

# MR45

Dual-band 802.11ax compatible access point with separate radios dedicated to security, RF management, and Bluetooth



## High Performance 802.11ax compatible wireless

The Cisco Meraki MR45 is a cloud-managed 4x4:4 802.11ax compatible access point that raises the bar for wireless performance and efficiency. Designed for next-generation deployments in offices, schools, hospitals, shops, and hotels, the MR45 offers high throughput, enterprise-grade security, and simple management.

The MR45 provides a maximum of 3.5 Gbps\* aggregate frame rate with concurrent 2.4 Ghz and 5 Ghz radios. A dedicated third radio provides real-time WIDS/WIPS with automated RF optimization, and a fourth integrated radio delivers Bluetooth scanning and beaconing.

With the combination of cloud management, high performance hardware, multiple radios, and advanced software features, the MR45 makes an outstanding platform for the most demanding of uses—including high-density deployments and bandwidth or performance-intensive applications like voice and high-definition video.

## MR45 and Meraki cloud management

Management of the MR45 is through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without time-consuming training or costly certifications. Since the MR45 is self-configuring and managed over the web, it can be deployed at a remote location in a matter of minutes, even without on-site IT staff.

24x7 monitoring via the Meraki cloud delivers real-time alerts if the network encounters problems. Remote diagnostic tools enable immediate troubleshooting over the web so that distributed networks can be managed with a minimum of hassle.

The MR45's firmware is automatically kept up to date via the cloud. New features, bug fixes, and enhancements are delivered seamlessly over the web. This means no manual software updates to download or missing security patches to worry about.

### Product Highlights

- 4 x 4 802.11ax with MU-MIMO and OFDMA  
Multi-Gigabit 1G/2.5G Ethernet
- 3.5 Gbps dual-radio aggregate frame rate
- 24 x 7 real-time WIPS/WIDS and spectrum analytics via dedicated third radio
- Integrated Bluetooth Low Energy Beacon and scanning radio
- Enhanced transmit power and receive sensitivity
- Full-time Wi-Fi location tracking via dedicated 3rd radio
- Integrated enterprise security and guest access
- Application-aware traffic shaping
- Optimized for voice and video
- Self-configuring, plug-and-play deployment
- Sleek, low-profile design blends into office environments

## Features

### Dual-radio aggregate frame rate of up to 3.5 Gbps\*

A 5 GHz 4x4:4 radio and a 2.4 GHz 4x4:4 radio offer a combined dual-radio aggregate frame rate of 3.5 Gbps\*, with up to 2,402 Mbps in the 5 GHz band and 1,147 Mbps in the 2.4 GHz band. Technologies like transmit beamforming and enhanced receive sensitivity allow the MR45 to support a higher client density than typical enterprise-class access points, resulting in better performance for more clients, from each AP.

### Multi User Multiple Input Multiple Output (MU-MIMO)

With support for features of 802.11ax, the MR45 offers MU-MIMO and OFDMA for more efficient transmission to multiple clients. Especially suited to environments with numerous mobile devices, MU-MIMO enables multiple clients to receive data simultaneously. This increases the total network performance and improves the end user experience.

### Multigigabit Ethernet

The MR45 has an integrated multigigabit uplink that ensures maximum capacity for this high performance 802.11ax compatible hardware configuration.

### Bluetooth Low Energy Beacon and scanning radio

An integrated fourth Bluetooth radio provides seamless deployment of BLE Beacon functionality and effortless visibility of Bluetooth devices. The MR45 enables the next generation of location-aware applications while future proofing deployments, ensuring it's ready for any new customer engagement strategies.

### Automatic cloud-based RF optimization

The MR45's sophisticated and automated RF optimization means that there is no need for the dedicated hardware and RF expertise typically required to tune a wireless network. The RF data collected by the dedicated third radio is continuously fed back to the Meraki cloud. This data is then used to automatically tune the channel selection, transmit power, and client connection settings for optimal performance under even the most challenging RF conditions.

### Integrated enterprise security and guest access

The MR45 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 Enterprise authentication with 802.1X and Active Directory integration provide wired-like security while still being easy to configure. One-click guest isolation provides secure, Internet-only access for visitors. PCI compliance reports check network settings against PCI requirements to simplify secure retail deployments.

### 3rd radio delivers 24x7 wireless security and RF analytics

The MR45's dedicated dual-band scanning and security radio continually assesses the environment, characterizing RF interference and containing wireless threats like rogue access points. There's no need to choose between wireless security, advanced RF analysis, and serving client data - a dedicated third radio means that all functions occur in real-time, without any impact to client traffic or AP throughput.

### Enterprise Mobility Management (EMM) & Mobile Device Management (MDM) integration

Meraki Systems Manager natively integrates with the MR45 to offer automatic, context-aware security. Systems Manager's self-service enrollment helps to rapidly deploy MDM without installing additional equipment, and then dynamically tie firewall and traffic shaping policies to client posture.

### Application-aware traffic shaping

The MR45 includes an integrated Layer 7 packet inspection, classification, and control engine, enabling the configuration of QoS policies based on traffic type, helping to prioritize mission critical applications while setting limits on recreational traffic like peer-to-peer and video streaming. Policies can be implemented per network, per SSID, per user group, or per individual user for maximum flexibility and control.

\* Refers to maximum over-the-air data frame rate capability of the radio chipsets, and may exceed data rates allowed by IEEE-compliant operation.



## Features (cont'd)

### **Voice and video optimization**

Industry standard QoS features are built-in and easy to configure. Wireless Multi Media (WMM) access categories, 802.1p, and DSCP standards support all ensure important applications get prioritized correctly, not only on the MR45, but on other devices in the network. Unscheduled Automatic Power Save Delivery (U-APSD) and new Target Wait Time features in 802.11ax clients ensure minimal battery drain on wireless VoIP phones.

### **Self-configuring, self-maintaining, always up-to-date**

When plugged in, the MR45 automatically connects to the Meraki cloud, downloads its configuration, and joins the appropriate network. If new firmware is required, this is retrieved by the AP and updated automatically. This ensures the network is kept up-to-date with bug fixes, security updates, and new features.

### **Advanced analytics**

Wireless Health is a tool integrated within the Meraki Dashboard to offer powerful heuristics for smarter troubleshooting of customer networks. Drilling down into the details of network usage provides highly granular traffic analytics. Visibility into the physical world can be enhanced with journey tracking through location analytics. Visitor numbers, dwell time, repeat visit rates, and track trends can all be easily monitored in the dashboard and deeper analysis is enabled with raw data available via simple APIs.

## MR45 Tx / Rx Tables | 2.4 GHz

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s	26.0 dBm	-99 dBm
		2 Mb/s	26.0 dBm	-94 dBm
		5.5 Mb/s	26.0 dBm	-94 dBm
		11 Mb/s	26.0 dBm	-90 dBm
2.4 GHz	802.11g	6 Mb/s	26.0 dBm	-94 dBm
		9 Mb/s	26.0 dBm	-93 dBm
		12 Mb/s	24.0 dBm	-90 dBm
		18 Mb/s	24.0 dBm	-89 dBm
		24 Mb/s	23.0 dBm	-86 dBm
		36 Mb/s	23.0 dBm	-83 dBm
		48 Mb/s	22.0 dBm	-78 dBm
		54 Mb/s	22.0 dBm	-77 dBm
2.4 GHz	802.11n (HT20)	MCS0	26.0 dBm	-95 dBm
		MCS1	26.0 dBm	-92 dBm
		MCS2	24.0 dBm	-90 dBm
		MCS3	24.0 dBm	-87 dBm
		MCS4	24.0 dBm	-84 dBm
		MCS5	22.0 dBm	-80 dBm
		MCS6	22.0 dBm	-70 dBm
		MCS7	21.0 dBm	-77 dBm



Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
2.4 GHz	802.11ac (VHT20)	MCS0	26.0 dBm	-95 dBm
		MCS1	26.0 dBm	-92 dBm
		MCS2	24.0 dBm	-90 dBm
		MCS3	24.0 dBm	-87 dBm
		MCS4	24.0 dBm	-84 dBm
		MCS5	22.0 dBm	-80 dBm
		MCS6	22.0 dBm	-79 dBm
		MCS7	21.0 dBm	-77 dBm
		MCS8	20.0 dBm	-73 dBm
2.4 GHz	802.11ax (HE20)	MCS0	26.0 dBm	-95 dBm
		MCS1	26.0 dBm	-93 dBm
		MCS2	26.0 dBm	-91 dBm
		MCS3	24.0 dBm	-88 dBm
		MCS4	24.0 dBm	-85 dBm
		MCS5	24.0 dBm	-81 dBm
		MCS6	23.0 dBm	-79 dBm
		MCS7	22.0 dBm	-77 dBm
		MCS8	21.0 dBm	-74 dBm
		MCS9	20.0 dBm	-72 dBm
		MCS10	19.0 dBm	-68 dBm
		MCS11	19.0 dBm	-66 dBm



Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
2.4 GHz	802.11ac (VHT40)	MCS0	24.0 dBm	-92 dBm
		MCS1	24.0 dBm	-89 dBm
		MCS2	24.0 dBm	-87 dBm
		MCS3	24.0 dBm	-84 dBm
		MCS4	24.0 dBm	-81 dBm
		MCS5	23.0 dBm	-77 dBm
		MCS6	22.0 dBm	-76 dBm
		MCS7	23.0 dBm	-74 dBm
		MCS8	20.5 dBm	-71 dBm
		MCS9	20.0 dBm	-69 dBm
2.4 GHz	802.11ax (HE40)	MCS0	24.0 dBm	-92 dBm
		MCS1	24.0 dBm	-91 dBm
		MCS2	24.0 dBm	-88 dBm
		MCS3	24.0 dBm	-85 dBm
		MCS4	24.0 dBm	-82 dBm
		MCS5	23.0 dBm	-78 dBm
		MCS6	22.0 dBm	-79 dBm
		MCS7	21.5 dBm	-75 dBm
		MCS8	20.5 dBm	-71 dBm
		MCS9	20.0 dBm	-69 dBm
		MCS10	18.5 dBm	-65 dBm
		MCS11	18.5 dBm	-63 dBm



## MR45 Tx / Rx Tables | 5 GHz

Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11a	6 Mb/s	26.0 dBm	-93 dBm
		9 Mb/s	26.0 dBm	-91 dBm
		12 Mb/s	24.0 dBm	-89 dBm
		18 Mb/s	24.0 dBm	-87 dBm
		24 Mb/s	23.0 dBm	-84 dBm
		36 Mb/s	23.0 dBm	-81 dBm
		48 Mb/s	22.0 dBm	-77 dBm
		54 Mb/s	22.0 dBm	-75 dBm
5 GHz	802.11n (HT20)	MCS0	26.0 dBm	-93 dBm
		MCS1	26.0 dBm	-90 dBm
		MCS2	24.0 dBm	-88 dBm
		MCS3	24.0 dBm	-85 dBm
		MCS4	24.0 dBm	-82 dBm
		MCS5	23.0 dBm	-78 dBm
		MCS6	22.0 dBm	-77 dBm
		MCS7	22.0 dBm	-75 dBm
5 GHz	802.11n (HT40)	MCS0	24.0 dBm	-90 dBm
		MCS1	24.0 dBm	-88 dBm
		MCS2	24.0 dBm	-85 dBm
		MCS3	24.0 dBm	-82 dBm
		MCS4	24.0 dBm	-79 dBm
		MCS5	23.0 dBm	-75 dBm
		MCS6	22.0 dBm	-74 dBm
		MCS7	22.0 dBm	-73 dBm



Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ac (VHT20)	MCS0	26.0 dBm	-93 dBm
		MCS1	26.0 dBm	-90 dBm
		MCS2	24.0 dBm	-88 dBm
		MCS3	24.0 dBm	-85 dBm
		MCS4	24.0 dBm	-82 dBm
		MCS5	23.0 dBm	-78 dBm
		MCS6	22.0 dBm	-77 dBm
		MCS7	22.0 dBm	-75 dBm
		MCS8	21.0 dBm	-71 dBm
5 GHz	802.11ac (VHT40)	MCS0	24.0 dBm	-90 dBm
		MCS1	24.0 dBm	-88 dBm
		MCS2	24.0 dBm	-85 dBm
		MCS3	24.0 dBm	-82 dBm
		MCS4	24.0 dBm	-79 dBm
		MCS5	23.0 dBm	-75 dBm
		MCS6	22.0 dBm	-74 dBm
		MCS7	22.0 dBm	-73 dBm
		MCS8	20.5 dBm	-69 dBm
		MCS9	20.0 dBm	-67 dBm
5 GHz	802.11ac (VHT80)	MCS0	24.0 dBm	-87 dBm
		MCS1	24.0 dBm	-85 dBm
		MCS2	24.0 dBm	-82 dBm
		MCS3	24.0 dBm	-79 dBm
		MCS4	24.0 dBm	-77 dBm
		MCS5	22.0 dBm	-72 dBm
		MCS6	22.0 dBm	-71 dBm
		MCS7	20.0 dBm	-69 dBm
		MCS8	19.0 dBm	-65 dBm
		MCS9	19.0 dBm	-64 dBm





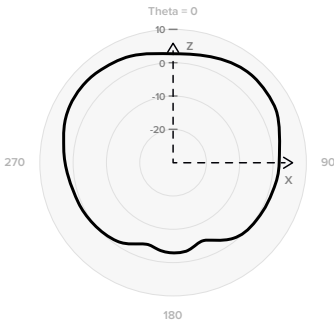
Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ax (HE20)	MCS0	26.0 dBm	-93 dBm
		MCS1	26.0 dBm	-91 dBm
		MCS2	24.0 dBm	-89 dBm
		MCS3	24.0 dBm	-86 dBm
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		MCS10	18.5 dBm	-64 dBm
MCS11	18.5 dBm	-61 dBm		



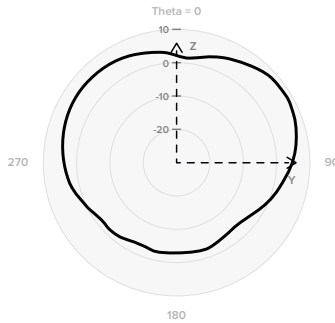
Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ax (HE80)	MCS0	24.0 dBm	-87 dBm
		MCS1	24.0 dBm	-85 dBm
		MCS2	24.0 dBm	-83 dBm
		MCS3	24.0 dBm	-80 dBm
		MCS4	24.0 dBm	-77 dBm
		MCS5	22.0 dBm	-73 dBm
		MCS6	22.0 dBm	-73 dBm
		MCS7	20.0 dBm	-70 dBm
		MCS8	19.0 dBm	-67 dBm
		MCS9	19.0 dBm	-65 dBm
		MCS10	17.0 dBm	-61 dBm
MCS11	17.0 dBm	-59 dBm		

**MR45**

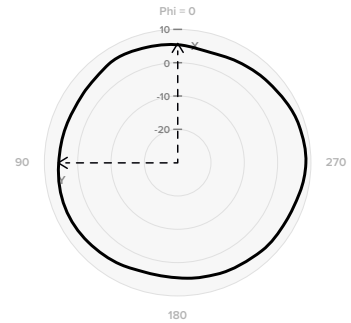
**Radiation Pattern for 2.4 GHz Antennas**



**XZ-cut**



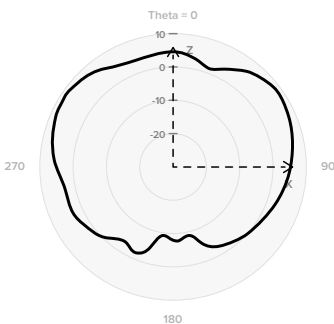
**YZ-cut**



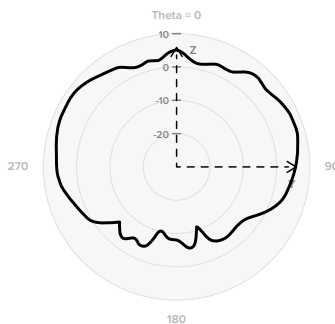
**XY-cut**  
(Theta = 90°)

**MR45**

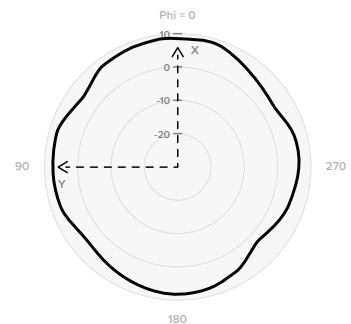
**Radiation Pattern for 5 GHz Antennas**



**XZ-cut**



**YZ-cut**



**XY-cut**  
(Theta = 90°)

# Specifications

## Radios

2.4 GHz 802.11b/g/n/ax client access radio

5 GHz 802.11a/n/ac/ax client access radio

2.4 GHz & 5 GHz dual-band WIDS/WIPS, spectrum analysis, and location analytics radio

2.4 GHz Bluetooth Low Energy (BLE) radio with Beacon and BLE scanning support  
Concurrent operation of all four radios

Supported frequency bands (country-specific restrictions apply):

- 2.400-2.484 GHz
- 5.170-5.250 GHz (UNII-1)
- 5.250-5.330 GHz (UNII-2)
- 5.490-5.730 GHz (UNII-2e)
- 5.735-5.835 GHz (UNII-3)

## Antenna

Internal omni antennas (5.4 dBi gain at 2.4 GHz, 6 dBi gain at 5 GHz)

## 802.11ax Compatible, 802.11ac Wave 2 and 802.11n Capabilities

DL-OFDMA, TWT support

4 x 4 multiple input, multiple output (MIMO) with four spatial streams

SU-MIMO and DL MU-MIMO support

Maximal ratio combining (MRC) and beamforming

20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac Wave 2)

Up to 1024-QAM on both 2.4 GHz & 5 GHz bands

Packet aggregation

## Power

Power over Ethernet: 42.5-57 V (802.3at compliant)

Alternative: 12 V DC input

Power consumption: 18 W max

Power over Ethernet injector and DC adapter sold separately

## Interfaces

1x 1000/2.5G BASE-T Ethernet

1x DC power connector (5.5 mm x 2.5 mm, center positive)

## Mounting

All standard mounting hardware included

Desktop, ceiling, and wall mount capable

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 security screw options included

13.5 mm long, 2.5 mm diameter, 5 mm head

Kensington lock hard point

Concealed mount plate with anti-tamper cable bay

## Environment

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

Humidity: 5% to 95%

## Physical Dimensions

12.05" x 5.06" x 1.74" (30.6 cm x 12.84 cm x 4.426 cm), not including deskmount feet or mount plate

Weight: 28.22 oz (800 g)

## Security

Integrated Layer 7 firewall with mobile device policy management

Real-time WIDS/WIPS with alerting and automatic rogue AP containment with Air Marshal

Flexible guest access with device isolation

VLAN tagging (802.1Q) and tunneling with IPsec VPN

PCI compliance reporting

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

EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM

TKIP and AES encryption

Enterprise Mobility Management (EMM) & Mobile Device Management (MDM) integration

Cisco ISE integration for guest access and BYOD posturing

## Quality of Service

Advanced Power Save (U-APSD)

WMM Access Categories with DSCP and 802.1p support

Layer 7 application traffic identification and shaping

## Mobility

PMK, OKC, and 802.11r for fast Layer 2 roaming

Distributed or centralized Layer 3 roaming

## Analytics

Embedded location analytics reporting and device tracking

Global L7 traffic analytics reporting per network, per device, and per application

## LED Indicators

1 power/booting/firmware upgrade status

## Regulatory

RoHS

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

## Warranty

Lifetime hardware warranty with advanced replacement included

## Ordering Information

MR45-HW: Meraki MR45 Cloud Managed 802.11ax Compatible AP

MA-PWR-30W-XX: Meraki AC Adapter for MR Series (XX = US/EU/UK/AU)

MA-INJ-4-XX: Meraki Gigabit 802.3at Power over Ethernet Injector (XX = US/EU/UK/AU)

MA-INJ-5-XX: Meraki Multigigabit 802.3at Power over Ethernet Injector (XX = US/EU/UK/AU)

Note: Meraki access point license required



## Compliance and Standards

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### IEEE Standards

802.11a  
802.11ac  
802.11ax Compatible  
802.11b  
802.11e  
802.11g  
802.11h  
802.11i  
802.11k  
802.11n  
802.11r  
802.11u and Hotspot 2.0

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### Safety Approvals

CSA and CB 60950 & 62368  
Conforms to UL 2043 (Plenum Rating)

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### Radio Approvals

Canada: FCC Part 15C, 15E, RSS-247  
Europe: EN 300 328, EN 301 893  
Australia/NZ: AS/NZS 4268  
Mexico: IFT, NOM-208  
Taiwan: NCC LP0002  
For additional country-specific regulatory information, please contact Meraki Sales

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### EMI Approvals (Class B)

Canada: FCC Part 15B, ICES-003  
Europe: EN 301 489-1-17, EN 55032, EN 55024  
Australia/NZ: CISPR 22  
Japan: VCCI

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### Exposure Approvals

Canada: FCC Part 2, RSS-102  
Europe: EN 50385, EN 62311, EN 62479  
Australia/NZ: AS/NZS 2772