FORTINET.

FortiAP™-221C and 320C
802.11ac Wireless Access Points

The Need for a Fortified Wireless LAN

Enterprises are looking to increase productivity through uninterrupted access to applications and resources, without compromising security and agility. You want to increase visibility and control of your wireless network traffic by enforcing the same policies as your wired network and eliminate potential blind spots. You also need a solution that meets compliance by proactively blocking unauthorized access, all while providing tools for business continuity by following industry best practices.

Integrated Wireless Security and Access Solution

Fortinet's FortiAP wireless thin access points deliver secure, identity-driven WiFi client access that creates a fortified WLAN network. Centrally managed by a FortiGate® or FortiWiFi™ platform with its integrated Wireless Controller, FortiAPs allow you to deploy a comprehensive, integrated security solution for your wireless and wired networks. By acting as a Wireless Controller, FortiGate or FortiWiFi security platforms enable you to deploy comprehensive Unified Threat Management (UTM) protection over your wireless network.

Highest Performance and Most Versatile Thin Access Point

The FortiAP-221 and FortiAP-320C are IEEE 802.11a/b/g/n/ac standards-based, and operate on both 2.4 GHz b/g/n and 5 GHz a/n spectrums. Supporting the latest 802.11ac technology, including 80 MHz channels width, both access points achieve a 280% throughput improvement over their 802.11n equivalents.

The FortiAP-221C is a next generation smoke detector form factor access point, perfect for discrete installations, such as hotel or school hallways. Supporting 2x2 MIMO technology with two spatial streams, this access point provides association rates of up to 867 Mbps.

The FortiAP-320C has been designed with dual redundant PoE Ethernet ports which provide maximum resiliency and wireless network uptime, making this AP ideal for mission critical environments such as hospitals and factories. This access point is sealed and can withstand an extended temperature range, making it suitable for non temperature controlled warehouse type environments. The plenum-rated enclosure also allows deployment above ceiling tiles in office environments. Leveraging powerful 3x3 MIMO technology and three spatial streams, this access point provides association rates of up to 1,300 Mbps.

High Performance Secure Thin Access Points

- Supports latest 802.11ac technology with association rate of up to 1.3 Gbps

- Leverage existing FortiGate or FortiWiFi platforms as controllers for low TCO

- Full range of authentications and access options for all use cases

- Integration with FortiManager and FortiAnalyzer for centralized management and reporting

- Fast roaming for uninterrupted data access

- Automatic Radio Resource Provisioning (ARRP) for optimized throughput

- Flexible deployment options with simple per device pricing

- Layer 7 application QoS for maximum business productivity

- Rogue AP detection and mitigation to satisfy PCI DSS compliance

a b g n ac

WiFi® CERTIFIED

FortiCare
Worldwide 24x7 Support
support.fortinet.com

FortiWiFi / FortiAP
Secure business-grade wireless
Wireless.fortinet.com

FortiGuard
Threat Research & Response
www.fortiguard.com

www.fortinet.com

Differentiating Features & Benefits

|	
Enterprise Unified Threat Management	Protects your network with the widest range of security and networking technologies seamlessly integrated into a single device: Firewall, IPS, Application Control, VPN, Web Filtering, and many others.
Application-Layer Quality of Service	Going above and beyond Wireless Multimedia Extensions (WME) by offering Layer 7 traffic shaping and application use control.
Robust Rogue AP Control	Industry's most comprehensive monitoring, detection and suppression of rogue APs for PCI DSS compliance.
"Single Pane of Glass" Management Console	Unmatched visibility and control of all wired and wireless network traffic that eliminates blindspots in your security infrastructure and ensures consistent and effective policy enforcement and compliance.
TX Beam Forming (TxBF) and Maximal Ratio Combining (MRC)	Leads to wider coverage and optimum performance due to extended rate over a longer range.
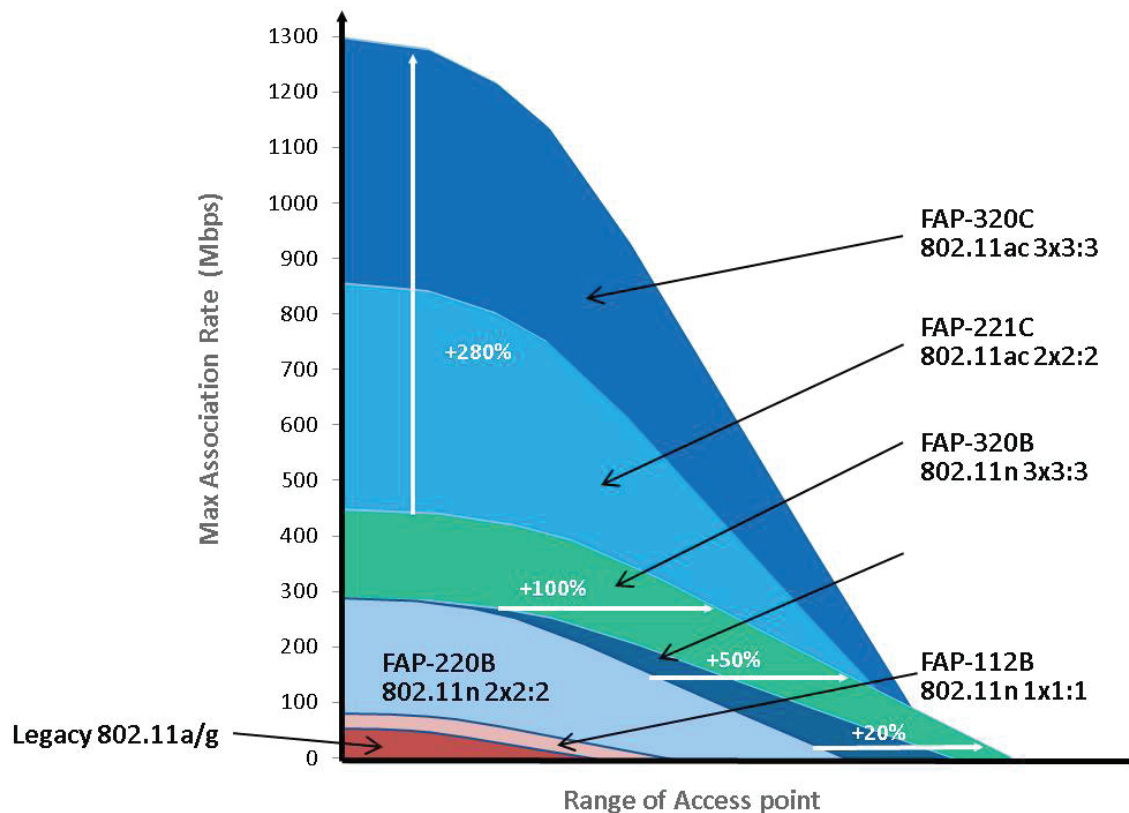
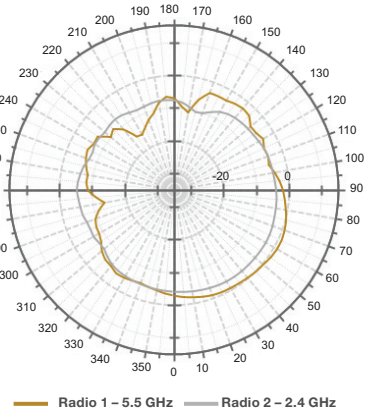# RADIATION PATTERNS OF FREQUENCY 2.4 AND 5 GHz

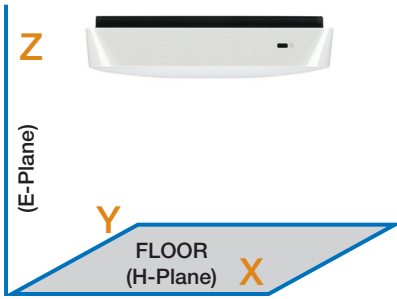## FAP-221C

H-Plane Pattern   E-Plane Pattern

Radio 1 – 5.5 GHz   Radio 2 – 2.4 GHz
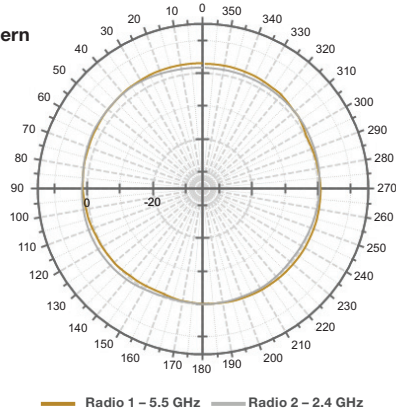
RF RX/TX PERFORMANCE TABLE

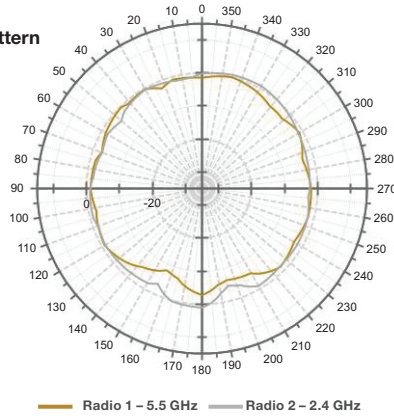|				Radio 2	
802.11 a/g	2.4 GHz (FAP-221C Only) Rx Sensitivity	5 GHz Tx Power (dBm)	Rx Sensitivity	2.4 GHz Tx Power (dBm)	Rx Sensitivity
6 Mbps	-96	20	-94	20	-88
9 Mbps	-93	19	-92	20	-88
12 Mbps	-90	19	-90	20	-86
18 Mbps	-87	19	-83	20	-84
24 Mbps	-85	19	-80	20	-80
36 Mbps	-82	18	-77	19	-77
48 Mbps	-78	18	-76	19	-74
54 Mbps	-77	17	-73	18	-72
802.11n HT20					
MCS0	-91	20	-92	20	-92
MCS1	-91	19	-90	20	-90
MCS2	-88	19	-87	20	-87
MCS3	-85	19	-85	20	-85
MCS4	-83	19	-82	20	-82
MCS5	-80	18	-79	19	-78
MCS6	-78	18	-76	19	-77
MCS7	-76	17	-74	18	-74
802.11n HT40					
MCS0 /8	-91	20	-91	20	-92
MCS1 /9	-90	19	-88	20	-89
MCS2 /10	-87	19	-85	20	-86
MCS3 /11	-82	19	-82	20	-83
MCS4 /12	-70	19	-79	20	-80
MCS5 /13	-76	18	-76	19	-77
MCS6 14	-74	18	-74	19	-74
MCS7 /15	-71	17	-72	18	-71

RADIATION PATTERNS OF FREQUENCY 2.4 AND 5 GHz

FAP-320C

H-Plane Pattern

E-Plane Pattern

Radio 1 – 5.5 GHz   Radio 2 – 2.4 GHz

Radio 1 – 5.5 GHz   Radio 2 – 2.4 GHz
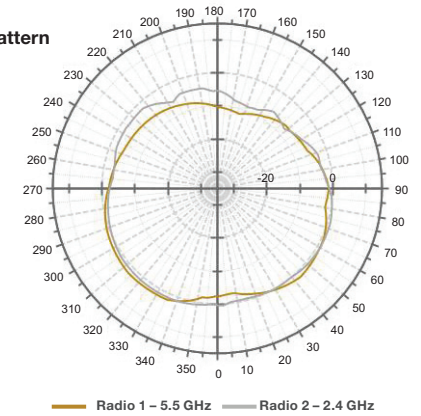
RF RX/TX PERFORMANCE TABLE

	Radio 1		Radio 2	
802.11 b	**5 GHz** **Tx Power (dBm)**	**Rx Sensitivity**	**2.4 GHz** **Tx Power (dBm)**	**Rx Sensitivity**
1 Mbps	24	-93		
11 Mbps	23	-90		
802.11a/g				
6 Mbps	23	-92	20	-90
9 Mbps	23	-90	20	-88
12 Mbps	23	-88	20	-87
18 Mbps	23	-86	20	-85
24 Mbps	23	-84	20	-84
36 Mbps	22	-80	17	-79
48 Mbps	21	-78	15	-78
54 Mbps	20	-76	13	-77
802.11n HT20				
MCS 0/8/16	22	-90	21	-88
MCS 1/9/17		-87	20	-86
MCS 2/10/18	21	-84	20	-84
MCS 3/11/19	21	-81	20	-82
MCS 4/12/20	20	-79	19	-80
MCS 5/13/21	20	-77	19	-78
MCS 6/14/22	19	-75	18	-77
MCS 7/15/23	19	-73	18	-76
802.11n HT40				
MCS 0/8/16	21	-88	17	-86
MCS 1/9/17	20	-85	16	-84
MCS 2/10/18	20	-82	16	-82
MCS 3/11/19	20	-79	16	-80
MCS 4/12/20	19	-77	14	-78
MCS 5/13/21	19	-75	14	-76
MCS 6/14/22	18	-72	13	-74
MCS 7/15/23	18	-70	13	-72

SPECIFICATIONS

TECHNICAL	FortiAP-221C	FortiAP-320C
Hardware		
Indoor/Outdoor Deployment	Indoor	Indoor and Plenum
Number of Radios	2	2
Number of Antennas	4 internal	6 internal
Peak Antenna Gain	3.5 dBi for 2.4 GHz, 6 dBi for 5 GHz	5 dBi for 2.4 GHz, 6 dBi for 5 GHz
Frequency Bands (GHz)*	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850	2.400–2.4835, 5.150–5.250, 5.250–5.350, 5.470–5.725, 5.725–5.850
Frequency of Radio 1	2.4 GHz b/g/n or 5 GHz a/n	2.4 GHz b/g/n
Frequency of Radio 2	5 GHz a/n/ac	5 GHz a/n/ac
Throughput	Radio 1 — Up to 300 Mbps, Radio 2 — Up to 867 Mbps	Radio 1 — Up to 450 Mbps, Radio 2 — Up to 1300 Mbps
Tx/Rx Streams	2x2 MIMO with 2 spatial streams	3x3 MIMO with 3 spatial streams
Ethernet Port	1x 10/100/1000	2x 10/100/1000
Serial Console Port	—	Yes
Power over Ethernet (PoE)	IEEE 802.3af (12.9 W)	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)	Yes (4 priority queues for voice, video, data and background traffic)
Simultaneous SSIDs	16 (14 if background scanning enabled)	16
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	20 dBm (100 mW)	21 dBm (126 mW)*
Physical Security	Kensington Lock	Kensington Lock
Mean Time Between Failures	> 10 years	> 10 years
IEEE Specifications	802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1X, 802.3af, 802.11ac	802.11a, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11j, 802.11n, 802.1X, 802.3af, 802.11ac
802.11ac 80 MHz channel	Supported	Supported
802.11n Features	20 MHz and 40 MHz High-Throughput (HT) Support	20 MHz and 40 MHz High-Throughput (HT) Support
	Increased maximum frame transmission by incorporating A-MPDU and A-MSDU Packet Aggregation	Increased maximum frame transmission by incorporating A-MPDU and A-MSDU Packet Aggregation
	Conserve power via Dynamic MIMO power save	Conserve power via Dynamic MIMO power save
Advanced 802.11n to enhance rate-over-range including:	Low-density parity check (LDPC) encoding	Low-density parity check (LDPC) encoding
	Maximum Likelihood Demodulation (MLD)	Maximum Likelihood Demodulation (MLD)
	Maximum Ratio Combining (MRC) for improved receiver performance	Maximum Ratio Combining (MRC) for improved receiver performance
Mounting Options	Drywall mount anchors, T-Rail mount and Ceiling mount are included in package	Drywall mount anchors, T-Rail mount and Ceiling mount are included in package
Wireless Monitoring Capabilities		
Frequencies scanned	2.4 and 5 GHz	N/A
Background scan with client access on 2.4 and 5 GHz	Supported	Not supported
Full-time scan as dedicated Monitor	Supported	Not supported
Full-time scan with client access on 5 GHz	Supported	Not supported
Dimensions		
Diameter x Height	6.3 x 1.5 in (16.0 x 3.8 cm)	—
Length x Width x Height	—	6.5 x 6.5 x 1.4 in (16.5 x 16.5 x 3.5 cm)
Weight	10.3 oz (300 g)	21.2 oz (600 g)
Package (shipping) Weight	19.5 oz (550 g)	28.6 oz (810 g)
Environment		
Power Adapter**	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A	Adapter Input: 100–240V, 50/60Hz, 0.4A Output: 12V DC, 2A
Power Consumption (AVG)	7.8 W	10.5 W
Power Consumption (MAX)	15.72 W	12.08 W
Humidity	5% to 90% non-condensing	5% to 90% non-condensing
Operating Temperature	32 to 104°F (0 to 40°C)	-4 to 122°F (-20 to 50°C)
Storage Temperature	-4 to 140°F (-20 to 60°C)	-40 to 158°F (-40 to 70°C)
Directives	Low Voltage Directive • RoHS2	Low Voltage Directive • RoHS2

* Frequency selection and power may be restricted to abide by regional regulatory compliance laws.
** Sold separately. See price list.

Certifications		
WiFi Alliance Certified	—	Yes

ORDER INFORMATION

Product	SKU	Description
FortiAP-221C	FAP-221C	Indoor wireless AP — 1x GE RJ45 port, dual radio (802.11 a/n/ac and 802.11 b/g/n, 2x2 MIMO), Ceiling/wall mount kit included, Power adapter not included. For Gigabit PoE injector order: GPI-115. For AC power adapter order: SP-FG20C-PA.
	FC-10-P0225-311-02-DD	8x5 FortiCare Contract.
	FC-10-P0225-247-02-DD	24x7 FortiCare Contract.
FortiAP-320C	FAP-320C	Indoor wireless AP — 2x GE RJ45 ports, dual radio (802.11 a/n/ac and 802.11 b/g/n, 3x3 MIMO), Ceiling/wall mount kit included, Power adapter not included. For Gigabit PoE injector order: GPI-115. For AC power adapter order: SP-FG20C-PA.
	FC-10-P0321-311-02-DD	8x5 FortiCare Contract.
	FC-10-P0321-247-02-DD	24x7 FortiCare Contract.
AC Power Adapter	SP-FG20C-PA-US	AC Power adapter for FG/FWF-20C series, FG/FWF-30D, FS-28C, FAP-28C, FAP-221C, FAP-320B and FAP-320C with US power plug.
GPI-115 PoE	GPI-115	1-Port Gigabit PoE Power Injector, 802.3af 15.4 Watts 10/100/1000 (PD-3501).
FortiPlanner	N/A	FortiPlanner Wireless AP Deployment Planning Utility — FortiPlanner Lite Edition free download from Fortinet.com to support up to 50 Access Points. Requires Windows XP or Windows 7.
	FAP-FPL-PRO	FortiPlanner Wireless AP Deployment Planning Utility — Pro upgrade license unlocks FortiPlanner Lite (free version) to support more than 50 Access Points and includes site survey tool. Requires Windows 7.

Note: FortiAP-221C and FortiAP-320C require a FortiGate running FortiOS 5.2 or later to serve as its controller.

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

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