

Altitude 4522

Cost Effective and High Performance Independent 802.11 abgn Wireless Access Point

BENEFITS

PERFORMANCE

- 2x2 MIMO
- 802.11 abgn (2.4 and 5 GHz)
- 24 dBm Max Output Power
- GigE Uplink with PoE

FORM FACTOR

- Dual Radio
- Independent AP
- Wall or Ceiling Mount

FEATURES

- Compact
- Cost Effective
- Layer 2-7 Stateful Packet Filtering
- Firewall
- Wireless IPS
- VPN Gateway
- SMART RF
- Internal and External Antenna Options Virtual Controller Functionality
- Continues to provide service even if connectivity to controller is lost



The Extreme Networks© Altitude™ 4522 is an independent, cost-effective access point (AP). As a dual radio independent AP, the Altitude 4522 can be used as a standalone AP or with a wireless controller, this AP also can become a virtual controller and control up to 24 additional Altitude 4522 Access Points. This access point is targeted at Enterprise and Campus deployments that are looking to lower the cost of deploying and operating a secure, reliable

802.11n wireless LAN (WLAN) but are also looking for a more robust solution than a pure dependent AP approach. The Altitude 4522 can continue to provide service if a connection to the controller is lost, for example by a cable cut or power failure. The Altitude 4522 is equipped with a 2x2 MIMO 802.11 abgn (2.4 and 5GHz) band unlocked radio with a combined output power of a maximum 24 dBm. The 4522 supports local bridging and has a single Gigabit Ethernet uplink port. The device has a small form factor and is easily mounted on a wall or ceiling with included hardware. The Altitude 4522 can be powered via the Gigabit Ethernet uplink port with standard 802.3af PoE. There are two versions of the Altitude 4522, an internal integrated antenna version and an external antenna version with connectors for standard paddle antennas.

SECURITY

The AP includes a layer 2-7 stateful packet filtering firewall. AAA Radius client services, built in wireless IPS, VPN Gateway, and location based access control are also included.

DEPLOYMENT

The Altitude 4522 supports wireless controller autodiscovery. Upon activation it communicates with the controller and automatically downloads configuration parameters and firmware. This reduces installation, maintenance and troubleshooting costs for layer 2 and layer 3 deployments.

INTELLIGENCE

The Altitude 4522 uses SMART RF to adjust power and channel selection to prevent channel overlap or co-channel interference. This is done automatically reduces the chance of human error or interference. SMART RF is a standard feature on the Altitude 4522.

DIRECT FORWARDING

The Altitude 4522 allows for direct forwarding of data traffic to reduce the bottleneck at the wireless controller, which reduces latency and jitter issues for voice and video applications.

Flexible Antenna options: The Altitude 4522 comes with either internal or external antennas. The internal antenna model has a white plastic facia. The external antenna model contains four external paddle antenna connectors (external antennas not included). Both versions support both wall and ceiling mounting, for maximum deployment flexibility.

Virtual Controller Functionality: The Altitude 4522 has the capability to act as a virtual controller AP, allowing a single Altitude 4522 to control up to 24 other of the same type of AP.

Altitude 4522 Specifications Chart

PHYSICAL CHARACTERISTICS	INTERNAL ANTENNA	EXTERNAL ANTENNA
Dimensions:	9.5 in. L x 7.5 in. W x 1.1 in. H 24.13 cm L x 19.5 cm W x 2.78 cm H	7.8 in. L x 5.0 in. W x 1.0 in. H 19.82 cm L x 12.7 cm W x 2.54 cm H
Weight:	0.85 lbs./0.385 kg	1.75 lbs./0.794 kg
Max 10Gb Ethernet Ports	Ceiling-mount (to suspended ceiling T-bars, below tile); wall mount	Ceiling-mount (above tile); wall-mount
MAC Address Table		Yes, certified to UL 2043
LED Indicators:	2 LED indicators with multiple modes indicating 2.4GHz/5 GHz Activity	

Wireless Data Communications and Networking

Data rates supported	802.11b/g: 1,2,5.5,11,6,9,12,18,24,36,48, and 54Mbps 802.11a: 6,9,12,18,24,36,48, and 54Mbps 802.11n: MCS 0-15 up to 300Mbps
Network Standard:	802.11a, 802.11b, 802.11g, 802.11n
Wireless Medium:	Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM), and Spatial Multiplexing (MIMO)
VLANs/WLANs supported:	VLANs and WLANs may be set up independently or through a controller
Uplink:	Auto-sensing 10/100/1000Base-T ETHERNET

Radio Characteristics

Operating channels:	5GHz: All channels from 5180 MHz to 5825 MHz 2.4GHz: 2412-2472 MHz Actual operating frequencies depend on national regulatory limits
Maximum available transmit power:	21dBm
Transmit power Adjustment:	1dB increments
Antenna configuration:	2x2 MIMO (transmit on two and receive on two antennas)
Operating bands:	2.412 to 2.472 GHz, 5.15 to 5.25 GHz, 5.25 to 5.35 GHz, 5.470 to 5.725 GHz, 5.725 to 5.850 GHz

Radio Characteristics (cont.)

USER ENVIRONMENT	INTERNAL ANTENNA	EXTERNAL ANTENNA
Operating temperature:	32°F to 104° F/0°C to 40° C	
Storage temperature:	-40°F to 185° F/-40°C to 85°	
Operating humidity:	5%-95% (non-condensing)	
Operating altitude:	8,000 ft./2438 m	
Storage altitude:	30,000 ft./9,144 m	
Electrostatic discharge:	+/- 15 kV (Air), +/- 8 kV (contact)	

Power Specifications

Operating voltage:	802.3af supply: 48 VDC @ 12.95W (typical), 36 VDC to 57 VDC (range)
Operating current:	270mA rms at 48V
Integrated Power-over-Ethernet support:	Standards-based IEEE 802.3af
Typical Operational RMS Power Consumption:	12W Max
Storage altitude:	30,000 ft./9,144 m
Electrostatic discharge:	+/- 15 kV (Air), +/- 8 kV (contact)

Maximum Radio Transit Power

BAND	SINGLE ANTENNA COMPOSITE TRANSMIT POWER	DUAL ANTENNA COMPOSITE TRANSMIT POWER
2400MHZ	+21 dBm	+24 dBm
5200MHZ	+20 dBm	+23 dBm

Antenna Port Specification

Type:	Integrated 2.4 GHz and 5.2 GHz Dual-Antenna Elements Four RP-SMA connectors for external antennas (not included)
Band:	2.4 GHz to 2.5 GHz; 5.180 GHz to 5.850 GHz (actual operating frequencies depend on regulatory rules and certification agency)

Internal Antenna Information

INTERNAL ANTENNA DESCRIPTION	VALUES
Peak gain, 2.4GHz band (Radio 1)	3.9dBi
Peak gain, 5.0GHz band (Radio 2)	7.5dBi

Regulatory

Product safety certifications:	UL 60950, cUL, EU EN 60950, TUV and UL 2043 (external antenna)
Radio approvals:	FCC (USA), Industry Canada, CE (Europe)

Conducted Receiver Sensitivity

2400 MHZ BAND
(MEASURED AT ANTENNA CONNECTORS)

RATE / MCS	MODE	SENSITIVITY (DBM)
1	Legacy	-91
2	Legacy	-90
5.5	Legacy	-90
11	Legacy	-88
6	Legacy	-91
9	Legacy	-91
12	Legacy	-91
18	Legacy	-88
24	Legacy	-85
36	Legacy	-81
48	Legacy	-78
54	Legacy	-76
MCS0	HT20	-91
MCS1	HT20	-89
MCS2	HT20	-87
MCS3	HT20	-83
MCS4	HT20	-80
MCS5	HT20	-76
MCS6	HT20	-75
MCS7	HT20	-73
MCS8	HT20	-88
MCS9	HT20	-85
MCS10	HT20	-83
MCS11	HT20	-80
MCS12	HT20	-78
MCS13	HT20	-73
MCS14	HT20	-71
MCS15	HT20	-70
MCS0	HT40	-87
MCS1	HT40	-85
MCS2	HT40	-82
MCS3	HT40	-80
MCS4	HT40	-77
MCS5	HT40	-73
MCS6	HT40	-72
MCS7	HT40	-70
MCS8	HT40	-85
MCS9	HT40	-82
MCS10	HT40	-79
MCS11	HT40	-77
MCS12	HT40	-74
MCS13	HT40	-69
MCS14	HT40	-67
MCS15	HT40	-66

Conducted Receiver Sensitivity

5200 MHZ BAND
(MEASURED AT ANTENNA CONNECTORS)

RATE / MCS	MODE	SENSITIVITY (DBM)
6	Legacy	-91
9	Legacy	-91
12	Legacy	-91
18	Legacy	-88
24	Legacy	-85
36	Legacy	-81
48	Legacy	-78
54	Legacy	-76
MCS0	HT20	-91
MCS1	HT20	-89
MCS2	HT20	-88
MCS3	HT20	-83
MCS4	HT20	-80
MCS5	HT20	-76
MCS6	HT20	-75
MCS7	HT20	-73
MCS8	HT20	-88
MCS9	HT20	-85
MCS10	HT20	-83
MCS11	HT20	-80
MCS12	HT20	-78
MCS13	HT20	-73
MCS14	HT20	-71
MCS15	HT20	-70
MCS0	HT40	-87
MCS1	HT40	-85
MCS2	HT40	-83
MCS3	HT40	-80
MCS4	HT40	-78
MCS5	HT40	-73
MCS6	HT40	-72
MCS7	HT40	-70
MCS8	HT40	-85
MCS9	HT40	-82
MCS10	HT40	-79
MCS11	HT40	-77
MCS12	HT40	-74
MCS13	HT40	-72
MCS14	HT40	-67
MCS15	HT40	-66

Ordering Information

PART NUMBER	DESCRIPTION	INFORMATION
15993	AP4522i int ant US	Altitude AP4522i dual-radio Independent indoor Access Point for US regulatory domain, 802.11a/b/g/n, 2x2 MIMO, integrated internal omni-directional antennas, Powered by 802.3af/at PoE.
15994	AP4522i int ant ROW	Altitude AP4522i dual-radio Independent indoor Access Point for Rest of World regulatory domain, 802.11a/b/g/n, 2x2 MIMO, internal omni-directional antennas, Powered by 802.3af/at PoE.
15815	AP4522i int ant EU	Altitude AP4522i dual-radio Independent indoor Access Point for European Union regulatory domain, 802.11a/b/g/n, 2x2 MIMO, internal omni-directional antennas, Powered by 802.3af/at PoE.
15995	AP4522e ext ant US	Altitude AP4522e dual-radio Independent indoor Access Point for US regulatory domain, 802.11a/b/g/n, 2x2 MIMO. External antennas not included-must order separately up to 4 paddle antennas. Powered by 802.3af/at PoE.
15996	AP4522e ext ant ROW	Altitude AP4522e dual-radio Independent indoor Access Point for Rest of World regulatory domain, 802.11a/b/g/n, 2x2 MIMO. External antennas not included-must order separately up to 4 paddle antennas. Powered by 802.3af/at PoE.
15816	AP4522e ext ant EU	Altitude AP4522e dual-radio Independent indoor Access Point for European Union regulatory domain, 802.11a/b/g/n, 2x2 MIMO. External antennas not included-must order separately up to 4 paddle antennas. Powered by 802.3af/at PoE.

Third Party Accessories

Accessories for the Altitude 4522 include external power supplies, PoE injectors and external antennas for the external antenna model. Ordering information can be found below.

PART NUMBER	DESCRIPTION	INFORMATION
PWRS-14000-148R	AP4022 external PSU	External Power Supply for Altitude 4522 access points
ML-2452-APA2-01	AP4022e external antenna, black	External antenna for Altitude 4521/4522, black
ML-2452-APAG2A1-02	AP4022e external antenna, white	External antenna for Altitude 4521/4522, white
KT-135628-01	Altitude AP 4022/4522 Mounting Kit	Mounting Kit for WLAN AP 4022/4522

Warranty

- Limited Lifetime Warranty for Hardware
- For warranty details, visit www.extremenetworks.com/go/warranty



<http://www.ExtremeNetworks.com/contact> / Phone +1-408-579-2800

©2014 Extreme Networks, Inc. All rights reserved. Extreme Networks and the Extreme Networks logo are trademarks or registered trademarks of Extreme Networks, Inc. in the United States and/or other countries. All other names are the property of their respective owners. For additional information on Extreme Networks Trademarks please see <http://www.extremenetworks.com/about-extreme/trademarks.aspx>. Specifications and product availability are subject to change without notice. 1853-0114