FortiAP™ Series

Integrated 802.11ac Access Points

FortiAP access points are managed centrally by the integrated WLAN controller of any FortiGate® security appliance or can be managed through the 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

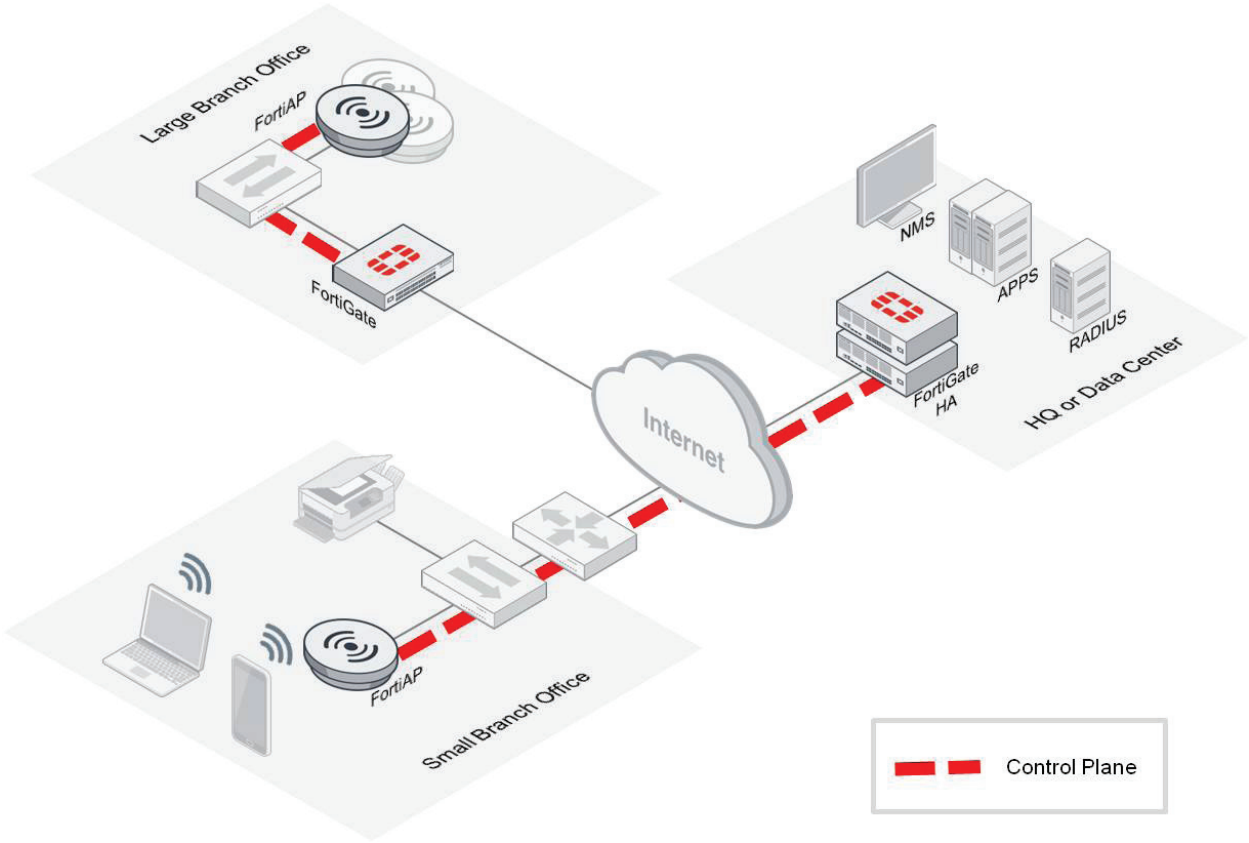
Protects the network from advanced wireless threats and satisfies PCI DSS compliance.

Product Offerings

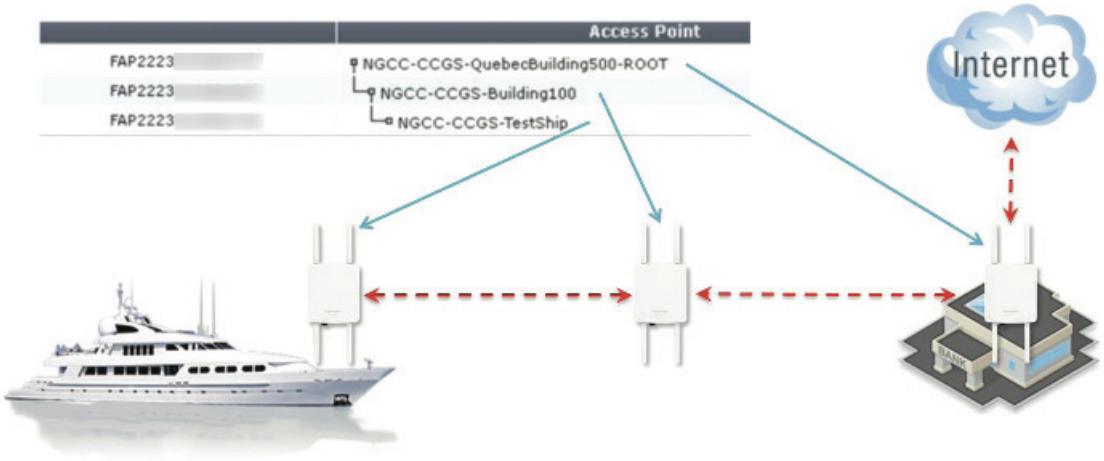
802.11ac Wave 1	**FAP-221C** **FAP-223C**	2x2 MIMO APs with dual radios
	FAP-320C	3x3 MIMO AP with dual radios
	FAP-321C	3x3 MIMO AP with dual radios
	FAP-222C	Outdoor, IP67 rated AP, 2x2 MIMO with dual radios with a variety of external antenna options
802.11ac Wave 2	**FAP-221E** **FAP-223E**	2x2 MU-MIMO APs with dual radios
	FAP-421E **FAP-423E**	4x4 MU-MIMO APs with dual radios

DEPLOYMENT

Centralized or Local Wireless Controller

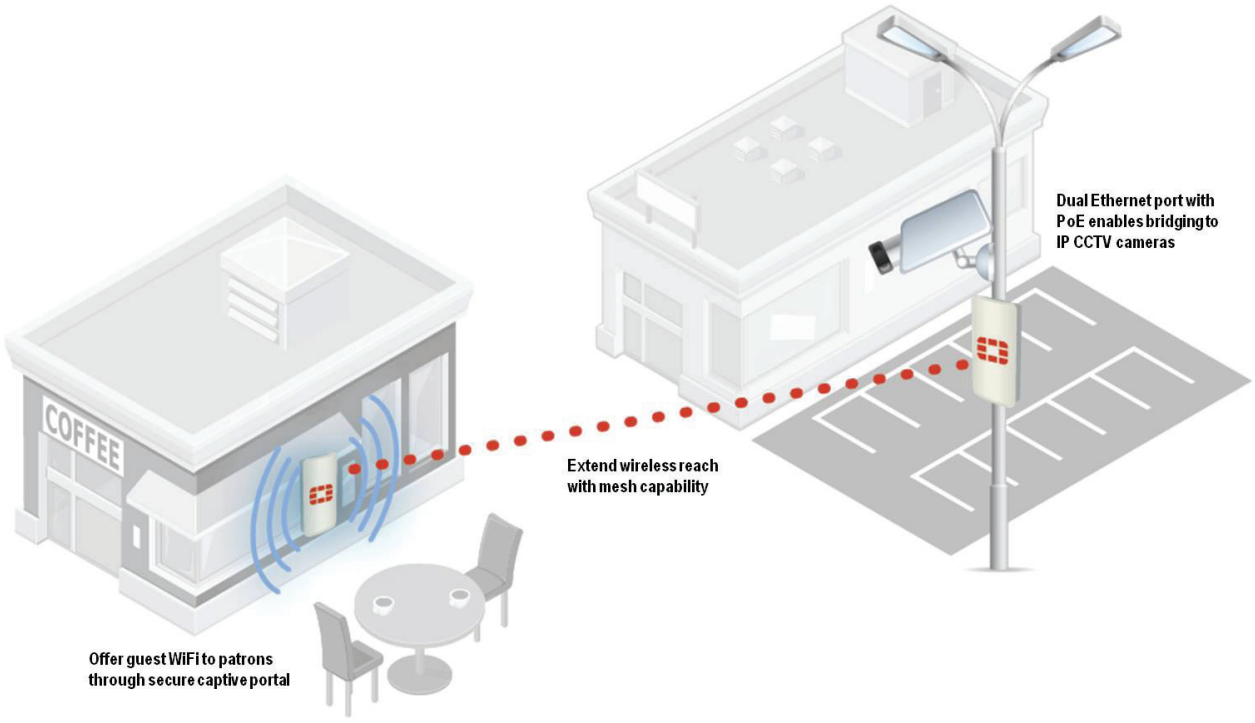


Outdoor Point-to-Point Bridging or Multipoint Mesh Deployment



DEPLOYMENT

Outdoor Mesh and PoE Pass-Though 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
Hardware		
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, 802.11n, 802.1x, 802.3af, 802.11ac	
802.11ac 80MHz 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	
Wireless Monitoring Capabilities		
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	Yes	Yes
Dimensions		
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)
Environment		
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.)	15.72 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
Certifications		
WiFi Alliance Certified	Yes	No
DFS Certified for Europe and Japan	Yes	Yes
Warranty		
Limited Lifetime Warranty	Yes	Yes

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

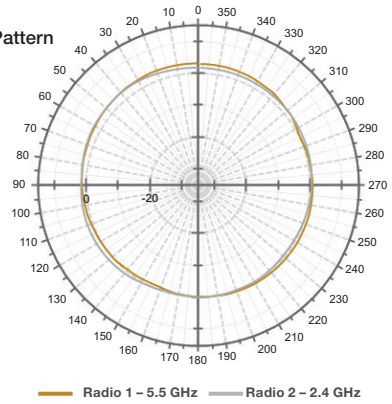
RF RX/TX PERFORMANCE TABLE

	FORTIAP 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
802.11n HT20						
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
802.11n HT40						
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
802.11ac VHT20						
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
802.11 ac VHT40						
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
802.11ac VHT80						
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

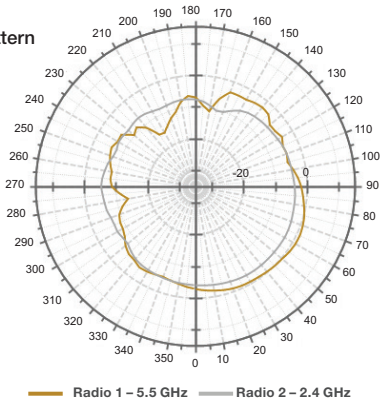
ANTENNA RADIATION PATTERNS

FAP-221C

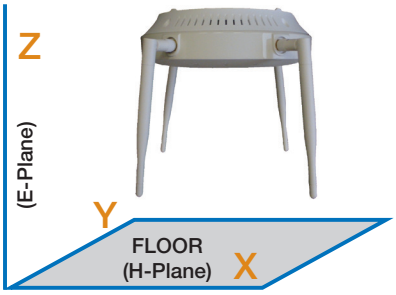
H-Plane Pattern



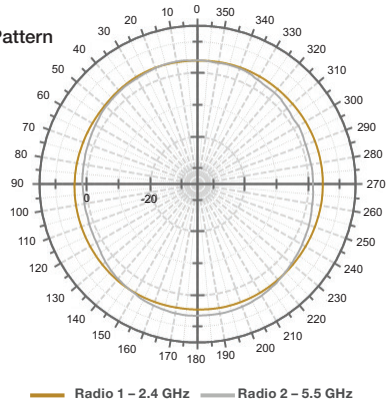
E-Plane Pattern



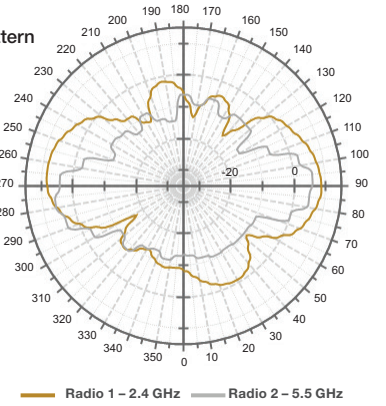
FAP-223C



H-Plane Pattern



E-Plane Pattern



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
Hardware	
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, 802.11n, 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
Wireless Monitoring Capabilities	
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	Yes
Dimensions	
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)
Environment	
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
Certifications	
WiFi Alliance Certified	Yes
DFS Certified for Europe	Yes
Warranty	
Limited Lifetime Warranty	Yes

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

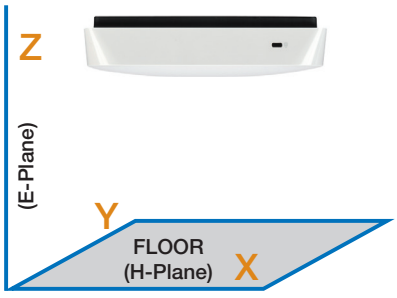
RF RX/TX PERFORMANCE TABLE

	FORTIAP 320C			
	RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
802.11 a/g				
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
802.11n HT20				
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
802.11n HT40				
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

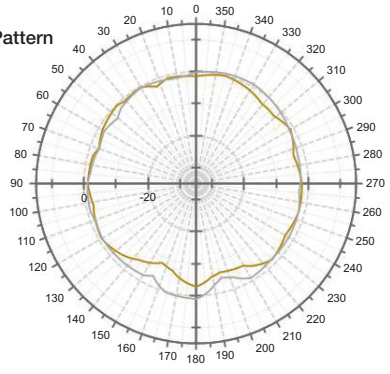
	FORTIAP 320C			
	RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
802.11ac VHT20				
MCS 0	—	—	20	-85
MCS 1	—	—	20	-84
MCS 2	—	—	20	-83
MCS 3	—	—	19	-82
MCS 4	—	—	19	-81
MCS 5	—	—	18	-78
MCS 6	—	—	17	-74
MCS 7	—	—	16	-70
MCS 8	—	—	15	-69
802.11ac VHT40				
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
802.11ac VHT80				
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

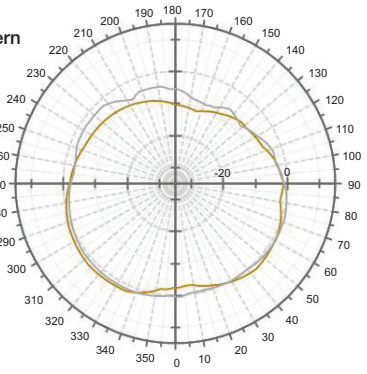
FAP-320C



H-Plane Pattern



E-Plane Pattern



HIGHLIGHTS

FortiAP 321C

The FortiAP 321C is a dual-radio 802.11ac AP, 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 | Dual Radio 2.4 and 5 GHz | 6 Internal Antennas

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

SPECIFICATIONS

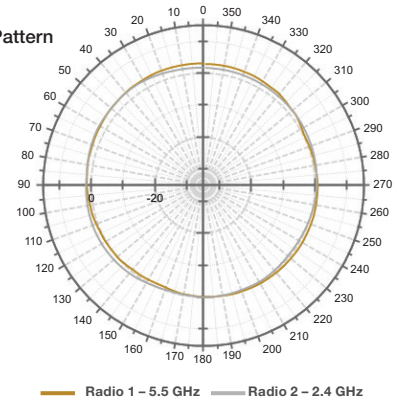
	FORTIAP 321C
Hardware	
Hardware Type	Indoor
Number of Radios	2
Number of Antennas	6 Internal
Peak Antenna Gain	4 dBi for 2.4 GHz, 5 dBi for 5 GHz
Frequency Bands (GHz) *	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850
Frequency of Radio 1	2.4 GHz b/g/n
Frequency of Radio 2	5 GHz a/n/ac
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	1x GE RJ45
USB Port	–
Serial Console Port	–
Power over Ethernet (PoE)	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	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, 802.11n, 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
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
Wireless Monitoring Capabilities	
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	Yes
Dimensions	
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)
Environment	
Power Supply	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A
Power Consumption (Average)	4.9 W
Power Consumption (Maximum)	12.48 W
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
Certifications	
WiFi Alliance Certified	Yes
DFS Certified for Europe	Yes
Warranty	
Limited Lifetime Warranty	Yes

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

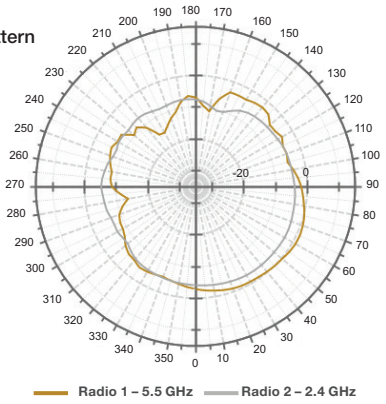
ANTENNA RADIATION PATTERNS

FAP-321C

H-Plane Pattern



E-Plane Pattern



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
Hardware	
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	5 GHz a/n/ac
Frequency of Radio 2	2.4 GHz b/g/n
Maximum Data Rate	Radio 1: Up to 867 Mbps, Radio 2: Up to 300 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, 802.11n, 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 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
Wireless Monitoring Capabilities	
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
Dimensions	
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)
Environment	
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
Certifications	
WiFi Alliance Certified	Yes
DFS Certified for Europe	Yes

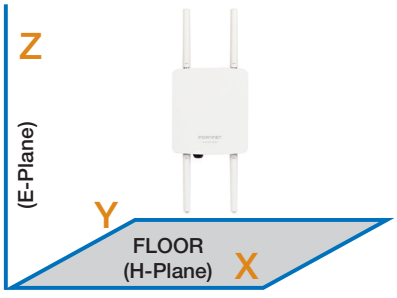
* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF RX/TX PERFORMANCE TABLE

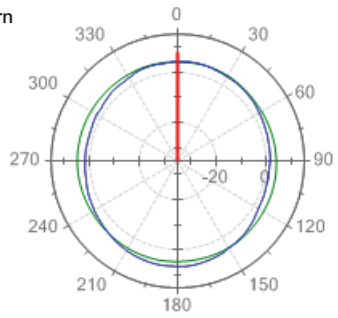
	FORTIAP 222C			
	RADIO 1		RADIO 2	
	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
6 Mbps	24	-93	27	-92
54 Mbps	20	-77	25	-75
802.11n HT20				
MCS 0/8	24	-93	27	-91
MCS 1/9	24	-91	27	-89
MCS 2/10	24	-87	27	-88
MCS 3/11	23	-84	27	-85
MCS 4/12	23	-81	26	-81
MCS 5/13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

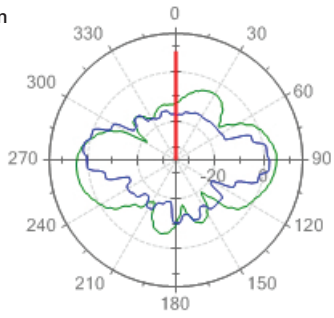


H-Plane Pattern



Radio 1 – 5.5 GHz Radio 2 – 2.4 GHz

E-Plane Pattern



Radio 1 – 5.5 GHz Radio 2 – 2.4 GHz

HIGHLIGHTS

FortiAP 221E and 223E

The FortiAP 221E and 223E our medium-density 802.11ac Wave 2 access point. These enterprise class access point is ideal for medium-density environments such as office or classroom. Provide support for MU-MIMO and 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 300 + 867 Mbps

SPECIFICATIONS

	FORTIAP 221E	FORTIAP 223E
Hardware		
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	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 (2x2:2 stream) 20/40 Mhz (64 QAM)	2.4 GHz b/g/n (2x2:2 stream) 20/40 Mhz (64 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 300 Mbps Radio 2: up to 867 Mbps	Radio 1: up to 300 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	19 dBm (80 mW)*	19 dBm (80 mW)*
Physical Security	Kensington Lock	Kensington Lock
IEEE Standards	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.11ac, 802.3af, 802.3az	
FortiPresence Capable	Yes	Yes
Wireless Mesh Capable	Yes	Yes
Concurrent Clients Per Radio (Maximum / Recommended)	512 / 128	512 / 128
Advanced 802.11 Features		
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
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)	
Wireless Monitoring Capabilities		
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	No
Dimensions		
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 seperately)	Ceiling, T-Rail and Wall mount kit and 8 dipole antennas (AC power adapter sold seperately)
Environment		
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
Certifications		
WiFi Alliance Certified	In Process	In Process
DFS Certified	In Process	In Process
Warranty		
Limited Lifetime Warranty	Yes	Yes

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

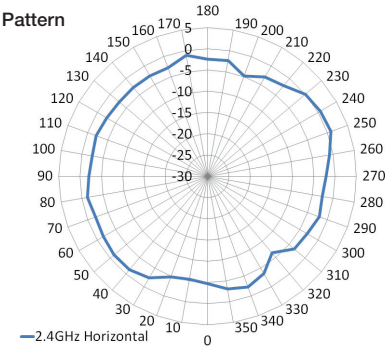
RF RX/TX PERFORMANCE TABLE

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

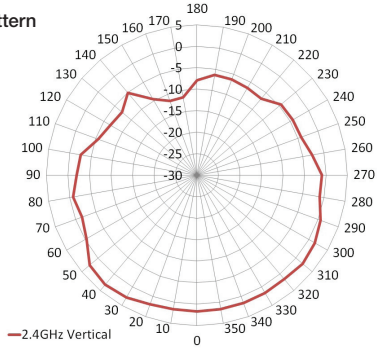
ANTENNA RADIATION PATTERNS

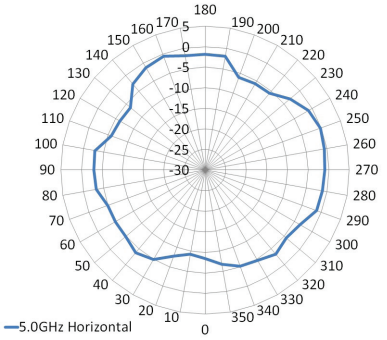
FAP-221E

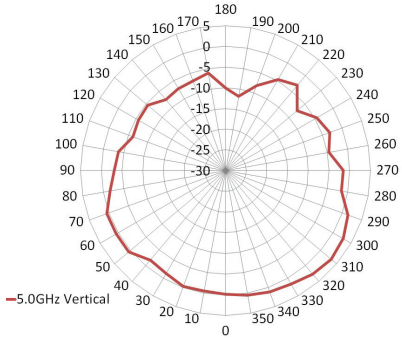
H-Plane Pattern



E-Plane Pattern

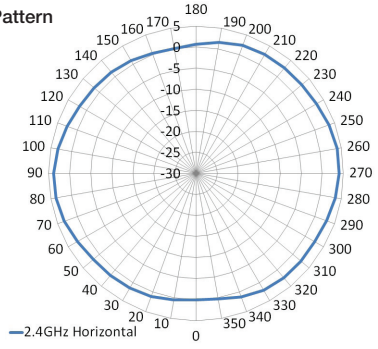




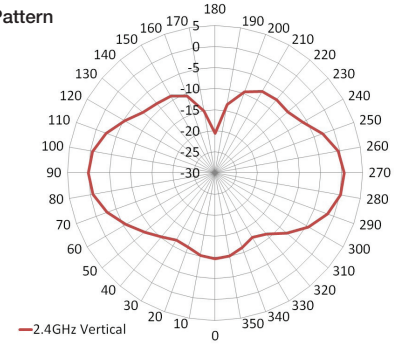


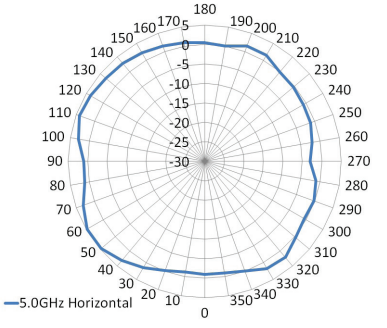
FAP-223E

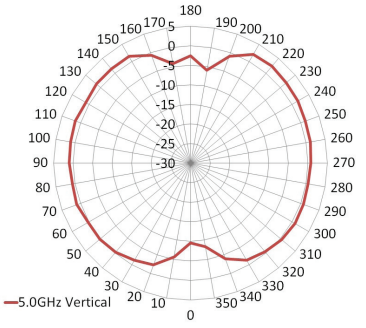
H-Plane Pattern



E-Plane Pattern







HIGHLIGHTS

FortiAP 421E and 423E

The FortiAP 421E and 423E access points support the latest 802.11ac Wave 2 standard. Additional features include 802.11ac explicit transmit beamforming (TxBF), 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 600 + 1,733 Mbps

SPECIFICATIONS

	FORTIAP 421E	FORTIAP 423E
Hardware		
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 (64 QAM)	2.4 GHz b/g/n (4x4:4 stream) QCA9980 20/40 Mhz (64 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 600 Mbps Radio 2: up to 1.733 Gbps	Radio 1: up to 600 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	19 dBm (80 mW)*	19 dBm (80 mW)*
Physical Security	Kensington Lock	Kensington Lock
IEEE Standards	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 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 / Minimum)	512 / 128	512 / 128
Advanced 802.11 Features		
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
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)	
Wireless Monitoring Capabilities		
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	No
Dimensions		
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 seperately)	Ceiling, T-Rail and wall mount kit and 8 dipole antennas (AC power adapter sold seperately)
Environment		
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
Certifications		
WiFi Alliance Certified	Yes	Yes
DFS Certified for Europe, Japan and Korea.	Yes	Yes
Warranty		
Limited Lifetime Warranty	Yes	Yes

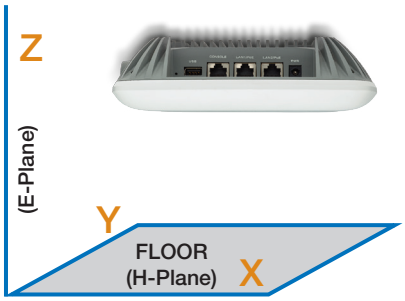
* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.

RF RX/TX PERFORMANCE TABLE

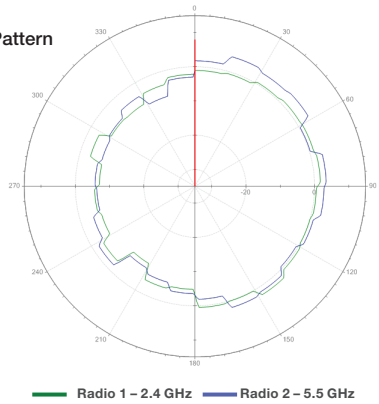
	FORTIAP 421E / 423E			
	RADIO 1		RADIO 2	
802.11 a/g	2.4 GHz Tx Power (dBm)	RX Sensitivity (dBm)	5 GHz Tx Power (dBm)	RX Sensitivity (dBm)
6 Mbps	18	-93	19	-86
9 Mbps	18	-91	19	-83
12 Mbps	18	-88	19	-81
18 Mbps	18	-85	19	-78
24 Mbps	18	-80	19	-76
36 Mbps	18	-77	18	-74
48 Mbps	18	-76	18	-70
54 Mbps	18	-75	16	-66
802.11 HT20				
MSC 0/8/16 (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
802.11 HT40				
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
802.11 HT80				
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

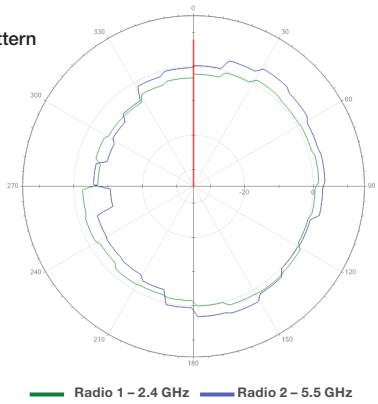
FAP-421E



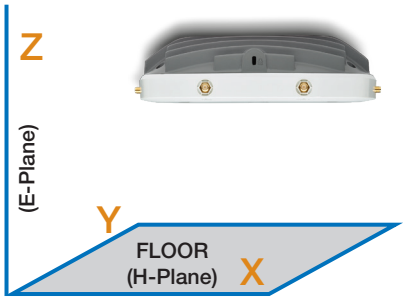
H-Plane Pattern



E-Plane Pattern



FAP-423E



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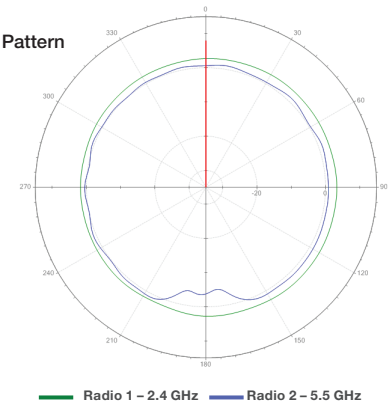

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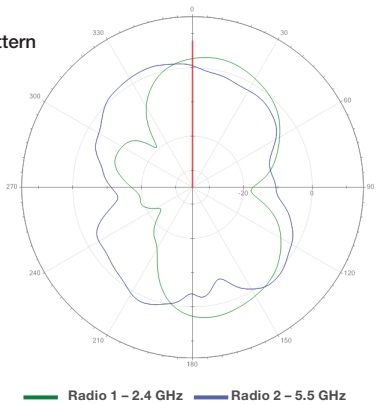

PERFORMANCE MATRIX

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	65.0
MCS 2	1	19.5	21.7	40.5	45	87.8	97.5
MCS 3	1	26	28.9	54	60	117.0	130.0
MCS 4	1	39	43.3	81	90	175.5	195.0
MCS 5	1	52	57.8	108	120	234.0	260.0
MCS 6	1	58.5	65	121.5	135	263.3	292.5
MCS 7	1	65	72.2	135	150	292.5	325.0
MCS 8	1	78.0	86.7	162.0	180.0	351.0	390.0
MCS 9	1	NA	NA	180.0	200.0	390.0	433.3
MCS 0	2	13	14.4	27	30	58.5	65.0
MCS 1	2	26	28.9	54	60	117.0	130.0
MCS 2	2	39	43.3	81	90	175.5	195.0
MCS 3	2	52	57.8	108	120	234.0	260.0
MCS 4	2	78	86.7	162	180	351.0	390.0
MCS 5	2	104	115.6	216	240	468.0	520.0
MCS 6	2	117	130	243	270	526.5	585.0
MCS 7	2	130	144.4	270	300	585.0	650.0
MCS 8	2	156.0	173.3	324.0	360.0	702.0	780.0
MCS 9	2	NA	NA	360.0	400.0	780.0	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	195.0
MCS 2	3	58.5	65	121.5	135	263.3	292.5
MCS 3	3	78	86.7	162	180	351.0	390.0
MCS 4	3	117	130	243	270	526.5	585.0
MCS 5	3	156	173.3	324	360	702.0	780.0
MCS 6	3	175.5	195	364.5	405	NA	NA
MCS 7	3	195	216.7	405	450	877.5	975.0
MCS 8	3	234.0	260.0	486.0	540.0	1053.0	1170.0
MCS 9	3	260.0	288.9	540.0	600.0	1170.0	1300.0
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
MCS8	2	13	14.4	27	30
MCS9	2	26	28.9	54	60
MCS10	2	39	43.3	81	90
MCS11	2	52	57.8	108	120
MCS12	2	78	86.7	162	180
MCS13	2	104	115.6	216	240
MCS14	2	117	130	243	270
MCS15	2	130	144.4	270	300
MCS16	3	19.5	21.7	40.5	45
MCS17	3	39	43.3	81	90
MCS18	3	58.5	65	121.5	135
MCS19	3	78	86.7	162	180
MCS20	3	117	130	243	270
MCS21	3	156	173.3	324	360
MCS22	3	175.5	195	364.5	405
MCS23	3	195	216.7	405	450

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

ORDER INFORMATION

Product	SKU	Description
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 — 2x GE RJ45 ports, 802.11 a/b/g/n/ac Wave 2, dual concurrent dual band (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 — 2x GE RJ45 ports, 802.11 a/b/g/n/ac Wave 2, dual concurrent dual band (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 421E	FAP-421E	Indoor wireless AP — 2x GE RJ45 ports, 802.11 a/b/g/n/ac Wave 2, dual concurrent dual band (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 concurrent dual band (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
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.

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

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ThunderIT for the REMC SAVE Contract

ThunderIT offers products and services for REMC SAVE contract customers at a discounted price in accordance to the REMC price list.

Overview for the REMC SAVE contract

REMC SAVE provides large volume contracts for a variety of educational resources, including furniture, school and office supplies, software and digital services, and technology.

The program saves time and money by providing bids compliant with the Michigan Revised School Code that also provides local school districts with the authority to purchase using REMC contracts. The legislation that established REMCs (Michigan Compiled Laws Act 451 Section 380.671), and State Board of Education Rules, enables REMCs to bid on behalf of local school districts and also provide local school districts with the authority to purchase using REMC contracts. All items and vendors are awarded through a sealed bid process by the REMC SAVE Bid Project and approved by the REMC Association.

REMC SAVE is provided as a project of the REMC Association of Michigan for all Michigan schools. REMC SAVE provides large-volume contracts for a variety of educational resources. By using REMC SAVE contracts, Michigan schools have saved more than $1 billion since 1990. Every dollar saved through REMC SAVE today is one more dollar to invest in instruction tomorrow.

ThunderIT services the following REMC districts; REMC 1, REMC 2N, REMC 2C, REMC 2S, REMC 3, REMC 4, REMC 5, REMC 6, REMC 7, REMC 8, REMC 9, REMC 10, REMC 11, REMC 12W, REMC 12E, REMC 13, REMC 14W, REMC 14E, REMC 15, REMC 16, REMC 17, REMC 18S, REMC 18N, REMC 19W, REMC 19E, REMC 20, REMC 21, REMC 22

ThunderIT services the following REMC customers; AKIVA HEBREW DAY SCHOOL, BIRNEY MIDDLE SCHOOL, BUSSEY CTR-EARLY CHILDHOOD DEV, DEVRY UNIVERSITY - SOUTHFIELD – CENTRAL, HAMILTON ACADEMY CENTRAL OFFICE, LEONHARD ELEMENTARY SCHOOL, MCINTYRE ELEMENTARY SCHOOL, OAKLAND INTERNATIONAL ACADEMY

Other REMC contract holders include: Inacomp Technical Services Group, Sentinel Technologies, Software Services Group, Insight Direct USA, Information Systems Intelligence, Netech, Secant Technologies, CDW Logistics Inc (CDWG)

ThunderIT offers a variety of Solutions & Services to meet your every need

Digital Workplace

Transform your digital workplace and empower employees to drive your business forward. We deliver flexible, tailored, end-to-end solutions to keep your workforce engaged and productive. With an innovative approach centered around exceptional user experiences.

Smart Spaces

We provide smart workspace solutions to help you deliver consistent network performance and give guests, employees and students an uninterrupted experience.

Secure Network Solutions

Our security solutions help protect your network and critical data from cybersecurity threats

Safe Environments

We believe that employee, student, and customer safety is paramount in any environment. That's why our solutions provide a cloud based platform to help you intuitively manage and monitor physical locations to ensure a safe experience for everyone.

Next Generation WiFi

Power new and improved user experiences with our managed wifi solutions, offering faster speeds for enhanced application experience and more capacity for high density indoor and outdoor environments.

Remote Work Solutions

With our remote work solutions, working away from the office is no big deal. Give employees a secure, optimized connection to your entire network from anywhere.

Hybrid Workforce

We provide a seamless hybrid workforce solution that embraces change and operational scale. Give your employees and customers unrivaled experiences with a cloud platform that unifies best-in-class technologies.

Free Network Evaluation & Demo

ThunderIT offers a FREE Network Evaluation and/or product Demo to help ensure you are well informed and confident when choosing the right Cisco Meraki solution for your needs. During our call we'll architect a custom built Cisco Meraki solution for your business or environment.

Migration & Deployment

ThunderIT offers Migration and Deployment Services for your Cisco Meraki solution. Our experienced team of IT Professionals can configure, deploy and support your products to meet your needs. Our custom solutions ensure maximum efficiency and provide a clear path for your business going forward.

Managed Security

ThunderIT offers the best and most cost-effective solution to lower your risk in a heightened threat environment. Our team of certified Cisco engineers are ready to ensure that your network is secure, and your firewall is optimally configured to defend your business.

Mobile device management (MDM) Services

Our Mobile Device Management (MDM) solution unifies management of thousands of endpoint devices in a secure cloud platform, driving your organization's mobility initiatives, while maintaining an environment of agility and security.

Support & Monitoring

ThunderIT offers network support and monitoring services that are designed to fit the needs of every customer.

FAQs for the REMC SAVE Contract

Q: Does REMC SAVE meet the legal requirement for competitive bidding? A: The legislation that established REMCs (Michigan Compiled Laws Act 451 Section 380.671), and State Board of Education Rules, enables REMCs to bid on behalf of local school districts and also provide local school districts with the authority to purchase using REMC contracts. All items are competitively bid by REMC SAVE and awarded by the REMC Association.

Q: Who can Use REMC SAVE contracts? A: The following agencies are eligible to purchase using REMC SAVE contracts: PreK-12 Public, Charter (PSA) and Non-Public Schools, Community Colleges, Universities and Colleges, Public Libraries, Museums, State, County, and Local Government Agencies, Educational Non-profit Organizations and Health Care Facilities. Personal purchases at awarded bid pricing are at the discretion of the vendors.

Q: What is REMC SAVE? A: REMC SAVE is a free service of the REMC Association for all Michigan schools. There are 3 staff of REMC SAVE, and they conduct all of the bids and maintain vendor contracts. You can ask your local REMC Center questions. Find your local REMC Center by scrolling down the REMC SAVE home screen to view the map for your region or look up by zip code.

Q: How do I provide feedback? A: Your local REMC SAVE contact will always listen to any feedback you wish to provide. If you have feedback about the product, scroll down the home screen at remcsave.org and click 'View All Vendors' and you can complete a vendor evaluation form.

Q: What if my company wishes to become an awarded vendor? A: Go to vendorcenter.remcbids.org and create an account by clicking Login or Register in the upper right corner. Follow the directions! The only requirement is that you need five Michigan K12 school references. Customers can send their vendor recommendations to their local REMC contact or email remcsave@remc.org

Q: How are the vendors and products selected? A: Products and Vendors are awarded through a competitive bid process. REMC SAVE staff analyzes all bids and make recommendations to the REMC SAVE Advisory Committee for award. Once the REMC SAVE Advisory Committee votes on the award recommendations, they are then voted on by the REMC Association Board of Directors for final award.

Q: Where do I send my order or contact an awarded vendor? To contact vendors, navigate to the vendor listing by scrolling down the home screen and click 'view all vendors,' or navigate to https://www.remcsave.org/vendors. Click on the vendor name to find their contact information.

Q: What do I need to include on my purchase order? Please make sure your purchase order is itemized and includes the REMC item number, the model number/name, the reseller product number (if available), the quantity of each item to be purchased, and the unit price. A quote may be attached, but the purchase order should still be itemized. Sometimes the item numbers for the warranties, accessories, and upgrades are located on the spec sheet, linked from the awarded item page – be sure to include on the Purchase Order.