OAP433e

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

Seamlessly deploy an outdoor high-performance 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 MIMO (3x3:3) 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.

Adding radios boosts 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 support 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
- Highest WLAN reliability and toll-quality voice service assurance maximizes performance and gain
- Support for Meru's Service Assurance Application Suite including E(z)RF™ Network Manager
- Supports all 802.11 a/b/g/n devices
- Three-stream radio technology — 3x3:3 802.11n support in both 2.4 GHz and 5 GHz frequency bands

TECHNOLOGY:	DATA RATE:	CONNECTIVITY:
Patented Virtualized Wireless LAN	1.2 Gbps	380 clients

For more information about the OAP433e, visit **www.merunetworks.com**

OAP433e

TECHNICAL SPECIFICATIONS

APPLICATION SUPPORT AND OVER-THE-AIR QoS

SIP Support
Dynamic out-of-the-box support for SIP applications and codecs

QoS
Configurable dynamic QoS rules
Over-the-air resource reservation
Automatic, stateful flow detectors for SIP
Configurable QoS rules for SIP, Ascom, Avaya, Microsoft, Polycom's SVP, 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), MS-CHAPv2, Smartcard/ Certificate, Lightweight EAP (LEAP), EAP-FAST, EAP-MD5, EAP-SIM and EAP-AKA, with mutual authentication and dynamic, per-user, per-session unicast and broadcast keys
Secure HTTPS with 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™ Network Manager
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: 2x2 mode; radio 2 & 3: 3x3 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: 2.4–2.4835 GHz (US, Europe), 2.4–2.497 GHz (Japan only)

Operating Channels
1–11 US/Canada, 1–13 Europe, and 1–14 Japan
3 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 dBm at 11 Mbps, -90 dBm at 6 Mbps, and -92 dBm at 1 Mbps

PHYSICAL SPECIFICATIONS

Dimensions
10.25" length × 9.85" width × 2.85" depth
(26 cm length × 25 cm width × 7.2 cm depth)

Weight
4 lbs 4 oz (1.93 kgs)

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: 2x2 mode, radio 2 & 3: 3x3 mode
Type B USB port

Standard Warranty
One year limited warranty

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 Standards
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

Meru delivers an all-wireless network that fully supports the enterprise, delivering a consistent, interactive experience for all users. No matter what applications they are running. No matter how many other users are on the network.

For more information about Meru OAP433e, visit www.merunetworks.com or email your questions to: info@merunetworks.com

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