FORTINET

FortiAP™ Universal Access Point Series

FAP-U421EV and FAP-U423EV

Enterprise WiFi has transformed from a transient network to a permanent fixture within all organizations. The data transported on our wireless networks span from classroom video conferencing to healthcare patient monitoring traffic to financial Point-of-Sale transactions. Expectations continue to rise for this always on, always everywhere network. Today, WiFi is no longer a convenience but a mission critical utility.

Universal Access Points

Fortinet offers the industry's largest enterprise-class WiFi portfolio and blazing fast 802.11ac Wave 2 access points. The Fortinet Universal AP offer the ability to support all deployment options from on-premise to cloud management. This ability by our Universal Access Points to intelligently support stand-alone dedicated controllers (FortiWLC), integrated security controllers (FortiGate) and cloud management (FortiCloud) options, establish a new benchmark in flexibility, performance and security in the enterprise WLAN market. When paired with our industry-leading FortiGuard services, this next generation enterprise-class WLAN solution can protect your network from the latest cybersecurity threats while at the same time providing unmatched wireless performance.

⚙ Highlights

- Supports Universal Access Management from on-premise to cloud management
- 802.11ac Wave 2 technology with data rates of up to 3.5 Gbps
- 4x4 4-spatial stream multi-user MIMO (MU-MIMO) improves client throughput and range
- 802.11ac transmit beamforming (TxBF)
- Modulation up to 256 QAM
- Integrated with Fortinet Security Fabric
- Virtual Cell enabled deployments segment traffic at RF layer
- Hit-less PoE Failover

Key Features and Benefits

Universal Access Management	Supports ALL wireless deployment types from on-premise controllers to cloud management.
Highest Gigabit WiFi Performance	Incorporates the highest WiFi standards available today — 802.11ac Wave 2, 3.5 Gbps, 4x4, MU-MIMO.
Unmatched Security Protection	Integrates with Fortinet's Security Fabric providing unparalleled cybersecurity protection at the network edge.
Multi-User MIMO	Simultaneous transmission to Multiple devices to achieve higher throughputs.

HIGHLIGHTS

Fortinet Universal access points are designed to support medium to large offices, schools, universities, hospitals, hotels, and large retail stores.
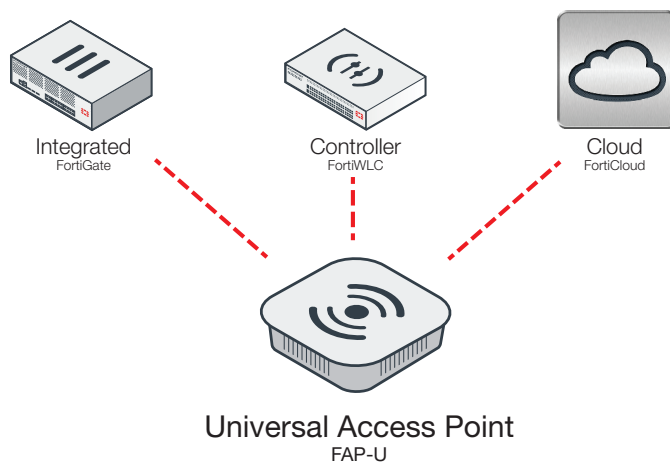

Figure 1 — Universal Access Management, highest Gigabit WiFi performance and unmatched security protection.

Education

Deployment of large scale WiFi requires site surveys, channel planning and worries over cell sizes and transmit power. Fortinet's Universal access points ,when paired with our dedicated wireless controllers (FortiWLC and MC), eliminates this work.

This enables school administrators to simplify initial deployment or the adding of APs to support more students throughout the campus or in classrooms without the headaches of more wireless network planning.
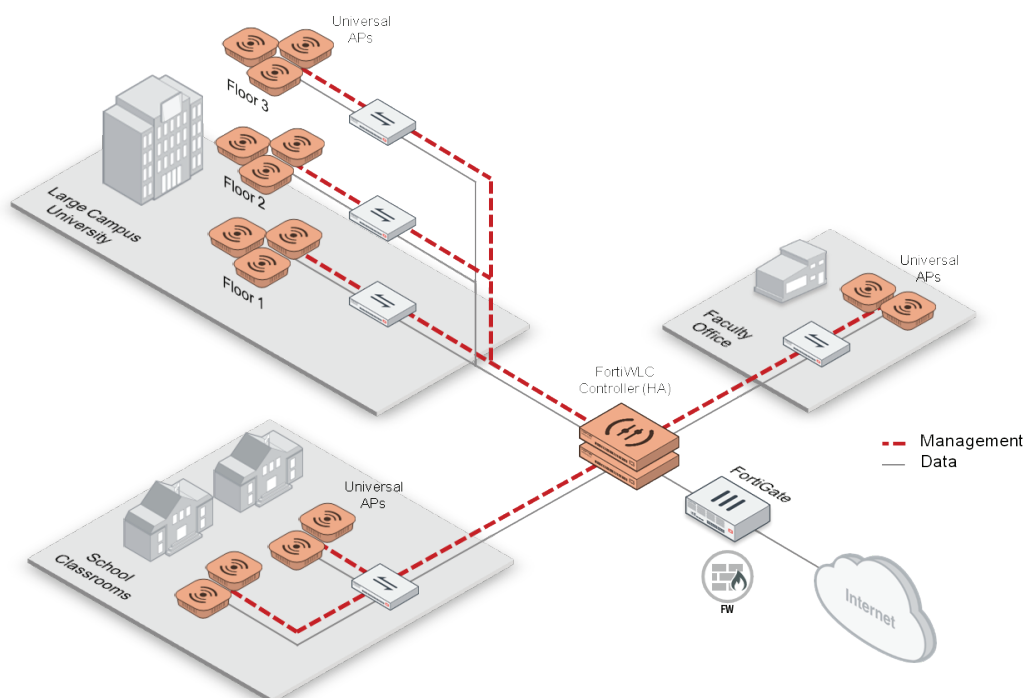

Figure 2 — Educational organizations with Universal APs managed by on-premise FortiWLC controllers.

www.fortinet.com

HIGHLIGHTS

Healthcare

Patient safety is priority one. Fortinet Universal APs empower hospitals to improve patient safety by enabling life-critical applications such as telemetry requiring low bandwidth but

exceptionally high reliability. Our Integrated secure wireless controllers (FortiGate) connected to our Universal access points ensures patient safety remains paramount.
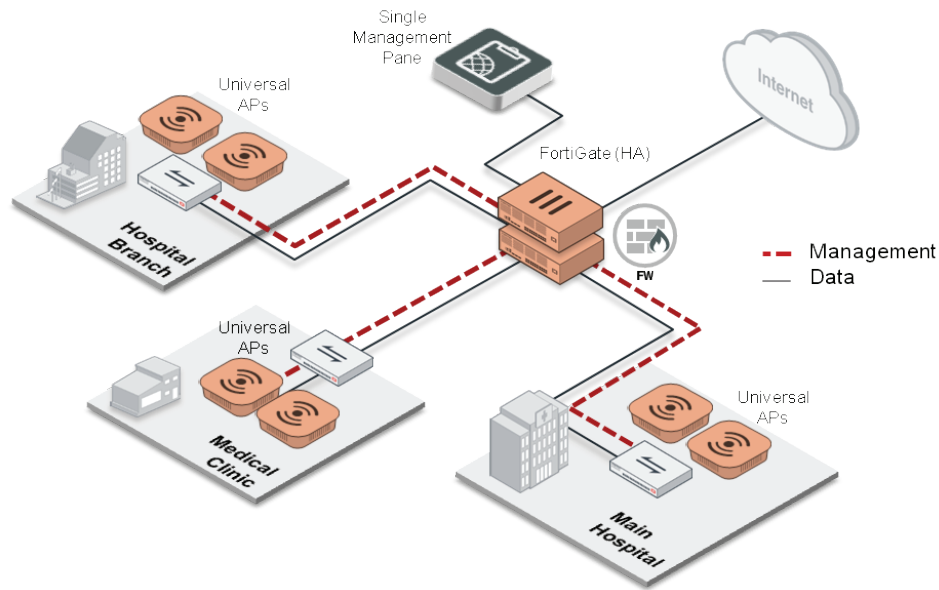

Figure 3 — Healthcare organizations with Universal APs managed by on-premise FortiGate controllers.

Retail

The retail sector continues to be a top target for cyber criminals. To protect themselves and their customers, while also providing robust wireless services to their customers and employees, retailers need a cost-effective wireless solution. Retailers can streamline WiFi store deployments through the combination of Universal APs and FortiCloud. This, in combination with FortiGuard services, provides cybersecurity protection to mitigate risk to retailers from damage created by a data breach.
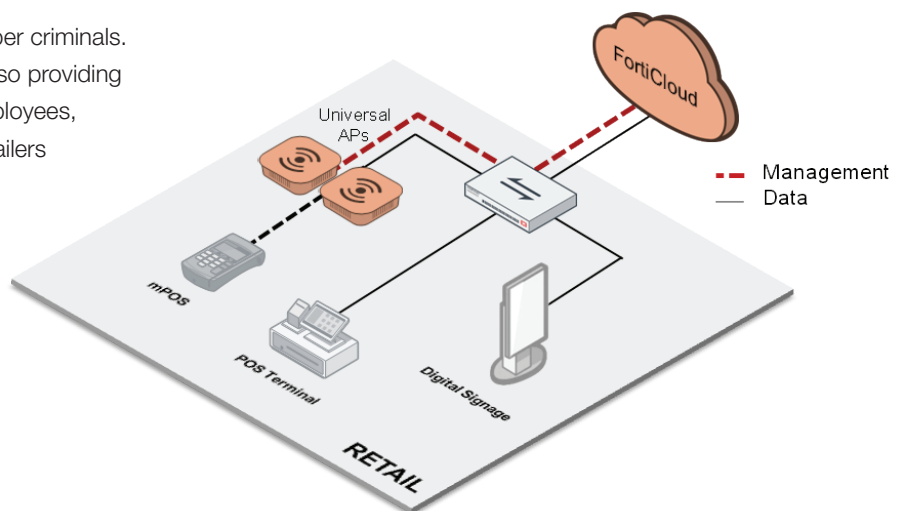

Figure 4 — Retail store with Universal APs managed by FortiCloud.

HIGHLIGHTS

Highest Gigabit WiFi Performance — 802.11ac Wave 2

The FortiAP U421EV and U423EV access points support the latest 802.11ac Wave 2 standard, with a client association rate of up to 3.5 Gbps. Additional features include 802.11ac explicit transmit beamforming (TxBF), multi-user MIMO (MU-MIMO) and more.

The combination of the 802.11ac Wave 2 standard and these advanced features means better client data rates over greater distances, and ultimately a better user experience.

FAP-U421EV / FAP-U423EV RF RX/TX PERFORMANCE TABLE

FORTIAP U421EV AND U432EV				
		Radio 1 2.4 GHz		Radio 2 5 GHz
802.11 a/g	MAX TX Power per transmit chain (dBm)	RX Sensitivity per receiver chain (dBm)	MAX TX Power per transmit chain (dBm)	RX Sensitivity per receiver chain (dBm)
6 Mbps	22	-94	20	-91
9 Mbps	22	-92	20	-89
12 Mbps	22	-89	20	-86
18 Mbps	22	-88	20	-85
24 Mbps	22	-83	20	-80
36 Mbps	22	-78	19	-75
48 Mbps	22	-77	19	-74
54 Mbps	19	-76	18	-73
802.11 HT20	TX Power (dBm)	RX Sensitivity (dBm)	TX Power (dBm)	RX Sensitivity (dBm)
MSC 0/8/16 (BPSK)	22	-91	20	-89
MSC 1/9/17 (QPSK)	21	-89	19	-87
MSC 2/10/18 (QPSK)	20	-86	19	-84
MSC 3/11/19 (16-QAM)	19	-85	18	-83
MSC 4/12/20 (16-QAM)	19	-80	17	-78
MSC 5/13/21 (64-QAM)	18	-75	17	-73
MSC 6/14/22 (64-QAM)	18	-74	17	-72
MSC 7/15/23 (64-QAM)	18	-73	17	-71
802.11 HT40	TX Power (dBm)	RX Sensitivity (dBm)	TX Power (dBm)	RX Sensitivity (dBm)
MSC 0/8/16 (BPSK)	21	-89	20	-86
MSC 1/9/17 (QPSK)	20	-87	19	-84
MSC 2/10/18 (QPSK)	20	-84	19	-81
MSC 3/11/19 (16-QAM)	19	-83	18	-80
MSC 4/12/20 (16-QAM)	19	-78	18	-75
MSC 5/13/21 (64-QAM)	18	-73	17	-70
MSC 6/14/22 (64-QAM)	18	-72	17	-69
MSC 7/15/23 (64-QAM)	18	-71	17	-68
MSC 8/16/24 (256-QAM)	15	-66	14	-65
MSC 9/17/25 (256-QAM)	15	-65	14	-63
802.11 HT80	TX Power (dBm)	RX Sensitivity (dBm)	TX Power (dBm)	RX Sensitivity (dBm)
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	-59

Maximum capability of the Hardware provided (Excluding antenna gain)

SPECIFICATIONS

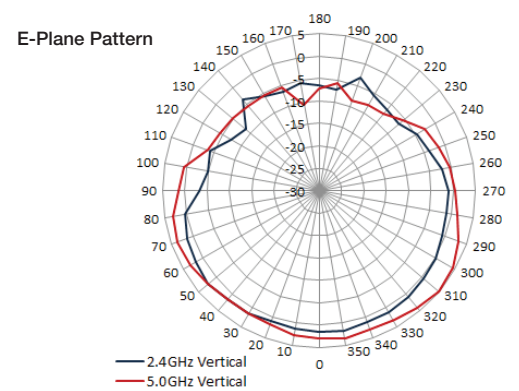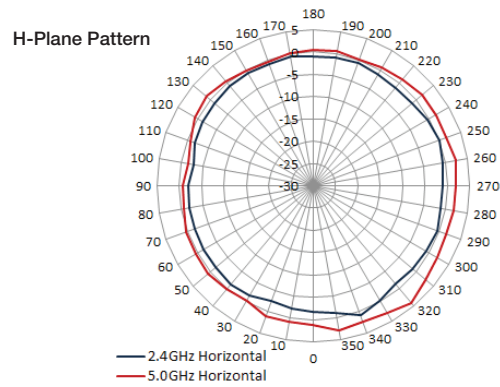|	FORTIAP U421EV	FORTIAP U423EV
Hardware		
Hardware Type	Indoor Universal AP	Indoor Universal AP
Number of Radios	2	2
Number of Antennas	9 Internal (8 WiFi + 1 Bluetooth/BLE)	8 RP-SMA External and 1 Bluetooth/BLE Internal
Peak Antenna Gain	4 dBi for 2.4 GHz, 5 dBi for 5 GHz	3 dBi for 2.4 GHz, 3 dBi for 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	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.851
Frequency of Radio 1	2.4 GHz b/g/n 20/40 MHz (256 QAM)	2.4 GHz b/g/n 20/40 MHz (256 QAM)
Frequency of Radio 2	5 GHz a/n/ac 20/40/80/160 MHz (256 QAM)	5 GHz a/n/ac 20/40/80/160 MHz (256 QAM)
Maximum Data Rate	Radio 1: up to 800 Mbps Radio 2: up to 3.46 Gbps	Radio 1: up to 800 Mbps Radio 2: up to 3.46 Gbps
Radio Chains / Streams	4x4 / spatial streams	4x4 / spatial streams
Bluetooth Low Energy (BT/BLE) Radio	4 dBm Transmit Power (class 2) -94 dBm Receive Sensitivity	4 dBm Transmit Power (class 2) -94dBm Receive Sensitivity
Ethernet Ports	2x GE RJ45	2x GE RJ45
USB Port	1x Type A	1x 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)	Dual redundant PoE power ports with support for IEEE 802.3at (25.5 W)
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	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	WPA™ and WPA2™ with 802.1x or Preshared key, WEP and Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	2.4 GHz band – 22.0 dBm* 5.0 GHz band – 20.0 dBm*	2.4 GHz band – 22.0 dBm* 5.0 GHz band – 20.0 dBm*
Physical Security	Kensington Lock	Kensington Lock
IEEE Standards	802.11a, 802.11ac, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.3af, 802.3at, 802.3az	802.11a, 802.11ac, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.3af, 802.3at, 802.3az
FortiPresence Capable	Yes	Yes
Wireless Mesh Capable	Yes	Yes
Modes of Operation	MC with SD 8.2, FWLM, Future FortiGate or FortiCloud support	MC with SD 8.2, FWLM, FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by controller)	Local-Bridge, Tunnel & Mesh (when managed by controller)
FortiDeploy and FortiCloud Key	Yes	Yes
Concurrent Clients Per Radio (Maximum / Recommended)	512 / 128	512 / 128
LED Off Mode	Yes	Yes
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)	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
Packet Sniffer Mode	Yes	Yes
Spectrum Analyzer	Yes — Dedicated chipset	Yes — Dedicated chipset

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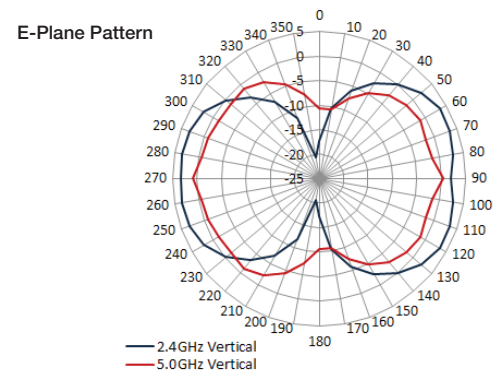
SPECIFICATIONS

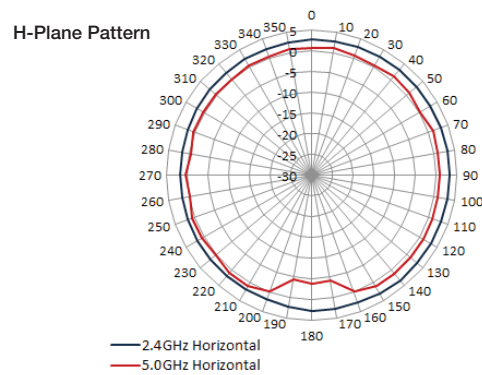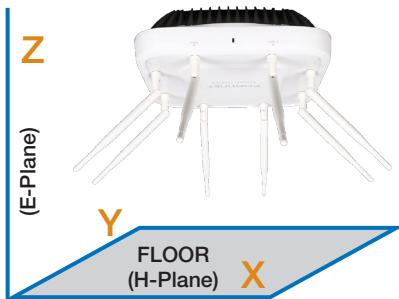|	FORTIAP U421EV	FORTIAP U423EV
Dimensions		
Length x Width x Height (inches)	8.46 x 8.46 x 2.2	8.46 x 8.46 x 2.2
Length x Width x Height (mm)	215 x 215 x 56	215 x 215 x 56
Weight	3.31 lb (1.5 kg)	3.4 lb (1.53 kg)
Package (shipping) Weight	5.09 lb (2.31 kg)	5.36 lb (2.43 kg)
Mounting Options	Ceiling, 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)
Environment		
Power Supply	Adapter input: 100-240V, 50/60 Hz, 0.9A Max output: 12V DC, 3A	Adapter input: 100-240V, 50/60 Hz, 0.9A Max output: 12V DC, 3A
Power Consumption (Maximum)	24.58 W	24.58 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
Hit-less PoE Failover	Yes	Yes
Compliance		
SAFETY		
FCC	Yes	Yes
ICES	Yes	Yes
CE	Yes	Yes
RCM	Yes	Yes
VCCI	Yes	Yes
RF		
IC	Yes	Yes
CE + RCM	Yes	Yes
WiFi Alliance		
WFA	Yes (FortiWLC and MC image only)	Yes (FortiWLC and MC image only)
Dynamic Frequency Selection		
CE DFS	Yes (FortiWLC and MC image only)	Yes (FortiWLC and MC image only)
Warranty		
Limited Lifetime Warranty	Yes	Yes

ANTENNA RADIATION PATTERNS

FAP-U421EV

H-Plane Pattern

— 2.4GHz Horizontal
— 5.0GHz Horizontal

E-Plane Pattern

— 2.4GHz Vertical
— 5.0GHz Vertical

FAP-U423EV

H-Plane Pattern

— 2.4GHz Horizontal
— 5.0GHz Horizontal

E-Plane Pattern

— 2.4GHz Vertical
— 5.0GHz Vertical

PERFORMANCE MATRIX

802.11AC PERFORMANCE — DATA RATES (MBPS)										
Descriptor	Data Streams	VHT20		VHT40		VHT80		VH160	
		Normal GI	Short GI	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	58.6	65
MCS 1	1	13	14.4	27	30	58.5	65	117	130
MCS 2	1	19.5	21.7	40.5	45	87.8	97.5	175.6	195
MCS 3	1	26	28.9	54	60	117	130	234	260
MCS 4	1	39	43.3	81	90	175.5	195	351	390
MCS 5	1	52	57.8	108	120	234	260	468	520
MCS 6	1	58.5	65	121.5	135	263.3	292.5	526.6	585
MCS 7	1	65	72.2	135	150	292.5	325	585	650
MCS 8	1	78	86.7	162	180	351	390	702	780
MCS 9	1	NA	NA	180	200	390	433.3	780	866.6
MCS 0	2	13	14.4	27	30	58.5	65	117	130
MCS 1	2	26	28.9	54	60	117	130	234	260
MCS 2	2	39	43.3	81	90	175.5	195	351	390
MCS 3	2	52	57.8	108	120	234	260	468	520
MCS 4	2	78	86.7	162	180	351	390	702	780
MCS 5	2	104	115.6	216	240	468	520	936	1040
MCS 6	2	117	130	243	270	526.5	585	1053	1170
MCS 7	2	130	144.4	270	300	585	650	1170	1300
MCS 8	2	156	173.3	324	360	702	780	1404	1560
MCS 9	2	NA	NA	360	400	780	866.7	1560	1733.4
MCS 0	3	19.5	21.7	40.5	45	87.8	97.5	175.6	195
MCS 1	3	39	43.3	81	90	175.5	195	351	390
MCS 2	3	58.5	65	121.5	135	263.3	292.5	526.6	585
MCS 3	3	78	86.7	162	180	351	390	702	780
MCS 4	3	117	130	243	270	526.5	585	1053	1170
MCS 5	3	156	173.3	324	360	702	780	1404	1560
MCS 6	3	175.5	195	364.5	405	NA	NA	NA	NA
MCS 7	3	195	216.7	405	450	877.5	975	1755	1950
MCS 8	3	234	260	486	540	1053	1170	2106	2340
MCS 9	3	260	288.9	540	600	1170	1300	N/A	N/A
MCS 0	4	26	28.9	54	60	117	130	234	260
MCS 1	4	52	57.8	108	120	234	260	468	520
MCS 2	4	78	86.7	162	180	351	390	702	780
MCS 3	4	104	115.6	216	240	468	520	936	1040
MCS 4	4	156	173.3	324	360	702	780	1404	1560
MCS 5	4	208	231.1	432	480	936	1040	1872	2080
MCS 6	4	234	260	486	540	1053	1170	2106	2340
MCS 7	4	260	288.9	540	600	1170	1300	2340	2600
MCS 8	4	312	346.7	648	720	1404	1560	2808	3120
MCS 9	4	NA	NA	720	800	1560	1733.3	3120	3466.6

ORDER INFORMATION

Product	SKU	Description
FortiAP U421EV	FAP-U421EV	Universal Indoor wireless AP — 4x4 MU-MIMO 802.11 a/b/g/n/ac Wave 2, dual concurrent dual-band (2.4 GHz/5 GHz) radios and 3rd BT/BLE radio, 2x GE RJ45 802.3at PoE ports, Internal antennas, ceiling/wall mount kit included, power adapter not included.
	FC-10-P0421-311-02-DD	8x5 FortiCare Contract
	FC-10-P0421-247-02-DD	24x7 FortiCare Contract
FortiAP U423EV	FAP-U423EV	Universal Indoor wireless AP — 4x4 MU-MIMO 802.11 a/b/g/n/ac Wave 2, dual concurrent dual-band (2.4 GHz/5 GHz) radios and 3rd BT/BLE radio, 2x GE RJ45 802.3at PoE ports, external antennas, ceiling/wall mount kit included, power adapter not included.
	FC-10-P0423-311-02-DD	8x5 FortiCare Contract
	FC-10-P0423-247-02-DD	24x7 FortiCare Contract
Power Adapter	SP-FAP400-PA	AC Power Adapter for FAP-U421EV, FAP-U423EV, FAP-S421E, FAP-S423E, FAP-421E and FAP-423E.

REGION/COUNTRY SKU SUFFIX*								
Americas-FCC	Europe ETSI	International	Japan	Korea	Non-FFCA	Singapore	Taiwan	World 2.4G
-A	-E	-I	-J	-K	-N	-S	-T	-W

* For the complete list of countries and regions, refer to http://www.fortinet.com/wireless.

FST-PROD-DS-FAPU

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