

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 UTM services 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.**



Remote Management

Combines the low CAPEX and convenience of remote management via a central FortiGate or FortiCloud, with on site, locally applied 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 or FortiAnalyzer.

Product Offerings

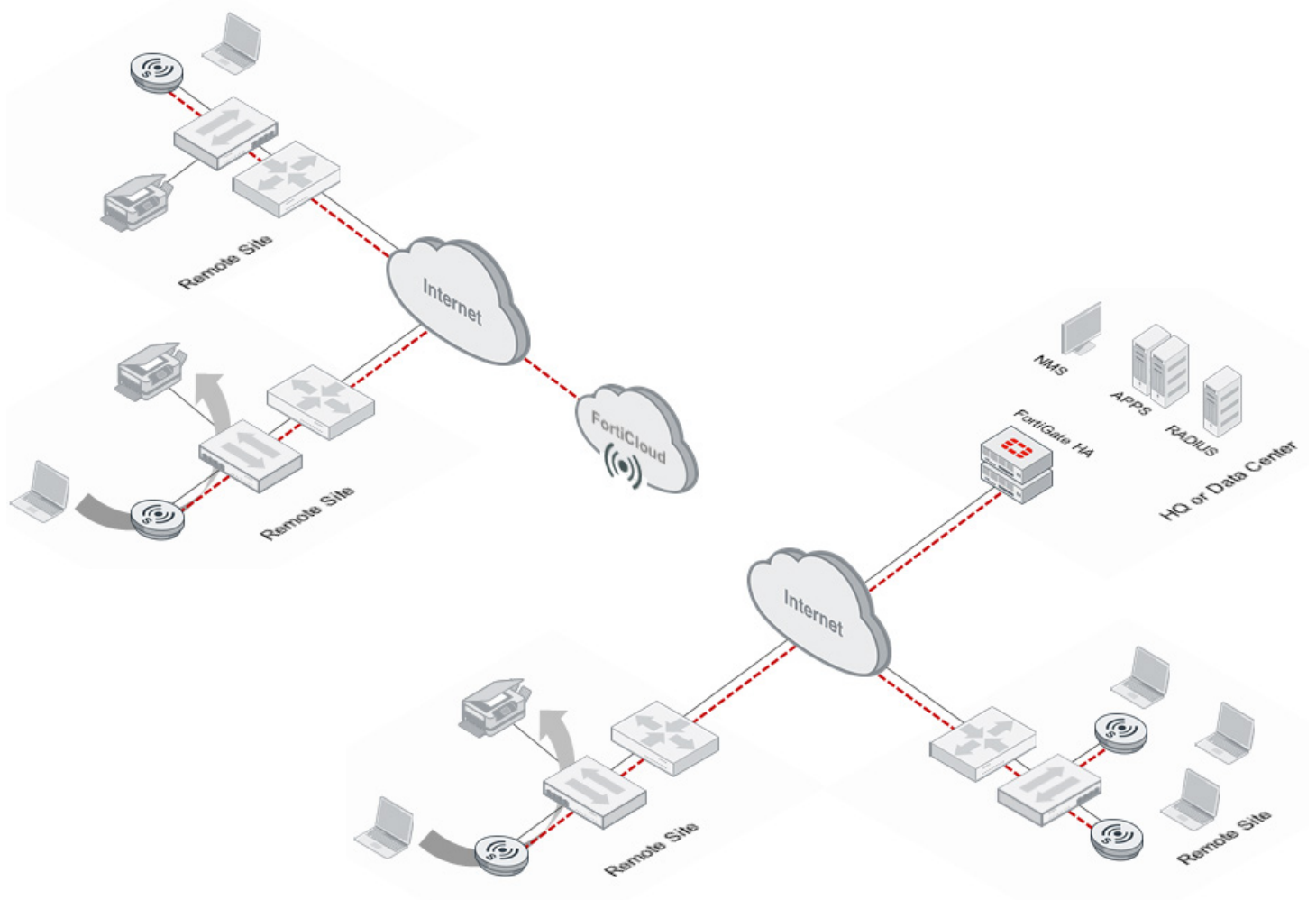
802.11ac Wave 2

FAP-S221E

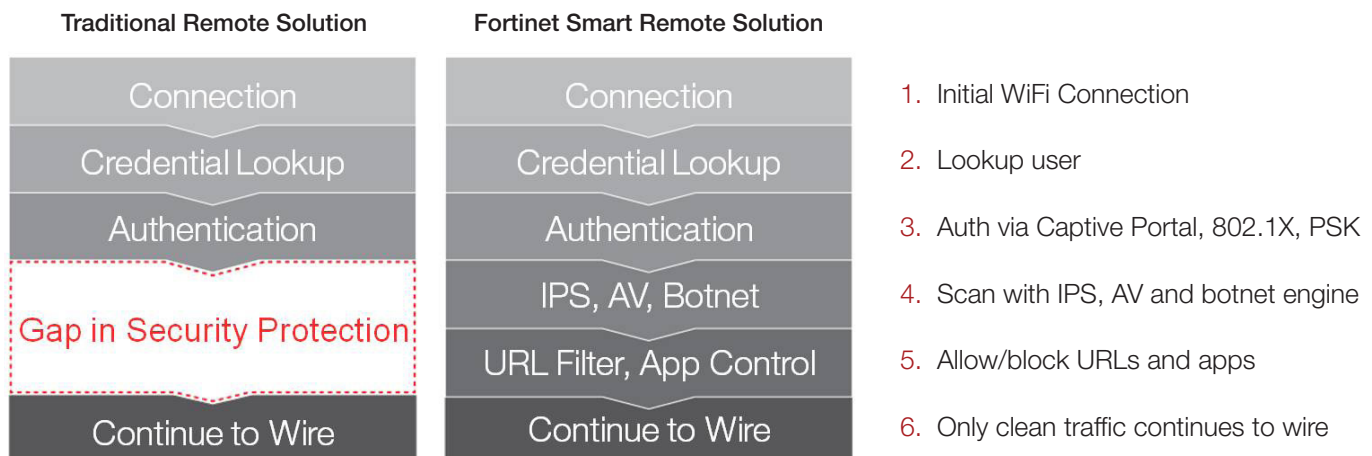
2x2 APs with dual radios

FAP-S223E

Deployment



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



Fortinet approach to secure remote-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 multiple simultaneous devices.



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

 **Up to 300 + 867 Mbps**

Specifications

FORTIAP S221E	
Hardware	
Hardware Type	Indoor AP
Number of Radios	2 + 1 BLE
Number of Antennas	4 Internal + 1 BLE internal
Antenna Type and peak Gain	PIFA: 3 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
Radio 1 Capabilities	2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (64 QAM)
Radio 2 Capabilities	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
Bluetooth Low Energy Radio	Bluetooth scanning and iBeacon advertisement @ 4 dBm max TX power
Interfaces	2x 10/100/1000 Base-T RJ45, 1x Type A USB, 1x RS-232 RJ45 Serial Port
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3af & 802.3at
Simultaneous SSIDs	Up to 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™, WPA2™, and WPA3™ with 802.1x or Preshared key, WEP, Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	2.4 GHz: 23 dBm / 200 mW (2 chains combined)* 5 GHz: 22 dBm / 158 mW (2 chains combined)*
Kensington Lock	Yes
IEEE Standards	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11x, 802.3af, 802.3at, 802.3az
SSID Types Supported	Local-Bridge, Mesh, & Tunnel (when managed by FortiGate)
Per Radio Client Capacity	Up to 512
Cellular Co-existence**	Yes
LED Off Mode	Yes
Advanced 802.11 Features	
802.11ac MU-MIMO Wave 2	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes

FORTIAP S221E	
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
Wireless Monitoring Capabilities	
Rogue Scan Radio Modes	Background, Full-time
WIPS / WIDS Radio Modes	Background, Full-time (recommended)
Packet Sniffer Mode	Yes
Spectrum Analyzer	Yes
Dimensions	
Length x Width x Height	7.87 x 7.87 x 1.81 inches (200 x 200 x 46 mm)
Weight	1.2 lbs (0.55 kg)
Package (shipping) Weight	2.5 lbs (1.15 kg)
Mounting Options	Ceiling, T-Rail, and Wall
Included Accessories	Mount kits for Ceiling, T-Rail, and Wall
Environment	
Power Supply	SP-FAP200-PA-XX, GPI-115, or GPI-130
Power Consumption (Maximum)	24 W
Humidity	5–90% non-condensing
Operating / Storage Temperature	-4–122°F (-20–50°C) / -40–158°F (-40–70°C)
Directives	Low Voltage Directive • RoHS
UL2043 Plenum Material	No
Mean Time Between Failures	>30 Years
IP Rating	—
Surge Protection Built In	—
Hit-less PoE Failover	No
Certifications	
WiFi Alliance Certified	Yes
DFS	FCC, IC, CE, Japan
Warranty	
Limited Lifetime Warranty	Yes

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

** Additional filtration added to reduce interference in 2.4 GHz band from nearby cellular equipment.

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 multiple simultaneous devices.



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



Up to 300 + 867 Mbps



Specifications

FORTIAP S223E	
Hardware	
Hardware Type	Indoor AP
Number of Radios	2 + 1 BLE
Number of Antennas	4 External (RP-SMA) + 1 BLE internal
Antenna Type and peak Gain	Dipole: 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
Radio 1 Capabilities	2.4 GHz b/g/n (2x2:2 stream) 20/40 MHz (64 QAM)
Radio 2 Capabilities	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
Bluetooth Low Energy Radio	Bluetooth scanning and iBeacon advertisement @ 4 dBm max TX power
Interfaces	2x 10/100/1000 Base-T RJ45, 1x Type A USB, 1x RS-232 RJ45 Serial Port
Power over Ethernet (PoE)	Dual redundant PoE power ports with support for IEEE 802.3af & 802.3at
Simultaneous SSIDs	Up to 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™, WPA2™, and WPA3™ with 802.1x or Preshared key, WEP, Web Captive Portal, MAC blacklist & whitelist
Maximum Tx Power	2.4 GHz: 23 dBm / 200 mW (2 chains combined)* 5 GHz: 22 dBm / 158 mW (2 chains combined)*
Kensington Lock	Yes
IEEE Standards	802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11k, 802.11n, 802.11r, 802.11v, 802.11ac, 802.11x, 802.3af, 802.3at, 802.3az
SSID Types Supported	Local-Bridge, Mesh, & Tunnel (when managed by FortiGate)
Per Radio Client Capacity	Up to 512
Cellular Co-existence**	Yes
LED Off Mode	Yes
Advanced 802.11 Features	
802.11ac MU-MIMO Wave 2	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes

FORTIAP S223E	
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
Wireless Monitoring Capabilities	
Rogue Scan Radio Modes	Background, Full-time
WIPS / WIDS Radio Modes	Background, Full-time (recommended)
Packet Sniffer Mode	Yes
Spectrum Analyzer	Yes
Dimensions	
Length x Width x Height	7.87 x 7.87 x 1.81 inches (200 x 200 x 46 mm)
Weight	1.3 lbs (0.6 kg)
Package (shipping) Weight	2.6 lbs (1.18 kg)
Mounting Options	Ceiling, T-Rail, and Wall
Included Accessories	Mount kits for Ceiling, T-Rail, and Wall, 4 dipole antennas
Environment	
Power Supply	SP-FAP200-PA-XX, GPI-115, or GPI-130
Power Consumption (Maximum)	24 W
Humidity	5–90% non-condensing
Operating / Storage Temperature	-4–122°F (-20–50°C) / -40–158°F (-40–70°C)
Directives	Low Voltage Directive • RoHS
UL2043 Plenum Material	No
Mean Time Between Failures	>30 Years
IP Rating	—
Surge Protection Built In	—
Hit-less PoE Failover	No
Certifications	
WiFi Alliance Certified	Yes
DFS	FCC, IC, CE, Japan
Warranty	
Limited Lifetime Warranty	Yes

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

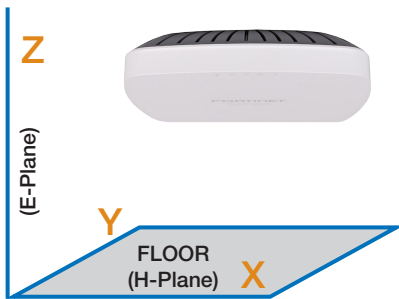
** Additional filtration added to reduce interference in 2.4 GHz band from nearby cellular equipment.

RF Rx/Tx Performance Table

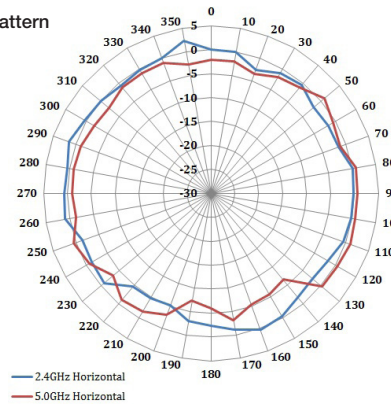
	FORTIAP S221E and S223E RADIO 1		RADIO 2	
	2.4 GHz Tx Power (dBm)	Rx Sensitivity (dBm)	5 GHz Tx Power (dBm)	Rx Sensitivity (dBm)
802.11 a/g				
6 Mbps	20	-93	19	-90
9 Mbps	20	-91	19	-89
12 Mbps	20	-90	18	-88
18 Mbps	19	-88	18	-85
24 Mbps	19	-84	17	-82
36 Mbps	18	-83	17	-79
48 Mbps	18	-76	17	-76
54 Mbps	17	-75	16	-74
802.11n HT20				
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
802.11n HT40				
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
802.11 ac VHT20				
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
802.11 ac VHT40				
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
802.11 ac VHT80				
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

Antenna Radiation Patterns

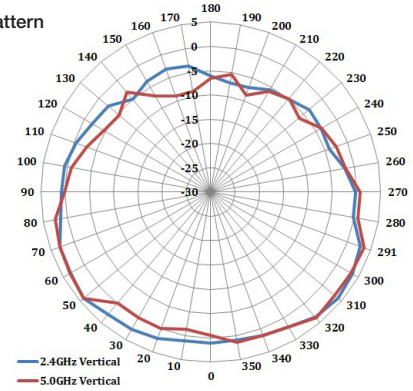
FAP-S221E



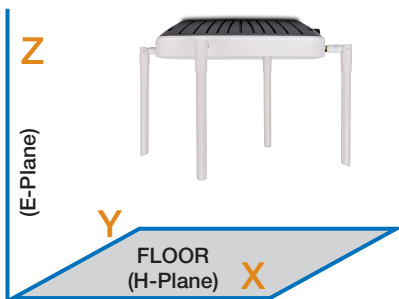
H-Plane Pattern



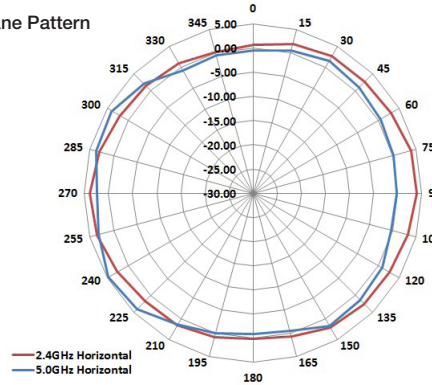
E-Plane Pattern



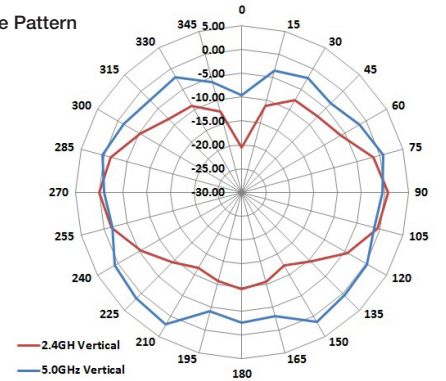
FAP-S223E



H-Plane Pattern



E-Plane Pattern



UTM Performance Summary

FAP-S22XE	
Spirent Test Centre Results	
AV HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	55 Mbps
AV HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	55 Mbps
IPS HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	100 Mbps
IPS HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	100 Mbps
Botnet HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	310 Mbps
Botnet HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	170 Mbps
Web Filter HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	70 Mbps
Web Filter HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	70 Mbps
Application Control HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	300 Mbps
Application Control HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	165 Mbps
All UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	35 Mbps
All UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	35 Mbps
No UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Downlink	345 Mbps
No UTM HTTP 44K Throughput on 5G 80MHz Radio in Bridge mode – Uplink	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-PS221-247-02-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-PS223-247-02-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-FAP200-PA	AC Power Adapter for FAP-S221E and FAP-S223E.
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	Bangladesh	China	India	Europe ETSI	Indonesia	International	Japan	Korea
-A	-B	-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	

Note: Additional countries may apply to given suffix codes. Please work with your local supplier for the correct model in your regulatory domain.



www.fortinet.com

Copyright © 2019 Fortinet, Inc. All rights reserved. Fortinet®, FortiGate®, FortiCare® and FortiGuard®, and certain other marks are registered trademarks of Fortinet, Inc., and other Fortinet names herein may also be registered and/or common law trademarks of Fortinet. All other product or company names may be trademarks of their respective owners. Performance and other metrics contained herein were attained in internal lab tests under ideal conditions, and actual performance and other results may vary. Network variables, different network environments and other conditions may affect performance results. Nothing herein represents any binding commitment by Fortinet, and Fortinet disclaims all warranties, whether express or implied, except to the extent Fortinet enters a binding written contract, signed by Fortinet's General Counsel, with a purchaser that expressly warrants that the identified product will perform according to certain expressly-identified performance metrics and, in such event, only the specific performance metrics expressly identified in such binding written contract shall be binding on Fortinet. For absolute clarity, any such warranty will be limited to performance in the same ideal conditions as in Fortinet's internal lab tests. Fortinet disclaims in full any covenants, representations, and guarantees pursuant hereto, whether express or implied. Fortinet reserves the right to change, modify, transfer, or otherwise revise this publication without notice, and the most current version of the publication shall be applicable. Fortinet disclaims in full any covenants, representations, and guarantees pursuant hereto, whether express or implied. Fortinet reserves the right to change, modify, transfer, or otherwise revise this publication without notice, and the most current version of the publication shall be applicable.