

## Benefits

### Business Alignment

- Support for demanding voice/ video/data applications to enhance mobile worker productivity and convenience
- Role-based grouping of users, devices, and applications to deliver priority, QoS, and security in accordance with business needs
- 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 from ExtremeWireless™ 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

### Security

- Authentication and authorization functions include role-based access control (using 802.1X, MAC, and captive portal) and authentication at the AP
- Wireless Intrusion Prevention (WIPS) functions provide continuous scanning, threat classification, rogue AP detection, and countermeasures against possible attacks
- Integration of security policies (NAC, IPS) across the wired/ wireless networks enables quick diagnosing and resolution of security threats
- Integration of Policy Manager across the wired/ wireless networks dynamically oversees user access at the wireless network point of entry

### Support and Service

- Industry-leading customer satisfaction and first call resolution rates
- Lifetime warranty for indoor access points
- Personalized services, including site surveys, network design, installation, and training



# ExtremeWireless™ 3801i Indoor Access Point

Single Radio, Dual-Band, High Performance for  
Low-Density Deployments

## Product Overview

The AP3801i is a feature rich, single radio 802.11ac or 802.11bgn indoor access point (AP), ergonomically designed to blend into any environment. It is an ideal solution for providing secure 802.11ac or 802.11bgn connectivity for low-density and price sensitive deployments.

The AP3801i comes with an integrated antenna array for ease of installation and a consistent RF footprint. The AP can be powered via 802.3af Power over Ethernet (PoE) or an optional external power supply.

The AP3801i is built on the latest Wi-Fi technology including 802.11ac, dynamic radio management, and spectrum analysis with interference classification, beam forming, self-forming and self-healing meshing, security, role-based authentication, authorization, and access control. The 2x2:2 platform is capable of delivering up to 867 Mbps over-the-air-performance and up to 40,000 packets per second on the wire port. The AP ships with brackets that address most drop ceiling and wall mounting installations.

# Specifications

Product Features	AP3801i
<b>General</b>	
Enterprise-grade AP	✓
Number of radios	1
MIMO implementation for high performance 11ac & 11n throughputs	2x2
Number of spatial streams	2
Maximum Throughput 2.4GHz Radio	300Mbps
Maximum Throughput 5GHz Radio	867Mbps
Maximum Throughput per AP	867 Mbps
RFC2285 Wire/Wireless Forwarding Rate	40,000 packets per second
Number of SSIDs supported per AP	8
Simultaneous users per AP	112
Simultaneous Voice calls(802.11b, G711, R>80)	Up to 12
Mode of operation	Semi-autonomous
Plug and play operation/Zero touch deployment	ü
Security and Standards	WPA, WPA2 (AES), 802.11i, 802.11w, 802.1x, IPSec, IKEv2, PKCS #10, X509 DER / PKCS #12
<b>Multiple Operating Modes</b>	
Intelligent thin AP	Encryption, Security, QoS and RF management done on 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	✓
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	✓
Self-forming and self-healing meshing	✓
Remote access point	✓
Hardware-based, end-to-end control plane encryption	✓
Private and public cloud deployments	✓
<b>Hybrid Operation</b>	
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	✓
<b>Radio Characteristics</b>	
<b>Max Radiated Power</b>	
Radio 1 (5GHz)	26 dBm*
Radio 2 (2.4GHz)	25 dBm*
<b>Max Antenna Gain (Integrated Antenna)</b>	
Radio 1 (5GHz)	5 dBi
Radio 2 (2.4GHz)	3 dBi

Product Features	AP380ii
<b>Adaptive Radio Management</b>	
Dynamic Channel Control	802.11h: DFS & 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	✓
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	✓
<b>QoS for Applications</b>	
Quality of Service (WMM, 802.11e)	✓
Power Save (U-APSD)	✓
Fast secure roaming and handover between APs 802.11r and 802.11k	✓
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	✓
<b>Multicast Rate Control</b>	
Multicast to unicast Conversion	✓
Adaptable rate multicast	✓
Power save mode optimization for multicast	✓
<b>Wireless Services</b>	
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: See 802.11n Performance Table below 802.11ac: See 802.11ac Performance Table below  Receiver Sensitivity 802.11a: -92DdBm @ 6Mbps -77DdBm @ 54Mbps  802.11g: -91DdBm @ 6Mbps -78DdBm @ 54Mbps  802.11n: See 802.11n Receiver Sensitivity Table below 802.11ac: See 802.11ac Receiver Sensitivity Table below

Product Features	AP380ii
<b>Wireless Services (cont.)</b>	
Frequency Bands	802.11ac/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 certification in progress
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
<b>Interfaces</b>	
# 10/100/1000 Base T Ethernet autosensing link	1
<b>Mounting</b>	
Wall mounting (included)	✓
Flush & Protruded drop-ceiling mounting bracket (9/16" & 15/16" flat T-bar included)	✓
<b>Environmental</b>	
Environmental	Plenum rated (UL 2043)  Operating: Temperature 0° C to +45° C (+32° F to +113° F) Humidity 0%-95% (noncondensing)  Storage: Temperature -50° C to +70° C (-58° F to +158° F)  Transportation: Temperature -50° C to +70° C (-58° F to +158° F)
<b>Wireless and EMC</b>	
Compliance	<ul style="list-style-type: none"> <li>•FCC CFR 47 Part 15, Class B</li> <li>•ICES-003 Class B</li> <li>•FCC Subpart C 15.247</li> <li>•FCC Subpart E 15.407</li> <li>•RSS-210</li> <li>•EN 301 893</li> <li>•EN 300 328</li> <li>•EN 301 489 1 &amp; 17</li> <li>•EN 62311</li> <li>•EN 55022 (CISPR 22)</li> <li>•EN 60601-1-2</li> <li>•AS/NZS4268 + CISPR22</li> </ul>
Safety	<ul style="list-style-type: none"> <li>•IEC 60950-1</li> <li>•EN 60950-1</li> <li>•UL 60950-1</li> <li>•CSA 22.2 No.60950-1-03</li> <li>•AS/NZS 60950.1</li> </ul>
<b>Mechanical</b>	
Dimensions (Outer Diameter x Height)	6.18" x 1.63"
Weight	0.75 lbs (0.34 kg)
Max power consumption	9.6W
Warranty	Lifetime

## Ordering Information

Part Number	Description
<b>Access Points</b>	
WS-AP380i	Single radio, dual-band 802.11ac/an or 802.11b/gn, 2x2:2 MIMO indoor access point with four internal antenna array (Requires V9.21.01 or higher)
<b>Accessories</b>	
WS-MBI-DCU01	Universal Mounting brackets for drop ceiling rails
WS-PSI12V-MR1	Multi-region 12V Indoor External Power Supply for the AP380i
<b>Mid-Span PoE Devices</b>	
PD-3501G-ENT	Single port, 1 Gigabit 802.3af PoE Midspan

## 802.11ac Performance

### Data Rates (Mbps)

	Streams	VHT20		VHT40		VHT80	
		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	65.0
MCS2	1	19.5	21.7	40.5	45	87.8	97.5
MCS3	1	26	28.9	54	60	117.0	130.0
MCS4	1	39	43.3	81	90	175.5	195.0
MCS5	1	52	57.8	108	120	234.0	260.0
MCS6	1	58.5	65	121.5	135	263.3	292.5
MCS7	1	65	72.2	135	150	292.5	325.0
MCS8	1	78.0	86.7	162.0	180.0	351.0	390.0
MCS9	1	NA	NA	180.0	200.0	390.0	433.3
MCS0	2	13	14.4	27	30	58.5	65.0
MCS1	2	26	28.9	54	60	117.0	130.0
MCS2	2	39	43.3	81	90	175.5	195.0
MCS3	2	52	57.8	108	120	234.0	260.0
MCS4	2	78	86.7	162	180	351.0	390.0
MCS5	2	104	115.6	216	240	468.0	520.0
MCS6	2	117	130	243	270	526.5	585.0
MCS7	2	130	144.4	270	300	585.0	650.0
MCS8	2	156.0	173.3	324.0	360.0	702.0	780.0
MCS9	2	NA	NA	360.0	400.0	780.0	866.7

# 802.11n Performance

## Data Rates (Mbps)

	Data Streams	2.4GHZ		5GHZ	
		HT20 Normal GI	HT20 Short GI	HT40 Normal GI	HT40 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

## Receiver Sensitivity (dBm)

Receiver Sensitivity			
Rate	20 MHz (dBm)	40 MHz (dBm)	80 MHz (dBm)
(MCS0, 1)	-92	-89	-86
(MCS1, 1)	-91	-88	-85
(MCS2, 1)	-88	-85	-82*
(MCS3, 1)	-84	-81	-78
(MCS4, 1)	-81	-78	-75
(MCS5, 1)	-77	-74	-71
(MCS7, 1)	-75	-72	-69
(MCS6, 1)	-74	-71	-68
(MCS8, 1)	-70	-67	-64
(MCS9, 1)	NA	-65	-62
(MCS0, 2)	-89	-86	-83
(MCS1, 2)	-88	-85	-82
(MCS2, 2)	-85	-82	-79
(MCS3, 2)	-81	-78	-75
(MCS4, 2)	-78	-75	-72
(MCS5, 2)	-74	-71	-68
(MCS6, 2)	-72	-69	-66
(MCS7, 2)	-71	-68	-65
(MCS8, 2)	-67	-64	-61
(MCS9, 2)	NA	-62	-59

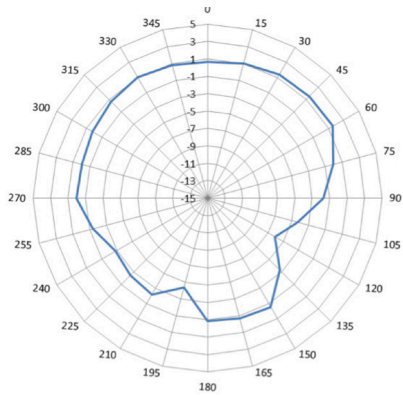
Receiver Sensitivity		
Rate	20 MHz (dBm)	40MHz (dBm)
MCS0	-91	-88
MCS1	-91	-88
MCS2	-90	-87
MCS3	-86	-83
MCS4	-83	-80
MCS5	-79	-76
MCS6	-77	-74
MCS7	-76	-73
MCS8	-88	-85
MCS9	-88	-85
MCS10	-87	-84
MCS11	-83	-80
MCS12	-80	-77
MCS13	-76	-73
MCS14	-74	-71
MCS15	-73	-70

Rate	dBm
54Mbps	-77
48Mbps	-80
36Mbps	-83
24Mbps	-85
18Mbps	-88
11Mbps	-91
9Mbps	-92
6Mbps	-92

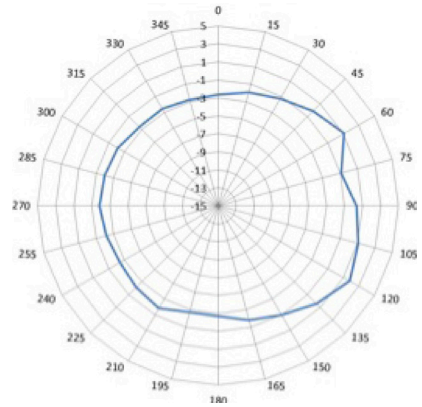
Rate	dBm
54Mbps	-78
48Mbps	-80
36Mbps	-83
24Mbps	-86
18Mbps	-88
12Mbps	-90
9Mbps	-91
6Mbps	-91

# 3801i Antenna Radiation Patterns

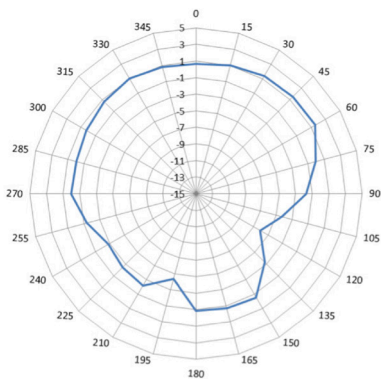
## Horizontal Radiation Pattern 2.4GHz



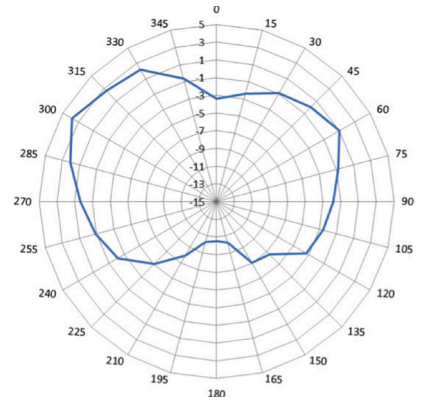
## Vertical Radiation Pattern 2.4GHz



## Horizontal Radiation Pattern 5GHz



## Vertical Radiation Pattern 5GHz



## 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: <http://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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