

# FortiAP™ Series

Cloud or FortiOS-managed Access Points

FortiAP access points are managed centrally by the integrated WLAN controller of any FortiGate® security appliance or can be managed through the free FortiCloud provisioning and management portal. With the integration of the wireless controller functionality into the market leading FortiGate appliance, Fortinet delivers a true Unified Access Layer. This enables you to easily manage wired and wireless security from a Single-pane-of-glass management console and protects your network from the latest security threats.



## Unified Management

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



## Advanced Security Protection

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



## Built-in WiFi Security

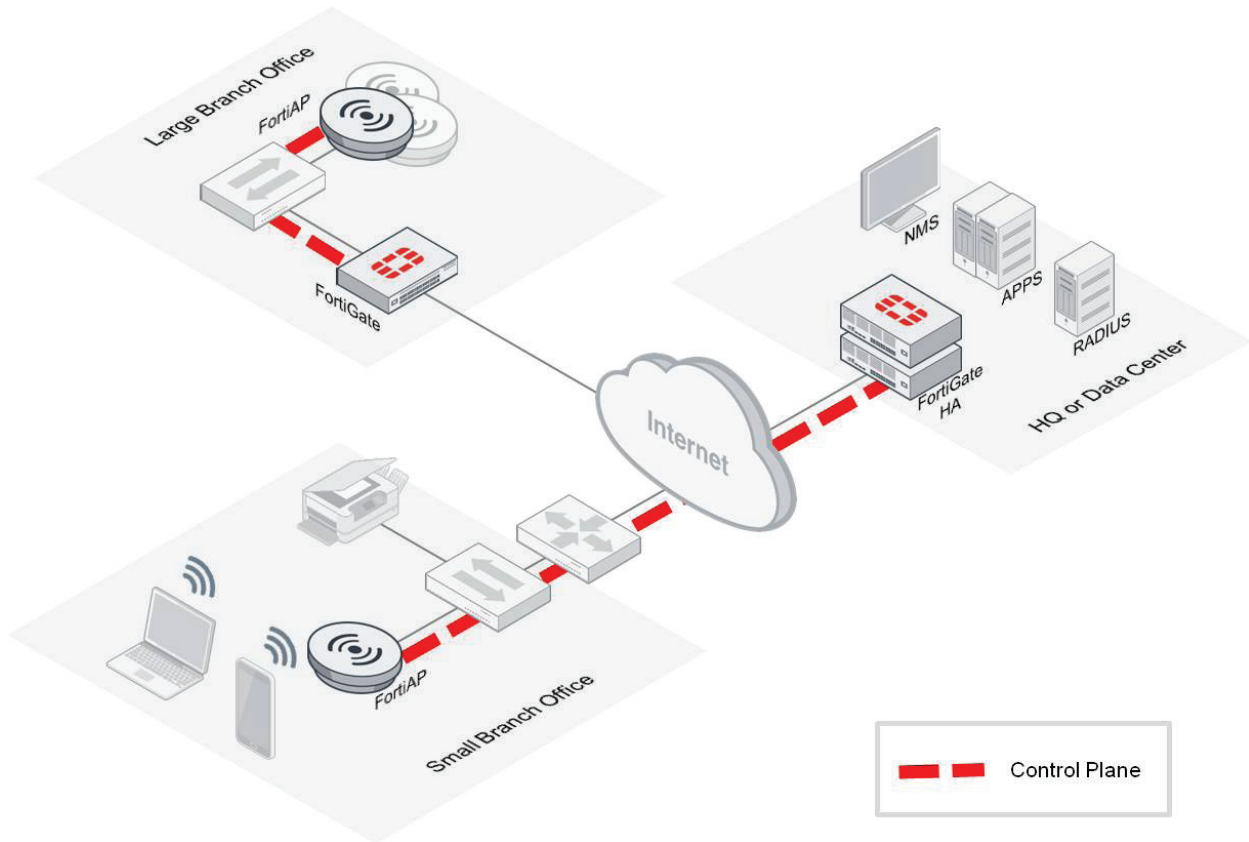
Protects the network from advanced wireless threats and satisfies PCI DSS compliance.

## Product Offerings

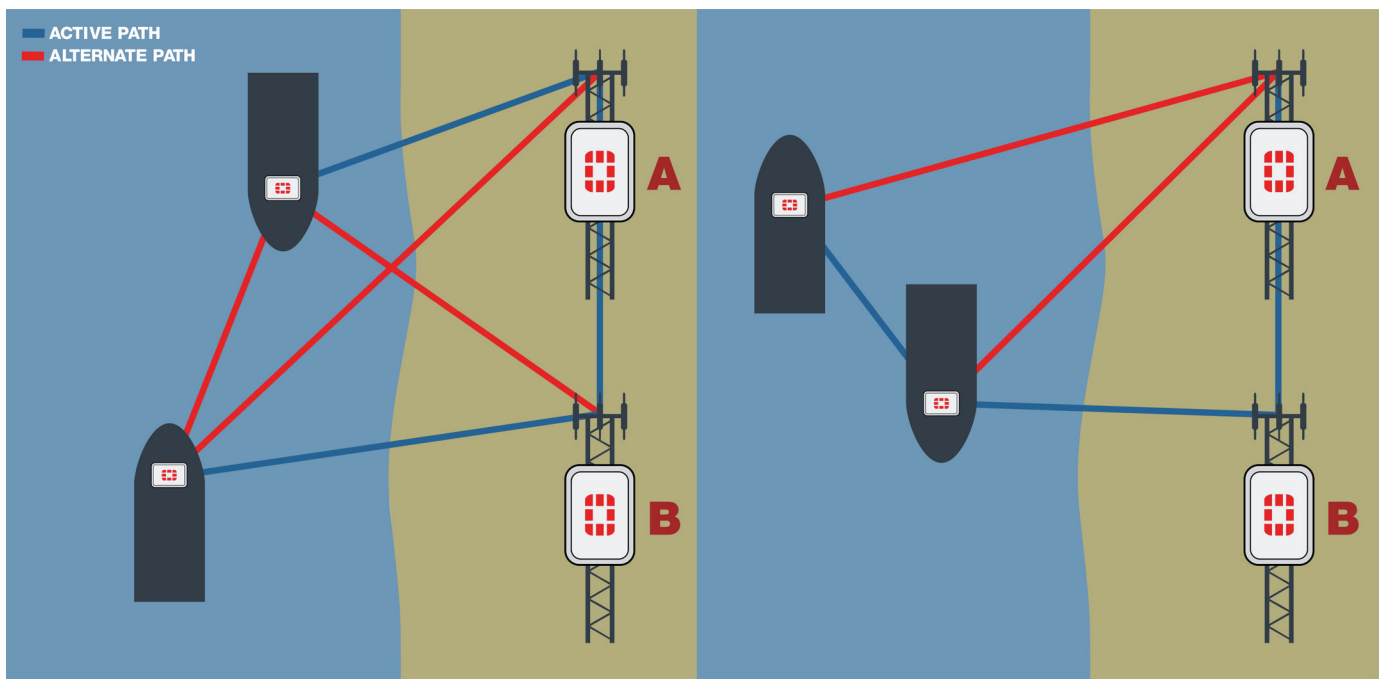
802.11ac Wave 1	<b>FAP-221C</b> <b>FAP-223C</b>	2x2 MIMO APs with dual radio
	<b>FAP-320C</b>	3x3 MIMO AP with dual radio
	<b>FAP-321C</b>	3x3 MIMO AP with dual radio
	<b>FAP-222C</b>	Outdoor, IP67 rated AP, 2x2 MIMO with dual radio with a variety of external antenna options
802.11ac Wave 2	<b>FAP-221E</b> <b>FAP-223E</b>	2x2 MU-MIMO APs with dual radio
	<b>FAP-222E</b>	Outdoor, IP67 rated AP, 2x2 MU-MIMO with dual radio with a variety of external antenna options
	<b>FAP-224E</b>	Outdoor, IP67 rated AP, 2x2 MU-MIMO with dual radio, internal antennas
	<b>FAP-421E</b> <b>FAP-423E</b>	4x4 MU-MIMO APs with dual radio
	<b>FAP-C24JE</b>	2x2 Indoor wall jack AP with dual 2.4 GHz and 5 GHz radios

## DEPLOYMENT

### Centralized or Local Wireless Controller

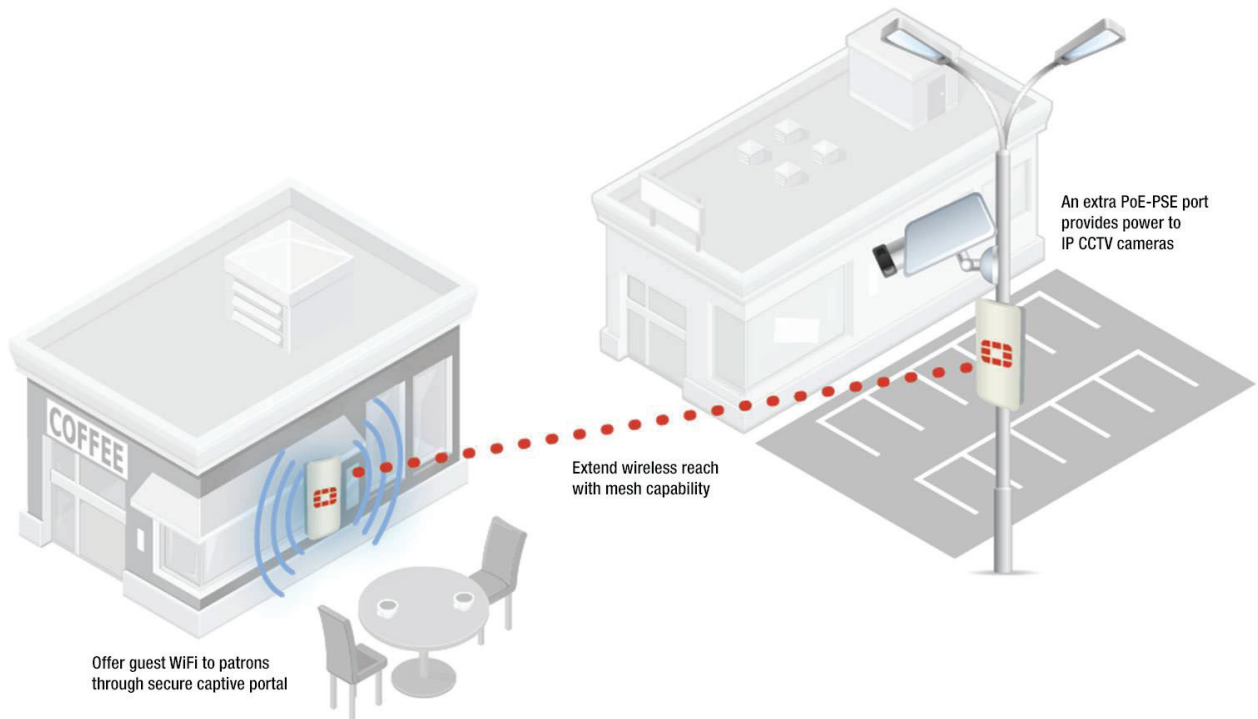


### Outdoor Point-to-Point Bridging or Multipoint Mesh Deployment



## DEPLOYMENT

### Outdoor Mesh and PoE Pass-Through Deployment



## HIGHLIGHTS

### FortiAP 221C and 223C

The FortiAP 221C and FortiAP 223C are dual-radio 802.11ac APs, designed for medium density indoor environments, including hotspot and guest or social WiFi deployments. The smoke detector form factor is perfect where discreet installation is required, like school classrooms and retail stores.



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

 **2x2 MIMO | Up to 300 + 867 Mbps**

## SPECIFICATIONS

	FORTIAP 221C	FORTIAP 223C
<b>Hardware</b>		
Hardware Type	Indoor	Indoor
Number of Radios	2	2
Number of Antennas	4 internal	4 RP-SMA External
Peak Antenna Gain	3.5 dBi for 2.4 GHz, 6 dBi for 5 GHz	3 dBi for 2.4 GHz, 3 dBi for 5 GHz
Frequency Bands (GHz) *	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850	
Frequency of Radio 1	2.4 GHz b/g/n or 5 GHz a/n	2.4 GHz b/g/n or 5 GHz a/n
Frequency of Radio 2	5 GHz a/n/ac	5 GHz a/n/ac
Maximum Data Rate	Radio 1: Up to 300 Mbps, Radio 2: Up to 867 Mbps	Radio 1: Up to 300 Mbps, Radio 2: Up to 867 Mbps
Tx/Rx Streams	2x2 MIMO 2 spatial stream	2x2 MIMO 2 spatial stream
Ethernet Ports	1x GE RJ45	1x GE RJ45
USB Port	–	–
Serial Console Port	–	–
Power over Ethernet (PoE)	IEEE 802.3af (12.9 W)	IEEE 802.3af (12.9 W)
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)	
Simultaneous SSIDs	16 (14 if background scanning enabled)	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST	
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist	
Maximum Tx Power	20 dBm (100 mW) *	20 dBm (100 mW) *
Physical Security	Kensington Lock	Kensington Lock
Mean Time Between Failures	> 10 years	> 10 years
IEEE Specifications	802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11x, 802.11y, 802.3af, 802.11ac	
802.11ac 80 MHz Channel	Yes	Yes
Mounting Options	Ceiling, T-Rail and wall	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit	Ceiling, T-Rail and wall mount kit
FortiPresence Capable	Yes	Yes
802.11n Features	20 MHz and 40 MHz High-Throughput (HT) Support  Increased maximum frame transmission by incorporating A-MPDU and A-MSDU Packet Aggregation  Conserve power via Dynamic MIMO power save	

	FORTIAP 221C	FORTIAP 223C
Advanced 802.11n to enhance rate-over-range including:	Low-density parity check (LDPC) encoding Maximum likelihood demodulation (MLD) Maximum Ratio Combining (MRC) for improved receiver performance	
<b>Wireless Monitoring Capabilities</b>		
Frequencies scanned	2.4 and 5 GHz	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes	Yes
Full-time scan as dedicated monitor	Yes	Yes
Full-time scan with client access on 5G GHz	No in AP mode	No in AP mode
<b>Dimensions</b>		
Diameter x Height	6.3 x 1.5 inches (16.0 x 3.8 cm)	6.3 x 1.5 inches (16.0 x 3.8 cm)
Weight	0.64 lb (0.3 kg)	0.64 lb (0.3 kg)
Package (shipping) Weight	1.21 lb (0.55 kg)	1.37 lb (0.62 kg)
<b>Environment</b>		
Power Supply	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A
Power Consumption (Avg.)	7.8 W	7.8 W
Power Consumption (Max.)	12 W	12 W
Humidity	5–90% non condensing	5–90% non condensing
Operating Temperature	32–104°F (0–40°C)	32–104°F (0–40°C)
Storage Temperature	-4–140°F (-20–60°C)	-4–140°F (-20–60°C)
Directives	Low Voltage Directive • RoHS	Low Voltage Directive • RoHS
<b>Certifications</b>		
WiFi Alliance Certified	Yes	No
DFS Certified for Europe and Japan	Yes	Yes
<b>Warranty</b>		
Limited Lifetime Warranty	Yes	Yes

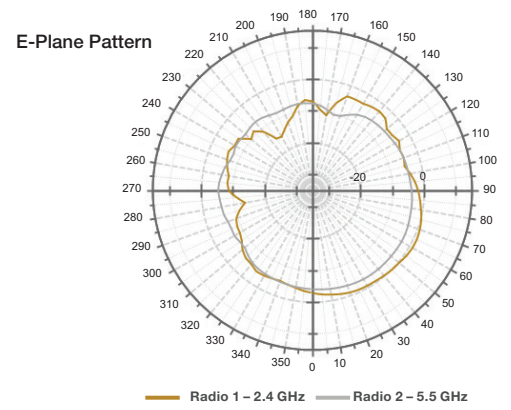
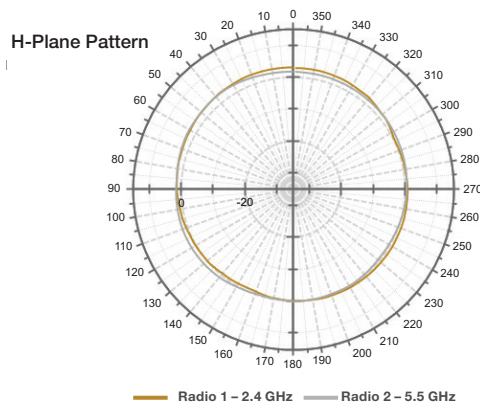
\* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

## RF RX/TX PERFORMANCE TABLE

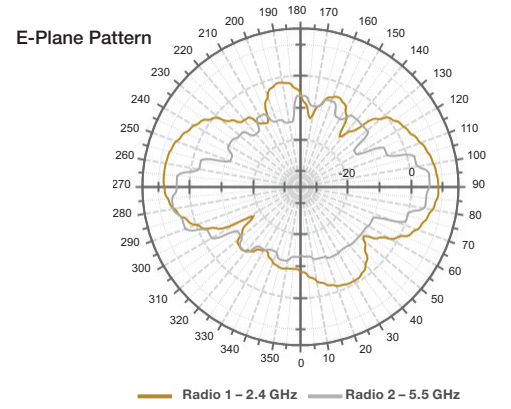
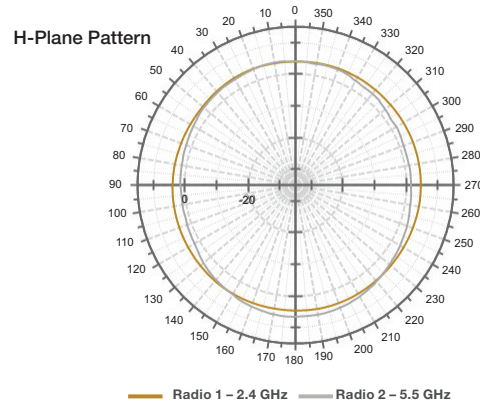
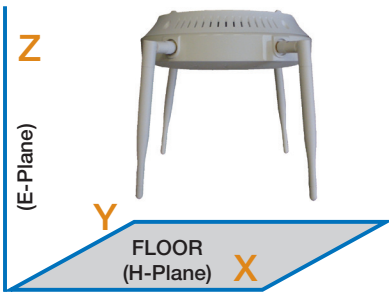
FORTIAP 221C / 223C						
RADIO 1				RADIO 2		
802.11 a/g	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
6 Mbps	20	-86	—	-86	18	-86
9 Mbps	20	-85	—	-85	18	-85
12 Mbps	20	-83	—	-83	17	-83
18 Mbps	20	-81	—	-81	17	-81
24 Mbps	20	-78	—	-78	17	-78
36 Mbps	20	-75	—	-75	16	-75
48 Mbps	19	-74	—	-74	15	-74
54 Mbps	17	-73	—	-73	15	-73
<b>802.11n HT20</b>						
MCS 0/8	18	-86	—	-86	18	-86
MCS 1/9	18	-83	—	-83	18	-83
MCS 2/10	18	-81	—	-81	18	-81
MCS 3/11	18	-78	—	-78	18	-78
MCS 4/12	18	-76	—	-76	17	-76
MCS 5/13	18	-72	—	-74	16	-74
MCS 6/14	17	-71	—	-73	15	-73
MCS 7/15	16	-70	—	-72	14	-72
<b>802.11n HT40</b>						
MCS 0/8	18	-83	—	-83	18	-83
MCS 1/9	18	-80	—	-80	18	-80
MCS 2/10	18	-78	—	-78	18	-78
MCS 3/11	18	-75	—	-75	18	-75
MCS 4/12	18	-73	—	-73	16	-73
MCS 5/13	18	-72	—	-72	15	-72
MCS 6/14	17	-71	—	-70	14	-70
MCS 7/15	16	-70	—	-69	13	-69
<b>802.11ac VHT20</b>						
MCS 0	—	—	—	—	18	-90
MCS 1	—	—	—	—	17	-86
MCS 2	—	—	—	—	17	-82
MCS 3	—	—	—	—	17	-78
MCS 4	—	—	—	—	17	-74
MCS 5	—	—	—	—	16	-70
MCS 6	—	—	—	—	15	-69
MCS 7	—	—	—	—	14	-68
MCS 8	—	—	—	—	13	-67
<b>802.11 ac VHT40</b>						
MCS 0	—	—	—	—	18	-86
MCS 1	—	—	—	—	16	-82
MCS 2	—	—	—	—	16	-78
MCS 3	—	—	—	—	16	-74
MCS 4	—	—	—	—	16	-70
MCS 5	—	—	—	—	15	-69
MCS 6	—	—	—	—	14	-68
MCS 7	—	—	—	—	13	-66
MCS 8	—	—	—	—	13	-64
MCS 9	—	—	—	—	12	-62
<b>802.11ac VHT80</b>						
MCS 0	—	—	—	—	18	-81
MCS 1	—	—	—	—	16	-78
MCS 2	—	—	—	—	16	-74
MCS 3	—	—	—	—	16	-70
MCS 4	—	—	—	—	16	-69
MCS 5	—	—	—	—	15	-68
MCS 6	—	—	—	—	14	-66
MCS 7	—	—	—	—	13	-64
MCS 8	—	—	—	—	13	-62
MCS 9	—	—	—	—	12	-60

# ANTENNA RADIATION PATTERNS

## FAP-221C



## FAP-223C



## HIGHLIGHTS

### FortiAP 320C

The FortiAP 320C is a dual-radio 802.11ac AP for high density environments. Designed with dual redundant PoE Ethernet ports to provide maximum resiliency, this AP is ideal for mission-critical environments such as hospitals and manufacturing facilities. The plenum-rated enclosure and extended temperature range also allows deployment in non-temperature controlled warehouses.



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

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

## SPECIFICATIONS

FORTIAP 320C	
<b>Hardware</b>	
Hardware Type	Indoor Plenum Rated
Number of Radios	2
Number of Antennas	6 Internal
Peak Antenna Gain	5 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
Frequency of Radio 1	2.4 GHz b/g/n
Frequency of Radio 2	5 GHz a/n/ac
Maximum Data Rate	Radio 1: Up to 450 Mbps, Radio 2: Up to 1300 Mbps
Tx/Rx Streams	3x3 MIMO with 3 spatial streams
Ethernet Ports	2x GE RJ45
USB Port	1x Type A
Serial Console Port	Yes
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3af (12.9 W)
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)
Simultaneous SSIDs	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	21 dBm (126 mW) *
Physical Security	Kensington Lock
Mean Time Between Failures	> 10 years
IEEE Specifications	802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11n, 802.1x, 802.3af, 802.11ac
802.11ac 80MHz Channel	Yes
802.11n Features	20 MHz and 40 MHz High-Throughput (HT) Support Increased maximum frame transmission by incorporating A-MPDU and A-MSDU Packet Aggregation Conserve power via Dynamic MIMO power save

FORTIAP 320C	
Advanced 802.11n to enhance rate-over-range including:	Low-density parity check (LDPC) encoding Maximum likelihood demodulation (MLD) Maximum Ratio Combining (MRC) for improved receiver performance
Mounting Options	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit
FortiPresence Capable	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access on 5G GHz	No in AP mode
<b>Dimensions</b>	
Length x Width x Height	6.5 x 6.5 x 1.4 inches (16.5 x 16.5 x 3.5 cm)
Weight	1.33 lb (0.6 kg)
Package (shipping) Weight	1.79 lb (0.81 kg)
<b>Environment</b>	
Power Supply	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A
Power Consumption (Average)	10.5 W
Power Consumption (Maximum)	12.08 W
Humidity	5–90% non condensing
Operating Temperature	–4–122°F (–20–50°C)
Storage Temperature	–40–158°F (–40–70°C)
Directives	Low Voltage Directive • RoHS
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified for Europe	Yes
<b>Warranty</b>	
Limited Lifetime Warranty	Yes

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

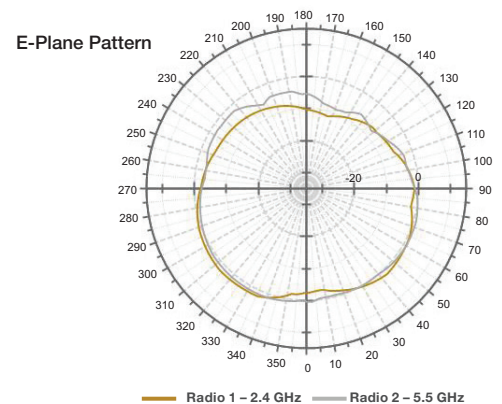
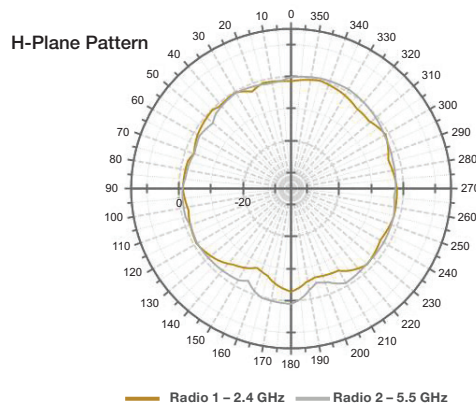
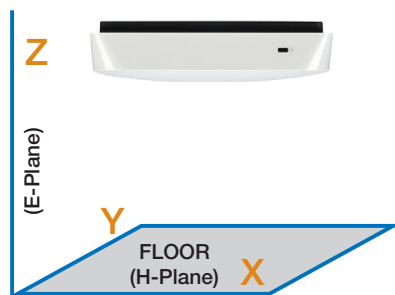
## RF RX/TX PERFORMANCE TABLE

FORTIAP 320C				
	RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
<b>802.11 a/g</b>				
6 Mbps	19	-85	21	-89
9 Mbps	19	-84	21	-88
12 Mbps	19	-83	21	-87
18 Mbps	19	-81	21	-85
24 Mbps	19	-78	20	-84
36 Mbps	16	-74	19	-83
48 Mbps	16	-70	18	-79
54 Mbps	16	-69	17	-76
<b>802.11n HT20</b>				
MCS 0/8	18	-85	20	-89
MCS 1/9	18	-83	20	-88
MCS 2/10	18	-81	20	-87
MCS 3/11	18	-78	19	-85
MCS 4/12	16	-74	19	-84
MCS 5/13	16	-70	18	-83
MCS 6/14	15	-69	17	-79
MCS 7/15	15	-68	16	-73
<b>802.11n HT40</b>				
MCS 0/8	17	-82	18	-91
MCS 1/9	17	-80	18	-85
MCS 2/10	17	-78	18	-85
MCS 3/11	17	-75	18	-80
MCS 4/12	15	-71	18	-78
MCS 5/13	15	-67	17	-76
MCS 6/14	14	-66	16	-74
MCS 7/15	14	-65	15	-71

FORTIAP 320C				
	RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
<b>802.11ac VHT20</b>				
MCS 0	—	—	20	-85
MCS 1	—	—	20	-84
MCS 2	—	—	20	-83
MCS 3	—	—	19	-82
MCS 4	—	—	19	-81
MCS 5	—	—	18	-78
MCS 6	—	—	17	-74
MCS 7	—	—	16	-70
MCS 8	—	—	15	-69
<b>802.11ac VHT40</b>				
MCS 0	—	—	18	-85
MCS 1	—	—	18	-84
MCS 2	—	—	18	-83
MCS 3	—	—	18	-82
MCS 4	—	—	18	-81
MCS 5	—	—	17	-78
MCS 6	—	—	16	-74
MCS 7	—	—	15	-70
MCS 8	—	—	14	-69
MCS 9	—	—	14	-68
<b>802.11ac VHT80</b>				
MCS 0	—	—	18	-78
MCS 1	—	—	18	-75
MCS 2	—	—	18	-73
MCS 3	—	—	18	-70
MCS 4	—	—	18	-67
MCS 5	—	—	17	-65
MCS 6	—	—	16	-62
MCS 7	—	—	15	-60
MCS 8	—	—	14	-58
MCS 9	—	—	14	-56

## ANTENNA RADIATION PATTERNS

### FAP-320C





## HIGHLIGHTS

### FortiAP 321C

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

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<b>Hardware</b>	
Hardware Type	Indoor
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Number of Antennas	6 Internal
Peak Antenna Gain	4 dBi for 2.4 GHz, 5 dBi for 5 GHz
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User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	20 (100 mW) *
Physical Security	Kensington Lock
Mean Time Between Failures	> 10 years
IEEE Specifications	802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.1x, 802.3af, 802.11ac
802.11ac 80 MHz Channel	Yes
802.11n Features	20 MHz and 40 MHz High-Throughput (HT) Support  Increased maximum frame transmission by incorporating A-MPDU and A-MSDU Packet Aggregation  Conserve power via Dynamic MIMO power save

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FortiPresence Capable	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access on 5G GHz	No in AP mode
<b>Dimensions</b>	
Diameter x Height	6.3 x 1.66 inches (16.2 x 4.2 cm)
Weight	0.77 lb (0.35 kg)
Package (shipping) Weight	1.33 lb (0.6 kg)
<b>Environment</b>	
Power Supply	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A
Power Consumption (Average)	4.9 W
Power Consumption (Maximum)	12 W, 12.6 W (with PoE)
Humidity	5–90% non condensing
Operating Temperature	32–113°F (0–45°C)
Storage Temperature	-4–140°F (-20–60°C)
Directives	Low Voltage Directive • RoHS
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified for Europe	Yes
<b>Warranty</b>	
Limited Lifetime Warranty	Yes

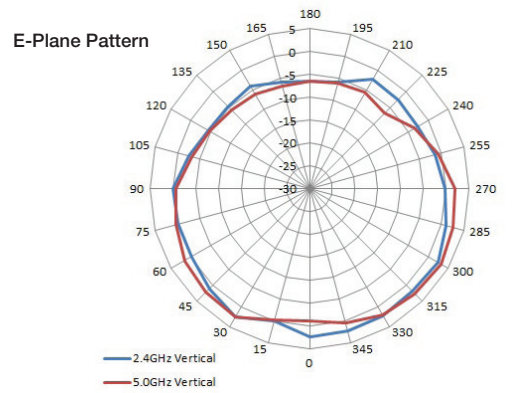
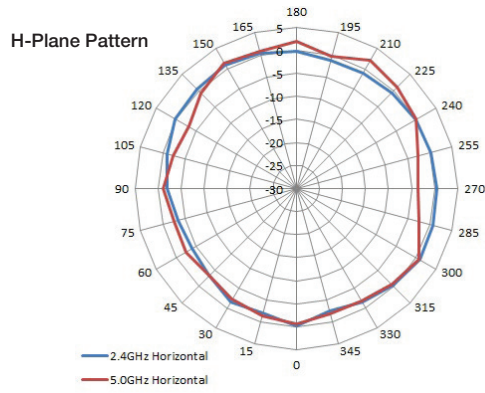
\* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

## RF RX/TX PERFORMANCE TABLE

FORTIAP 321C				
	RADIO 1		RADIO 2	
802.11 a/g	2.4 GHz Tx Power (dBm) (Total)	RX Sensitivity (dBm) (Combined)	5 GHz Tx Power (dBm) (Total)	RX Sensitivity (dBm) (Combined)
6 Mbps	24	-90	25	-93
9 Mbps	24	-90	25	-91
12 Mbps	24	-89	25	-89
18 Mbps	24	-87	25	-87
24 Mbps	24	-84	25	-84
36 Mbps	21	-80	25	-80
48 Mbps	21	-76	19	-78
54 Mbps	21	-75	19	-77
<b>802.11 n HT20</b>				
MCS 0/8/16	23	-90	25	-93
MCS 1/9/17	23	-87	25	-87
MCS 2/10/18	23	-85	25	-85
MCS 3/11/19	23	-82	25	-82
MCS 4/12/20	21	-78	25	-78
MCS 5/13/21	21	-76	25	-77
MCS 6/14/22	20	-75	25	-76
MCS 7/15/23	20	-74	24	-75
<b>802.11 n HT40</b>				
MCS 0/8/16	22	-87	25	-90
MCS 1/9/17	22	-84	25	-84
MCS 2/10/18	22	-82	25	-82
MCS 3/11/19	22	-79	25	-79
MCS 4/12/20	20	-75	25	-76
MCS 5/13/21	20	-73	25	-75
MCS 6/14/22	19	-72	25	-74
MCS 7/15/23	19	-71	24	-73
<b>802.11 ac VHT20</b>				
MCS 0	—	—	25	-93
MCS 1	—	—	25	-87
MCS 2	—	—	25	-85
MCS 3	—	—	25	-82
MCS 4	—	—	25	-78
MCS 5	—	—	25	-77
MCS 6	—	—	25	-76
MCS 7	—	—	24	-75
MCS 8	—	—	22	-71
<b>802.11 ac VHT40</b>				
MCS 0	—	—	25	-90
MCS 1	—	—	25	-84
MCS 2	—	—	25	-82
MCS 3	—	—	25	-79
MCS 4	—	—	25	-76
MCS 5	—	—	25	-75
MCS 6	—	—	25	-74
MCS 7	—	—	24	-73
MCS 8	—	—	22	-67
MCS 9	—	—	20	-65
<b>802.11 ac VHT80</b>				
MCS 0	—	—	25	-88
MCS 1	—	—	25	-81
MCS 2	—	—	25	-79
MCS 3	—	—	25	-76
MCS 4	—	—	25	-72
MCS 5	—	—	25	-69
MCS 6	—	—	25	-68
MCS 7	—	—	24	-67
MCS 8	—	—	22	-65
MCS 9	—	—	20	-63

# ANTENNA RADIATION PATTERNS

## FAP-321C



## HIGHLIGHTS

### FortiAP 222C

The FortiAP 222C is a high-performance dual-band 2x2 MIMO 802.11ac AP. Designed in a ruggedized IP67-rated enclosure and capable of withstanding extended temperature ranges, this AP is suitable for deployment in the harsh conditions. The AP uses high-quality external antennas for long-distance and mission-critical bridging or mesh deployments.



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

 **2x2 MIMO | Up to 300 + 867 Mbps**

## SPECIFICATIONS

FORTIAP 222C	
<b>Hardware</b>	
Hardware Type	Outdoor IP67 rated, status LEDs, gore vent for pressure equalization
Number of Radios	2
Number of Antennas	4 external N-Type
Peak Antenna Gain	3.5 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
Frequency of Radio 1	2.4 GHz a/n/ac
Frequency of Radio 2	5 GHz b/g/n
Maximum Data Rate	Radio 1: Up to 300 Mbps, Radio 2: Up to 867 Mbps
Tx/Rx Streams	2x2 MIMO with 2 spatial streams
Ethernet Ports	1x GE RJ45
USB Port	–
Serial Console Port	–
Power over Ethernet (PoE)	IEEE 802.3at or included PoE injector
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)
Simultaneous SSIDs	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	26 dBm (398 mW) *
Physical Security	Concrete and pole mount
Mean Time Between Failures	> 7 years
IEEE Specifications	802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.1x, 802.3af, 802.11ac
802.11ac 80 MHz Channel	Yes
802.11n Features	20 MHz and 40 MHz High-Throughput (HT) Support Increased maximum frame transmission by incorporating A-MPDU and A-MSDU Packet Aggregation Conserve power via Dynamic MIMO power save

FORTIAP 222C	
Advanced 802.11n to enhance rate-over-range including:	Low-density parity check (LDPC) encoding Maximum likelihood demodulation (MLD) Maximum Ratio Combining (MRC) for improved receiver
Mounting Options	Wall or pole
Included Accessories	PoE injector with AC power adapter, pole mount kit, wall mount kit, grounding cable, surge protector, 4x dipole antennas
FortiPresence Capable	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	No in AP mode
<b>Dimensions</b>	
Length x Width x Height	9.8 x 8.7 x 2.1 inches (249 x 220 x 53 mm)
Weight	3.68 lbs (1.67 kg)
Package (shipping) Weight	9.1 lbs (4.31 kg)
<b>Environment</b>	
Power Supply	Proprietary PoE Injector Adapter Input: 100–240V AC, 50–60 Hz
Power Consumption (Average)	16 W
Power Consumption (Maximum)	18.4 W
Humidity	5–90% non-condensing
Operating Temperature	–40–140°F (–40–60°C)
Storage Temperature	–40–158°F (–40–70°C)
Directives	Low Voltage Directive • RoHS
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified for Europe	Yes

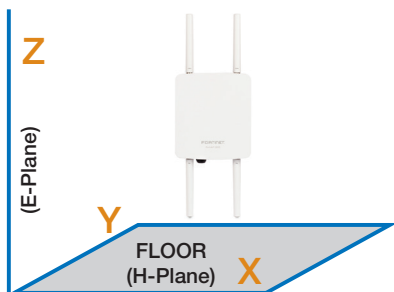
\* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

## RF RX/TX PERFORMANCE TABLE

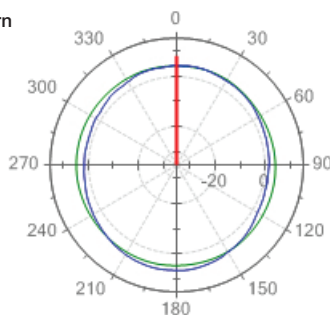
FORTIAP 222C				
	RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
6 Mbps	27	-92	24	-93
54 Mbps	25	-75	20	-77
<b>802.11n HT20</b>				
MCS 0/8	27	-91	24	-93
MCS 1/9	27	-89	24	-91
MCS 2/10	27	-88	24	-87
MCS 3/11	27	-85	23	-84
MCS 4/12	26	-81	23	-81
MCS 5/13	25	-78	21	-77
MCS 6/14	25	-76	20	-76
MCS 7/15	24	-73	20	-74
<b>802.11n HT40</b>				
MCS 0/8	27	-86	24	-89
MCS 1/9	27	-87	24	-86
MCS 2/10	27	-86	24	-84
MCS 3/11	27	-83	24	-81
MCS 4/12	26	-79	24	-78
MCS 5/13	24	-77	22	-76
MCS 6/14	24	-72	20	-75
MCS 7/15	24	-71	20	-73
<b>802.11ac HT80</b>				
MCS 0	—	—	24	-87
MCS 1	—	—	24	-85
MCS 2	—	—	24	-83
MCS 3	—	—	24	-79
MCS 4	—	—	24	-77
MCS 5	—	—	22	-76
MCS 6	—	—	21	-75
MCS 7	—	—	20	-73
MCS 8	—	—	18	-65
MCS 9	—	—	17	-61

## ANTENNA RADIATION PATTERNS

### FAP-222C

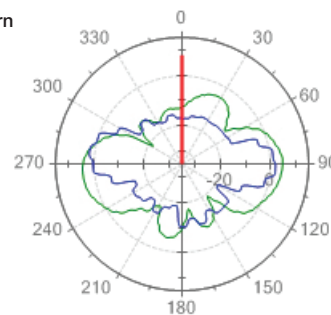


H-Plane Pattern



Radio 1 – 2.4 GHz    Radio 2 – 5.5 GHz

E-Plane Pattern



Radio 1 – 2.4 GHz    Radio 2 – 5.5 GHz

## 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 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
<b>Hardware</b>		
Hardware Type	Indoor	Indoor
Number of Radios	2	2
Number of Antennas	4 Internal	4 RP-SMA External
Peak Antenna Gain	4 dBi for 2.4 GHz, 5 dBi for 5 GHz	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	
Frequency of Radio 1	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)
Frequency of Radio 2	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
Ethernet Ports	1x GE RJ45	1x GE RJ45
USB Port	1x Type A	x Type A
Serial Console Port	1 RS-232 x RJ45	1 RS-232 x RJ45
Power over Ethernet (PoE)	IEEE 802.3af	IEEE 802.3af
Simultaneous SSIDs	16 (14 if background scanning enabled)	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST	
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist	
Maximum Tx Power	25 dBm (158 mW) @ 2.4 GHz* 23 dBm (158 mW) @ 5 GHz*	25 dBm (158 mW) @ 2.4 GHz* 23 dBm (158 mW) @ 5 GHz*
Physical Security	Kensington Lock	Kensington Lock
IEEE Specifications	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.1x, 802.11ac, 802.3af, 802.3az	
FortiPresence Capable	Yes	Yes
Wireless Mesh Capable	Yes	Yes
Concurrent Clients Per Radio (Maximum / Recommended)	512 / 512	512 / 512
<b>Advanced 802.11 Features</b>		
802.11ac Wave 2 MU-MIMO	Yes	Yes
Transmit Beam Forming (TxBF)	Yes	Yes
Low-Density Parity Check (LDPC) Encoding	Yes	Yes
Maximum Likelihood Demodulation (MLD)	Yes	Yes
Maximum Ratio Combining (MRC)	Yes	Yes
802.11ac 20/40/80 MHz Channel	Yes	Yes

	FORTIAP 221E	FORTIAP 223E
A-MPDU and A-MSDU	Yes	Yes
Packet Aggregation		
MIMO Power Save	Yes	Yes
Short Guard Interval	Yes	Yes
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)	
<b>Wireless Monitoring Capabilities</b>		
Frequencies Scanned	2.4 and 5 GHz	2.4 and 5 GHz
Background Scan with Client Access on 2.4 and 5 GHz	Yes	Yes
Full-time Scan as Dedicated Monitor	Yes	Yes
Full-time Scan with Client Access on 5G GHz	No in AP mode	No in AP mode
<b>Dimensions</b>		
Diameter x Height	6.3 x 1.85 inches (160 x 47 mm)	6.3 x 1.85 inches (160 x 47 mm)
Weight	1.1 lb (0.5 kg)	1.1 lb (0.5 kg)
Package (shipping) Weight	4.95 lb (2.2 kg)	5.3 lb (2.4 kg)
Mounting Options	Ceiling, T-Rail and wall	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and Wall mount kit (AC power adapter sold separately)	Ceiling, T-Rail and Wall mount kit and 8 dipole antennas (AC power adapter sold separately)
<b>Environment</b>		
Power Supply	Adapter Input: 100–240V, 50/60Hz, 0.9A Maximum Output: 12V DC, 3A	Adapter Input: 100–240V, 50/60Hz, 0.9A Maximum Output: 12V DC, 3A
Power Consumption (Avg.)	10.25 W	10.25 W
Power Consumption (Max.)	12.36 W	12.36 W
Humidity	5–90% non condensing	5–90% non condensing
Operating Temperature	–4–122°F (–20–50°C)	–4–122°F (–20–50°C)
Storage Temperature	–40–158°F (–40–70°C)	–40–158°F (–40–70°C)
Directives	Low Voltage Directive • RoHS	Low Voltage Directive • RoHS
UL2043 Plenum Material	Yes	Yes
Mean Time Between Failures	>30 Years	>30 Years
<b>Certifications</b>		
WiFi Alliance Certified	Yes	Yes
DFS Certified	Yes	Yes
Hotspot 2.0 Certified	Yes	Yes
<b>Warranty</b>		
Limited Lifetime Warranty	Yes	Yes

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

## RF RX/TX PERFORMANCE TABLE

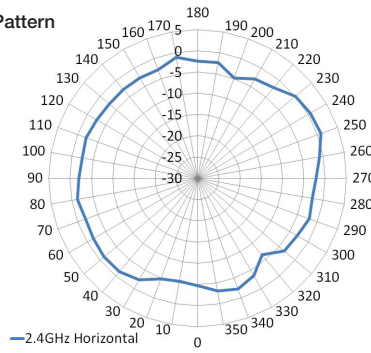
FORTIAP 221E / 223E				
	RADIO 1		RADIO 2	
802.11 a/g	2.4 GHz Tx Power (dBm)	RX Sensitivity (dBm)	5 GHz Tx Power (dBm)	RX Sensitivity (dBm)
6 Mbps	20	-93	21	-91
9 Mbps	20	-91	21	-90
12 Mbps	20	-90	21	-89
18 Mbps	19	-88	21	-86
24 Mbps	19	-85	21	-83
36 Mbps	18	-82	21	-80
48 Mbps	18	-77	19	-76
54 Mbps	17	-75	19	-74
<b>802.11 n HT20</b>				
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
<b>802.11 n HT40</b>				
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
<b>802.11 ac VHT20</b>				
MCS 0	19	-91	21	-91
MCS 1	19	-89	21	-88
MCS 2	19	-86	21	-86
MCS 3	18	-83	21	-83
MCS 4	18	-80	21	-79
MCS 5	18	-76	21	-75
MCS 6	18	-73	19	-74
MCS 7	18	-71	19	-72
MCS 8	18	-68	18	-69
<b>802.11 ac VHT40</b>				
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
<b>802.11 ac VHT80</b>				
MCS 0	—	—	19	-85
MCS 1	—	—	19	-83
MCS 2	—	—	19	-80
MCS 3	—	—	19	-77
MCS 4	—	—	19	-74
MCS 5	—	—	19	-71
MCS 6	—	—	18	-69
MCS 7	—	—	18	-68
MCS 8	—	—	17	-63
MCS 9	—	—	17	-61

# ANTENNA RADIATION PATTERNS

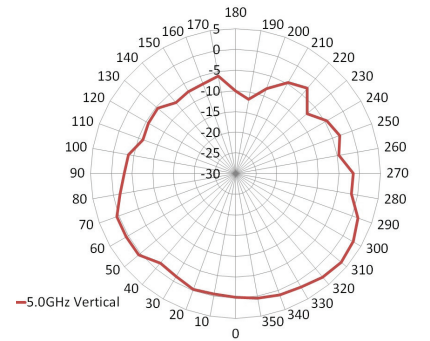
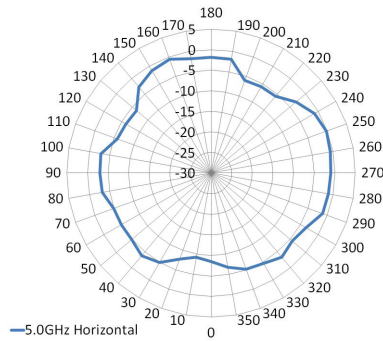
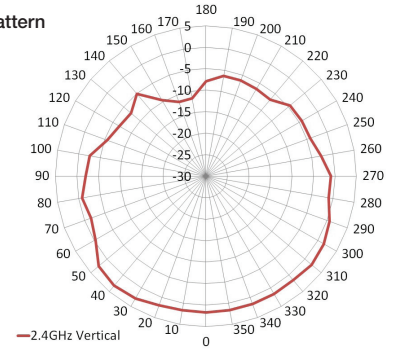
## FAP-221E



H-Plane Pattern



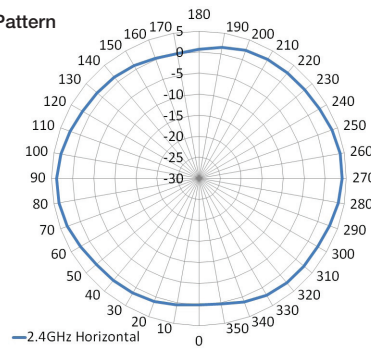
E-Plane Pattern



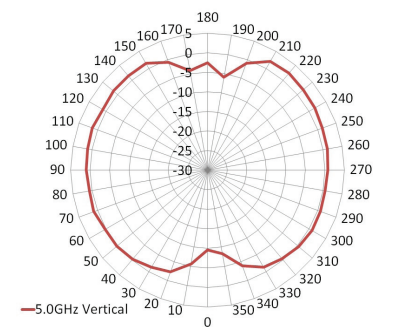
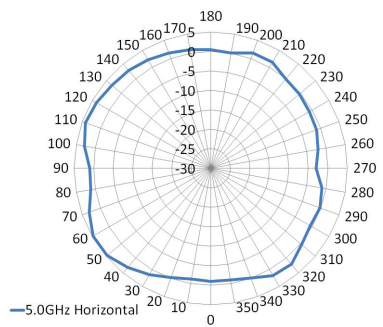
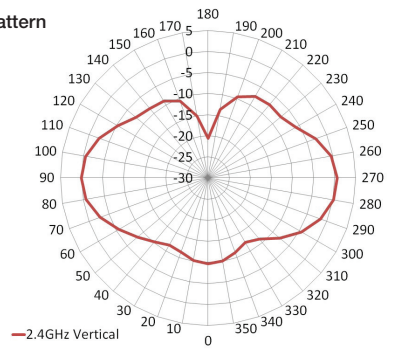
## FAP-223E



H-Plane Pattern



E-Plane Pattern





## HIGHLIGHTS

### FortiAP 222E

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



 **802.11ac Wave 2 | Dual Radio 2.4 and 5 GHz | High Gain Omni-directional Antennas**

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

## SPECIFICATIONS

FORTIAP 222E	
<b>Hardware</b>	
Hardware Type	Indoor/Outdoor Universal AP
Number of Radios	2
Number of Antennas	4 External
Peak Antenna Gain	5 dBi for 2.4 GHz, 7 dBi for 5 GHz
Frequency Bands (GHz) *	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850
Frequency of Radio 1	2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (256 QAM)
Frequency of Radio 2	5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) MU-MIMO 2 simultaneous devices
Maximum Data Rate	Radio 1: up to 400 Mbps, Radio 2: up to 867 Mbps
Ethernet Ports	1x GE RJ45, 1x GE RJ45 (PoE)
Serial Console Port	Internal console port
Power over Ethernet (PoE)	IEEE 802.3af/at (12.5 W / 30 W)
Simultaneous SSIDs	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	22 dBm (158 mW) @ 2.4 GHz per chain* 22 dBm (158 mW) @ 5 GHz per chain*
Physical Security	N/A
IEEE Specifications	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.3af, 802.11ac, 802.3at, 802.3az
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by controller)
FortiDeploy & FortiCloud Key	Yes
Concurrent Clients Per Radio (Maximum / Recommended)	512/40
LED Off Mode	Yes
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes

FORTIAP 222E	
Short Guard Interval	Yes
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)
<b>Wireless Monitoring Capabilities</b>	
Frequencies Scanned	2.4 and 5 GHz
Background Scan with Client Access on 2.4 and 5 GHz	Yes
Full-time Scan as Dedicated Monitor	Yes
Full-time Scan with Client Access on 5G GHz	No
Packet Sniffer Mode	Yes
Spectrum Analyzer	Yes — Dedicated chipset
<b>Dimensions</b>	
Length x Width x Height	9.8 x 8.66 x 2.08 inches (249 x 220 x 53 mm)
Weight	3.82 lb (1,735 g)
Package (shipping) Weight	5.82 lb (2.64 kg)
Mounting Options	Adjustable Pole mount kit (right/left rotation: 25°, tilt up: -20°, tilt down: 90°)
Included Accessories	Wall/Pole mount kit and 6M grounding cable
<b>Environment</b>	
Power Supply	PSE Device
Power Consumption (Avg. / Max.)	13.5 W / 17.5 W
Humidity	5–90% non-condensing
Operating / Storage Temperature	-4–149°F (-20–65°C) / -4–158°F (-20–70°C)
Directives	Low Voltage Directive • RoHS
UL2043 Plenum Material	N/A (Top Cover)
Mean Time Between Failures	>10 Years
IP Rating	IP67
<b>Certifications</b>	
WiFi Alliance Certified	In Process
DFS Certified	In Process
CB	IEC 60950-1
UL	UL 60950-1, CSA C22.2 No. 60950-1
FCC	FCC Part 15 Subpart B (Class B), Subpart C and Subpart E
IC	RSS-247, RSS-GEN, RSS-102, ICES-003
CE	CE R&TTE Directive 2014/53/EU (EN 300 328, EN 301 893, EN 301 489 EMC Directive 2004/108/EC (EN55032, EN 55024)
<b>Warranty</b>	
Limited Lifetime Warranty	1 Year**

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

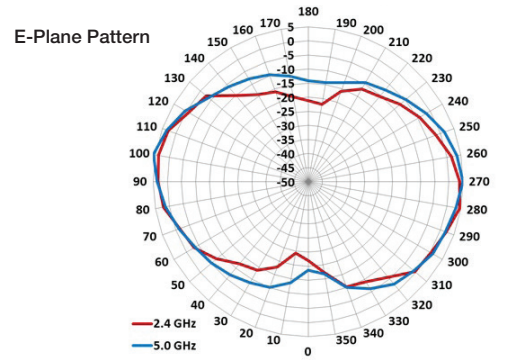
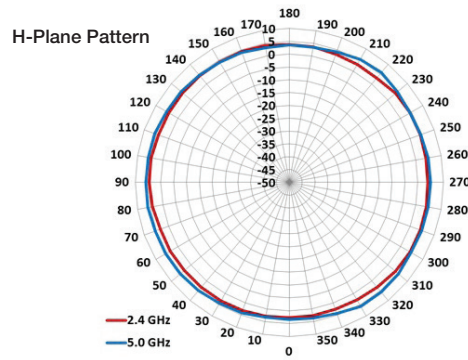
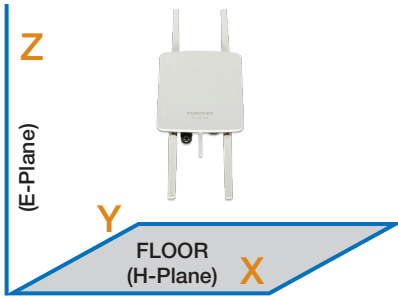
\*\* Warranty from Liteon: 12 months after shipping date from LTC manufacturing facility.

## RF RX/TX PERFORMANCE TABLE

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

# ANTENNA RADIATION PATTERNS

## FAP-222E



## HIGHLIGHTS

### FortiAP 224E

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



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

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

## SPECIFICATIONS

FORTIAP 224E	
<b>Hardware</b>	
Hardware Type	Indoor/Outdoor Universal AP
Number of Radios	2
Number of Antennas	4 Internal
Peak Antenna Gain	6 dBi for 2.4 GHz, 8 dBi for 5 GHz
Frequency Bands (GHz) *	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850
Frequency of Radio 1	2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (256 QAM)
Frequency of Radio 2	5 GHz a/n/ac (2x2:2 stream) 20/40/80 MHz (256 QAM) MU-MIMO 2 simultaneous devices
Maximum Data Rate	Radio 1: up to 400 Mbps, Radio 2: up to 867 Mbps
Ethernet Ports	1x GE RJ45, 1x GE RJ45 (PoE)
Optical Fiber	1x SFP cage
Serial Console Port	Internal console port
Power over Ethernet (PoE)	IEEE 802.3af/at (12.5 W / 30 W)
Simultaneous SSIDs	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	24 dBm (251 mW) @ 2.4 GHz per chain* 24 dBm (251 mW) @ 5 GHz per chain*
Physical Security	N/A
IEEE Specifications	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.3af, 802.11ac, 802.3at, 802.3az
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by controller)
FortiDeploy & FortiCloud Key	Yes
Concurrent Clients Per Radio (Maximum / Recommended)	512 / 40
LED Off Mode	Yes
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes

FORTIAP 224E	
MIMO Power Save	Yes
Short Guard Interval	Yes
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)
<b>Wireless Monitoring Capabilities</b>	
Frequencies Scanned	2.4 and 5 GHz
Background Scan with Client Access on 2.4 and 5 GHz	Yes
Full-time Scan as Dedicated Monitor	Yes
Full-time Scan with Client Access on 5G GHz	No
Packet Sniffer Mode	Yes
Spectrum Analyzer	Yes – Dedicated chipset
<b>Dimensions</b>	
Length x Width x Height	8.4 x 8.4 x 2.66 inches (214 x 214 x 67.5 mm)
Weight	3.8 lb (1,735 g)
Package (shipping) Weight	5.82 lb (2.64 kg)
Mounting Options	Adjustable Pole mount kit (right/left rotation: 25°, tilt up: -20°, tilt down: 90°)
Included Accessories	Wall/Pole mount kit and 6M grounding cable
<b>Environment</b>	
Power Supply	PSE Device
Power Consumption (Avg. / Max.)	14.33 W / 18.33 W
Humidity	5–90% non condensing
Operating / Storage Temperature	-4–149°F (-20–65°C) / -4–158°F (-20–70°C)
Directives	Low Voltage Directive • RoHS
UL2043 Plenum Material	N/A (Top Cover)
Mean Time Between Failures	>10 Years
IP Rating	IP67
<b>Certifications</b>	
WiFi Alliance Certified	In Process
DFS Certified	In Process
CB	IEC 60950-1
UL	UL 60950-1, CSA C22.2 No. 60950-1
FCC	FCC Part 15 Subpart B (Class B), Subpart C and Subpart E
IC	RSS-247, RSS-GEN, RSS-102, ICES-003
CE	CE R&TTE Directive 2014/53/EU (EN 300 328, EN 301 893, EN 301 489, EN62311) EMC Directive 2004/108/EC (EN55032, EN 55024)
<b>Warranty</b>	
Limited Lifetime Warranty	1 Year **

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

\*\* Warranty from Liteon: 12 months after shipping date from LTC manufacturing facility.

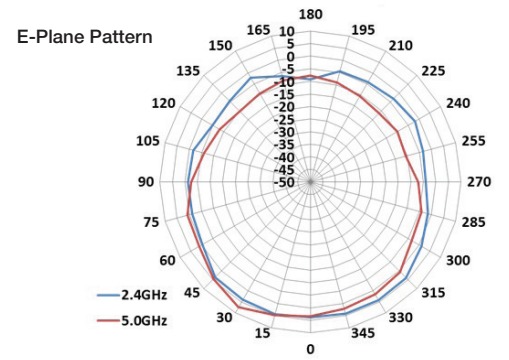
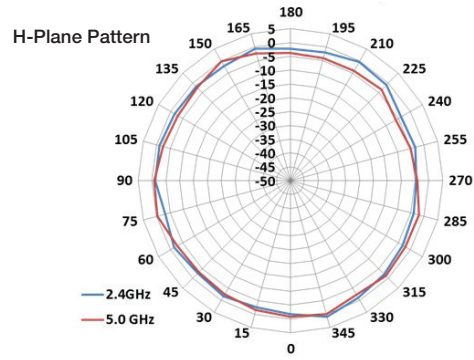
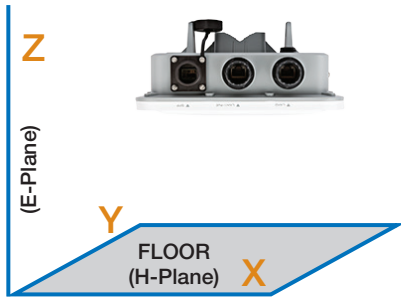
## RF RX/TX PERFORMANCE TABLE

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

Maximum capability of the Hardware provided (Excluding antenna gain)

# ANTENNA RADIATION PATTERNS

## FAP-224E



## HIGHLIGHTS

### FortiAP 421E and 423E

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

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

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



## SPECIFICATIONS

	FORTIAP 421E	FORTIAP 423E
<b>Hardware</b>		
Hardware Type	Indoor	Indoor
Number of Radios	2	2
Number of Antennas	8 Internal	8 RP-SMA External
Peak Antenna Gain	4 dBi for 2.4 GHz, 5 dBi for 5 GHz	3 dBi for 2.4 GHz, 3 dBi for 5 GHz
Frequency Bands (GHz) *	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850	
Frequency of Radio 1	2.4 GHz b/g/n (4x4:4 stream) QCA9980 20/40 MHz (256 QAM)	2.4 GHz b/g/n (4x4:4 stream) QCA9980 20/40 MHz (256 QAM)
Frequency of Radio 2	5 GHz a/n/ac (4x4:4 stream) QCA9980 20/40/80 MHz (256 QAM)	5 GHz a/n/ac (4x4:4 stream) QCA9980 20/40/80 MHz (256 QAM)
Maximum Data Rate	Radio 1: up to 800 Mbps Radio 2: up to 1.733 Gbps	Radio 1: up to 800 Mbps Radio 2: up to 1.733 Gbps
Ethernet Ports	2x GE RJ45	2x GE RJ45
USB Port	1x Type A	x Type A
Serial Console Port	1 RS-232 x RJ45	1 RS-232 x RJ45
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3at (25.5 W). Also supports 802.1af with reduced functionality. (See FOS 5.6.1 release notes)	
Simultaneous SSIDs	16 (14 if background scanning enabled)	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST	
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist	
Maximum Tx Power	25 dBm (158 mW) @ 2.4 GHz* 23 dBm (158 mW) @ 5 GHz*	25 dBm (158 mW) @ 2.4 GHz* 23 dBm (158 mW) @ 5 GHz*
Physical Security	Kensington Lock	Kensington Lock
IEEE Specifications	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.1x, 802.11ac, 802.3af, 802.3at, 802.3az, 802.3ad (LACP support)	
FortiPresence Capable	Yes	Yes
Wireless Mesh Capable	Yes	Yes
Concurrent Clients Per Radio (Maximum / Recommended)	512 / 128	512 / 128
<b>Advanced 802.11 Features</b>		
802.11ac Wave2 MU-MIMO	Yes	Yes
Transmit Beam Forming (TxBF)	Yes	Yes
Low-Density Parity Check (LDPC) Encoding	Yes	Yes
Maximum Likelihood Demodulation (MLD)	Yes	Yes
802.11ac 20/40/80 MHz Channel	Yes	Yes

	FORTIAP 421E	FORTIAP 423E
Maximum Ratio Combining (MRC)	Yes	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes	Yes
MIMO Power Save	Yes	Yes
Short Guard Interval	Yes	Yes
WME Multimedia Extensions	Yes (4 priority queues for voice, video, data and background traffic)	
<b>Wireless Monitoring Capabilities</b>		
Frequencies Scanned	2.4 and 5 GHz	2.4 and 5 GHz
Background Scan with Client Access on 2.4 and 5 GHz	Yes	Yes
Full-time Scan as Dedicated Monitor	Yes	Yes
Full-time Scan with Client Access on 5G GHz	No in AP mode	No in AP mode
<b>Dimensions</b>		
Length x Width x Height	8.5 x 8.5 x 2.2 inches (215 x 215 x 56 mm)	8.5 x 8.5 x 2.2 inches (215 x 215 x 56 mm)
Weight	3.53 lb (1.6 kg)	3.57 lb (1.62 kg)
Package (shipping) Weight	4.95 lb (2.2 kg)	5.3 lb (2.4 kg)
Mounting Options	Ceiling, T-Rail and wall	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit (AC power adapter sold separately)	Ceiling, T-Rail and wall mount kit and 8 dipole antennas (AC power adapter sold separately)
<b>Environment</b>		
Power Supply	Adapter Input: 100–240V, 50/60Hz, 0.9A Maximum Output: 12V DC, 3A	Adapter Input: 100–240V, 50/60Hz, 0.9A Maximum Output: 12V DC, 3A
Power Consumption (Avg.)	20 W	20 W
Power Consumption (Max.)	23 W	23 W
Humidity	5–90% non condensing	5–90% non condensing
Operating Temperature	-4–122°F (-20–50°C)	-4–122°F (-20–50°C)
Storage Temperature	-40–158°F (-40–70°C)	-40–158°F (-40–70°C)
Directives	Low Voltage Directive • RoHS	Low Voltage Directive • RoHS
UL2043 Plenum Material	Yes	Yes
Mean Time Between Failures	>30 Years	>30 Years
<b>Certifications</b>		
WiFi Alliance Certified	Yes	Yes
DFS Certified for Europe, Japan and Korea.	Yes	Yes
Hotspot 2.0 Certified	Yes	Yes
Spectralink Certified	Yes	Yes
<b>Warranty</b>		
Limited Lifetime Warranty	Yes	Yes

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

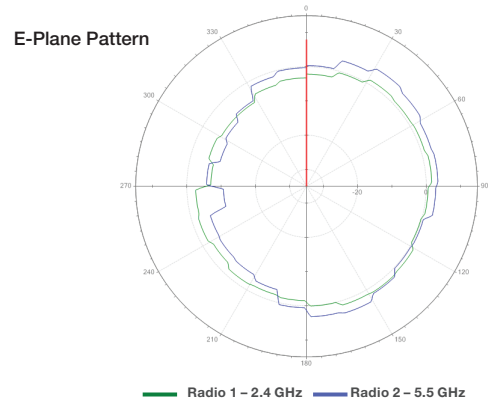
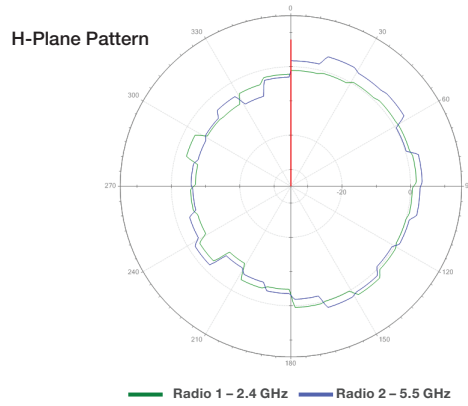
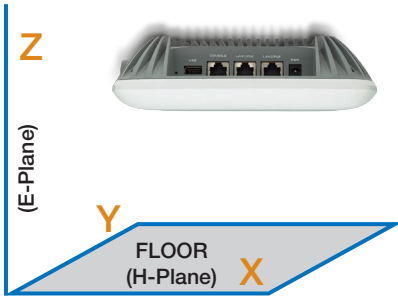
## RF RX/TX PERFORMANCE TABLE

FORTIAP 421E / 423E				
	RADIO 1		RADIO 2	
802.11 a/g	2.4 GHz Tx Power per Chain (dBm)	RX Sensitivity (dBm)	5 GHz Tx Power per Chain (dBm)	RX Sensitivity (dBm)
6 Mbps	18	-93	19	-86
9 Mbps	18	-91	19	-83
12 Mbps	18	-88	19	-81
18 Mbps	18	-85	19	-78
24 Mbps	18	-80	19	-76
36 Mbps	18	-77	18	-74
48 Mbps	18	-76	18	-70
54 Mbps	18	-75	16	-66
<b>802.11 HT20</b>				
MSC 0/8/16 (BPSK)	18	-87	18	-84
MSC 1/9/17 (QPSK)	17	-84	17	-81
MSC 2/10/18 (QPSK)	17	-81	17	-79
MSC 3/11/19 (16-QAM)	16	-78	16	-76
MSC 4/12/20 (16-QAM)	16	-73	16	-72
MSC 5/13/21 (64-QAM)	15	-70	15	-68
MSC 6/14/22 (64-QAM)	15	-69	15	-67
MSC 7/15/23 (64-QAM)	15	-67	15	-66
<b>802.11 HT40</b>				
MSC 0/8/16 (BPSK)	18	-84	18	-83
MSC 1/9/17 (QPSK)	17	-80	17	-80
MSC 2/10/18 (QPSK)	17	-77	17	-78
MSC 3/11/19 (16-QAM)	16	-74	16	-75
MSC 4/12/20 (16-QAM)	16	-71	16	-73
MSC 5/13/21 (64-QAM)	15	-67	15	-72
MSC 6/14/22 (64-QAM)	15	-65	15	-70
MSC 7/15/23 (64-QAM)	15	-65	15	-69
MSC 8/16/24 (256-QAM)	—	—	15	-65
MSC 9/17/25 (256-QAM)	—	—	15	-63
<b>802.11 HT80</b>				
MSC 0 (BPSK)	—	—	18	-83
MSC 1 (QPSK)	—	—	17	-80
MSC 2 (QPSK)	—	—	17	-78
MSC 3 (16-QAM)	—	—	16	-75
MSC 4 (16-QAM)	—	—	16	-73
MSC 5 (64-QAM)	—	—	15	-72
MSC 6 (64-QAM)	—	—	15	-70
MSC 7 (64-QAM)	—	—	15	-69
MSC 8 (256-QAM)	—	—	15	-65
MSC 9 (256-QAM)	—	—	15	-63

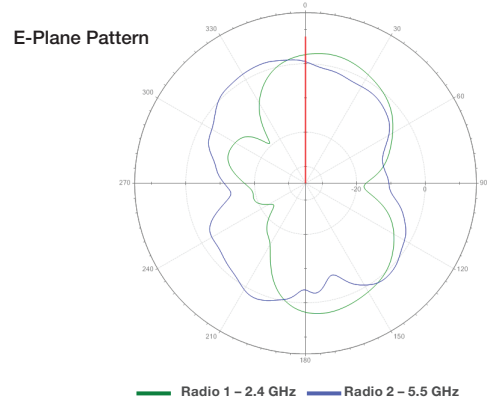
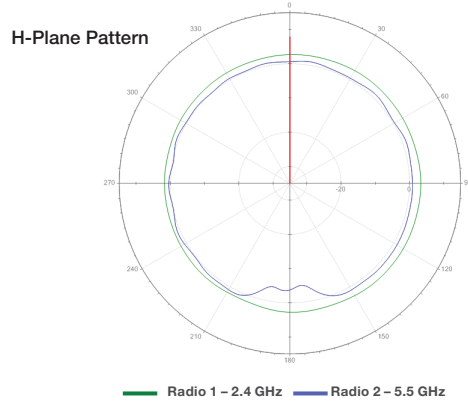
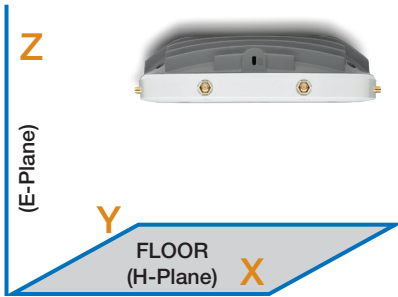


# ANTENNA RADIATION PATTERNS

## FAP-421E



## FAP-423E



## PERFORMANCE MATRIX

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

## PERFORMANCE MATRIX

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

## HIGHLIGHTS

### FortiAP C24JE

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



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

 **Up to 300 + 867 Mbps**

## SPECIFICATIONS

FORTIAP C24JE	
<b>Hardware</b>	
Hardware Type	Indoor Wall Plate AP
Number of Radios	2
Number of Antennas	4 Internal
Peak Antenna Gain	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
Frequency of Radio 1	2.4 GHz b/g/n (2x2:2 stream) RTL8197F (embedded in SoC) 20/40 Mhz (256 QAM)
Frequency of Radio 2	5 GHz a/n/ac (2x2:2 stream) RTL8812BR 20/40/80/160 Mhz (256 QAM) MU-MIMO 2 simultaneous devices
Maximum Data Rate	Radio 1: up to 300 Mbps, Radio 2: up to 867 Mbps
Interfaces	1x GE WAN/POE Uplink 2x RJ45 GE, 1x RJ45 GE/POE-PS (for IP phone) 1x RJ45 pass-thru
Serial Console Port	1x RJ45 RS232
Power over Ethernet (PoE)	1x PoE RJ45 port If powered by 802.3af (15.4 W) Max PSE Output = 4 W If powered by 802.3at (25.5 W) Max PSE Output = 15.4 W
Simultaneous SSIDs	16 capable
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Support Local-Authentication SSID using Open or WPA2-Personal Security	Yes
Support 64-digit Hexadecimal Passphrase for WPA2-Personal Security	Yes
Support Captive-portal SSID	Yes
Support Local-Standalone SSID when Managed by FortiCloud (in Bridge mode only)	Yes
Maximum Tx Power	20 dBm (100 mW)*
Physical Security	No
IEEE Standards	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.3af, 802.11ac, 802.3at, 802.3az
FortiPresence Capable	No
Wireless Mesh Capable	No
Management Systems	FortiGate or FortiCloud
SSID Types Supported	Local-Bridge, Tunnel
FortiDeploy & FortiCloud Key	Yes

FORTIAP C24JE	
Maximum / Recommended Concurrent Clients per Radio	64 / 32
LED Off Mode	Yes
<b>Advanced 802.11 Features</b>	
802.11ac Wave 2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access	Yes
Packet sniffer mode	Yes
Spectrum analyzer	Yes – Power density scan
<b>Dimensions</b>	
Length x Width x Height	6.69 x 4.04 x 1.08 inches (AP size) 170 x 102.5 x 27.5 mm (AP size)
Weight	1.3 lb (0.6 kg)
Package (shipping) Weight	1.6 lb (0.74 kg)
Mounting Options	Wall
Included Accessories	Wall mount bracket
<b>Environment</b>	
Power Supply	PoE 802.3af (15.4 W) Option: 12V/2A AC adapter (not provided)
Humidity	5–90% non condensing
Operating Temperature	32–104°F (0–40°C)
Storage Temperature	-4–158°F (-20–70°C)
UL2043 Plenum Material	No
Mean Time Between Failures	>10 Years
IP Rating	N/A
<b>Certifications</b>	
SRRC (China)	Yes
<b>Warranty</b>	
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
<b>802.11 HT20</b>				
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
<b>802.11 HT40</b>				
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
<b>802.11 HT80</b>				
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)

## ORDER INFORMATION

Product	SKU	Description
FortiAP-221C	FAP-221C	Indoor wireless AP — 1x GE RJ45 port, dual radio (802.11 a/n/ac and 802.11 b/g/n, 2x2 MIMO), ceiling/wall mount kit included, power adapter not included. For Gigabit PoE injector order: GPI-115. For AC power adapter order: SP-FG20C-PA.
	FC-10-P0225-311-02-DD	8x5 FortiCare Contract
	FC-10-P0225-247-02-DD	24x7 FortiCare Contract
	SP-FG20C-PA	AC Power Adapter for FAP-221C
FortiAP-223C	FortiAP-223C	Indoor wireless AP — 1x GE RJ45 port, dual radio (802.11 b/g/n and 802.11 a/n/ac, 2x2 MIMO), external antennas, ceiling/wall mount kit included, power adapter not included. For Gigabit PoE injector order: GPI-115. For AC power adapter order: SP-FG20C-PA.
	FC-10-P0229-311-02-DD	8x5 Enhanced FortiCare
	FC-10-P0229-247-02-DD	24x7 Comprehensive FortiCare
	SP-FG20C-PA	AC Power Adapter for FAP-223C
FortiAP-320C	FAP-320C	Indoor wireless AP — 2x GE RJ45 ports, dual radio (802.11 a/n/ac and 802.11 b/g/n, 3x3 MIMO), ceiling/wall mount kit included, power adapter not included. For Gigabit PoE injector order: GPI-115. For AC power adapter order: SP-FG20C-PA.
	FC-10-P0321-311-02-DD	8x5 FortiCare Contract
	FC-10-P0321-247-02-DD	24x7 FortiCare Contract
	SP-FG20C-PA	AC Power Adapter for FAP-320C
FortiAP-321C	FAP-321C	Indoor wireless AP — 1x GE RJ45 port, dual radio (802.11 b/g/n and 802.11 a/n/ac, 3x3 MIMO), ceiling/wall mount kit included, power adapter not included. For Gigabit PoE injector order: GPI-115. For AC power adapter order: SP-FG20C-PA.
	FC-10-P0322-311-02-DD	8x5 Enhanced FortiCare
	FC-10-P0322-247-02-DD	24x7 Comprehensive FortiCare
	SP-FG20C-PA	AC Power Adapter for FAP-321C
FortiAP 222C	FAP-222C	Outdoor Wireless AP — 1x GE RJ45 port, dual radio (802.11 a/n/ac and 802.11 b/g/n, 2x2 MIMO), external antennas, ceiling/wall mount kit included, proprietary PoE injector with AC power adapter included.
	FC-10-P0226-311-02-DD	8x5 Enhanced FortiCare
	FC-10-P0226-247-02-DD	24x7 Comprehensive FortiCare
	SP-FAP222B-PA	Proprietary PoE injector with AC power adapter for FortiAP 222C
FortiAP 221E	FAP-221E	Indoor Wireless AP — 1x GE RJ45 port, 802.11 a/b/g/n/ac Wave 2, dual radio (2.4 GHz/5 GHz), 2x2 MU-MIMO, ceiling/wall mount kit included, power adapter not included.
	FC-10-PE221-311-02-DD	8x5 Enhanced FortiCare
	FC-10-PE221-247-02-DD	24x7 Comprehensive FortiCare
FortiAP 223E	FAP-223E	Indoor Wireless AP — 1x GE RJ45 port, 802.11 a/b/g/n/ac Wave 2, dual radio (2.4 GHz/5 GHz), 2x2 MU-MIMO, external antennas, ceiling/wall mount kit included, power adapter not included.
	FC-10-PE223-311-02-DD	8x5 Enhanced FortiCare
	FC-10-PE223-247-02-DD	24x7 Comprehensive FortiCare
FortiAP 222E	FAP-222E	Outdoor Wireless Wave 2 AP — dual radio (802.11 a/b/g/n and 802.11 a/n/ac, 2x2 MU-MIMO and Bluetooth/BLE), 1x GE RJ45 port, pole/wall mount kit, lightning protector and PoE injector and 5 antennas included.
	FC-10-PE222-311-02-DD	8x5 Enhanced FortiCare
	FC-10-PE222-247-02-DD	24x7 Comprehensive FortiCare
FortiAP 224E	FAP-224E	Outdoor Wireless Wave 2 AP — dual radio with internal antenna (802.11 b/g/n and 802.11 a/n/ac/ac2, 2x2 MU-MIMO), BLE radio, 2x GE RJ45 port and 1 SFP port. IP67 water resistance, and 802.3af PoE powered.
	FC-10-PE224-311-02-DD	8x5 Enhanced FortiCare
	FC-10-PE224-247-02-DD	24x7 Comprehensive FortiCare
FortiAP 421E	FAP-421E	Indoor Wireless AP — 2x GE RJ45 ports, 802.11 a/b/g/n/ac Wave 2, dual radio (2.4 GHz/5 GHz), 4x4 MU-MIMO, ceiling/wall mount kit included, power adapter not included. For Gigabit PoE injector order: GPI-130.
	FC-10-P421E-311-02-DD	8x5 FortiCare Contract
	FC-10-P421E-247-02-DD	24x7 FortiCare Contract
FortiAP 423E	FAP-423E	Indoor Wireless AP — 2x GE RJ45 ports, 802.11 a/b/g/n/ac Wave 2, dual radio (2.4 GHz/5 GHz), 4x4 MU-MIMO, external antennas, ceiling/wall mount kit included, power adapter not included. For Gigabit PoE injector order: GPI-130.
	FC-10-P423E-311-02-DD	8x5 FortiCare Contract
	FC-10-P423E-247-02-DD	24x7 FortiCare Contract
FortiAP C24JE	FAP-C24JE	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. Total WiFi speed is 1167 Mbps (300 Mbps/2.4 GHz + 867 Mbps/5 GHz).
	FC-10-PC24E-311-02-DD	8x5 FortiCare Contract
	FC-10-PC24E-247-02-DD	24x7 FortiCare Contract
Gigabit PoE Injector	GPI-115	1-Port Gigabit PoE Power Injector, 802.3af 15.4 W, 10/100/1000.
	GPI-130	1-Port Gigabit PoE Power Injector, 802.3at up to 30 W.
Power Adapter	SP-FAP400-PA	AC Power Adapter for FAP-U421EV, FAP-U423EV, FAP-S421E, FAP-S423E, FAP-421E and FAP-423E.
FortiAP-FPL	FAP-FPL-PRO	FortiPlanner Wireless AP Deployment Planning Utility — Pro upgrade license unlocks FortiPlanner Lite (free version) to support more than 50 Access Points and includes site survey tool. Requires Windows 7.

## ORDER INFORMATION

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



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