



# OAP433e

## Three-Radio, Three-Stream 802.11N Outdoor Access Point

### Seamlessly deploy an outdoor wireless network

With its rugged design, the OAP433e brings secure, high-performance wireless connectivity to outside locations and harsh indoor environments. Featuring a three-radio, three-stream design, the OAP433e is fully compliant with the 802.11n standard and provides a superior user experience in high client density environments such as stadiums, warehouses, and campuses.

Added radios boost the benefits of Channel Layering, multiplying the capacity within a single access point or segregating mission-critical applications. And with all radios working in concert, the AP400 Series delivers a first-class wireless network to high-bandwidth applications. Built for mobility, the AP400 Series and the Meru Virtualized Wireless LAN define the new network edge, working with laptops and any mobile devices brought by users.

Designed for flexibility, the OAP433e can be configured with optional antennas including outdoor omni-directional antennas. In addition, the OAP433e has several mounting accessories such as a wall-mounting bracket and a pole-mounting bracket.

#### OAP433e Benefits:

- Rugged design for outdoor and harsh indoor applications
- Maximizes performance and gain, minimizes interference through Orthogonal Array Beam Forming antenna system
- Support for Meru's Service Assurance Application Suite including: E(z)RF™ Network Manager, WIPS, and PCI Compliance Manager
- Plug-and-play deployment using centralized Meru Controller
- Supports all 802.11 a/b/g/n devices
- Tool-free, tamper-proof installation
- Three-stream radio technology — 3x3 802.11n support in both 2.4 GHz and 5 GHz frequency bands

**TECHNOLOGY:**  
Patented Virtualized Wireless LAN

**DATA RATE:**  
1.35 Gbps

**CONNECTIVITY:**  
380 clients

# OAP433e

## TECHNICAL SPECIFICATIONS

### APPLICATION SUPPORT AND OVER-THE-AIR QoS

#### SIP and H.323 Support

Dynamic out-of-the-box support for SIP and H.323 applications and codecs

#### QoS

Configurable dynamic QoS rules over-the-air resource reservation Automatic, stateful flow detectors for SIP, H.323 Configurable QoS rules for SIP, H.323, Ascum, Avaya, Microsoft, Polycom, Siemens, ShoreTel, Vocera, and Cisco SCCP User-configurable static and dynamic QoS rules per application (user-defined) and per user (stations, users, and port numbers) Call Admissions Control and Call Load Balancing WMM support WMM rate adaptation, optimized based on real-time network conditions

### SECURITY

#### Authentication

Combination of captive portal, 802.1x and open authentication Advanced security using WPA2/802.1x with EAP-Transport Layer Security (EAP-TLS), Tunneled TLS (EAP-TTLS), Protected EAP (PEAP) MSCHAPv2, Smartcard/Certificate, Lightweight EAP (LEAP), EAP-FAST and EAP-MD5, with mutual authentication and dynamic, per user, per session unicast and broadcast keys Secure HTTPS w/customizable Captive Portal utilizing RADIUS

#### Encryption Support

Static and dynamic 40-bit and 128-bit WEP keys, TKIP with MIC, AES

#### Security Policy

RADIUS-assisted, per user and per ESSID access control via MAC filtering; multiple ESSID/BSSID each with flexibility of separate and shared security policy

#### Rogue Detection and Suppression

All radios capable of scanning 802.11n, 802.11a, and 802.11b/g for rogue devices

### MOBILITY

#### Zero-loss Handoffs

Infrastructure-controlled zero-loss handoff mechanism for standard Wi-Fi clients

### CENTRALIZED MANAGEMENT

#### Zero-Configuration

Automatically selects power and channel settings Automatically discovers controllers and download configuration settings Zero touch, plug-and-play deployments

#### System Management

Centralized and remote management and software upgrades via System Director web-based GUI, SNMP, command-line interface (CLI) via serial port, SSH, Telnet, centrally managed via E(z)RF Management Suite Centralized security policy for WLAN, multiple ESSIDs and VLANs with their own administrative/security policies

#### Intelligent RF Management

Coordination of access points with load-balancing for predictable performance; centralized auto-discovery, auto-channel configuration, and auto-power selection for APs; co-channel interference management

### WIRELESS SPECIFICATIONS

#### Wireless Standards

IEEE 802.11 a/b/g/n, IEEE 802.11i support (AES, WEP, WPA, WPA2), IEEE 802.11e, WMM

#### Power Management

Optimal power control in 1 dBm increments; ability to disable unused radios via software to lower power consumption

#### Antenna

8 N-Type external antenna connectors, radio 1: 2 x 2 mode, radio 2 & 3: 3 x 3 mode. Optional antennas: 802.11 b/g 8 dBi omni-directional antenna at 2400–2500 MHz (N Male), 802.11a 8 dBi omni-directional Antenna at 5150–5350 MHz (N Male), 802.11a 8 dBi omni-directional Antenna at 5470–5875 MHz (N Male), outdoor dual-band 3-element omni-directional antenna 6.0 dBi at 2.4 GHz, 7.0 dBi at 5 GHz

#### Client Support

Support for clients that perform active scanning and passive scanning Support for clients that pre-authenticate Support for clients that change to and from power save mode rapidly Power save mode for clients in both QoS mode and non-QoS mode

#### IEEE 802.11n

##### Frequency Band

2.412 to 2.472 GHz, 5.18 to 5.32 GHz, 5.5 to 5.825 GHz (frequency range per country codes)

#### Operating Channels

1 through 11 for 2.4 GHz band (Americas, 1–13 all others) 36 through 165 for 5 GHz band (per country codes)

#### Data Rates (800 nS GI Mbps/400 nS GI Mbps)

**20 MHz:** 195.0/216.7, 175.5/195.0, 156.0/173.3, 130.0/144.4, 117.0/130.0, 104.0/115.6, 78.0/86.7, 65.0/72.2, 58.5/65.0, 52.0/57.8, 39.0/43.3, 26.0/28.9, 19.5/21.7, 13.0/14.4, 6.5/7.2 Mbps

**40 MHz:** 405.0/450.0, 364.5/405.0, 324.0/360.0, 270.0/300.0, 243.0/270.0, 216.0/240.0, 162.0/180.0, 135.0/150.0, 121.5/135.0, 108.0/120.0, 81.0/90.0, 54.0/60.0, 40.5/45.0, 27.0/30.0, 13.5/15.0 Mbps

#### Average Transmit Power

2.4n [20 HT] MCS0/8/16: 21 dBm, 2.4n [40 HT] MCS0/8/16: 20 dBm  
2.4n [20 HT] MCS7/15/23: 17 dBm, 2.4n [40 HT] MCS7/15/23: 16 dBm  
5.0n [20 HT] MCS0/8/16: 18 dBm, 5.0n [40 HT] MCS0/8/16: 17 dBm  
5.0n [20 HT] MCS7/15/23: 15 dBm, 5.0n [40 HT] MCS7/15/23: 14 dBm

#### Receive Sensitivity (for max data rates)

2.4n [20 HT] MCS0/8/16: -92 dBm, 2.4n [40 HT] MCS0/8/16: -93 dBm  
2.4n [20 HT] MCS7/15/23: -76 dBm, 2.4n [40 HT] MCS7/15/23: -74 dBm  
5.0n [20 HT] MCS0/8/16: -93 dBm, 5.0n [40 HT] MCS0/8/16: -92 dBm  
5.0n [20 HT] MCS7/15/23: -75 dBm, 5.0n [40 HT] MCS7/15/23: -71 dBm

#### IEEE 802.11a

##### Frequency Band

5.180–5.240 GHz; 8 Channels [34, 36, 38, 40, 42, 44, 46, 48], 5.280–5.320 GHz; 4 Channels [52, 56, 60, 64], 5.745–5.825 GHz; 5 Channels [149, 153, 157, 161, 165], 5500–5700: 11 channels [100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140]

#### Operating Channels

Configurable based on country regulations

#### Data Rates

54, 48, 36, 24, 18, 12, 9, and 6 Mbps with automatic rate adaptation

#### Transmit Power

19 dBm at 6 Mbps and 16 dBm at 54 Mbps

#### Receive Sensitivity

-81 dBm at 54 Mbps and -93 dBm at 6 Mbps

#### IEEE 802.11b/g

##### Frequency Band

Hardware supports 2.40–2.50 GHz: 2.4 GHz–2.4835 GHz (US, Europe), 2.4 GHz–2.497 GHz (Japan only)

#### Operating Channels

1–11 US/Canada, 1–13 Europe, and 1–14 Japan3 non-overlapping channels

#### Transmit Power

17–21 dBm

#### 802.11b Data Rates

11, 5.5, 2, and 1 Mbps with automatic rate adaptation

#### 802.11g Data Rates

54, 48, 36, 24, 18, 12, 9, and 6 Mbps with automatic rate adaptation

#### 802.11b/g Receive Sensitivity

-80 dBm at 54 Mbps, -90 at 11 Mbps, -90 at 6 Mbps and -92 dBm at 1 Mbps

### PHYSICAL SPECIFICATIONS

#### Dimensions

10.25" length x 9.85" width x 2.85" depth [26 cm length x 25 cm width x 7.2 cm depth]

#### Weight

4 lbs 4 oz [1.93 kg]

#### Power

802.3at PoE for 3-radio operation and 802.3af for 2-radio operation Draws 12.95W to 18W depending on configuration

#### Environmental

Operating Temperature: -40 to 55° C (-40° to 131° F)  
Operating Humidity: 5 to 95% (non-condensing)  
Storage Temperature: -40° to 85° C ambient  
Storage Humidity: 95% (non-condensing)

#### Interfaces

One auto sensing 10/100/1000 Base-TX Ethernet (RJ-45),  
8 N-Type external antenna connectors, radio 1: 2 x 2 mode, radio 2 & 3: 3 x 3 mode,  
Type B USB port

#### Mounting Options

2–3 inch [5–7.5 cm] diameter pole bracket (included), wall-mounting bracket (included)

### OAP433e Part Numbers

Contact your representative

### Certifications

Wi-Fi Certified a/b/g/n



### Radio

FCC Part 15.247;  
FCC Part 15.407 (US);  
RSS-210 (Canada);  
EN 300 328; ARIB STD-T66; IDA  
RCR STD-33; ARIB STD-T71 (Japan);  
EN 301 893(EU)

### Safety

UL 60950-1; IEC 60950-1;  
EN 60950-1; CAN/CSA-C22.2  
No. 60950-1

### Emissions

EN 55022 Class B; EN 55024;  
EN 60601-1-2; EN 301 489-1;  
EN 301 489-17; ICES-003 Class B;  
FCC Part 15, Class B



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