

# MR34

Dual-concurrent 3x3 MIMO 802.11ac Access Point  
with 3rd Radio Dedicated to Security and RF Management



## Ultra-high performance cloud-managed 802.11ac wireless

The Cisco Meraki MR34 is an industry-first three-radio, cloud-managed 3x3 MIMO 802.11ac access point. Designed for high-density next-generation deployments in large offices, schools, hospitals and hotels, the MR34 provides the highest performance, security, and manageability.

The MR34 provides not only a blazing 1.75 Gbps throughput with concurrent 802.11ac and 802.11n 3x3:3 MIMO radios, but also unprecedented security and spectrum visibility via a third radio dedicated to 24x7 WIDS/WIPS and advanced RF analytics.

The combination of cloud management, 802.11ac, and integrated full-time RF environment scanning delivers the ultra-high throughput and reliability required by the most demanding business applications like voice and high-definition streaming video, both today and tomorrow.

## MR34 and Meraki Cloud Management: A Powerful Combo

The MR34 is managed through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without training or certifications. Since the MR34 is self-configuring and managed over the web, it can even be deployed at a remote location without on-site IT staff.

The MR34 is monitored 24x7 via the Meraki cloud, which delivers real-time alerts if the network encounters problems. Remote diagnostics tools enable real-time troubleshooting over the web, meaning multi-site, distributed networks can be managed remotely.

The MR34's firmware is always kept up to date from the cloud. New features, bug fixes, and enhancements are delivered seamlessly over the web, meaning no manual software updates to download or missing security patches to worry about.

## Product Highlights

- 3x3 802.11ac, 1.75 Gbps aggregate dual-band data rate
- 24x7 real-time WIPS/WIDS and spectrum analytics via dedicated third radio
- Enhanced transmit power and receive sensitivity
- Self-healing, zero-configuration mesh
- Integrated enterprise security and guest access
- Application-aware traffic shaping
- Self-configuring, plug-and-play deployment
- Sleek, low-profile design blends into office environments
- Optimized for voice and video

## Features

### Aggregate data rate of up to 1.75 Gbps

A 1.3 Gbps 5 GHz 3x3 802.11ac radio and a 450 Mbps 2.4 GHz 3x3 802.11n radio offer a combined aggregate dual-band throughput of 1.75 Gbps. Technologies like transmit beamforming and enhanced receive sensitivity allow the MR34 to support a higher client density than the typical enterprise-class access points, resulting in fewer required APs for a given deployment. Band steering further enhances overall throughput, by moving 5 GHz-capable clients to the 5 GHz radio, maximizing the capacity in the 2.4 GHz range for older 802.11b/g clients.

### Dedicated third radio delivers 24x7 wireless security and RF analytics

The MR34's sophisticated, dedicated dual-band third radio scans the environment continuously, characterizing RF interference and containing wireless threats like rogue access points. No more need to choose between wireless security, advanced RF analysis, and serving client data: a dedicated third radio means that all three occur in real-time, without any impact to client traffic or AP throughput.

### Automatic cloud-based RF optimization

The MR34's sophisticated, automated RF optimization means that there is no need for the dedicated hardware and RF expertise typically required to tune a wireless network. The real-time full-spectrum RF analysis data made available by the dedicated third radio is continuously fed back to the Meraki cloud. The Meraki cloud then automatically tunes the MR34's channel selection, transmit power, and client connection settings for optimal performance under the most challenging RF conditions. As a 5 GHz-only protocol with larger channel sizes, 802.11ac will greatly increase 5 GHz spectrum activity and noise, necessitating sophisticated and automated RF analytics to ensure the highest performance wireless LAN.

### Secure wireless environments using 24x7 Air Marshal

No longer choose between a wireless intrusion prevention system (WIPS) and serving client data: thanks to the dedicated third radio, Meraki's Air Marshal, a highly optimized built-in WIPS, scans continuously for threats and remediates them as commanded, all without disrupting client service. Alarms and auto-containment of malicious rogue APs are configured via flexible remediation policies, ensuring optimal security and performance in even the most challenging wireless environments.

### Integrated enterprise security and guest access

The MR34 features integrated, easy-to-use security technologies to provide secure connectivity for employees and guests alike.

Advanced security features such as AES hardware-based encryption and WPA2-Enterprise authentication with 802.1X and Active Directory integration provide wire-like security while still being easy to configure. One-click guest isolation provides secure, Internet-only access for visitors. Our policy firewall (Identity Policy Manager) enables group or device-based, granular access policy control. Meraki Teleworker VPN makes it easy to extend the corporate LAN to remote sites, without requiring all clients and devices to have client VPN software. PCI compliance reports check network settings against PCI requirements to simplify secure retail deployments.

### Application-aware traffic shaping

The MR34 includes an integrated layer 7 packet inspection, classification, and control engine, enabling you to set QoS policies based on traffic type. Also included is integrated support for Wireless Multi Media (WMM), 802.1p, and DSCP. Prioritize your mission critical applications, while setting limits on recreational traffic, e.g., peer-to-peer and video streaming.

### Low-profile, environmentally friendly design

Despite its robust feature set, the MR34 is packaged in a sleek, low-profile enclosure that blends seamlessly into any environment. Energy-saving components and intelligent power management techniques deliver best-in-class energy efficient performance and mean that pollution, material utilization, and your electric bill are kept to a minimum.

### High performance mesh\*

The MR34's advanced mesh technologies, like multi-channel routing protocols and multiple gateway support, make it possible to cover hard-to-wire areas and improve network resilience. In the event of a switch or cable failure, the MR34 will automatically revert to mesh mode.

\*Available Q1 CY2014

### Self-configuring, self-optimizing, self-healing

When plugged in, the MR34 automatically connects to the Meraki cloud, downloads its configuration, and joins the appropriate network. The MR34 then self-optimizes, determining the ideal channel, transmit power, and client connection parameters. As necessary, it will also self-heal, responding automatically to switch failures and other errors.

# Specifications

## Radios

One 2.4 GHz 802.11b/g/n, one 5 GHz 802.11a/n/ac, and one dedicated for dual-band WIPS & spectrum analysis

Concurrent operations of all three radios

Max data rate 1.75 Gbit/s

Operating bands:

| FCC (US)                  | CE (Europe)  |
|---------------------------|--|
| 2.412-2.484 GHz           | 2.412-2.484 GHz                                    |
| 5.150-5.250 GHz (UNII-1)  | 5.150-5.250 GHz (UNII-1)                           |
| 5.725 -5.825 GHz (UNII-3) | 5.250-5.350, 5.470-5.600, 5.660-5.725 GHz (UNII-2) |

## 802.11ac and 802.11n Capabilities

3 x 3 multiple input, multiple output (MIMO) with three spatial streams

Maximal ratio combining (MRC)

Beamforming

20 and 40 MHz channels (802.11n), 20, 40, and 80 MHz channels (802.11ac)

Packet aggregation

## Power

Power over Ethernet: 37 - 57 V (802.3at compatible, with functionality-restricted 802.3af mode supported)

12 V DC

Power consumption: 18W max (802.3at), 13.87W max (802.3af)

Power over Ethernet injector and DC adapter sold separately

## Mounting

All standard mounting hardware included

Desktop and wall mount

Ceiling tile rail (9/16, 15/16 or 1 1/2" flush or recessed rails), assorted cable junction boxes

Bubble level on mounting cradle for accurate horizontal wall mounting

## Physical Security

Two included security screw options

Kensington lock hard point

Anti-tamper cable bay

Concealed mount plate

## Environment

Operating temperature: 32 °F to 104 °F (0 °C to 40 °C)

Humidity: 5 to 95% non-condensing

## Physical Dimensions

10.0" x 6.1" x 1.5" (253.4 mm x 155.8 mm x 37.1 mm), not including deskmount feet or mount plate

Weight: 25 oz (0.7kg)

## Antenna

Integrated omni-directional antennas

## Interfaces

1x 100/1000Base-T Ethernet (RJ45)

1x DC power connector (5 mm x 2.1 mm, center positive)

## Security

Integrated policy firewall (Identity Policy Manager)

Mobile device policies

Air Marshal: Real-time WIPS (wireless intrusion prevention system) with alarms

Rogue AP containment

Guest isolation

Teleworker VPN with IPsec

PCI compliance reporting

WEP, WPA, WPA2-PSK, WPA2-Enterprise with 802.1X

TKIP and AES encryption

VLAN tagging (802.1q)

## Quality of Service

Wireless Quality of Service (WMM/802.11e)

Advanced Power Save (U-APSD)

DSCP

802.1p

Layer 7 application traffic shaping and firewall

## Mobility

PMK and OKC credential support for fast Layer 2 roaming

L3 roaming

## LED Indicators

2 Ethernet status

1 power/booting/firmware upgrade status

## Regulatory

Anatel (Brazil), FCC (US), IC (Canada), CE (Europe), C-Tick (Australia/New Zealand)

RoHS

For additional country-specific regulatory information, please contact Meraki sales

## Warranty

Lifetime hardware warranty with advanced replacement included

## Ordering Information

MR34-HW Meraki MR34 Cloud Managed AP

AC-MR-1-XX Meraki AC Adapter for MR Series (XX = US, EU, UK or AU)

MA-INJ-4-XX Cisco Meraki 802.3at Power over Ethernet Injector (XX = US, EU, UK or AU)

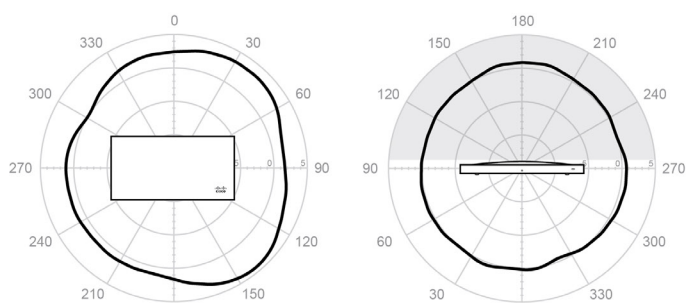
Note: Meraki Enterprise license required.

## RF Performance Table

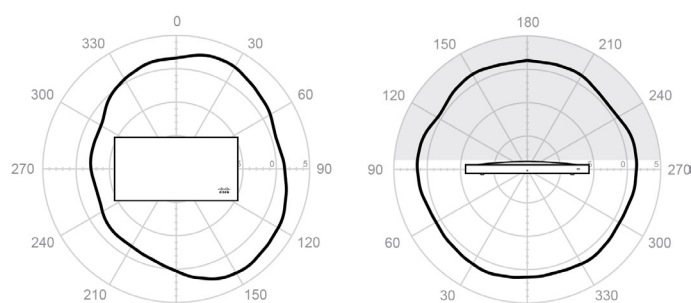
| Operating Band | Operating Mode  | Data Rate                                 | TX Power         | RX Sensitivity |
|----------------|-----------------|---|------------------|----------------|
| 2.4 GHz        | 802.11b         | 11 Mb/s                                   | 19 dBm           | -84            |
| 2.4 GHz        | 802.11g         | 6 Mb/s<br>54 Mb/s                         | 17 dBm<br>17 dBm | -87<br>-70     |
| 2.4 GHz        | 802.11n (HT20)  | MCS0/8/16 HT20<br>MCS7/15/23 HT20         | 18 dBm<br>15 dBm | -85<br>-67     |
| 2.4 GHz        | 802.11n (HT40)  | MCS0/8/16 HT40<br>MCS7/15/23 HT40         | 18 dBm<br>15 dBm | -83<br>-63     |
| 5 GHz          | 802.11a         | 6 Mb/s<br>54 Mb/s                         | 20 dBm<br>18 dBm | -92<br>-73     |
| 5 GHz          | 802.11n (HT20)  | MCS0/8/16 HT20<br>MCS7/15/23 HT20         | 20 dBm<br>17 dBm | -90<br>-70     |
| 5 GHz          | 802.11n (HT40)  | MCS0/8/16 HT40<br>MCS7/15/23 HT40         | 20 dBm<br>17 dBm | -87<br>-68     |
| 5 GHz          | 802.11ac (HT80) | VHT-MCS0/8/16 HT80<br>VHT-MCS9/15/23 HT80 | 20 dBm<br>15 dBm | -84<br>-58     |

\* Maximum hardware capability shown above. Transmit power is configurable in increments of 1 dB and is automatically limited to comply with local regulatory settings.

## Signal Coverage Patterns



2.4 GHz



5.0 GHz