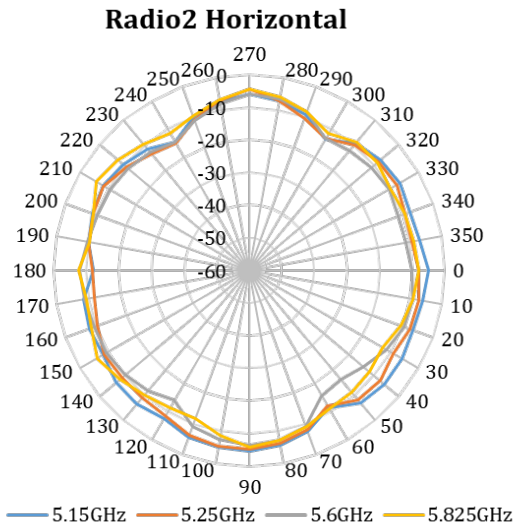
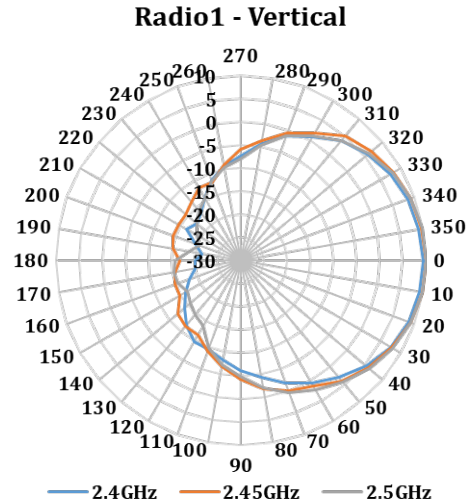
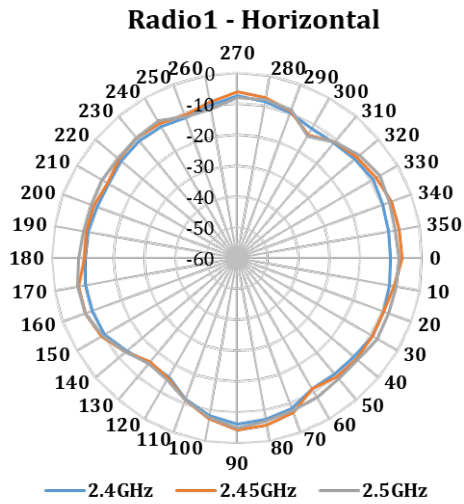
RF RX/TX PERFORMANCE TABLE

| 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



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 GHz 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 | 3 dual band internal Wi-Fi + 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 | 4x 10/100/1000 Base-T RJ45 Ports (1x 802.3at PoE(PD), 1x 802.3af PoE (PSE), 2x Non-PoE Ports) 3 RJ-45 Ports (1x Pass-through in, 1x Pass-through out, 1x RS-232 Serial Port) |
| Power over Ethernet (PoE) | <ul style="list-style-type: none"> • 802.3at PoE default (optional DC adaptor) • Powered via DC power supply - Full System functionality + USB + PSE (8023af 15.4W) • Powered by 802.3af - Only Radio functionality is operational (No USB/PSE supported) • Powered by 802.3at - Full System functionality+ PSE(7w) |
| Simultaneous SSIDs | Up to 16 (14 if background scanning enabled) |
| EAP Type(s) | EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/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, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11w, 802.11ac, 802.11ax (Wi-Fi 6), 802.1Q, 802.1X, 802.3ad, 802.3af, 802.3at, 802.3az |
| SSID Types Supported | Local-Bridge, Tunnel, and Mesh |

| FORTIAP 23JF | |
|---|---|
| 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-PA-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 | Yes |
| DFS | FCC, IC, CE, Japan, Brazil, Taiwan and Korea |
| Warranty | |
| Limited Lifetime Warranty | Yes |

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



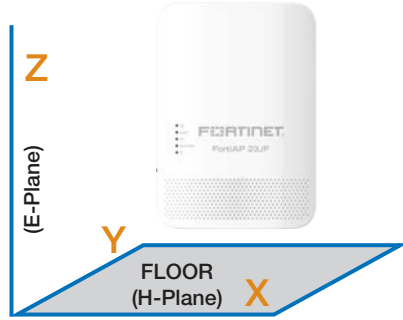
RF RX/TX PERFORMANCE TABLE

| 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 | — | — | — |

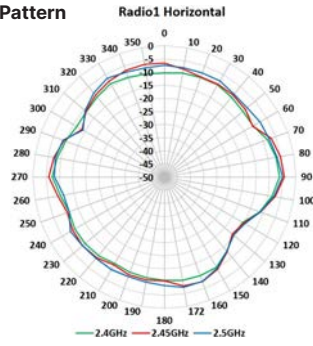


ANTENNA RADIATION PATTERNS

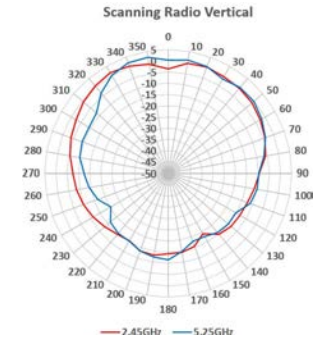
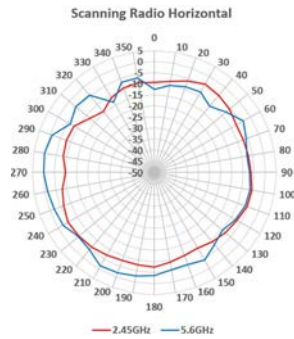
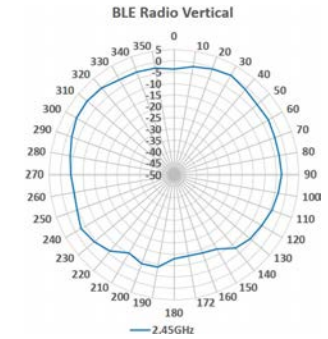
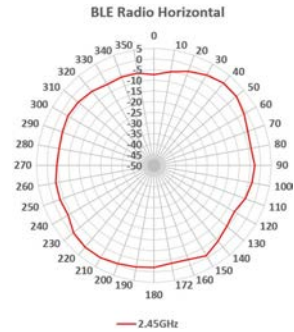
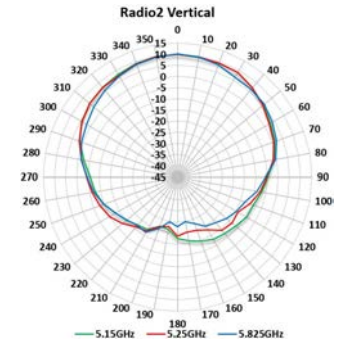
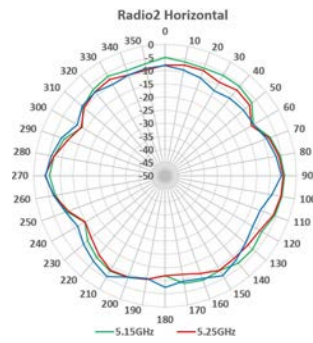
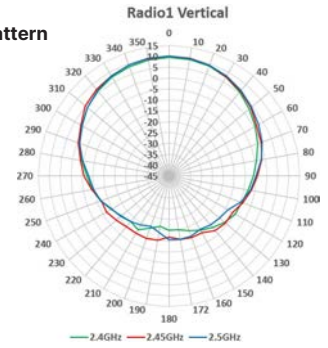
FAP-23JF



H-Plane Pattern



E-Plane Pattern





HIGHLIGHTS

FortiAP 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/MSCHAPv2, PEAPv0/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, 802.11w, 802.11ac, 802.11q, 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 |

| | FORTIAP 221E | FORTIAP 223E |
|---|---|---|
| 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 | 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

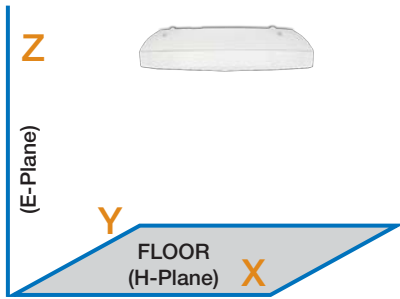
| FORTIAP 221E / 223E | | | | |
|---------------------|------------------------|----------------------|----------------------|----------------------|
| 802.11 a/g | RADIO 1 | | RADIO 2 | |
| | 2.4 GHz Tx Power (dBm) | RX Sensitivity (dBm) | 5 GHz Tx Power (dBm) | RX Sensitivity (dBm) |
| 6 Mbps | 20 | -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 |

| FORTIAP 221E / 223E | | | | |
|-----------------------|---------|-----|---------|-----|
| 802.11ac VHT20 | RADIO 1 | | RADIO 2 | |
| | MCS 0 | 19 | -91 | 21 |
| 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 |
| 802.11ac VHT80 | | | | |
| MCS 7 | — | — | 18 | -68 |
| MCS 8 | — | — | 17 | -63 |
| MCS 9 | — | — | 17 | -61 |

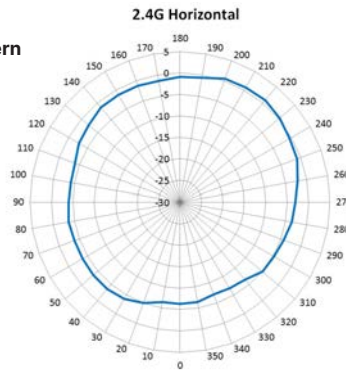


ANTENNA RADIATION PATTERNS

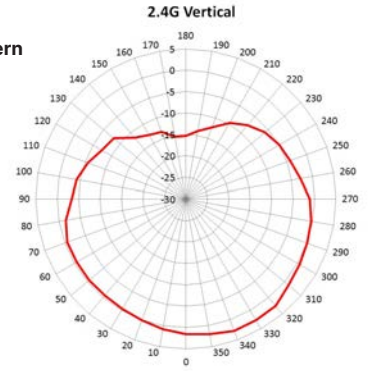
FAP-221E



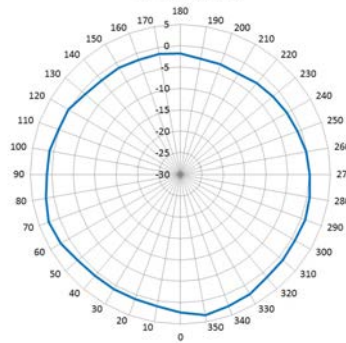
H-Plane Pattern



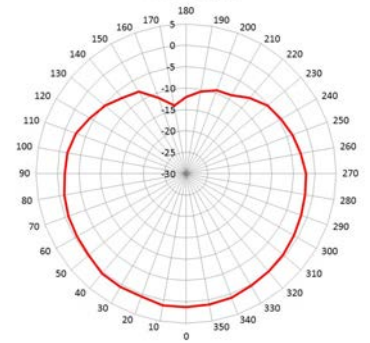
E-Plane Pattern



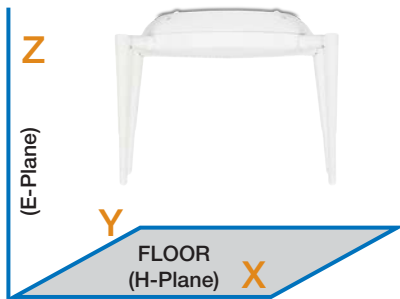
5.0G Horizontal



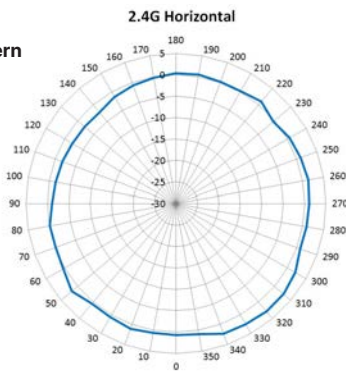
5.0G Vertical



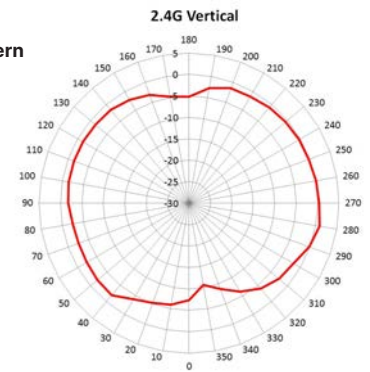
FAP-223E



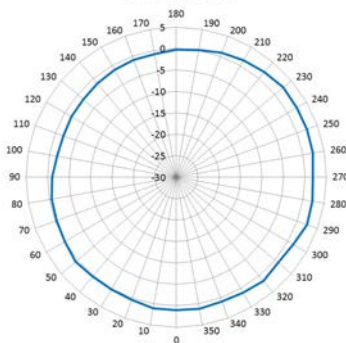
H-Plane Pattern



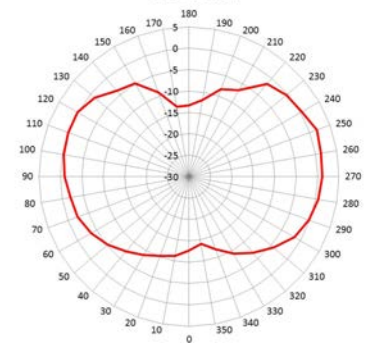
E-Plane Pattern



5.0G Horizontal



5.0G Vertical



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 GHz and 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 | 4x 10/100/1000 Base-T RJ45 Ports (1x 802.3at PoE(PD), 1x 802.3af PoE (PSE), 2x Non-PoE Ports) 3 RJ-45 Ports (1x Pass-through in, 1x Pass-through out, 1x RS-232 Serial Port) |
| Serial Console Port | 1x RJ45 RS232 |
| Power over Ethernet (PoE) | <ul style="list-style-type: none"> • 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/MSCCHAPv2, PEAPv0/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, 802.11w, 802.11v, 802.11ac, 802.11q, 802.11x, 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

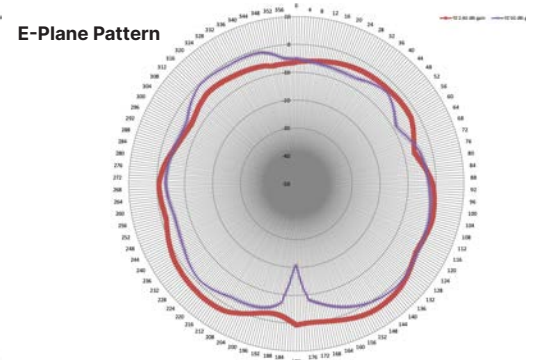
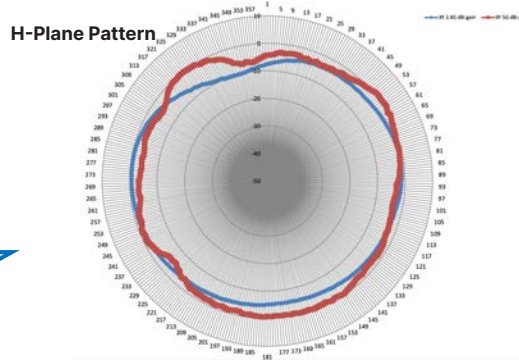
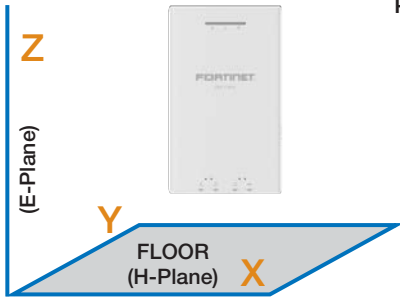
| FORTIAP C24JE | | | | | |
|-----------------------|--|--|--|--|--|
| 802.11 a/g | Radio 1 2.4 GHz | | Radio 2 5 GHz | | |
| | Maximum TX Power per Transmit Chain (dBm) | RX Sensitivity (dBm) per Receiver Chain | Maximum TX Power per Transmit Chain (dBm) | RX Sensitivity (dBm) per Receiver Chain | |
| 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 831F | FAP-831F | Indoor Wireless AP - Tri radio (1× 802.11 a/b/g/n/ac/ax 4×4 MIMO, 1× 802.11 a/b/g/n/ac/ax 8×8 MIMO and 1× 802.11 a/b/g/n/ac Wave 2 1×1 MU-MIMO), internal antennas, 1× 100/1000/5000 Base-T RJ45, 1× 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-F831F-247-02-DD | FortiCare Premium Support |
| | FC-10-P831F-284-02-DD | FortiCare Elite Support |
| FortiAP 431F | FAP-431F | Indoor Wireless AP - Tri radio (2× 802.11 a/b/g/n/ac/ax, 4×4 MIMO and 1× 802.11 a/b/g/n/ac Wave 2, 1×1 MU-MIMO), internal antennas, 1× 100/1000/2500 Base-T RJ45, 1× 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 | FortiCare Premium Support |
| | FC-10-F431F-284-02-DD | FortiCare Elite Support |
| FortiAP 433F | FAP-433F | Indoor Wireless AP - Tri radio (2× 802.11 a/b/g/n/ac/ax, 4×4 MIMO and 1× 802.11 a/b/g/n/ac Wave 2, 1×1 MU-MIMO), external antennas included, 1× 100/1000/2500 Base-T RJ45, 1× 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 | FortiCare Premium Support |
| | FC-10-F433F-284-02-DD | FortiCare Elite Support |
| FortiAP 432F | FAP-432F | Ruggedized indoor/outdoor Wireless FortiAP - Tri radio (1× 802.11b/g/n/ax 4×4 radio, 1× 802.11a/n/ac/ax 4×4 Radio and 1× 802.11 a/b/g/n/ac Wave 2, 2×2), 1× 100/1000/2500 Base-T RJ45, 1× 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. Ships with passive PoE injector. For power order 802.3bt. |
| | FC-10-PF432-247-02-DD | FortiCare Premium Support |
| | FC-10-PF432-284-02-DD | FortiCare Elite Support |
| FortiAP 231F | FAP-231F | Indoor Wireless AP - Tri radio (802.11 b/g/n/ax 2×2 MU-MIMO, 802.11 a/n/ac/ax 2×2 MU-MIMO and 1× 802.11 a/b/g/n/ac Wave 2, 1×1), internal antennas, 2× 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-FAP250-PA-10. |
| | FC-10-PF231-247-02-DD | FortiCare Premium Support |
| | FC-10-PF231-284-02-DD | FortiCare Elite Support |
| FortiAP 234F | FAP-234F | Ruggedized indoor/outdoor Wireless AP - Tri radio (802.11 b/g/n/ax 2×2 MU-MIMO, 802.11 a/n/ac/ax 2×2 MU-MIMO and 1× 802.11 a/b/g/n/ac Wave 2, 1×1), internal antennas, 2× 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. |
| | FC-10-P234F-247-02-DD | FortiCare Premium Support |
| | FC-10-P234F-284-02-DD | FortiCare Elite Support |
| FortiAP 23JF | FAP-23JF | Wall Plate AP - Tri radio (802.11 b/g/n/ax 2×2 MU-MIMO, 802.11 a/n/ac/ax 2×2 MU-MIMO and 1× 802.11 a/b/g/n/ac Wave 2, 1×1), internal antennas, 4 × 10/100/1000 RJ45 port (1× 802.3at PoE PD, 1× 802.3af PoE PSE, 2x Non-PoE Ports), 2 RJ-45 Ports (1xPass-through in, 1x Pass-through out), BT / BLE, 1x RS-232 RJ45 Serial Port. Wall plate mounting kit included. For power order 802.3at PoE injector GPI-130. Optional Accessory AC power adapter SP-FAP23J-PAX-10; Desktop stand FAP-MNT-WJ-20. |
| | FC-10-P23JF-247-02-DD | FortiCare Premium Support |
| | FC-10-P23JF-284-02-DD | FortiCare Elite Support |
| FortiAP 221E | FAP-221E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2×2 MU-MIMO), internal antennas, 1 × 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 | FortiCare Premium Support |
| | FC-10-PE221-284-02-DD | FortiCare Elite Support |
| FortiAP 223E | FAP-223E | Indoor Wireless AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2×2 MU-MIMO), external antennas included, 1 × 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 | FortiCare Premium Support |
| | FC-10-PE223-284-02-DD | FortiCare Elite Support |
| FortiAP C24JE | FAP-C24JE | Wall Plate AP - Dual radio (802.11 b/g/n and 802.11 a/n/ac Wave 2, 2×2 MU-MIMO), internal antennas, 4 × 10/100/1000 RJ45 port (1x 802.3at PoE PD, 1× 802.3af PoE PSE, 2x Non-PoE Ports), 2 RJ-45 Ports (1xPass-through in, 1x Pass-through out), 1x RS-232 RJ45 Serial Port. Wall plate mounting kit includedFor 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 | FortiCare Premium Support |
| | FC-10-AP024-284-02-DD | FortiCare Elite Support |



ORDER INFORMATION

| PRODUCT | SKU | DESCRIPTION |
|-----------------------------|-----------------------|---|
| FortiAP 231G | FAP-231G | Indoor Wireless AP - Tri radio (Wi-Fi-6E IEEE 802.11ax Tri-band 2.4/5/6GHz and dual 5G operation 2+2+2 2 streams 3 radios), internal antennas, 1x10/100/1000 RJ45 , 1x 100/1000/2500 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-PG231-247-02-DD | FortiCare Premium Support |
| | FC-10-PG231-284-02-DD | FortiCare Elite Support |
| FortiAP 233G | FAP-233G | Indoor Wireless AP - Tri radio (Wi-Fi-6E IEEE 802.11ax Tri-band 2.4/5/6GHz and dual 5G operation 2+2+2 2 streams 3 radios), external antennas, 1x10/100/1000 RJ45 , 1x 100/1000/2500 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-PG233-247-02-DD | FortiCare Premium Support |
| | FC-10-PG233-284-02-DD | FortiCare Elite Support |
| FortiAP 431G | FAP-431G | Indoor Wireless AP - Tri radio (Wi-Fi-6E IEEE 802.11ax Tri-band 2.4/5/6GHz and dual 5G operation 4+4+4 4 streams 3 radios), internal antennas, 2x 5G Base-T RJ45, BT/BLE, 1x Type A USB, 1x RS-232 RJ45 Serial Port. Ceiling/wall mount kit included. For power order: 802.3bt PoE injector or AC adapter SP-FAP400-PA. |
| | FC-10-PG431-247-02-DD | FortiCare Premium Support |
| | FC-10-PG431-284-02-DD | FortiCare Elite Support |
| FortiAP 433G | FAP-433G | Indoor Wireless AP - Tri radio (Wi-Fi-6E IEEE 802.11ax Tri-band 2.4/5/6GHz and dual 5G operation 4+4+4 4 streams 3 radios), external antennas, 2x 5G Base-T RJ45, BT/BLE, 1x Type A USB, 1x RS-232 RJ45 Serial Port. Ceiling/wall mount kit included. For power order: 802.3bt PoE injector or AC adapter SP-FAP400-PA. Region Code A. |
| | FC-10-PG433-247-02-DD | FortiCare Premium Support |
| | FC-10-PG433-284-02-DD | FortiCare Elite Support |
| PRODUCT | SKU | DESCRIPTION |
| 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 12v, 3.0A - 36W for FAP-231G, FAP-233G, FAP-431G, FAP-433G, FAP-831F, FAP-431F, FAP-433F, and FAP-C24JE. |
| | SP-FAP200-PA | AC power adapter 12v, 2.5A - 30W for FAP-221E, and FAP-223E. |
| | SP-FAP23J-PA-10 | AC power adapter 48v, 1.04A - 50W without power cord for FAP-23JF. |
| | SP-FAP250-PA-10 | AC power adapter 12v, 4.0A - 48W with Extended operating temp 0 deg C - 50 deg C with US and EU plugs for FAP-U231F and FAP-231F. |
| 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. |

Notes.

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

A country suffix code (-A, -B, -C, -D, -E, -F, -I, -J, -K, -N, -P, -S, -T, -U, -V, -W, or -Y) applies to all AP models based upon country of deployment. Work with your local supplier for the correct model in your regulatory domain.

Access Points mentioned in this datasheet are covered by a Limited Lifetime Hardware Warranty. Terms and conditions can be found in the EULA at <https://www.fortinet.com/content/dam/fortinet/assets/legal/EULA.pdf>



www.fortinet.com

Copyright © 2022 Fortinet, Inc. All rights reserved. Fortinet®, FortiGate®, FortiCare® and FortiGuard®, and certain other marks are registered trademarks of Fortinet, Inc., and other Fortinet names herein may also be registered and/or common law trademarks of Fortinet. All other product or company names may be trademarks of their respective owners. Performance and other metrics contained herein were attained in internal lab tests under ideal conditions, and actual performance and other results may vary. Network variables, different network environments and other conditions may affect performance results. Nothing herein represents any binding commitment by Fortinet, and Fortinet disclaims all warranties, whether express or implied, except to the extent Fortinet enters a binding written contract, signed by Fortinet's General Counsel, with a purchaser that expressly warrants that the identified product will perform according to certain expressly-identified performance metrics and, in such event, only the specific performance metrics expressly identified in such binding written contract shall be binding on Fortinet. For absolute clarity, any such warranty will be limited to performance in the same ideal conditions as in Fortinet's internal lab tests. Fortinet disclaims in full all covenants, representations, and guarantees pursuant hereto, whether express or implied. Fortinet reserves the right to change, modify, transfer, or otherwise revise this publication without notice, and the most current version of the publication shall be applicable.

Fortinet is committed to driving progress and sustainability for all through cybersecurity, with respect for human rights and ethical business practices, making possible a digital world you can always trust. You represent and warrant to Fortinet that you will not use Fortinet's products and services to engage in, or support in any way, violations or abuses of human rights, including those involving illegal censorship, surveillance, detention, or excessive use of force. Users of Fortinet products are required to comply with the Fortinet EULA (<https://www.fortinet.com/content/dam/fortinet/assets/legal/EULA.pdf>) and report any suspected violations of the EULA via the procedures outlined in the Fortinet Whistleblower Policy (https://secure.ethicspoint.com/domain/media/en/gui/19775/Whistleblower_Policy.pdf).