



AP822

## Dual-radio, Two-stream 802.11ac Wireless Access Point

### 802.11ac performance for small to large environments

The AP822 catalyzes the migration to Gigabit Wi-Fi by bringing the power of enterprise-wide, full channel 802.11ac to more customers. The AP822 is a cost-effective solution designed to meet the mid-range performance requirements of offices, schools, universities, hospitals, hotels, and retail stores, and it supports up to an aggregate 1.17 Gbps data rate for the most demanding business applications such as video and voice.

The AP822 is positioned to accelerate the adoption of 802.11ac into more cost-sensitive market segments. For schools, this means a more cost-effective solution can be deployed to meet the growing throughput demand from on-campus wireless devices. Hotels can more easily offer a richer Wi-Fi experience where availability of high-quality wireless services is often the primary criterion—above other amenities—for making reservations. Providing high-speed, high-capacity wireless LAN services for the small and medium business is now more attainable with the AP822.

The AP822 access point allows administrators to prioritize applications to improve the user experience based on Meru's unique ability to associate specific applications with deployed channel layers. 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 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.

Meru's single-channel option within the Mobile**FLEX** architecture uniquely allows the AP822 to support wide Wi-Fi channels in real-world deployments, effectively doubling the data rate over 802.11n and dramatically increasing throughput for Meru customers. The 2x2:2 spatial stream design provides very high throughput (VHT) data rates for the majority of tablets and smartphones, at a competitive price. Additionally, customer feedback has indicated up to a 40% increase in performance with legacy 802.11n devices because of the hardware design benefits of 802.11ac. The AP822 also provides unique roaming support. Meru's patented Air Traffic Control<sup>®</sup> technology enables the network to control client roams, resulting in the industry's lowest roaming latency figures—a true zero-handoff.

Like other Meru access points, the AP822 integrates seamlessly with our Meru Center, Meru Connect, Network Manager, and other application solutions to bring intelligent management and resilient wireless services to your network.

Features	Benefits
<ul style="list-style-type: none"> <li>• Supports IEEE Std 802.11ac with two spatial streams</li> <li>• Supports pervasive 80 MHz channel usage</li> <li>• Supports radio frequency virtualization</li> <li>• Supports multiple operating modes: centralized, distributed, MESH, bridged, and VPN tunnel</li> <li>• Integration with Meru controllers and management software applications</li> <li>• Supports either internal or external antennas</li> </ul>	<ul style="list-style-type: none"> <li>• Provides an optimized 802.11ac experience, with VHT capabilities</li> <li>• Only vendor to recommend one or two 80 MHz channel usage for maximum 802.11ac throughput</li> <li>• No channel planning, and delivers seamless mobility</li> <li>• Offers flexible deployment options for diverse customer requirements</li> <li>• Offers full management and security assurances</li> <li>• Provides a choice of two models to suit your needs</li> </ul>

## OPERATING MODES

Centralized deployment mode  
 Distributed deployment mode  
 MESH mode  
 Bridge 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 6.1 or later  
 Automatically discovers controllers and downloads configuration settings for plug-and-play deployment  
 Upgrades and management via System Director / Network Manager  
 Support for SNMP

## WIRELESS SPECIFICATIONS

### Model Introduction

AP822i dual-radio, single-band IEEE Std 802.11b/g/n for 2.4 GHz band and IEEE Std 802.11a/n/ac for 5.x GHz band access point with four internal omnidirectional antennas  
 AP822e dual-radio, single-band IEEE Std 802.11b/g/n for 2.4 GHz band and IEEE Std 802.11a/n/ac- for 5.x GHz band access point with four RP-SMA connectors and four external omnidirectional antennas

### Supported radio technologies

Dual-radio access point for indoor environment  
 2x2:2SS (two spatial streams)  
 Supported 2.4 GHz and 5.x GHz for single-band, dual-radio operation; data rate up to 1167 Mbps  
 IEEE Std 802.11n/a/g/ac with Orthogonal Frequency Division Multiplexing (OFDM)  
 IEEE Std 802.11b with 5 MHz channels and Direct Sequence Spread Spectrum (DSSS)  
 IEEE Std 802.11ac WAVE1 with 20/40/80 MHz (HT20/HT40/VHT80) channel width  
 IEEE Std 802.11n with 40 MHz (HT40) channel width  
 IEEE Std 802.11a/g with 20 MHz channel

### Supported Modulation

IEEE Std 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM  
 IEEE Std 802.11a/g/n: BPSK, QPSK, 16-QAM, and 64-QAM  
 IEEE Std 802.11b: BPSK, QPSK, CCK

### Supported MCS Index

Supported MCS0-MCS9 for IEEE Std 802.11ac (NSS=1-2)  
 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; Data Rates Supported (MBPS):

IEEE Std 802.11ac two streams: 13.0 ~ 866.7 Mbps (MCS0-HT20 @ 800 nS-MCS9-VHT80 @ 400 nS)  
 IEEE Std 802.11ac per stream: 6.5 ~ 433.3 Mbps (MCS0-HT20 @ 800 nS ~ MCS9-VHT80 @ 400 nS)  
 IEEE Std 802.11n Two streams: 13.0 ~ 300.0 Mbps (MCS8-HT20@800nS to MCS15-HT40@400nS)  
 IEEE Std 802.11n per stream: 6.5 ~ 150.0 Mbps (MCS0-HT20 @ 800nS to MCS7-HT40@400nS)  
 IEEE Std 802.11a/g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps  
 IEEE Std 802.11b: 1, 2, 5.5, and 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	20.0	24.0	23.0	-91
802.11g	19.0	23.0	22.0	-77
802.11n, 2.4 GHz HT20	18.0	22.0	21.0	-73
802.11n, 2.4 GHz HT40	18.0	21.3	21.0	-71
802.11a	18.0	24.0	22.0	-77
802.11n, 5 GHz, HT20	17.0	23.0	21.0	-73
802.11n, 5 GHz, HT40	17.0	23.0	21.0	-70
802.11ac, 5 GHz, HT20	17.0	23.0	21.0	-71
802.11ac, 5 GHz, HT40	16.0	22.0	20.0	-65
802.11ac, 5 GHz, VHT80	16.0	22.0	20.0	-63

## PHYSICAL SPECIFICATIONS

### SKU

AP822i: Four integrated dual-band omnidirectional metal PIFA antennas  
 AP822e: Four reverse polarity SMA connectors; shipment comes with four omnidirectional antennas

### Specification of Default Antenna

	Model Number	Description
1	MERU-P1633	Internal antenna (Default in AP822i): MERU-P1633 2.4/5.x GHz 3/4 dBi dual-band omnidirectional antenna
2	ANT-01ABGN-0406-O	External antenna (Default in AP822e): ANT-01ABGN-0406-O, 2.4/5 GHz 3.3/6 dBi omnidirectional antenna with a single RP-SMA jack

### Specification of Optional External Antennas (Sold Separately)

	Model Number	Description
1	ANT-ABNG230-W	2.4/5.x GHz 2/3 dBi omnidirectional rubber ducky antenna with a single RP-SMA jack
2	ANT-ABGN-470	2.4/5.x GHz 4.7/4.7 dBi omnidirectional rubber ducky antenna with a single RP-SMA jack
3	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 jacks
4	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 jacks

### Power

Operated at IEEE Std 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) (disabled), auto-sensing link speed and MDI/MDX  
 Four RPSMA RF connectors (For AP822e, external antenna SKU)  
 One RJ45 port (G1) support IEEE Std 802.3af or at PoE  
 One USB 2.0 port (Type-A) (disabled)  
 One console port  
 One reset button  
 One Kensington security slot

# TECHNICAL SPECIFICATIONS

**PHYSICAL SPECIFICATIONS (continued)**

**LED Indicators**

One tri-color LED over façade 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)  
 840-00126, Wall Mount Hardware Kit (including to 669-00004 space, 665-00085 M3x10 screws, & 665-00102-M3x30 screws)

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

**Installation in the Air-Handling Space**

AP822e metal enclosure only by removing plastic façade

**Dimensions**

AP822i or AP822e (with mounting bracket): 7.1" x 7.1" x 2.7" (18.0 cm x 18.0 cm x 6.8 cm)  
 AP822e without plastic façade: 6.3" x 6.3" x 2.1" (16.1 cm x 16.0 cm x 5.2 cm)

**Weight**

AP822i (with mounting bracket): 2.3 lb (1.1 kg)  
 AP822e (with mounting bracket): 1.9 lb (0.9 kg)  
 AP822e 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)

For more country-specific regulatory approval, please contact your Meru representative

**CERTIFICATIONS**

Wi-Fi CERTIFIED™  
 EU RoHS  
 CB Report

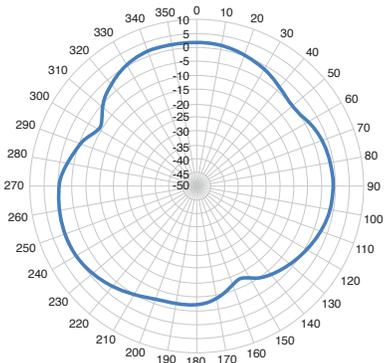


**WARRANTY**

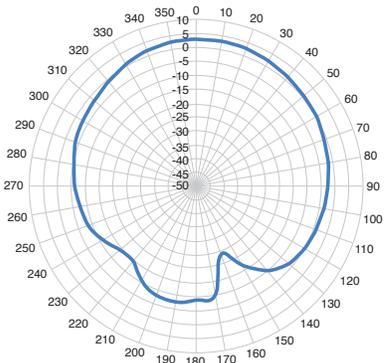
Limited lifetime warranty

# AP822i INTERNAL ANTENNA MODEL

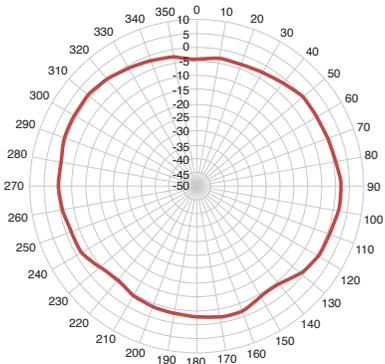
External Antenna	2.4 GHz ~ 2.5 GHz	4.9 GHz ~ 5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5



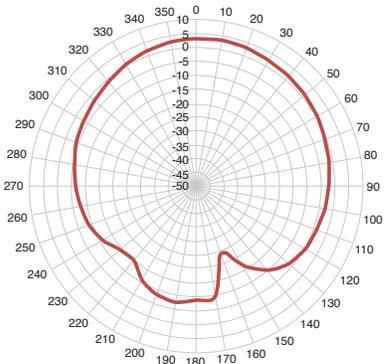
2.4 GHz H-plane



2.4 GHz E-plane



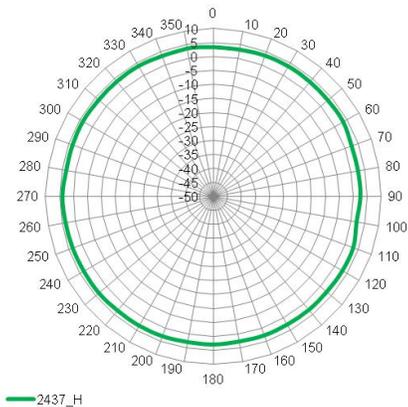
5 GHz H-plane



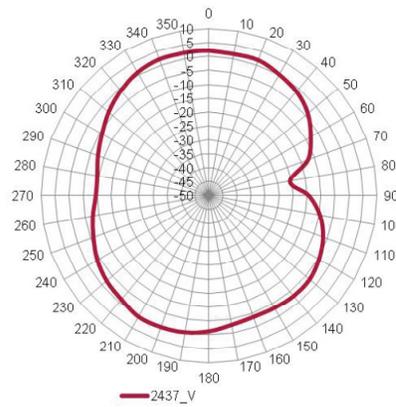
5 GHz E-plane

## AP822e EXTERNAL ANTENNA MODEL

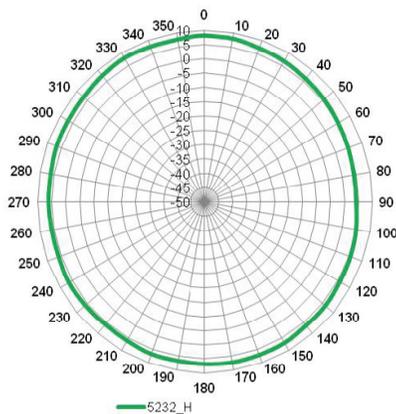
External Antenna	2.4 GHz ~ 2.5 GHz	4.9 GHz ~ 5.9 GHz
Average Antenna Gain	3.3 dBi	6.0 dBi
Polarization	Linear	Linear
Azimuth Beam-width	360°	360°
Elevation Beam-width	75°	55°
VSWR	1:1.5	1:1.5



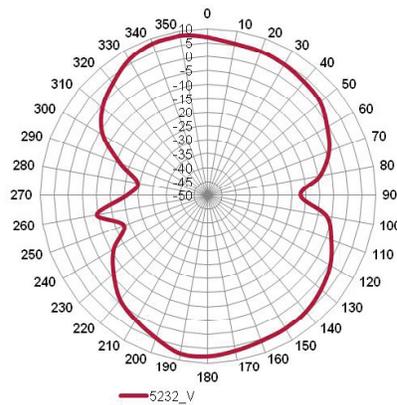
2.4 GHz H-plane



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](http://www.merunetworks.com) or email your questions to: [meruinfo@merunetworks.com](mailto:meruinfo@merunetworks.com).

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