

FortiAP™ Universal Access Point Series

FAP-U321EV, U323EV, U421EV and 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 Management

Ability to intelligently support stand-alone controllers (FortiWLC), integrated security controllers (FortiGate) and cloud management (future) options, establish a new benchmark in flexibility, performance and security.



Latest WiFi technologies

802.11ac Wave 2 technology with data rates of up to 3.5 Gbps and multi-user MIMO (MU-MIMO) improves client throughput and range.



Unmatched Security Protection

Integrates with Fortinet's Security Fabric providing unparalleled cybersecurity protection at the network edge.

Product Offerings

802.11ac Wave 2	FAP-U321EV	3x3 MU-MIMO APs with dual radios
	FAP-U323EV	
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	FAP-U421EV	4x4 MU-MIMO APs with dual radios
	FAP-U423EV	

HIGHLIGHTS

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

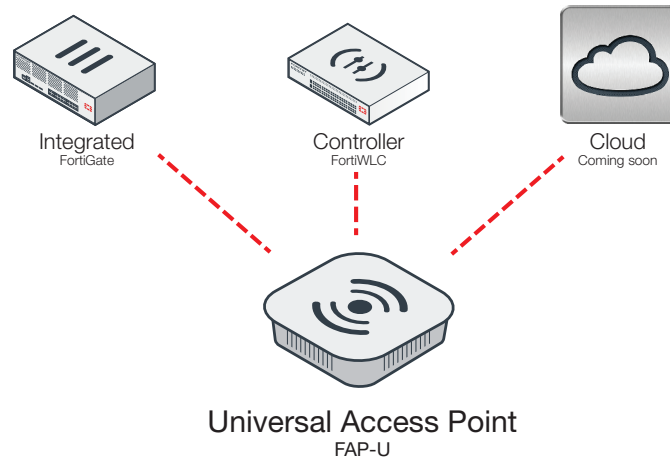


Figure 1 — Universal Access Management, highest Gigabit WiFi performance and unmatched security protection.

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 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.

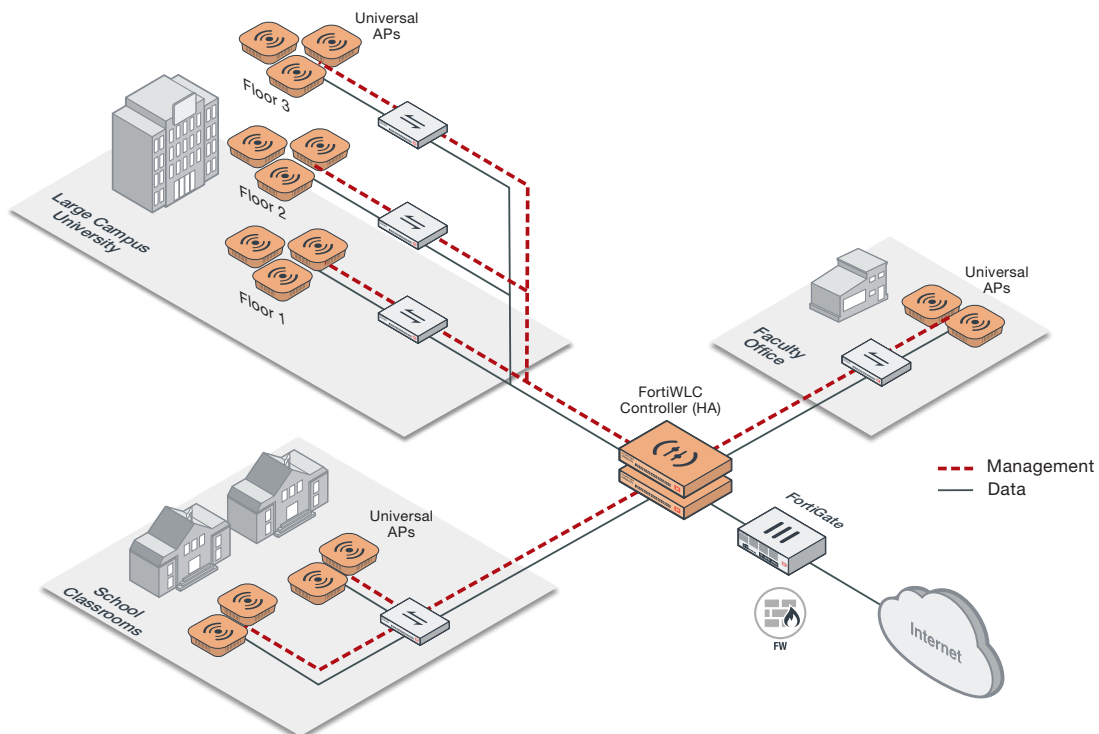


Figure 2 — Educational organizations with Universal APs managed by on-premise FortiWLC controllers.

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.

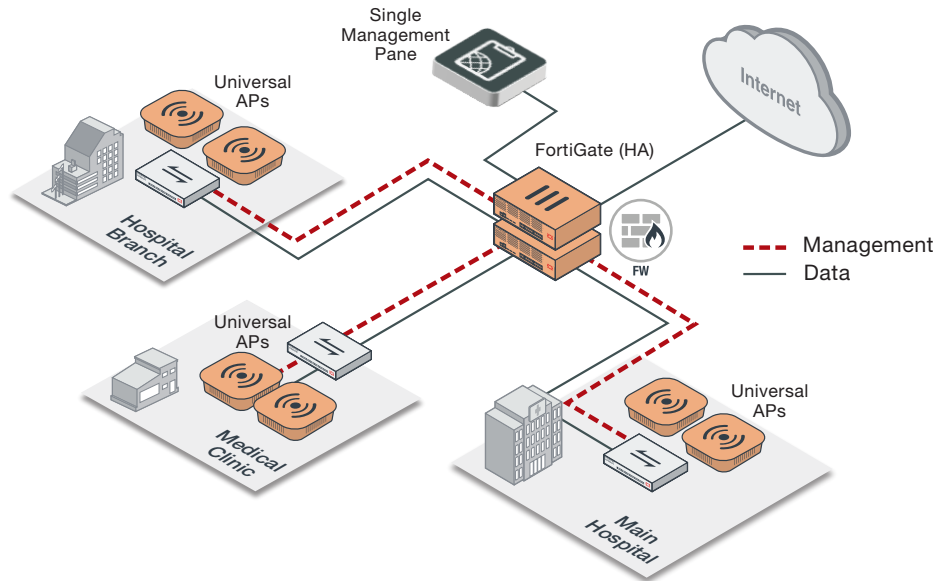


Figure 3 — Healthcare organizations with Universal APs managed by on-premise FortiGate controllers.

Small/Medium Business

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 FortiGate. This, in combination with FortiGuard services, provides cybersecurity protection to mitigate risk to retailers from damage created by a data breach.

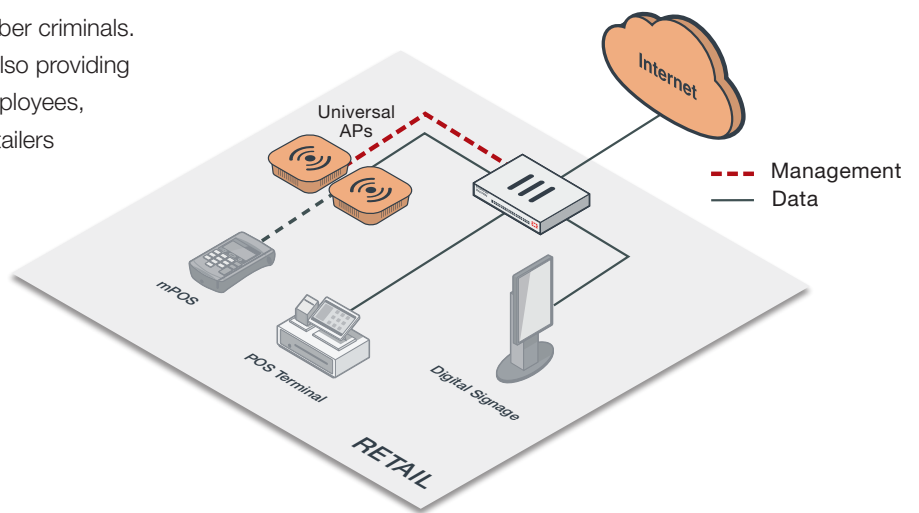


Figure 4 — Retail store with Universal APs managed by FortiGate.

HIGHLIGHTS

FortiAP U321EV and U323EV

The FortiAP U321EV and U323EV access points support the latest 802.11ac Wave 2 standard, with a client association rate of up to 2.34 Gbps. Additional features include 802.11ac explicit transmit beamforming (TxBF), MU-MIMO built in BLE radio for location services and more.



 **802.11ac Wave 2 | Dual Radio 2.4 & 5 GHz | 6 Interior/Exterior Antennas**

 **3x3 MU-MIMO | Up to 450 Mbps + 2.34 Gbps**

SPECIFICATIONS

	FORTIAP U321EV	FORTIAP U323EV
Hardware		
Hardware Type	Indoor Universal AP	Indoor Universal AP
Number of Radios	2	2
Number of Antennas	6 Internal plus 1 Bluetooth	6 RP-SMA External plus 1 Internal Bluetooth
Peak Antenna Gain	4.5 dBi for 2.4 GHz, 6.5 dBi for 5 GHz with 30 degree downtilt for ceiling mount	3.5 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	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 (3x3:3 stream) 20/40 Mhz (64 QAM)	2.4 GHz b/g/n (3x3:3 stream) 20/40 Mhz (64 QAM)
Frequency of Radio 2	5 GHz a/n/ac (3x3:3 stream) 20/40/80/160 MHz (256 QAM) MU-MIMO 2 simultaneous devices	5 GHz a/n/ac (3x3:3 stream) 20/40/80/160 MHz (256 QAM) MU-MIMO 2 simultaneous devices
Maximum Data Rate	Radio 1: up to 450 Mbps Radio 2: up to 2340 Mbps	Radio 1: up to 450 Mbps Radio 2: up to 2340 Mbps
Radio Chains / Streams	3x3 / 3 spatial streams	3x3 / 3 spatial streams
Bluetooth Low Energy (BT/BLE) Radio	Yes	Yes
Ethernet Ports	2x GE RJ45, LLDP	2x GE RJ45, LLDP
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)	IEEE 802.3at (3x3 @ 20 dBm with 802.3af; USB disabled)	IEEE 802.3at (3x3 @ 20 dBm with 802.3af; USB disabled)
Simultaneous SSIDs Per Radio	Up to 16 (Dependant on mode)	Up to 16 (Dependant on mode)
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: 21.5 dBm (141 mW)* 5 GHz: 19.5 dBm (90 mW)*	2.4 GHz: 21.5 dBm (141 mW)* 5 GHz: 19.5 dBm (90 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, 802.3af, 802.11ac, 802.3at, 802.3az, 802.3ad	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, 802.3ad
FortiPresence Capable	Yes	Yes
Wireless Mesh Capable	Yes	Yes
Modes of Operation	WLC 8.3.3 (min.), FortiGate, (FortiCloud – Future)	WLC 8.3.3 (min.), FortiGate, (FortiCloud – Future)
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by controller)	Local-Bridge, Tunnel & Mesh (when managed by controller)
Concurrent Clients Per Radio (Maximum / Recommended)	256 / 80	256 / 80
LED Off Mode	Yes	Yes

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

SPECIFICATIONS

	FORTIAP U321EV	FORTIAP U323EV
Advanced 802.11 Features		
802.11ac MU-MIMO Wave 2	Yes	Yes
Transmit Beam Forming (TxBF)	Yes	Yes
Low-Density Parity Check (LDPC) Encoding	Yes	Yes
Maximum Likelihood Demodulation (MLD)	Yes	Yes
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	No	No
Packet Sniffer Mode	Yes	Yes
Spectrum Analyzer	Yes — Dedicated chipset	Yes — Dedicated chipset
Dimensions		
Length x Width x Height (inches)	8.58 x 8.58 x 1.69	8.96 x 8.58 x 1.69
Length x Width x Height (mm)	218 x 218 x 43	227.7 x 218 x 43
Weight	2.24 lb (1016.5 g)	2.25 lb (1021.5 g)
Package (shipping) Weight	3.73 lb (1694 g)	3.74 lb (1699 g)
Mounting Options	Wall, T-Rail & Ceiling Mounting	Wall, T-Rail & Ceiling Mounting
Included Accessories	Ceiling, T-Rail and wall mount kit (AC power adapter sold separately)	Ceiling, T-Rail and wall mount kit and 6 dipole antennas (AC power adapter sold separately)
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 (Maximum)	20 W	20 W
Humidity	5–90% non-condensing	5–90% non-condensing
Operating Temperature	32–122°F (0–50°C)	32–122°F (0–50°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	FCC Part 15 Subpart B (Class B), Subpart C and Subpart E	FCC Part 15 Subpart B (Class B), Subpart C and Subpart E
UL	UL 60950-1, UL 2043, CSA C22.2 No. 60950-1	UL 60950-1, UL 2043, CSA C22.2 No. 60950-1
CB	IEC 60950-1	IEC 60950-1
RF		
IC	RSS-210, RSS-GEN, RSS-102, ICES-003	RSS-210, RSS-GEN, RSS-102, ICES-003
Warranty		
Limited Lifetime Warranty	Yes	Yes

FAP-U321EV / FAP-U323EV RF RX/TX PERFORMANCE TABLE

FORTIAP U321EV AND U323EV				
802.11 a/g	Radio 1 2.4 GHz		Radio 2 5 GHz	
	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	-91	20	-90
9 Mbps	22	-90	20	-89
12 Mbps	22	-87	20	-86
18 Mbps	22	-86	20	-85
24 Mbps	22	-81	20	-80
36 Mbps	22	-76	19	-75
48 Mbps	22	-75	19	-74
54 Mbps	19	-74	18	-73
802.11 HT20	TX Power (dBm)	RX Sensitivity (dBm)	TX Power (dBm)	RX Sensitivity (dBm)
MCS 0/8/16 (BPSK)	21	-90	19	-90
MCS 1/9/17 (QPSK)	21	-86	19	-87
MCS 2/10/18 (QPSK)	20	-83	19	-85
MCS 3/11/19 (16-QAM)	19	-82	18	-82
MCS 4/12/20 (16-QAM)	19	-77	17	-80
MCS 5/13/21 (64-QAM)	18	-75	17	-77
MCS 6/14/22 (64-QAM)	18	-73	17	-74
MCS 7/15/23 (64-QAM)	17	-70	16	-71
802.11 HT40	TX Power (dBm)	RX Sensitivity (dBm)	TX Power (dBm)	RX Sensitivity (dBm)
MCS 0/8/16 (BPSK)	21	-87	18	-88
MCS 1/9/17 (QPSK)	20	-87	18	-85
MCS 2/10/18 (QPSK)	20	-84	18	-85
MCS 3/11/19 (16-QAM)	19	-83	18	-80
MCS 4/12/20 (16-QAM)	19	-78	18	-78
MCS 5/13/21 (64-QAM)	18	-73	17	-74
MCS 6/14/22 (64-QAM)	18	-72	17	-71
MCS 7/15/23 (64-QAM)	18	-71	15	-68
MCS 8/16/24 (256-QAM)	-	-	15	-64
MCS 9/17/25 (256-QAM)	-	-	15	-61
802.11 HT80	TX Power (dBm)	RX Sensitivity (dBm)	TX Power (dBm)	RX Sensitivity (dBm)
MCS 0 (BPSK)	-	-	18	-83
MCS 1 (QPSK)	-	-	17	-80
MCS 2 (QPSK)	-	-	17	-78
MCS 3 (16-QAM)	-	-	16	-75
MCS 4 (16-QAM)	-	-	16	-73
MCS 5 (64-QAM)	-	-	15	-75
MCS 6 (64-QAM)	-	-	15	-72
MCS 7 (64-QAM)	-	-	15	-69
MCS 8 (256-QAM)	-	-	15	-61
MCS 9 (256-QAM)	-	-	15	-58

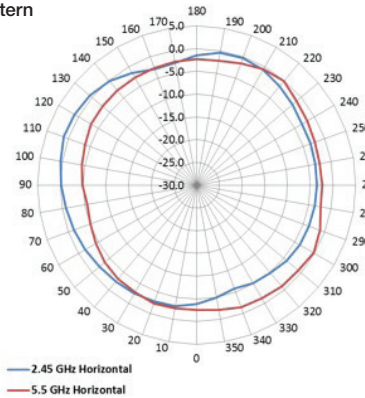
Maximum capability of the Hardware provided (Excluding antenna gain)

ANTENNA RADIATION PATTERNS

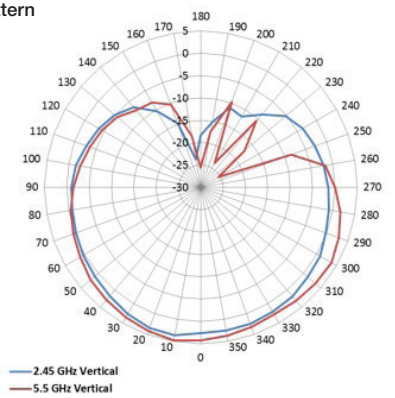
FAP-U321EV



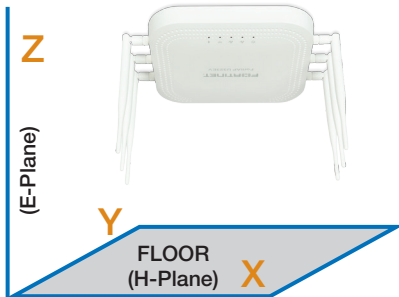
H-Plane Pattern



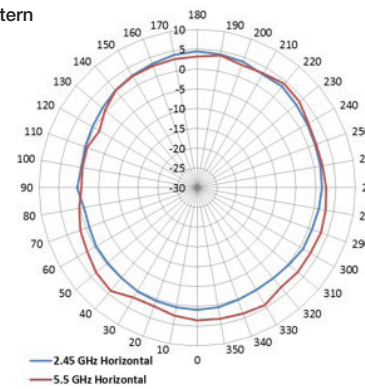
E-Plane Pattern



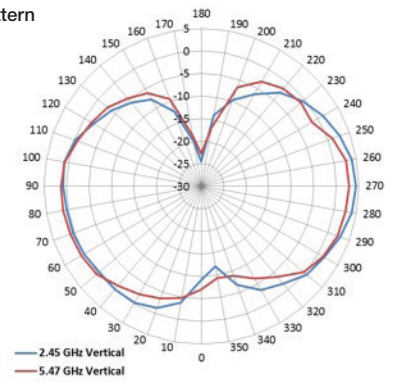
FAP-U323EV



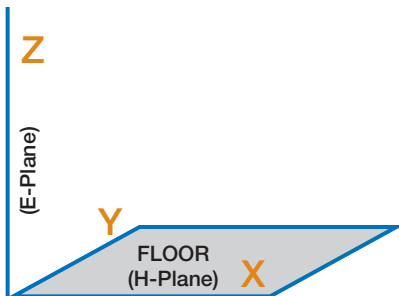
H-Plane Pattern



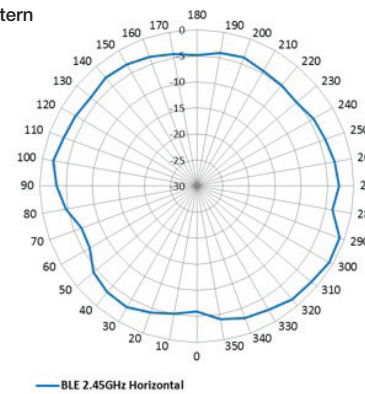
E-Plane Pattern



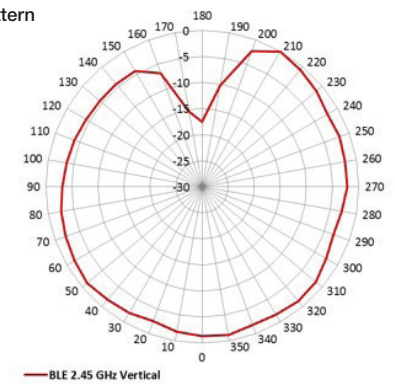
FAP-U32XEV BLE



H-Plane Pattern



E-Plane Pattern



PERFORMANCE MATRIX


FAP-U321EV AND FAP-U323EV 802.11AC PERFORMANCE — DATA RATES (MBPS)										
Descriptor	Data Streams	VHT20		VHT40		VHT80		VHT160		
		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	175.5	195	
MCS 1	3	39	43.3	81	90	175.7	195	351	390	
MCS 2	3	58.5	65	121.5	135	263.3	292.5	526.5	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	1579.5	1755	
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	286	540	600	1170	1300	NA	NA	

HIGHLIGHTS

FortiAP U421EV and U423EV

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), MU-MIMO and more.



 **802.11ac Wave 2 | Dual Radio 2.4 & 5 GHz | 8 Interior/Exterior Antennas**

 **4x4 MU-MIMO | Up to 800 Mbps + 3.46 Gbps**

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 (64 QAM)	2.4 GHz b/g/n 20/40 MHz (64 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 / 4 spatial streams	4x4 / 4 spatial streams
Bluetooth Low Energy (BT/BLE) Radio	4 dBm Transmit Power (class 2) -94 dBm Receive Sensitivity	4 dBm Transmit Power (class 2) -94 dBm Receive Sensitivity
Ethernet Ports	2x GE RJ45, LLDP	2x GE RJ45, LLDP
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 802.3af (2x2 @ 17 dBm with 802.3af; USB disabled)	Dual redundant PoE power ports with support for IEEE 802.3af (2x2 @ 17 dBm with 802.3af; USB disabled)
Simultaneous SSIDs Per Radio	Up to 16 (14 if background scanning enabled)	16 (14 if background scanning enabled)
EAP Type(s)	EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST	EAP-TLS, EAP-TTLS/MSCSHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
User/Device Authentication	WPA™ and WPA2™ with 802.1x or Preshared key, WEP 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, when managed by controller	Yes, when managed by controller
Wireless Mesh Capable	Yes	Yes
Modes of Operation	WLC 8.2 (min.), FortiGate, (FortiCloud – Future)	WLC 8.2 (min.), FortiGate, (FortiCloud – Future)
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by controller)	Local-Bridge, Tunnel & Mesh (when managed by controller)
Concurrent Clients Per Radio (Maximum / Recommended)	Up to 256 / Dependent on use case	Up to 256 / Dependent on use case
LED Off Mode	Yes	Yes

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

SPECIFICATIONS

	FORTIAP U421EV	FORTIAP U423EV
Advanced 802.11 Features		
802.11ac MU-MIMO Wave 2	Yes	Yes
Transmit Beam Forming (TxBF)	Yes	Yes
Low-Density Parity Check (LDPC) Encoding	Yes	Yes
Maximum Likelihood Demodulation (MLD)	Yes	Yes
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
Packet Sniffer Mode	Yes	Yes
Spectrum Analyzer	Yes — Dedicated chipset	Yes — Dedicated chipset
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	FCC Part 15 Subpart B (Class B), Subpart C and Subpart E	FCC Part 15 Subpart B (Class B), Subpart C and Subpart E
UL	UL 60950-1, UL 2043, CSA C22.2 No. 60950-1	UL 60950-1, UL 2043, CSA C22.2 No. 60950-1
CB	IEC 60950-1	IEC 60950-1
RF		
IC	RSS-210, RSS-GEN, RSS-102, ICES-003	RSS-210, RSS-GEN, RSS-102, ICES-003
Warranty		
Limited Lifetime Warranty	Yes	Yes

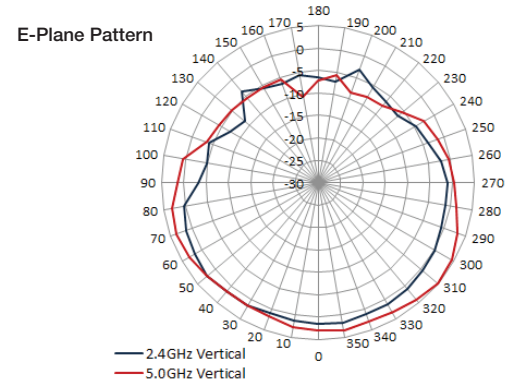
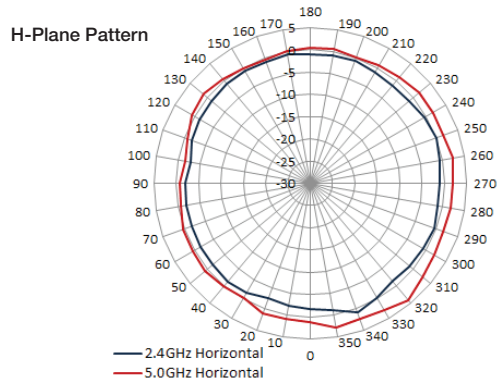
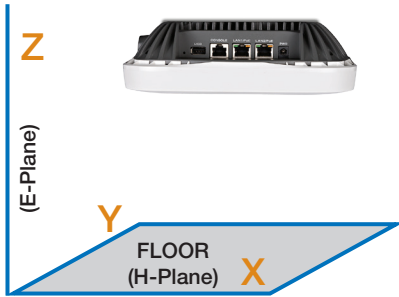
FAP-U421EV / FAP-U423EV RF RX/TX PERFORMANCE TABLE

FORTIAP U421EV AND U432EV				
802.11 a/g	Radio 1 2.4 GHz		Radio 2 5 GHz	
	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)	-	-	14	-65
MSC 9/17/25 (256-QAM)	-	-	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

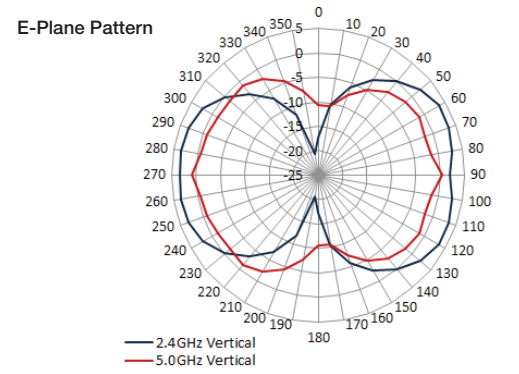
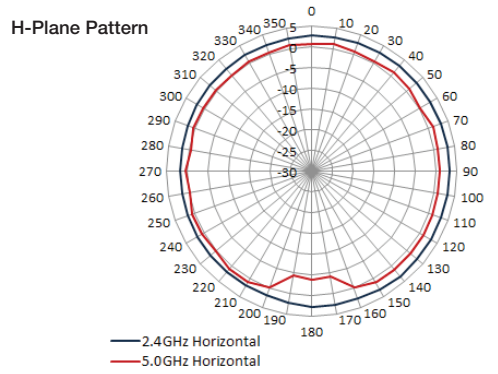
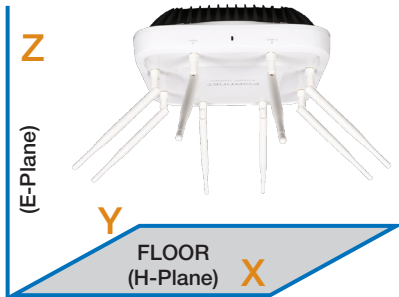
Maximum capability of the Hardware provided (Excluding antenna gain)

ANTENNA RADIATION PATTERNS

FAP-U421EV



FAP-U423EV



PERFORMANCE MATRIX

FAP-U421EV AND FAP-U423EV 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 U321EV	FAP-U321EV	Universal Indoor Wireless AP — 3x3 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 802.3af PoE ports, internal antennas, ceiling/wall mount kit included, power adapter not included.
	FC-10-PU321-311-02-DD	8x5 FortiCare Contract
	FC-10-PU321-247-02-DD	24x7 FortiCare Contract
FortiAP U323EV	FAP-U323EV	Universal Indoor Wireless AP — 3x3 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 802.3af PoE ports, external antennas, ceiling/wall mount kit included, power adapter not included.
	FC-10-PU323-311-02-DD	8x5 FortiCare Contract
	FC-10-PU323-247-02-DD	24x7 FortiCare Contract
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
Gigabit PoE Injector	GPI-130	1-Port Gigabit PoE Power Injector, 802.3at up to 30W.
Power Adapter	SP-FAP400-PA	AC Power Adapter for FAP-U421EV, FAP-U423EV, FAP-U321EV, FAP-U323EV, FAP-S421E, FAP-S423E, FAP-421E and FAP-423E.

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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