Highlights

Business Alignment

- Extends secure connectivity to Internet of Things (IoT) sensors for Smart Buildings while reducing risks from weak or insecure sensors
- Enforces role-based grouping of users, devices, and applications to deliver priority, QoS, and security in accordance with business needs for wireless devices
- Support for demanding voice/video/data applications to enhance mobile worker productivity and convenience
- Seamless roaming across an entire multi- subnet campus without the need for cumbersome client software
- Integrated management, security, and QoS features reduce operating cost and ensure a consistent user experience regardless of location

Operational Efficiency

- Centralized visibility and control accelerates problem resolution, optimize network utilization, and automate management
- Adaptive architecture reduces complexity and optimizes information flow for each application
- Dynamic Radio Management when used for planning and monitoring ensures optimal spectrum coverage resulting in the best end- user quality of experience
- Flexible Client Access optimizes throughput for 802.11ac/n clients in today's mixed ac, n, and a/b/g client environments

Flexible Managment Options

- On premise, with hardware or virtual ExtremeWireless Appliance
- ExtremeCloud™ Cloud-Managed Networking Platform (future)

ExtremeWireless™ 3917i/e Outdoor Access Point

Enterprise-Grade and Wave 2 Outdoor Performance without the Premium Cost

Product Overview

The AP3917 is a feature rich 802.11ac Wave 2 and 802.11abgn outdoor access point that extends affordable enterprise-grade mobility beyond the walls. These outdoor access points are designed to operate in harsh environments such as manufacturing plants, parks, practice facilities, and outdoor stadiums. The AP3917 offers multiple connectivity options including WiFi 2.4GHz, WiFi 5GHz, and BLE/802.15.4 (e.g. Thread, etc.) for location services or extended connectivity to Internet of Things (IoT) sensors and devices.

The energy efficient AP3917 is powered via 802.3af Power over Ethernet (PoE). The light-weight and compact design enables easy installation on most surfaces; optional accessories are available for fixed wall mounting, directional wall mounting, or pole mounting. The AP3917e model requires professional installation and includes four standard N-type antenna connectors supporting 2.4GHz or 5GHz band antennas, as well as a fifth standard N-type connector for a 2.4GHz antenna for BLE/802.15.4 support.

The AP3917 is built using the latest in technology, including 802.11ac Wave 2, dynamic radio management, spectrum analysis with interference classification, beamforming, multi-user MIMO, self-forming and self-healing meshing, security, role-based authentication, authorization, and access control to ensure consistent and secure connectivity to users and sensors.

The 2x2:2 platform can deliver up to 1.2 Gbps over-the-air-performance and up to 50,000 packets per second on the wired port using a unique flow-based architecture that provides consistent performance even when enforcing extensive application-based (aka Layer 7) service requirements.

ExtremeCloud Management

The AP3917 is cloud-ready out of the box and supports future secure connectivity to ExtremeCloud™, a single pane of glass for cloud managing both the wired and wireless components of your network.

See the ExtremeCloud datasheet for details and ordering part numbers.

Specifications

Product Features	AP3917 i/e
General	
Fully-Featured Enterprise Class AP	✓
Number of Wi-Fi Radios	2
MIMO Implementation for High-Performance 11ac & 11n Throughputs	2x2
Number of Spatial Streams	2
Number of Simultaneous Users (MU-MIMO)	2
Maximum Throughput 2.4GHz Radio	300 Mbps
Maximum Throughput 5GHz Radio	867 Mbps
Maximum Throughput Per AP	1.167 Gbps
RFC2285 Wire/Wireless Forwarding Rate	50,000 pps
Number of SSIDs Supported Per Radio/Total	8/16
Simultaneous Users Per Radio/Total	240/480 Per AP
Simultaneous Voice calls (802.11b, G711, R>80)	30 or less
Mode of Operation	Semi-autonomous
Plug and Play Operation/Zero Touch Deployment	✓
Security and Standards	WPA, WPA2 (AES), 802.11i, 802.1x, IPSec, IKEv2, PKCS #10, X509 DER / PKCS #12, SSL
Internet of Things (IoT) Radio	Dual mode selectable (2.4 GHz with Co-Existence): Bluetooth Low Energy (BLE) 4.1 Single and Dual mode operation (Classic and Low Power Profiles 802.15.4 -2011)
GPS Radio	Internal
Multiple Operating Modes	
Intelligent Thin AP	Encryption, Security, QoS and RF Management Services done at AP
Distributed and Centralized Data Paths Within Same SSID	✓
Application Based Distributed and Centralized Data Paths Within Same User / Device Session	✓
Simultaneous RF Monitoring and Client Services	✓
BYOD / Device Fingerprinting Visibility	✓
Application / Layer 7 Visibility and Control	✓
In-Channel WIDS	✓
In-Channel WIPS	✓
Dedicated Multi-Channel WIDS (Guardian Mode)	✓
Dedicated Multi-Channel WIPS (Guardian mode)	✓
Dedicated Multi-Channel RF Spectrum Analysis and Fingerprinting	✓
Locates Devices and Threats via RF Triangulation	✓

Specifications (cont.)

Product Features	AP3917 i/e
Multiple Operating Modes (cont.)	
Self-Forming and Self-Healing Meshing	✓
Remote Access Point	✓
Hardware-Based, End-to-End Data and Control Plane Encryption	✓
Private and Public Cloud Deployments	✓
SSL	✓
Policy Enforcement for Wireless Clients (L2-L7 Access Control, QoS, Rate Limiting, and VLAN Containment)	✓
Fabric Attach ready (end-to-end network orchestration and automation)	✓
Hybrid Operation	
Security Scanning and Serve Clients On Same Radio	✓
Security Scanning and Spectrum Analysis On Same Radio	✓
Spectrum Analysis and Serve Clients On Same Radio	✓
Multi-Channel Dedicated Security Scanning and Spectrum Analysis	✓
Radio Characteristics	
Cellular coexistence	✓
Max Total Conducted Power (does not include antenna gain)*	
Radio 1 (5GHz)	25 dBm (AP3917i), 24 dBm (AP3917e)
Radio 2 (2.4GHz)	26 dBm (AP3917i), 25 dBm (AP3917e)
IoT Radio	3 dBm
Max Antenna Gain (Integrated Antenna)	
Radio 1 (5GHz)	6.18 dBi
Radio 2 (2.4GHz)	4.06 dBi
IoT	3.53 dBi
Adaptive Radio Management	
Dynamic Channel Control	802.11h: DFS and TPC support (ETSI)
Efficient Use of the Spectrum with A Multi-Channel Architecture	✓
Automatic Transmit Power and Channel Control	✓
Self-Healing with Coverage Gap Detection	✓
Band Steering with Multiple Steering Modes	✓
Spectrum Load Balancing of Clients	✓
Airtime Fairness	✓
Performance Protection In Congested RF Environments	✓
Fast Transition Roaming (802.11k)	✓
Mitigates Co-Channel Interference with Coordinated Access	✓
Mitigates Adjacent Channel Interference with Optimized Receive Sensitivity	✓
Efficient Reuse of Channels At Shorter Intervals	✓
Mitigates Non 802.11 Interference Without Dedicated Radios	✓
Probe Suppression and Client Link Monitoring	✓
Management Frame Protection (802.11w)	✓

* Actual available power would vary based on local regulatory requirement and actual channels used for operation

Specifications (cont.)

Product Features	AP3917 i/e
Quality of Service	
Quality of Service (WMM, 802.11e)	✓
Power Save (U-APSD)	✓
Fast Secure Roaming and Handover Between APs (802.11r)	✓
Pre-Authentication (Pre-Auth)	✓
Opportunistic Key Caching (OKC)	✓
Bonjour/LLMNR/UPNP Identification, Containment and Control	✓
Supports Voice, Video, and Data Using the Same SSID	✓
Prioritizes Voice Over Data for Both Tagged and Untagged Traffic	✓
Rate Limiting (Rule and User-Based)	✓
Rule and Role Based Qos Processing	✓
Multicast Rate Control	
Multicast to Unicast Conversion	✓
Adaptable Rate Multicast	✓
Power Save Mode Optimization for Multicast	✓
Wireless Services	
Media Access Protocol	CSMA/CA with ACK
Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps 802.11n: Performance Table below 802.11ac: Performance Table below Receiver Sensitivity 802.11a: • -94dBm @ 6Mbps • -79dBm @ 54Mbps 802.11g: • -95dBm @ 6Mbps • -79dBm @ 54Mbps 802.11n: See 802.11n Receiver Sensitivity Table below 802.11ac: See 802.11ac Receiver Sensitivity Table below
Frequency Bands	802.11 ac/a/n: • 5.15 to 5.25 GHz (FCC/IC/ETSI) • 5.25 to 5.35 GHz (FCC/IC/ETSI)* • 5.47 to 5.725 GHz (FCC/IC/ETSI)* • 5.725 to 5.850 GHz (FCC/IC) 802.11b/g/n: • 2.400 to 2.4720 GHz (FCC/IC) • 2.400 to 2.4835 GHz (ETSI) *FCC/IC DFS planned after release
Wireless Modulation	802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM with OFDM 802.11ac Packet Aggregation: A-MPDU, A-MSDU 802.11ac Very High-Throughput (VHT): VHT20/40/80 802.11ac Advanced Features: LDPC, STBC, Maximum Likelihood (ML) Detection 802.11n: BPSK, QPSK, 16QAM, 64QAM with OFDM 802.11n High-throughput (HT) support: HT 20/40 802.11n Packet aggregation: A-MPDU, A-MSDU 802.11n Advanced Features: LDPC, STBC and TxBF 802.11a: BPSK, QPSK, 16QAM, 64QAM with OFDM 802.11g: DSSS and OFDM 802.11b: DSSS

Specificaitons (cont.)

Product Features	AP3917 i/e
Interfaces	
Uplink	1x 10/100/1000 Mbps auto-sensing Ethernet port (PoE) 1x 10/100/1000 Mbps auto-sensing Ethernet port (Non-PoE)
Console Port	RJ45
Mounting	
Wall and pole mounting (optional)	✓
Articulating mounting bracket (optional)	✓
Environmental	
Environmental	Protection: IP67 / NEMA6 Operating Temperature: -40° C to +70° C (-40° F to +158° F) w/ No Solar Load -40° C to +60° C (-40° F to +140° F) w/ Solar Load Humidity: 0%-95% (noncondensing) Altitude: 8,000ft at 54° F (12° C) Storage Temperature: -40° C to +70° C (-58° F to +158° F) Altitude: 30,000 ft at 82° F (28° C) Transportation Temperature: -40° C to +70° C (-58° F to +158° F) Electrostatic discharge: Condensing electrostatic Wind rating: 165 Mph gusts
Operational Shock	IEC60721-3-4, Class 4M3, MIL STD 810G Method 516.6
Operation Vibration	ASTM D3580-95, IEC60721-3-4, Class 4M3 (IEC 60068-2-64)
Wireless and EMC	
Compliance	• FCC CFR 47 Part 15, Class B • ICES-003 Class B • FCC Subpart C 15.247 • FCC Subpart E 15.407 • RSS-210 • EN 301 893 • EN 300 328 • EN 301 489 1 & 17 • EN 50385 • EN 55032 (CISPR 32) • EN 60601-1-2 • AS/NZS4268 + CISPR32
Safety	• IEC 60950-1 • EN 60950-1 • UL 60950-1 • CSA 22.2 No.60950-1-03 • AS/NZS 60950.1
Mechanical	
Dimensions	8.6 in. length x 7.1 in. width x 2.7 in height / 218 mm x 180 mm x 69 mm (AP3917i) 8.6 in. length x 7.8 in. width x 2.7 in. height / 218 mm x 198 mm x 69 mm (AP3917e)
Weight	2.4 lbs/1.1 kg (AP3917i) 2.8 lbs/1.3 kg (AP3917e)
Power Consumption (RMS — Excludes PSE Load)	AP3917i Typical: 4.8W Idle (radios ON): 11W AP3917e Typical: 4.8W Idle (radios ON): 11W
Warranty	One Year Hardware Warranty

Ordering Information

Part Number	AP3917 i/e
Access Points	
31050	WS-AP3917i-FCC (US, Puerto Rico, Colombia), Dual Radio 802.11ac/abgn, Wave 2, 2x2:2 MIMO outdoor access point with five internal antenna array and an integrated, BLE/802.15.4 radio (Requires ExtremeWireless V10.41.02)
31051	WS-AP3917i-ROW (Verify country availability before ordering), Dual Radio 802.11ac/abgn Wave 2, 2x2:2 MIMO outdoor access point with five internal antenna array and an integrated, BLE/802.15.4 radio (Requires ExtremeWireless V10.41.02)
31055	WS-AP3917e-FCC (US, Puerto Rico, Colombia), Dual Radio 802.11ac/abgn, Wave 2, 2x2:2 MIMO outdoor access point with five external antenna ports and an integrated, BLE/802.15.4 radio (Requires ExtremeWireless V10.41.02)
31056	WS-AP3917e-ROW (Verify country availability before ordering), Dual Radio 802.11ac/abgn Wave 2, 2x2:2 MIMO outdoor access point with five external antenna ports and an integrated, BLE/802.15.4 radio (Requires ExtremeWireless V10.41.02)
Accessories	
30514	WS-MBO-ART01 Articulating Mtg Brkt | Outdoor articulating mounting bracket for AP3917i/e
30517	WS-EIO-01 AP Enclosure | Indoor/Outdoor enclosure for AP3917i under-seat install
30519	WS-MBO-H01 H-Type Mtg Brkt | Outdoor H-Type mounting bracket for AP3917i/e
30520	WS-MBO-POLE01 Pole Mtg Brkt | Outdoor Pole mounting bracket for AP3917i/e
ML-2452-LAK1-02R	Lightning Arrestor Type N, Male–Female
ML-1499-10JK-01R	10 foot Low-Loss Coaxial Cable Jumper: N Male to N Male
ML-1499-25JK-01R	25 foot Low-Loss Coaxial Cable Jumper: N Male to N Male
WS-CAB-L400C06N	6 foot LMR400 Cable With Standard N-type Plug and Plug Connectors
WS-CAB-L400C50N	50 foot LMR400 Cable With Standard N-type Plug and Plug Connectors
WS-CAB-L400C75N	75 foot LMR400 Cable With Standard N-type Plug and Plug Connectors
WS-CAB-L600C25N	25 foot LMR600 Cable With Standard N-type Plug and Plug Connectors
WS-CAB-L600C50N	50 foot LMR600 Cable With Standard N-type Plug and Plug Connectors
WS-CAB-NTERM	Standard N-type Plug Terminator
Antennas (Required for WS-AP3917e)	
ML-2452-HPAG5A8-01	Dipole Omni, 7.5dBi/8dBi, dual band, outdoor with standard N Plug connector (up to 5 per AP)
ML-2452-HPAG4A6-01	Dipole Omni, 4dBi/7.3dBi, dual band, outdoor with standard N Plug connector (up to 5 per AP)
ML-2452-HPA6X6-036	Dipole Omni Array, 4dBi/6dBi, dual band, outdoor with six feed 36″ leads and standard N Plug connectors
30724	WS-AO-DQ04360N Dipole Omni Array, 4dBi/7.3dBi, dual band, outdoor with quad feed 36″ leads and standard N Plug connectors
ML-2499-HPA4-01	Dipole Omni, 4.5dBi, 2.4GHz only, outdoor with standard N Plug connector (up to 5 per AP)
ML-2452-HPA6-01	Dipole Omni, 5.3/4.6/6.1dBi, dual band, outdoor with standard N Plug connector (up to 5 per AP)
ML-5299-HPA5-01	Dipole Omni, 5.6dBi, 5GHz only, outdoor with standard N Plug connector (up to 5 per AP)
ML-2499-HPA8-01	Dipole Omni, 8dBi, 2.4GHz only, outdoor with standard N Plug connector (up to 5 per AP)
ML-2499-FHPA5-01R	Dipole Omni, 5dBi, 2.4GHz only, outdoor with single feed 48″ lead and standard N Plug connector (up to 5 per AP)
ML-5299-FHPA6-01R	Dipole Omni, 8.25dBi, 5GHz only, outdoor with standard N Plug connector (up to 5 per AP)
ML-2452-PNA5-01R	Panel, 120 deg, 5.5dBi/6dBi, dual band, outdoor with single feed 12″ lead and standard N Plug connector (up to 5 per AP)
ML-2452-PNA7-01R	Panel, 52 deg, 8dBi/12dBi, dual band, outdoor with single feed 12″ lead and standard N Plug connector (up to 5 per AP)
ML-2452-PNL6M4-N36	Polarized Panel, 90 deg, 5.7/6.7/5.5dBi, dual band, outdoor with quad feed 30″ leads and standard N Plug connectors
ML-2452-SEC6M4-N36	Polarized Panel, 100 deg, 6.92dBi/7.23dBi, dual band, outdoor with quad feed 32″ leads and standard N Plug connectors
ML-2452-SEC6M4-N30	Polarized Panel, 60 deg, 5.5dBi/6dBi, dual band, outdoor with quad feed 30″ leads and standard N Plug connectors
ML-2452-PNL9M3-N36	Polarized Panel, 75/55 deg, 11dBi/10.7dBi, dual band, outdoor with triple feed 36″ leads and standard N Plug connectors (cannot be used on BLE port)
Mid-Span PoE Devices	
AP-PSBIAS-7161-US	Outdoor, Single Port, 1 Gigabit 802.3at PoE Midspan US
AP-PSBIAS-7161-WW	Outdoor, Single Port, 1 Gigabit 802.3at PoE Midspan ROW

Data Rates

2.4 MHz Radio (802.11n)

Description	Data Streams	HT20		HT40	
		Normal GI	Short GI	Normal GI	Short GI
MCS0	1	6.5	7.2	13.5	15
MCS1	1	13	14.4	27	30
MCS2	1	19.5	21.7	40.5	45
MCS3	1	26	28.9	54	60
MCS4	1	39	43.3	81	90
MCS5	1	52	57.8	108	120
MCS6	1	58.5	65	121.5	135
MCS7	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

5.0 GHz Radio (802.11n/ac)

Description	Data Streams	HT20		HT40		HT80	
		Normal GI	Short GI	Normal GI	Short GI	Normal GI	Short GI
MCS0	1	6.5	7.2	13.5	15	29.3	32.5
MCS1	1	13	14.4	27	30	58.5	65
MCS2	1	19.5	21.7	40.5	45	87.8	97.5
MCS3	1	26	28.9	54	60	117	130
MCS4	1	39	43.3	81	90	175.5	195
MCS5	1	52	57.8	108	120	234	260
MCS6	1	58.5	65	121.5	135	263.3	292.5
MCS7	1	65	72.2	135	150	292.5	325
MCS8	1	78	86.7	162	180	351	390
MCS9	1	N/A	N/A	180	200	390	433.3
MCS0	2	13	14.4	27	30	58.5	65
MCS1	2	26	28.9	54	60	117	130
MCS2	2	39	43.3	81	90	175.5	195
MCS3	2	52	57.8	108	120	234	260
MCS4	2	78	86.7	162	180	351	390
MCS5	2	104	115.6	216	240	468	520
MCS6	2	117	130	243	270	526.5	585
MCS7	2	130	144.4	270	300	585	650
MCS8	2	156	173.3	324	360	702	780
MCS9	2	N/A	N/A	360	400	780	866.7

Receiver Sensitivity

2.4 GHz Wi-Fi Radio (2.4GHz, 11g)

Typical Sensitivity at Each RF Chain. Frame (1000-BYTE PDUS) Error Rate <10% at Room Temp. 25° C (802.11G: IEEE STD 802.11G/D8.2-APR 2003 Part 11 Paragraph 19.5.1)	
6Mbps	-94
9Mbps	-94
12Mbps	-92
18Mbps	-91
24Mbps	-88
36Mbps	-86
48Mbps	-83
54Mbps	-78

2.4 GHz Wi-Fi Radio (2.4GHz, 11n)

Typical Sensitivity at Each RF Chain. Frame (1000-BYTE PDUS) Error Rate <10% at Room Temp. 25° C (Should Comply to 802.11N: IEEE P802.11N- SEP 2009 Table 20.22)		
Rate	20 MHz (dBm)	40 MHz (dBm)
(MCS0)	-94	-92
(MCS1)	-92	-90
(MCS2)	-91	-89
(MCS3)	-88	-86
(MCS4)	-85	-83
(MCS5)	-82	-80
(MCS6)	-77	-75
(MCS7)	-75	-73
(MCS8)	-91	-89
(MCS9)	-89	-87
(MCS10)	-88	-86
(MCS11)	-85	-83
(MCS12)	-82	-80
(MCS13)	-79	-77
(MCS14)	-74	-72
(MCS15)	-72	-70

IoT Radio Sensitivity

Typical Receiver Sensitivity	dBm
Bluetooth Low Energy	-90
802.15 4	-100

5.0 GHz Radio (5GHz, 11a)

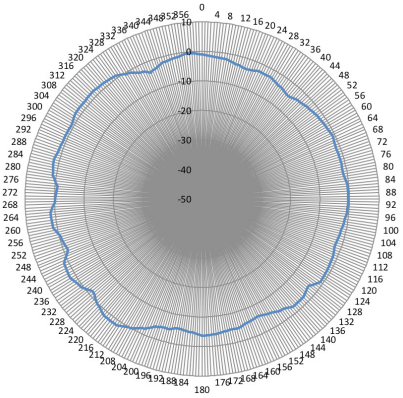
Typical Sensitivity at Each RF Chain. Frame (1000-BYTE PDUS) Error Rate <10% at Room Temp. 25° C (Should Comply to 802.11N: IEEE STD 802.11A-1999 Part 11 Paragraph 17.3.10.1)	
6Mbps	-93
9Mbps	-92
12Mbps	-91
18Mbps	-91
24Mbps	-88
36Mbps	-85
48Mbps	-82
54Mbps	-78

5.0 GHz Radio (5GHz, 11ac)

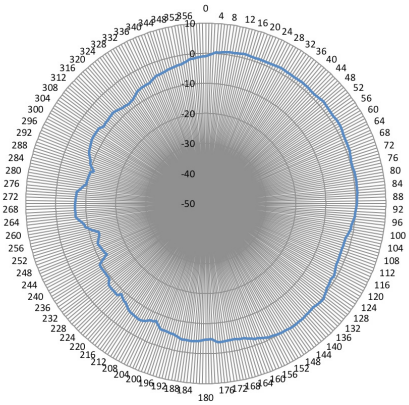
Typical Sensitivity at Each RF Chain. Frame (1000-BYTE PDUS) Error Rate <10% at Room Temp. 25° C (Should Comply to 802.11ac)			
Rate	20 MHz (dBm)	40 MHz (dBm)	80 MHz (dBm)
(MCS0, 1)	-93	-91	-88
(MCS1, 1)	-92	-89	-86
(MCS2, 1)	-90	-87	-84
(MCS3, 1)	-88	-85	-82
(MCS4, 1)	-84	-81	-78
(MCS5, 1)	-81	-78	-75
(MCS6, 1)	-79	-76	-73
(MCS7, 1)	-76	-74	-72
(MCS8, 1)	-72	-70	-67
(MCS9, 1)	N/A	-68	-65
(MCS0, 2)	-90	-88	-85
(MCS1, 2)	-89	-86	-83
(MCS2, 2)	-87	-84	-81
(MCS3, 2)	-85	-82	-79
(MCS4, 2)	-82	-78	-75
(MCS5, 2)	-78	-75	-72
(MCS6, 2)	-76	-73	-70
(MCS7, 2)	-73	-72	-69
(MCS8, 2)	-70	-68	-65
(MCS9, 2)	N/A	-65	-62

Antenna Radiation Patterns

2.5GHz

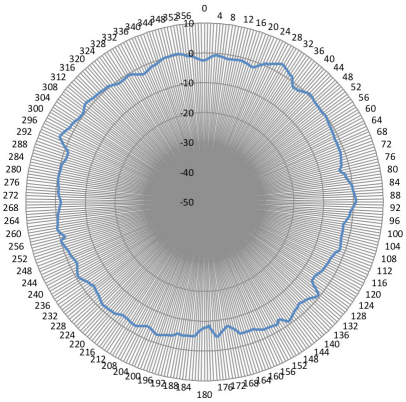


Horizontal



Vertical

5GHz



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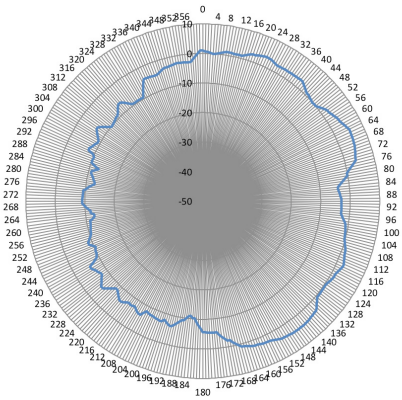
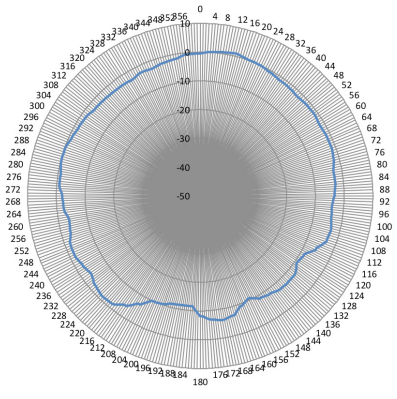


Vertical

IoT



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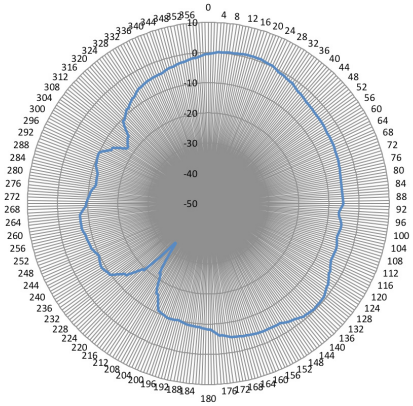

Vertical

Warranty

As a customer-centric company, Extreme Networks is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or media replaced as soon as possible.

For full warranty terms and conditions please go to: support.extremenetworks.com

Service and Support

Extreme Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimization of customer networks, customized technical training, to service and support tailored to individual customer needs.

Please contact your Extreme Networks account executive for more information about Extreme Networks Service and Support.

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