

# FortiAP™ Smart Access Point Series

Cloud or FortiOS-managed Smart Access Points

The FortiAP-S Series are the first Access Points of their kind to have a Next Generation Firewall built in. They are equipped with extra memory and a powerful processor that enables them to perform real-time security processing on the AP, providing complete protection against all manner of WiFi and cyber-threats at the network edge. **With Fortinet's award-winning security technology, the FortiAP-S series provides the most compact solution for complete content and application security in a WiFi architecture.**



## Cloud Management

Combines the low CAPEX and convenience of cloud management, with cloud-provided threat protection, delivered through regular FortiGuard updates.



## Advanced Security Protection

On-board IPS, antivirus scanning, web-filtering and application control, protects all users and devices from the latest security threats.



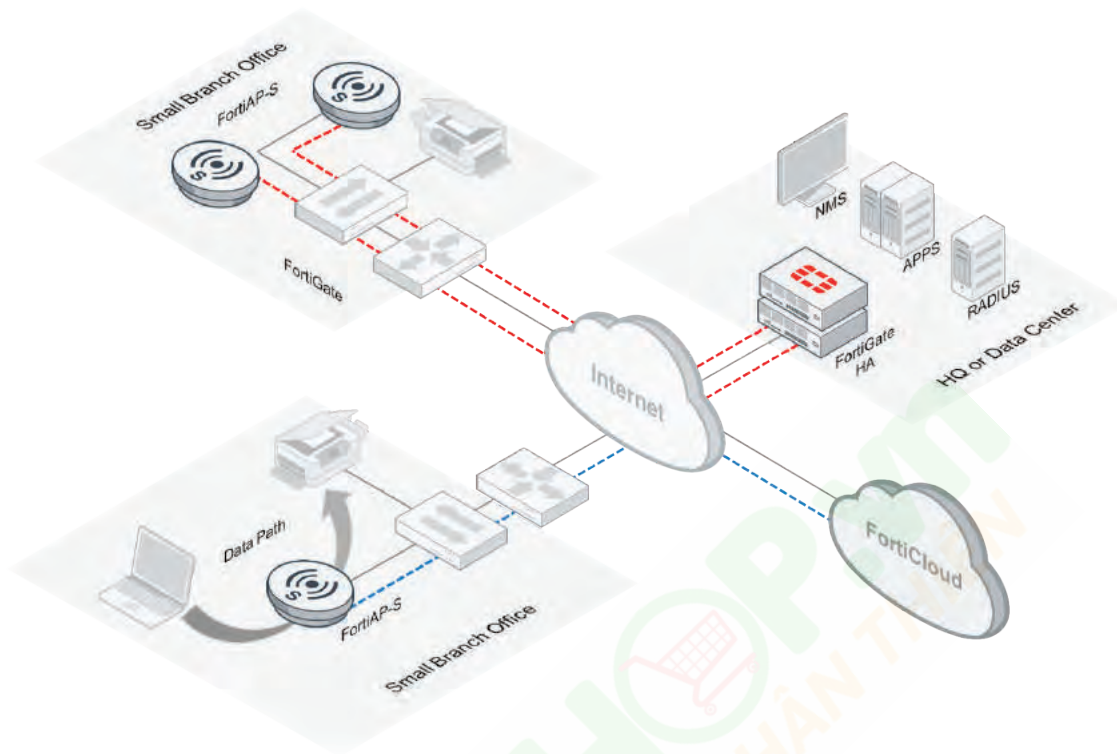
## Built-in WiFi Security

Protects the network from advanced wireless threats to satisfy PCI DSS compliance. PCI-DSS compliance reports available through FortiCloud.

## Product Offerings

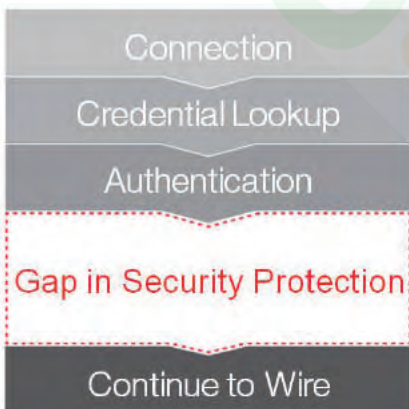
802.11ac Wave 2	<b>FAP-S221E</b>	2x2 APs with dual radios
	<b>FAP-S223E</b>	
	<b>FAP-S421E</b>	4x4 APs with dual radios
	<b>FAP-S423E</b>	
	<b>FAP-S422E</b>	Outdoor, 4x4 APs with dual radios and a variety of external antenna options

# DEPLOYMENT

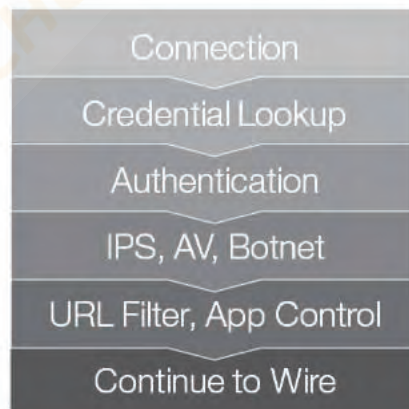


Showing both Cloud-managed and FortiGate-managed FAP-S series at remote sites

## Traditional Cloud Solution



## Fortinet Cloud Solution



1. Initial WiFi Connection
2. Lookup user in FortiCloud or RADIUS
3. Auth via Captive Portal, 802.1X, PSK
4. Scan with IPS, AV and botnet engine
5. Allow/block URLs and apps
6. Only clean traffic continues to wire

Fortinet approach to secure cloud-managed WiFi

## HIGHLIGHTS

### FortiAP S221E

The FAP-S221E is our medium-density 802.11ac Wave 2 access point. This enterprise class access point is ideal for medium-density environments such as office or classroom. The S221E supports MU-MIMO giving excellent performance throughput of up to 867 Mbps and the ability to support 2 simultaneous devices.



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

 **Up to 300 + 867 Mbps**

## SPECIFICATIONS

FORTIAP S221E	
<b>Hardware</b>	
Hardware Type	Indoor Smart AP
Number of Radios	2
Number of Antennas	4 Internal plus 1 Bluetooth
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 (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), MU-MIMO 2 simultaneous devices
Bluetooth Low Energy (BT/BLE) Radio	Bluetooth scanning and iBeacon advertisement @ 4 dBm maximum TX power
Throughput	Radio 1: up to 300 Mbps, Radio 2: up to 867 Mbps
Ethernet Ports	2x GE RJ45
USB Port	1x Type A
Serial Console Port	1 RS-232 x RJ45
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	19 dBm (80 mW)*
Physical Security	Kensington Lock
Mean Time Between Failures	>30 Years
IEEE Specifications	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
Mounting Options	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit (AC power adapter sold separately)
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by FortiGate)
FortiDeploy and FortiCloud Key	Yes
Per Radio Client Capacity	Up to 512
LED Off Mode	Yes
<b>Onboard Security Features when Managed from FortiCloud</b>	
Application Control	Yes
Block Botnet	Yes
Antivirus	Yes
Intrusion Prevention	Yes

FORTIAP S221E	
URL Filtering	Yes
FortiGuard Security Feed	Subscription available through FortiCloud
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access	No
Packet sniffer mode	Yes
Spectrum analyzer	Yes
<b>Dimensions</b>	
Length x Width x Height	7.87 x 7.87 x 1.81 inches (20 x 20 x 4.6 cm)
Weight	1.2 lbs (0.55 kg)
Package (shipping) Weight	2.5 lbs (1.15 kg)
<b>Environment</b>	
Power Supply	Adapter input: 100–240V, 50/60Hz, 0.9A, Max output: 12V DC, 3A
Power Consumption (Average / Maximum)	22.87 W / 24 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
UL2043 Plenum Material	Yes
IP Rating	—
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified	Yes
<b>Warranty</b>	
Limited Lifetime Warranty	Yes

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

## HIGHLIGHTS

### FortiAP S223E

The FAP-S223E is our medium-density 802.11ac Wave 2 access point. This enterprise class access point is ideal for medium-density environments such as office or classroom. The S223E supports MU-MIMO giving excellent performance throughput of up to 867 Mbps and the ability to support 2 simultaneous devices.

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

 **Up to 300 + 867 Mbps**



## SPECIFICATIONS

FORTIAP S223E	
<b>Hardware</b>	
Hardware Type	Indoor Smart AP
Number of Radios	2
Number of Antennas	4 External plus 1 Internal Bluetooth
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 (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), MU-MIMO 2 simultaneous devices
Bluetooth Low Energy (BT/BLE) Radio	Bluetooth scanning and iBeacon advertisement @ 4 dBm maximum TX power
Throughput	Radio 1: up to 300 Mbps, Radio 2: up to 867 Mbps
Ethernet Ports	2x GE RJ45
USB Port	1x Type A
Serial Console Port	1 RS-232 x RJ45
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	19 dBm (80 mW)*
Physical Security	Kensington Lock
Mean Time Between Failures	>30 Years
IEEE Specifications	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
Mounting Options	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit (AC power adapter sold separately)
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by FortiGate)
FortiDeploy and FortiCloud Key	Yes
Per Radio Client Capacity	Up to 512
LED Off Mode	Yes
<b>Onboard Security Features when Managed from FortiCloud</b>	
Application Control	Yes
Block Botnet	Yes
Antivirus	Yes
Intrusion Prevention	Yes

FORTIAP S223E	
URL Filtering	Yes
FortiGuard Security Feed	Subscription available through FortiCloud
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access	No
Packet sniffer mode	Yes
Spectrum analyzer	Yes
<b>Dimensions</b>	
Length x Width x Height	7.87 x 7.87 x 1.81 inches (20 x 20 x 4.6 cm)
Weight	1.3 lbs (0.6 kg)
Package (shipping) Weight	2.6 lbs (1.18 kg)
<b>Environment</b>	
Power Supply	Adapter input: 100–240V, 50/60Hz, 0.9A, Max output: 12V DC, 3A
Power Consumption (Average / Maximum)	22.87 W / 24 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
UL2043 Plenum Material	Yes
IP Rating	—
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified	Yes
<b>Warranty</b>	
Limited Lifetime Warranty	Yes

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

## RF RX/TX PERFORMANCE TABLE

	FORTIAP S221E and S223E RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
<b>802.11 a/g</b>				
6 Mbps	20	-93	19	-90
9 Mbps	20	-91	19	-89
12 Mbps	20	-90	18	-88
18 Mbps	19	-88	18	-85
24 Mbps	19	-84	17	-82
36 Mbps	18	-83	17	-79
48 Mbps	18	-76	17	-76
54 Mbps	17	-75	16	-74
<b>802.11n HT20</b>				
MCS 0/8/16	20	-90	19	-90
MCS 1/9/17	20	-88	18	-87
MCS 2/10/18	19	-85	18	-85
MCS 3/11/19	19	-82	17	-82
MCS 4/12/20	18	-79	17	-78
MCS 5/13/21	18	-74	17	-73
MCS 6/14/22	17	-72	16	-72
MCS 7/15/23	16	-71	16	-70
<b>802.11n HT40</b>				
MCS 0/8/16	19	-89	18	-88
MCS 1/9/17	19	-86	18	-86
MCS 2/10/18	18	-84	18	-84
MCS 3/11/19	18	-81	17	-80
MCS 4/12/20	17	-77	17	-77
MCS 5/13/21	17	-73	16	-73
MCS 6/14/22	16	-71	16	-71
MCS 7/15/23	16	-69	15	-69
<b>802.11 ac VHT20</b>				
MCS 0	20	-90	19	-90
MCS 1	20	-88	18	-87
MCS 2	19	-85	18	-84
MCS 3	19	-82	17	-80
MCS 4	18	-79	17	-78
MCS 5	18	-74	17	-73
MCS 6	17	-72	16	-72
MCS 7	16	-71	16	-71
MCS 8	15	-67	16	-67
<b>802.11 ac VHT40</b>				
MCS 0	19	-89	18	-88
MCS 1	19	-86	18	-85
MCS 2	18	-84	18	-83
MCS 3	18	-81	17	-80
MCS 4	17	-77	17	-77
MCS 5	17	-73	16	-71
MCS 6	16	-71	16	-70
MCS 7	16	-69	15	-68
MCS 8	15	-67	15	-66
MCS 9	15	-65	15	-63
<b>802.11 ac VHT80</b>				
MCS 0			17	-85
MCS 1			17	-80
MCS 2			17	-78
MCS 3			16	-75
MCS 4			16	-72
MCS 5			16	-71
MCS 6			15	-67
MCS 7			15	-65
MCS 8			14	-61
MCS 9			14	-60

## HIGHLIGHTS

### FortiAP S421E

The FAP-S421E is our high-density 802.11ac Wave 2 access point. This enterprise class access point is ideal for large high-density environments such as a large office or classroom. The S421E supports MU-MiMO giving excellent performance throughput of up to 1.733 Gbps and the ability to support 3 simultaneous devices.



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

 **Up to 800 + 1,733 Mbps**

## SPECIFICATIONS

FORTIAP S421E	
<b>Hardware</b>	
Hardware Type	Indoor Smart AP
Number of Radios	2
Number of Antennas	8 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 (4x4:4 stream), 20/40 Mhz (64 QAM)
Frequency of Radio 2	5 GHz a/n/ac (4x4:4 stream), 20/40/80 Mhz (256 QAM), MU-MIMO 3 simultaneous devices
Throughput	Radio 1: up to 600 Mbps, Radio 2: up to 1.733 Gbps
Ethernet Ports	2x GE RJ45
USB Port	1x Type A
Serial Console Port	1 RS-232 x RJ45
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3at (25.5 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	19 dBm (80 mW)*
Physical Security	Kensington Lock
Mean Time Between Failures	>30 Years
IEEE Specifications	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
Mounting Options	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit (AC power adapter sold separately)
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by FortiGate)
FortiDeploy and FortiCloud Key	Yes
Per Radio Client Capacity	Up to 512
LED Off Mode	Yes
<b>Onboard Security Features when Managed from FortiCloud</b>	
Application Control	Yes
Block Botnet	Yes
Antivirus	Yes
Intrusion Prevention	Yes
URL Filtering	Yes
FortiGuard Security Feed	Subscription available through FortiCloud

FORTIAP S421E	
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access	No
Packet sniffer mode	Yes
Spectrum analyzer	Yes
<b>Dimensions</b>	
Length x Width x Height	8.46 x 8.46 x 2.2 inches (21.5 x 21.5 x 5.6 cm)
Weight	3.31 lbs (1.5 kg)
Package (shipping) Weight	5.09 lbs (2.31 kg)
<b>Environment</b>	
Power Supply	Adapter input: 100–240V, 50/60Hz, 0.9A, Max output: 12V DC, 3A
Power Consumption (Average / Maximum)	22.87 W / 24 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
UL2043 Plenum Material	Yes
IP Rating	—
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified	Yes
Spectralink Certified	Yes
<b>Warranty</b>	
Limited Lifetime Warranty	Yes

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

## RF RX/TX PERFORMANCE TABLE

802.11 a/g	FORTIAP S421E RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (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
<b>802.11 HT20</b>				
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
<b>802.11 HT40</b>				
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
<b>802.11 HT80</b>				
MSC 0 (BPSK)			18	-83
MSC 1 (QPSK)			17	-80
MSC 2 (QPSK)			17	-78
MSC 3 (16-QAM)			16	-75
MSC 4 (16-QAM)			16	-73
MSC 5 (64-QAM)			15	-72
MSC 6 (64-QAM)			15	-70
MSC 7 (64-QAM)			15	-69
MSC 8 (256-QAM)			15	-65
MSC 9 (256-QAM)			15	-59

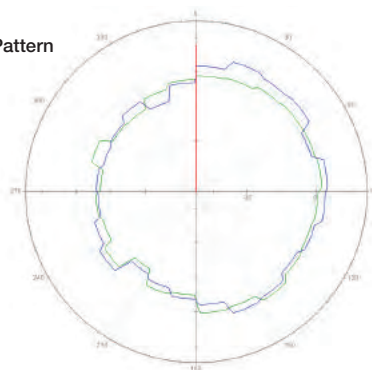
Maximum capability of the Hardware provided (Excluding antenna gain)

## ANTENNA RADIATION PATTERNS

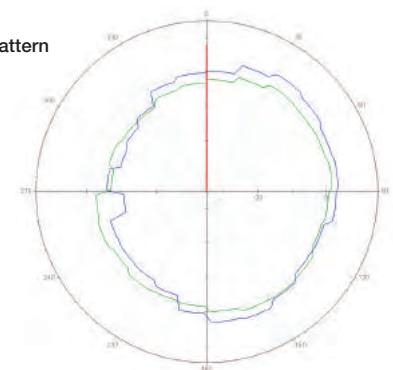
### FAP-S421E



H-Plane Pattern



E-Plane Pattern



Radio 1 – 2.4 GHz Radio 2 – 5.5 GHz

Radio 1 – 2.4 GHz Radio 2 – 5.5 GHz

## HIGHLIGHTS

### FortiAP S423E

The FAP-423E is our high-density 802.11ac Wave 2 access point. This enterprise class access point is ideal for large high-density environments such as a large office or classroom. The S423E supports MU-MiMO giving excellent performance throughput of up to 1.733 Gbps and the ability to support 3 simultaneous devices.



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

 **Up to 800 + 1,733 Mbps**

## SPECIFICATIONS

FORTIAP S423E	
<b>Hardware</b>	
Hardware Type	Indoor Smart AP
Number of Radios	2
Number of Antennas	8 RP-SMA External
Peak Antenna Gain	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, 5.725–5.851
Frequency of Radio 1	2.4 GHz b/g/n (4x4:4 stream), 20/40 Mhz (64 QAM)
Frequency of Radio 2	5 GHz a/n/ac (4x4:4 stream), 20/40/80 Mhz (256 QAM), MU-MIMO 3 simultaneous devices
Throughput	Radio 1: up to 600 Mbps, Radio 2: up to 1.733 Gbps
Ethernet Ports	2x GE RJ45
USB Port	1x Type A
Serial Console Port	1 RS-232 x RJ45
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3at (25.5 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	19 dBm (80 mW)*
Physical Security	Kensington Lock
Mean Time Between Failures	>30 Years
IEEE Specifications	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
Mounting Options	Ceiling, T-Rail and wall
Included Accessories	Ceiling, T-Rail and wall mount kit and 8 dipole antennas (AC power adaptor sold separately)
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by FortiGate)
FortiDeploy and FortiCloud Key	Yes
Per Radio Client Capacity	Up to 512
LED Off Mode	Yes
<b>Onboard Security Features when Managed from FortiCloud</b>	
Application Control	Yes
Block Botnet	Yes
Antivirus	Yes
Intrusion Prevention	Yes
URL Filtering	Yes
FortiGuard Security Feed	Subscription available through FortiCloud

FORTIAP S423E	
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access	No
Packet sniffer mode	Yes
Spectrum analyzer	Yes
<b>Dimensions</b>	
Length x Width x Height	8.46 x 8.46 x 2.2 inches (21.5 x 21.5 x 5.6 cm)
Weight	3.35 lbs (1.52 kg)
Package (shipping) Weight	5.31 lbs (2.41 kg)
<b>Environment</b>	
Power Supply	Adapter input: 100–240V, 50/60Hz, 0.9A, Max output: 12V DC, 3A
Power Consumption (Average / Maximum)	22.87 W / 24 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
UL2043 Plenum Material	Yes
IP Rating	—
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified	Yes
Spectralink Certified	Yes
<b>Warranty</b>	
Limited Lifetime Warranty	Yes

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



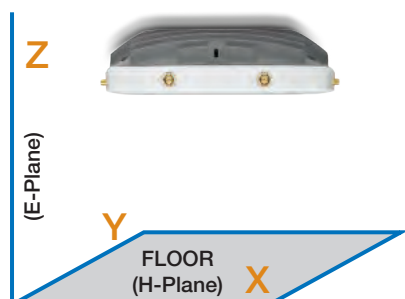
## RF RX/TX PERFORMANCE TABLE

802.11 a/g	FORTIAP S423E RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (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
<b>802.11HT20</b>				
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
<b>802.11HT40</b>				
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
<b>802.11 HT80</b>				
MSC 0 (BPSK)			18	-83
MSC 1 (QPSK)			17	-80
MSC 2 (QPSK)			17	-78
MSC 3 (16-QAM)			16	-75
MSC 4 (16-QAM)			16	-73
MSC 5 (64-QAM)			15	-72
MSC 6 (64-QAM)			15	-70
MSC 7 (64-QAM)			15	-69
MSC 8 (256-QAM)			15	-65
MSC 9 (256-QAM)			15	-59

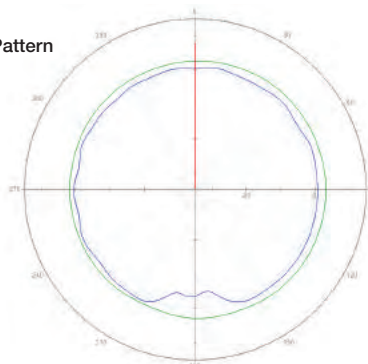
Maximum capability of the hardware provided (Excluding antenna gain)

## ANTENNA RADIATION PATTERNS

### FAP-S423E

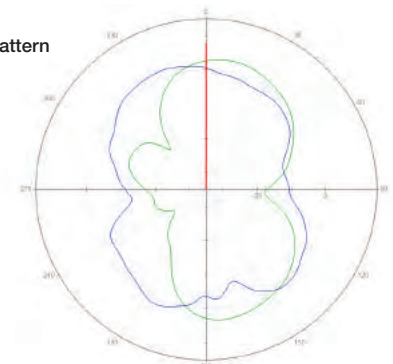


H-Plane Pattern



Radio 1 – 2.4 GHz Radio 2 – 5.5 GHz

E-Plane Pattern



Radio 1 – 2.4 GHz Radio 2 – 5.5 GHz

## HIGHLIGHTS

### FortiAP S422E

The FAP-422E is our high-density 802.11ac Wave 2 outdoor access point. This enterprise class access point is ideal for large high-density outdoor environments such as an outside office building or recreation area. It supports MU-MiMO giving excellent performance throughput and the ability to support 3 simultaneous devices.

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

 **Up to 800 + 1,733 Mbps**



## SPECIFICATIONS

FORTIAP S422E	
<b>Hardware</b>	
Hardware Type	Outdoor Smart AP
Number of Radios	2
Number of Antennas	8 N-type External
Peak Antenna Gain	5 dBi for 2.4 GHz, 7 dBi for 5 GHz
Frequency Bands (GHz) *	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.851
Frequency of Radio 1	2.4 GHz b/g/n (4x4:4 stream), 20/40 Mhz (64 QAM)
Frequency of Radio 2	5 GHz a/n/ac (4x4:4 stream), 20/40/80 Mhz (256 QAM), MU-MiMO 3 simultaneous devices
Throughput	Radio 1: up to 800 Mbps, Radio 2: up to 1.733 Gbps
Ethernet Ports	2x GE RJ45
USB Port	—
Serial Console Port	1 RS-232 x RJ45
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3at (25.5 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	19 dBm (80 mW)*
Physical Security	Kensington Lock
Mean Time Between Failures	>30 Years
IEEE Specifications	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1x, 802.3af, 802.11ac, 802.3at, 802.3az
Mounting Options	Wall or Pole Mounting
Included Accessories	8x Dipole Antennas, power adapter and proprietary injector, pole mount bracket, grounding cable, surge protector (GPI-SGPT)**
FortiPresence Capable	Yes
Wireless Mesh Capable	Yes
Modes of Operation	FortiGate or FortiCloud management
SSID Types Supported	Local-Bridge, Tunnel & Mesh (when managed by FortiGate)
FortiDeploy and FortiCloud Key	Yes
Per Radio Client Capacity	Up to 512
LED Off Mode	Yes
<b>Onboard Security Features when Managed from FortiCloud</b>	
Application Control	Yes
Block Botnet	Yes
Antivirus	Yes
Intrusion Prevention	Yes
URL Filtering	Yes
FortiGuard Security Feed	Subscription available through FortiCloud

FORTIAP S422E	
<b>Advanced 802.11 Features</b>	
802.11ac Wave2 MU-MIMO	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
<b>Wireless Monitoring Capabilities</b>	
Frequencies scanned	2.4 and 5 GHz
Background scan with client access on 2.4 and 5 GHz	Yes
Full-time scan as dedicated monitor	Yes
Full-time scan with client access	No
Packet sniffer mode	Yes
Spectrum analyzer	Yes
<b>Dimensions</b>	
Length x Width x Height	8.23 x 8.23 x 2.36 inches (20.9 x 20.9 x 6.0 cm)
Weight	4.08 lbs (1.85 kg)
Package (shipping) Weight	11.42 lbs (5.18 kg)
<b>Environment</b>	
Power Supply	PoE input: 48V DV, 0.8A
Power Consumption (Average / Maximum)	18.83 W / 22 W
Humidity	5–95% non condensing
Operating Temperature	-40–140°F (-40–60°C)
Storage Temperature	-40–158°F (-40–70°C)
Directives	Low Voltage Directive • RoHS
UL2043 Plenum Material	Yes
IP Rating	IP67
Surge Protection Built In	Yes
<b>Certifications</b>	
WiFi Alliance Certified	Yes
DFS Certified	Yes

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

\*\* GPI-SGPT consists of a surge protector box and a surge protected power injector. It is not available for order separately.

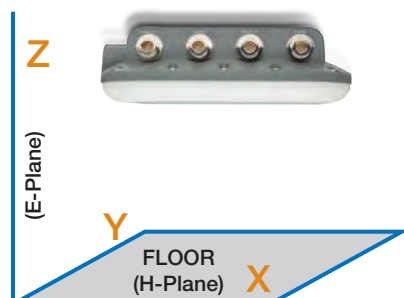
## RF RX/TX PERFORMANCE TABLE

802.11 a/g	FORTIAP S422E RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
6 Mbps	21	-94	20	-90
9 Mbps	21	-92	20	-89
12 Mbps	21	-89	20	-86
18 Mbps	21	-88	20	-85
24 Mbps	21	-83	20	-80
36 Mbps	21	-78	18	-75
48 Mbps	21	-77	18	-74
54 Mbps	19	-76	17	-73
<b>802.11 HT20</b>				
MSC 0/8/16 (BPSK)	19	-91	19	-90
MSC 1/9/17 (QPSK)	19	-89	19	-87
MSC 2/10/18 (QPSK)	19	-86	19	-84
MSC 3/11/19 (16-QAM)	19	-85	18	-82
MSC 4/12/20 (16-QAM)	19	-80	17	-77
MSC 5/13/21 (64-QAM)	18	-75	16	-72
MSC 6/14/22 (64-QAM)	18	-74	16	-71
MSC 7/15/23 (64-QAM)	18	-73	16	-70
<b>802.11 HT40</b>				
MSC 0/8/16 (BPSK)	19	-89	19	-87
MSC 1/9/17 (QPSK)	19	-87	18	-85
MSC 2/10/18 (QPSK)	19	-84	18	-82
MSC 3/11/19 (16-QAM)	18	-83	17	-81
MSC 4/12/20 (16-QAM)	18	-78	17	-76
MSC 5/13/21 (64-QAM)	17	-73	17	-71
MSC 6/14/22 (64-QAM)	17	-72	17	-70
MSC 7/15/23 (64-QAM)	17	-71	17	-69
MSC 8/16/24 (256-QAM)			13	-63
MSC 9/17/25 (256-QAM)			13	-62
<b>802.11 HT80</b>				
MSC 0 (BPSK)			18	-84
MSC 1 (QPSK)			17	-81
MSC 2 (QPSK)			17	-79
MSC 3 (16-QAM)			16	-76
MSC 4 (16-QAM)			16	-74
MSC 5 (64-QAM)			15	-73
MSC 6 (64-QAM)			15	-71
MSC 7 (64-QAM)			15	-70
MSC 8 (256-QAM)			14	-66
MSC 9 (256-QAM)			14	-59

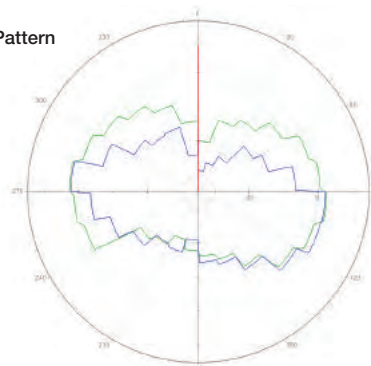
Maximum capability of the hardware provided (Excluding antenna gain)

## ANTENNA RADIATION PATTERNS

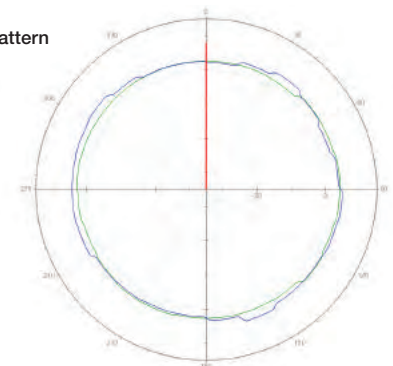
### FAP-S422E



H-Plane Pattern



E-Plane Pattern



# 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	

## UTM PERFORMANCE SUMMARY

	FAP-S42XE	FAP-S32XC	FAP-S22XE
<b>Spirent Test Centre Results</b>			
AV HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	150 Mbps	110 Mbps	55 Mbps
AV HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	150 Mbps	110 Mbps	55 Mbps
IPS HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	220 Mbps	120 Mbps	100 Mbps
IPS HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	220 Mbps	120 Mbps	100 Mbps
Botnet HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	595 Mbps	540 Mbps	310 Mbps
Botnet HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	455 Mbps	355 Mbps	170 Mbps
Web Filter HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	240 Mbps	135 Mbps	70 Mbps
Web Filter HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	240 Mbps	135 Mbps	70 Mbps
Application Control HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	455 Mbps	455 Mbps	300 Mbps
Application Control HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	440 Mbps	340 Mbps	165 Mbps
All UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	95 Mbps	60 Mbps	35 Mbps
All UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	95 Mbps	60 Mbps	35 Mbps
No UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	1,050 Mbps	720 Mbps	345 Mbps
No UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	705 Mbps	565 Mbps	245 Mbps

Specifications for other series are not available

## ORDER INFORMATION

Product	SKU	Description
FortiAP S221E	FAP-S221E	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-PS221-311-02-DD	8x5 FortiCare Contract
	FC-10-PS221-247-02-DD	24x7 FortiCare Contract
FortiAP S223E	FAP-S223E	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-PS223-311-02-DD	8x5 FortiCare Contract
	FC-10-PS223-247-02-DD	24x7 FortiCare Contract
FortiAP S421E	FAP-S421E	Indoor Cloud or FortiGate Managed 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 MIMO, ceiling/wall mount kit included, power adapter not included.
	FC-10-PS421-905-02-12	FortiAP-S Security and Support Bundle (24x7 FortiCare plus IPS, App Control, AV and Web Filtering)
	FC-10-PS421-311-02-DD	8x5 FortiCare Contract
FortiAP S422E	FAP-S422E	Outdoor Cloud or FortiGate Managed 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 MIMO, external antennas, ceiling/wall mount kit included. Proprietary PoE injector with AC power adapter included.
	FC-10-PS422-905-02-12	FortiAP-S Security and Support Bundle (24x7 FortiCare plus IPS, App Control, AV and Web Filtering)
	FC-10-PS422-311-02-DD	8x5 FortiCare Contract
FortiAP S423E	FAP-S423E	Indoor Cloud or FortiGate Managed 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 MIMO. Ceiling, T-Rail and wall mount kit, antennas included. Power adapter not included.
	FC-10-PS423-905-02-12	FortiAP-S Security and Support Bundle (24x7 FortiCare plus IPS, App Control, AV and Web Filtering)
	FC-10-PS423-311-02-DD	8x5 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.
FortiCloud FortiAP FAP-S Enterprise Management License	FC-10-90APS-173-02-DD	FortiAP-S Enterprise License adds/includes a subscription to FortiGuard services, Bonjour relaying, intra-SSID isolation of specific clients, 1 year log retention and FortiCare 8x5 Support.

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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