
AP832e


AP832i

AP832

Dual-radio, Three-stream 802.11ac Wireless Access Point

High-performance wireless connectivity for high-density environments

The AP832 is the industry's first 802.11ac access point capable of supporting two concurrent 5 GHz 3x3:3ss radios, designed for high-density deployments in large offices, schools, universities, hospitals, hotels, and large retail stores. The AP832 supports an aggregate 2.6 Gbps data rate for the most demanding business applications like video and voice.

The AP832 access point allows administrators to prioritize applications to improve the user experience with Meru's unique Context Aware Layers technology. For schools, this means Learning Management System applications can be assigned to one dedicated channel layer, while online classroom video feeds can be dedicated to another channel layer. For healthcare, life-critical applications such as patient monitoring can be dynamically assigned to one channel layer, doctor and nursing applications can be assigned to a second layer, and patient applications can be placed on a third channel layer.

The AP832 also provides unique roaming support because Meru enables the network (not the client) to control roams via our Air Traffic Control® technology, resulting in the industry's lowest roaming latency figures – a true zero-handoff.

Additionally, Meru's single-channel technology allows the AP832 to leverage the 802.11ac design for pervasive, real-world deployments of 80 MHz channels, effectively doubling the available data rate and dramatically increasing throughput availability for Meru customers.

Like other Meru access points, the AP832 integrates seamlessly with our E(z)RF® network management system, Identity Manager, and other application solutions to bring intelligent management and resilient wireless services to your network.

Features	Benefits
• Supports IEEE 802.11ac-Draft with dual radios and three spatial streams • Supports multiple wireless deployment options • Support for multiple operating modes: centralized, distributed, mesh, bridged, and VPN tunnel modes • Integration with Meru controllers and management software applications • Supports either internal or external antennas	• Provides an optimized 802.11ac experience in the industry with Very High Throughput (VHT) capabilities • No channel planning, and delivers seamless mobility • Offers flexible deployment options for diverse customer requirements • Offers full management and security assurances • Provides a choice of two models to suit your needs

For more information, visit **www.merunetworks.com**

AP832

TECHNICAL SPECIFICATIONS

QoS
WMM support
Dynamic WMM rate adaptation
Configurable QoS rules per user and application

OPERATING MODES
Centralized deployment mode
Distributed deployment mode
Remote VPN tunnel mode

SECURITY
WEP, WPA-PSK, WPA-TKIP, WPA2-AES, 802.11i, 802.1X (EAP-TLS, EAP-TTLS, PEAP, LEAP, EAP-FAST, EAP-SIM, EAP-AKA, and EAP-MD5)
802.1X and captive portal authentication against local database on the controller, RADIUS, and Active Directory
RADIUS-assisted per-user and per-ESSID access control via MAC filtering

MANAGEMENT
Centrally managed by any Meru controller running System Director
Automatically discovers controllers and downloads configuration settings for plug-and-play deployment
Upgrades and management using System Director/E(z)RF® Network Manager
Support for SNMP

WIRELESS SPECIFICATIONS
Model Introduction
AP832i dual-radio, dual-band IEEE Std 802.11a/b/g/n/ac-Draft access point with six internal omnidirectional antennas
AP832e dual-radio, dual-band IEEE Std 802.11a/b/g/n/ac-Draft access point with six RP-SMA connectors and six external omnidirectional antennas

Supported radio technologies
Dual-band, dual-radio access point
3x3:3SS (three spatial streams)
Indoor application
Supported 2.4 GHz (TurboQAM Mode) and 5.x GHz for dual-band, dual-radio operation, data rate up to 1.9 Gbps
Supported dual 5.x GHz IEEE Std 802.11ac operation with RF collocation (FCC Permit by Ask provision), data rate up to 2.6 Gbps
Supported transmit beam-forming (TxBF)
IEEE Std 802.11ac Draft standard
IEEE Std 802.11n/ac with Draft Orthogonal Frequency Division Multiplexing (OFDM)
IEEE Std 802.11b with Direct Sequence Spread Spectrum (DSSS)
IEEE Std 802.11ac Draft with 20/40/80 MHz (VHT20/40/80) channel width
IEEE Std 802.11n with 40 MHz (HT40) channel width
IEEE Std 802.11a/g with 20 MHz channel
IEEE Std 802.11b with 5 MHz channel

Supported Modulation
IEEE Std 802.11ac Draft: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
IEEE Std 802.11b: BPSK, QPSK, CCK
Featured 256-TurboQAM modulation for 2.4 GHz and 5 GHz operations

Supported MCS Index
Supported MCS0~MCS9 for IEEE Std 802.11ac Draft
Supported MCS0~MCS15 for IEEE Std 802.11n

Supported Frequency Bands
2.400 ~ 2.4835 GHz (ISM)
5.150 ~ 5.250 GHz (UNII-1)
5.250 ~ 5.350 GHz (UNII-2, upon DFS approval)
5.470 ~ 5.725 GHz (UNII-2 Extended, upon DFS approval)
5.725 ~ 5.825 GHz (UNII-3)
Country-specific restrictions apply; adjusted by controller upon approval

Operating Channels
2.4 GHz Channels
- CH1~11 for U.S., Canada
- CH1~13 for Japan, Europe, rest of world

5 GHz HT20 (20 MHz) Channel
- Non-DFS Channel: CH36, 40, 44, 48, 144, 149, 153, 161, 165
- DFS Channel upon approval: CH 52, 56, 60, 64, 100, 104, 108, 112, 116, 120*, 124*, 128*, 132*, 136, 140, 144 (*weather radar)

5 GHz HT40 (40 MHz) Center Channel
- Non-DFS channel: CH38, 46, 151, 159
- DFS channel upon approval: CH54, 62, 102, 110, 118*, 116*, 134* 134, 142 (*weather radar)

5 GHz VHT80 (80 MHz) Center Channel
- Non-DFS channel: CH42, 155
- DFS channel upon approval: CH58, 106, 122* (*weather channel)

Platform supports Dynamic Frequency Selection (DFS & DFS/TPC) for future 5 GHz channel adoption
Country-specific restrictions apply; adjusted by controller upon approval

Supported Data Rate (Mbps)
IEEE Std 802.11ac Draft three streams: 19.5 ~ 1300 Mbps (MCS0-HT20@800nS~MCS9-HT40@400nS)
IEEE Std 802.11ac Draft per stream: 6.5 ~ 433.3 Mbps (MCS0-HT20@800nS~MCS9-HT40@400nS)
IEEE Std 802.11n Three streams: 13 ~ 450 Mbps (MCS9-HT20@800nS to MCS23-HT40@400nS)
IEEE Std 802.11n Per stream: 6.5 ~ 150 Mbps (MCS0-HT20 @ 800nS to MCS7-HT40@400nS)
IEEE Std 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
IEEE Std 802.11b: 1, 2, 5.5, 11 Mbps

Transmit Power (TX) and Receive Sensitivity (RX) per Stream

Configuration	Maximum conductive point transmit power per stream (dBm)	Maximum EIRP per stream (dBm), External Antenna SKU	Maximum EIRP per stream (dBm), Internal Antenna SKU	RX (dBm)
802.11b	21.0	25.0	24.0	-85
802.11g	20.0	24.0	23.0	-70
802.11n, 2.4 GHz HT20	19.0	23.0	22.0	-65
802.11n, 2.4 GHz HT40	18.0	22.0	21.0	-64
802.11a	18.0	24.0	22.0	-69
802.11n, 5 GHz, HT20	17.0	23.0	21.0	-67
802.11n, 5 GHz, HT40	16.0	22.0	20.0	-64
802.11ac Draft, 5 GHz, HT20	17.0	13.0	21.0	-69
802.11ac Draft, 5 GHz, HT40	16.0	22.0	20.0	-67
802.11ac Draft, 5 GHz, VHT80	16.0	22.0	20.0	-64

Configurable Transmission Power
Transmission power configurable in 1.0 dBm increments
Unused radios can be disabled via software for lower power consumption

PHYSICAL SPECIFICATIONS
SKU
AP832i: Six integrated dual-band omnidirectional PIFA antennas
AP832e: Six extended reverse polarity SMA connectors; shipment comes with six omnidirectional rubber ducky antennas

Specification of Default Antenna

	Model Number	Description
1	MERU-P1633	Internal antenna (Default in AP832i): MERU-P1633 2.4/5.x GHz dual-band omnidirectional antenna, 3dBi gain @ 2.4 GHz and 4 dBi @ 5.x GHz
2	ANT-01ABGN-0406-O	External antenna (Default in AP832e): ANT-01ABGN-0406-O, 2.4/5 GHz 4/6 dBi omnidirectional antenna with 1x RP-SMA jack

Specification of Optional External Antennas (Sold Separately)

	Model Number	Description
1	ANT-6ABGN-24	2.4/5.x GHz 2.5/4 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks
2	ANT-I3ABGN-0304	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 3x RP-SMA male jacks
3	ANT-ABGN-23	2.4/5.x GHz 3/4 dBi directional patch wall/pole-mount antenna, with 60-inch external coaxial cables and 6x RP-SMA male jacks
4	ANT-ABNG230-W	2.4/5.x GHz 2/3 dBi omnidirectional rubber ducky antenna with 1x RP-SMA male jacks
5	ANT-ABGN-470	2.4/5.x GHz 4.7/4.7 dBi omnidirectional rubber ducky antenna with 1x RP-SMA make jack
6	ANT-I2ABGN-0304-O	2.4/5.x GHz 3/4 dBi omnidirectional ceiling mount antenna, with 36-inch external coaxial cables and 2x RP-SMA male jacks
7	ANT-O4ABGN-0607-PT	2.4/5.x GHz 6/7 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 4x RP-SMA male jacks
8	ANT-O6ABGN-0607-PT	2.4/5.x GHz 6/7 dBi directional patch wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks
9	ANT-06ABGN-0606-O	2.4/5.x GHz 6/6 dBi omnidirectional wall/pole-mount antenna, with 36-inch external coaxial cables and 6x RP-SMA male jacks

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TECHNICAL SPECIFICATIONS

PHYSICAL SPECIFICATIONS (continued)

Power
Operated at IEEE 802.3af power
Powered by IEEE Std 802.1af or at PoE (Power over Ethernet) injector or switch
12V external power adapter (sold separately)

Other Interfaces
Networks: One 10/100/1000 BASE-T Ethernet RJ45 uplink (G1), one 10/100/1000 BASE-T Ethernet RJ45 (G2) for downlink and future expansion purposes, auto-sensing link speed and MDI/MDX
Six RPSMA RF connectors for external antenna SKU (AP832e)
One RJ45 port (G1) support IEEE Std 802.3af or at PoE
One USB 2.0 port (Type-A) for future feature
One console port
One reset button
One Kensington security slot

LED Indicators
One tri-color LED over facade for AP status
Additional LEDs for Ethernet activity over two RJ45 ports (G1 & G2)

Mounting
Wall, desktop, or ceiling mount
Three mounting kits included with access point:
- 650-00232, 15/16" T-bar & wall-mount combo adapter
- 650-00233, 9/16" T-bar adapter
- Flat-surface wall-mount bracket (used with 650-00232)

Option (ordered separately)
- CBL-SERIAL-DB9-35, DB9-stereo console cable
- CBL-RJ45-ADAPT-X5, GbE extension adapter
- MNT-FEET-SET-X5, rubber feet for desktop staging

Installation in the Air-Handling Space
AP832e metal enclosure only by removing plastic façade

Dimensions
AP832i or AP832e (with mounting bracket): 7.1" x 7.1" x 2.7" (18.0 cm x 18.0 cm x 6.8 cm)
AP832e without plastic façade: 6.3" x 6.3" x 2.1" (16.1 cm x 16.0 cm x 5.2 cm)

Weight
AP832i (with mounting bracket): 2.3 lb (1.1 kg)
AP832e (with mounting bracket): 1 .9 lb (0.9 kg)
AP832e without façade and mounting bracket: 1.5 lb (0.7 kg)

Environmental
Operating temperature: 32° F to 122° F (0° C to 50° C)
Operating humidity: 5–95% (non-condensing)
Storage temperature: -40° F to 185° F (-40° C to 70° C) ambient
Storage humidity: 5–95% (non-condensing)

REGULATORY APPROVAL
FCC (United States of America)
CE Mark (European Community)
Industry Canada (Canada)
TELEC (Japan)
Safety Approval (worldwide)
EU RoHS
•For more country-specific regulatory approval, please contact your Meru representative
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CERTIFICATIONS
Wi-Fi certified IEEE Std 802.11a/b/g/n (ac)*

(*Wi-Fi alliance certification started in June 2013 and Meru AP832 has been submitted for certification.)

WARRANTY
Limited lifetime warranty

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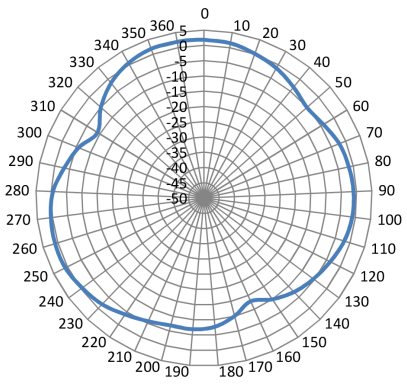
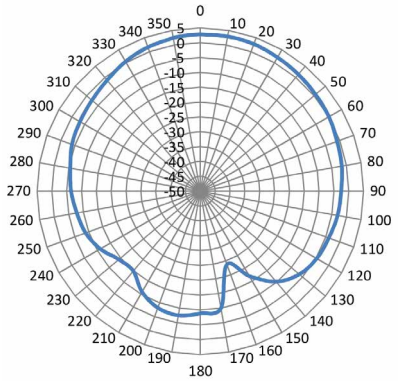
Antenna Radiation Patterns (Internal Antenna Model)

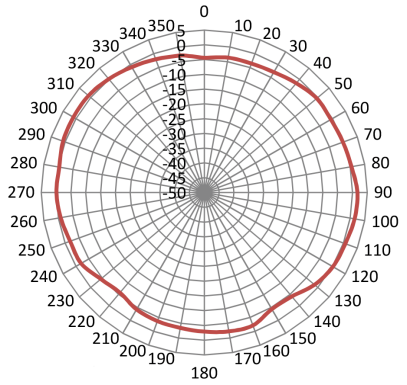
Internal Antenna (MERU-P1633)	2.4 GHz ~ 2.5 GHz	4.9 GHz ~ 5.9 GHz
Average Antenna Gain	3.0 dBi	4.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	195°	190°
Elevation Beam-width	98°	100°
VSWR	1:2.0	1:2.0



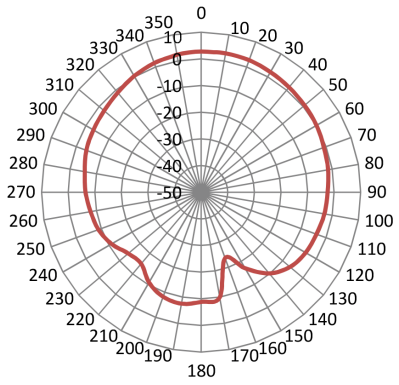
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane

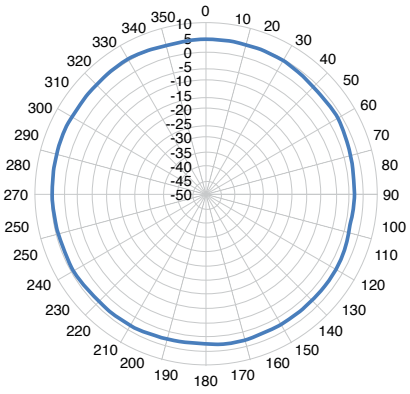


5 GHz E-plane

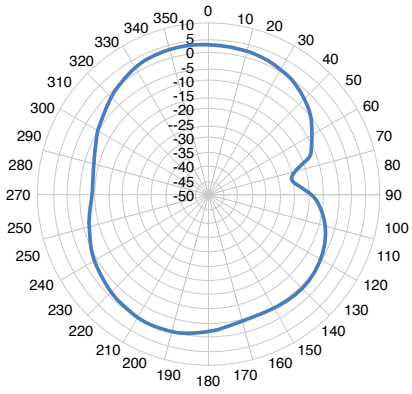
AP832

Antenna Radiation Patterns (External Antenna Model)

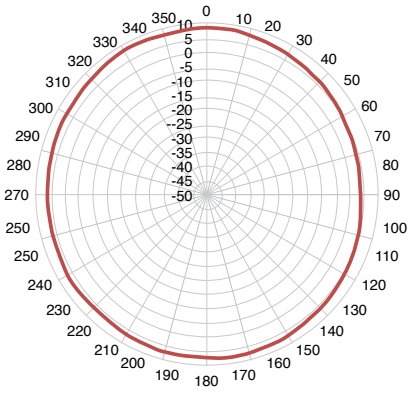
External Antenna	2.4 GHz ~ 2.5 GHz	4.9 GHz ~ 5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5



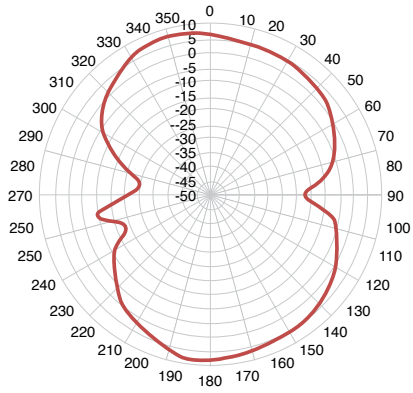
2.4 GHz H-plane



2.4 GHz E-plane



5 GHz H-plane



5 GHz E-plane

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, visit www.merunetworks.com or email your questions to: meruinfo@merunetworks.com

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