



AP1020e



AP1020i

# AP1010 and AP1020

## Dual-stream 802.11n Wireless Access Points

### General purpose, enterprise-class wireless LAN performance

The AP1010 and AP1020 are 802.11a/b/g/n enterprise wireless access points with a 2x2:2 MIMO design. The AP1010 features a single radio and operates on either the 2.4 GHz or 5 GHz band to deliver a maximum data rate of 300 Mbps. The AP1020 features dual radios and operates on the 2.4 GHz and 5 GHz bands to deliver a maximum data rate of 300 Mbps per radio. Both access points offer a choice between internal and external antenna models.

The AP1010 and AP1020 simultaneously support data, voice, and video applications with superior reliability and predictability in moderate-density environments. They are designed for a broad range of general purpose uses, including classrooms, dormitories, and branch offices.

Radio frequency virtualization delivers plug-and-play deployment, easy capacity expansion, and seamless mobility. Multiple operating modes give you the flexibility to design a wireless network suited to your specific needs. The access points support centralized, distributed and mesh modes.

As key elements of Meru's Virtualized Wireless LAN solution, the AP1010 and AP1020 Wi-Fi access points deliver a superior end-user experience. As with other Meru access points, they integrate seamlessly with the System Director wireless operating system and the Meru E(z)RF® network management suite to bring intelligent management and resilient wireless services to your network.

Features	Benefits
<ul style="list-style-type: none"> <li>• 802.11a/b/g/n enterprise wireless connectivity</li> <li>• Radio frequency virtualization</li> <li>• Choice of single- or dual-radio models, each with internal or external antennas</li> <li>• Multiple operating modes: centralized, distributed and mesh modes</li> <li>• Integration with Meru System Director operating system</li> </ul>	<ul style="list-style-type: none"> <li>• Supports resource-intensive applications in moderate-density environments</li> <li>• Simplifies deployment and delivers seamless mobility</li> <li>• Lets you select from a range of options to suit your needs</li> <li>• Offers flexible deployment options for diverse uses</li> <li>• Delivers wireless connectivity with superior reliability and predictability</li> </ul>

# AP1010 and AP1020

## TECHNICAL SPECIFICATIONS

### QoS

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

### OPERATING MODES

Centralized deployment mode  
Distributed deployment mode  
Mesh 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

#### Radio Technologies

AP1010: Single-radio, selectable dual-band 802.11n indoor access point; 2x2 MIMO with two spatial streams; supports both 20 MHz and 40 MHz channel widths  
AP1020: Dual-radio, concurrent dual-band 802.11n indoor access point; 2x2 MIMO with two spatial streams; supports both 20 MHz and 40 MHz channel widths  
Supported radio technologies:  
802.11b: Direct-sequence spread-spectrum (DSSS)  
802.11a/g/n: Orthogonal frequency division multiplexing (OFDM)  
802.11n: 2x2 MIMO with two spatial streams

#### Modulation

Supported modulation types:  
802.11b: BPSK, QPSK, CCK  
802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM

#### Frequency Band

Supported frequency bands:  
2.400–2.485 GHz  
5.150–5.250 GHz  
5.250–5.350 GHz  
5.470–5.725 GHz  
5.725–5.875 GHz  
Country-specific restrictions apply; adjusted by controller upon approval  
Platform supports Dynamic Frequency Selection (DFS)

#### Operating Channels

2.4 GHz channels: 1 to 11 for U.S. & Canada, 1 to 13 for Europe, 1 to 13 for Japan  
5 GHz channels: 36 through 165  
Country-specific restrictions apply; adjusted by controller upon approval  
Platform supports Dynamic Frequency Selection (DFS) for flexible 5 GHz channel adoption

#### Data Rate

**Data rates supported (Mbps):**  
802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54  
802.11b: 1, 2, 5.5, 11  
802.11n: 6.5–300 (MCS0 to MCS15)

### Transmit Power and Receive Sensitivity (Internal Antenna Model)

Frequency Band	Maximum Transmit Power (EIRP)	Receive Sensitivity at Lowest Data Rate
IEEE 802.11b	23 dBm	-83 dBm
IEEE 802.11g	20 dBm	-83 dBm
IEEE 802.11a	19 dBm	-86 dBm
2.4GHz IEEE 802.11n (HT20)	19 dBm	-83 dBm
2.4GHz IEEE 802.11n (HT40)	19 dBm	-83 dBm
5GHz IEEE 802.11n (HT20)	17 dBm	-86 dBm
5GHz IEEE 802.11n (HT40)	16 dBm	-83 dBm

### Transmit Power and Receive Sensitivity (External Antenna Model)

Frequency Band	Maximum Transmit Power (EIRP)	Receive Sensitivity at Lowest Data Rate
IEEE 802.11b	22 dBm	-82 dBm
IEEE 802.11g	19 dBm	-82 dBm
IEEE 802.11a	17 dBm	-84 dBm
2.4GHz IEEE 802.11n (HT20)	18 dBm	-82 dBm
2.4GHz IEEE 802.11n (HT40)	18 dBm	-82 dBm
5GHz IEEE 802.11n (HT20)	15 dBm	-84 dBm
5GHz IEEE 802.11n (HT40)	14 dBm	-81 dBm

### Configurable Transmission Power

Transmission power configurable in 1.0 dBm increments

### PHYSICAL SPECIFICATIONS

#### Antenna

AP1010: Two integrated dual-band omnidirectional antennas with typical gain of 4.0 dBi for 2.4 GHz and 5.0 dBi for 5 GHz  
AP1010e: Two extended reverse polarity SMA connectors. Ships with two omnidirectional rubber duck antennas with typical gain of 2.0 dBi for 2.4 GHz and 3.0 dBi for 5 GHz. Other external antenna options are available.  
AP1020i: Four integrated dual-band omnidirectional antennas with typical gain of 4.0 dBi for 2.4 GHz and 5.0 dBi for 5 GHz  
AP1020e: Four extended reverse polarity SMA connectors. Ships with four omnidirectional rubber duck antennas with typical gain of 2.0 dBi for 2.4 GHz and 3.0 dBi for 5 GHz. Other external antenna options are available.

#### Power

802.3af PoE and 802.3at PoE  
5V external power adapter [sold separately]

#### Interfaces

One 10/100/1000 BASE-T Ethernet (RJ45), auto-sensing link speed and MDI/MDX, with 802.3af PoE  
One RJ45 console  
One USB 2.0 port (Type-A connector)  
One built-in Kensington security slot (included in AP1010e and AP1020e)  
AP1010e: Two reverse polarity SMA connectors  
AP1020e: Four reverse polarity SMA connectors

#### Indicators

Two status LEDs (on front cover) for power, Ethernet activity, and wireless activity

#### Mounting

Wall or ceiling mount  
Access point includes:  
Mount over 15/16" T-bar (no tools required)  
Lockable wall-mount kit (included in AP1010e and AP1020e)  
Lock key to lock the access point to a ceiling (for AP1010i and AP1020i)  
Other mounting kits sold separately:  
MNT-SCRMKIT-03, mounting adapter for recessed ceiling or narrow T-bars (5-pc package)  
MNT-SCRMKIT-04, mounting adapter for Interlude/Silhouette T-bars (5-pc package)  
MNT-WMKIT-01, optional lockable wall-mount kit for AP1010i and AP1020i (5-pc package)

#### Dimensions

AP1010: 6.75" x 6.50" x 2.50" (17.10 cm x 17.10 cm x 5.70 cm)  
AP1010e: 6.33" x 4.50" x 1.50" (16.10 cm x 11.40 cm x 3.80 cm)  
AP1020i: 6.75" x 6.50" x 2.50" (17.10 cm x 17.10 cm x 5.70 cm)  
AP1020e: 6.50" x 4.50" x 1.50" (16.10 cm x 11.40 cm x 3.80 cm)

#### Weight

AP1010: 0.95 lb (0.44 kg)  
AP1010e: 1.08 lb (0.49 kg)  
AP1020i: 1.01 lb (0.46 kg)  
AP1020e: 1.12 lb (0.51 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  
EU R&TTE Directive 1995/5/EC  
RS-210  
ICES-003  
VCCI  
ARIB-STD33 & STD66  
For more country-specific regulatory approvals, please contact your Meru representative.

### Certifications

Wi-Fi certified 802.11a/b/g/n



RoHS Compliant  
WEEE Compliant  
REACH Compliant  
UL2043 Compliant (AP1010e and AP1020e only)

### Warranty

Limited lifetime warranty

### Part Numbers

**AP1010i**  
Dual-band, selectable single-radio 802.11a/b/g/n access point; includes integrated dual-band antennas

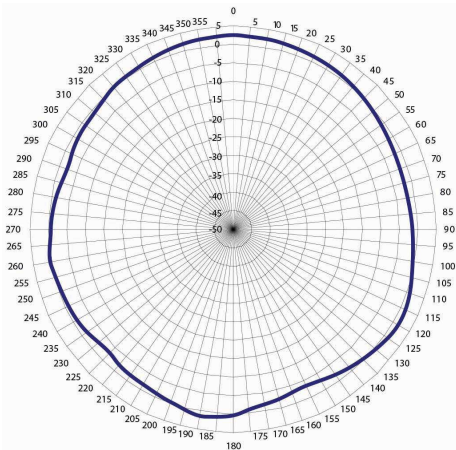
**AP1010e**  
Dual-band, selectable single-radio 802.11a/b/g/n access point with two external RPSMA antenna connectors; includes two dual-band rubber duck antennas

**AP1020i**  
Dual-band, concurrent dual-radio 802.11a/b/g/n access point; includes integrated dual-band antennas

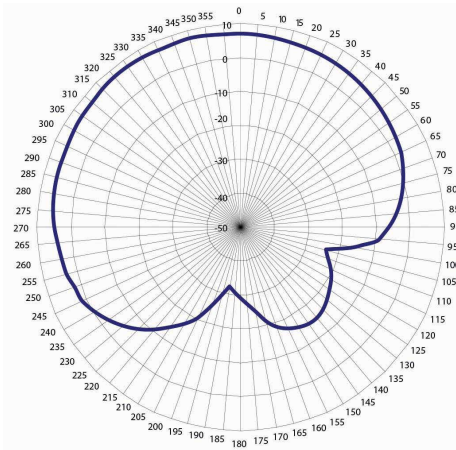
**AP1020e**  
Dual-band, concurrent dual-radio 802.11a/b/g/n access point with four external RPSMA antenna connectors; includes four dual-band rubber duck antennas

# AP1010 and AP1020

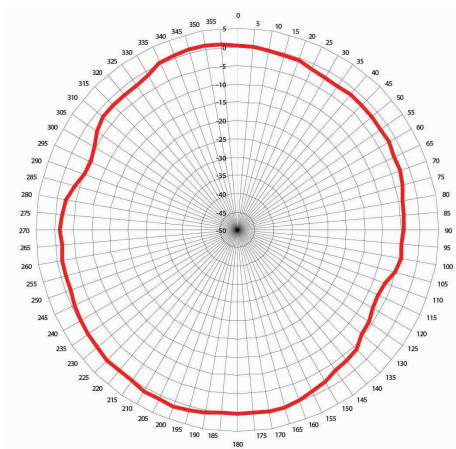
## Antenna Radiation Patterns (Internal Antenna Model)



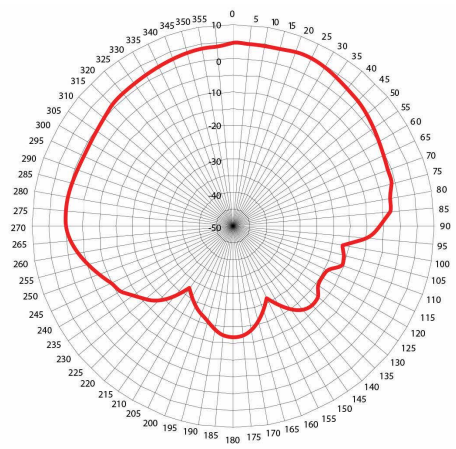
2.4 GHz H-plane



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.



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