

MR42

Dual-band 802.11ac Wave 2 access point with separate radios dedicated to security, RF management, and Bluetooth



High performance 802.11ac Wave 2 wireless

The Cisco Meraki MR42 is a four radio, cloud-managed 3x3 MU-MIMO 802.11ac Wave 2 access point. Designed for next-generation deployments in offices, schools, hospitals, shops, and hotels, the MR42 offers performance, security, and simple management.

The MR42 provides a maximum 1.9 Gbps frame rate with concurrent 802.11ac Wave 2 and 802.11n 3x3:3 MIMO radios. A dedicated third radio provides real-time WIDS/WIPS with automated RF optimization. In addition, an integrated fourth radio delivers Bluetooth Low Energy (BLE) scanning and Beacons functionality.

With a combination of cloud management, high performance hardware, multiple radios, and advanced software features, the MR42 makes an outstanding platform for the most demanding of uses today and tomorrow. These uses include high-density deployments and support for applications like voice and high-definition video.

MR42 and Meraki cloud management: a powerful combination

Management of the MR42 is handled through the Meraki cloud, enabling rapid deployment across multiple sites without the need for time-consuming training or costly certifications. Since the

MR42 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.

24/7 monitoring via the Meraki cloud delivers real-time alerts if the network encounters problems. Remote diagnostic tools enable immediate troubleshooting over the web, meaning multi-site, distributed networks can be easily managed.

The MR42'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

- » 3x3:3 MU-MIMO 802.11ac Wave 2
- » 1.9 Gbps aggregate dual-band frame rate
- » 24x7 real-time WIDS/WIPS and spectrum analytics via dedicated third radio
- » Integrated Bluetooth Low Energy Beacon and scanning radio
- » Enhanced transmit power and receive sensitivity
- » Full-time WiFi 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

Aggregate data rate of up to 1.9 Gbps

A 5 GHz 3x3:3 radio and a 2.4 GHz 3x3:3 radio offer a combined aggregate dual-band frame rate of 1.9 Gbps. Supports up to 1,300 Mbps in the 5 GHz band and 600 Mbps in the 2.4 GHz band. Technologies like transmit beamforming and enhanced receive sensitivity allow the MR42 to support a higher client density than typical enterprise-class access points, resulting in fewer APs for a given deployment.

Multi User Multiple Input Multiple Output (MU-MIMO)

With support for the 802.11ac Wave 2 standard, the MR42 offers MU-MIMO for efficient transmission to multiple clients. Especially suited for 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.

Third radio delivers 24x7 wireless security and RF analytics

The MR42's sophisticated, dedicated dual-band radio scans the environment continuously, characterizing RF interference and containing wireless threats like rogue access points. No longer 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.

Bluetooth Low Energy Beacon and scanning radio

An integrated fourth radio for Bluetooth Low Energy (BLE) provides seamless deployment of BLE Beacon functionality and effortless visibility of BLE devices. The MR42 enables the next generation of location-aware applications while futureproofing your deployment, making it ready for any new customer engagement strategies.

Automatic cloud-based RF optimization

The MR42'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 RF analysis data collected by the dedicated third radio is continuously fed back to the Meraki cloud. This then automatically tunes the MR42's 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 MR42 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 granular access control at the group or device level. PCI compliance reports check network settings against PCI requirements to simplify secure retail deployments.

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

Meraki Systems Manager natively integrates with the MR42 to offer simple automatic security that is context aware. Rapidly deploy self-service MDM enrolment without installing additional equipment or dynamically tie firewall policies to client posture. End-to-end security has never been so easy.

Application-aware traffic shaping

The MR42 includes an integrated layer 7 packet inspection, classification, and control engine, enabling you to set QoS policies based on traffic type. Prioritize your mission critical applications, while setting limits on recreational traffic, e.g., peer-to-peer and video streaming. Importantly, controls can be implemented per network, per SSID,

per user group, or per individual user.

Voice and video optimizations

Industry standard QoS features are easy to configure and come built in. Wireless Multi Media (WMM) access categories, 802.1p, and DSCP industry standards all ensure important applications get prioritized correctly, not only on the MR42, but on other steps in the traffic flow. Unscheduled Automatic Power Save Delivery (U-APSD) ensures minimal battery drain on wireless VoIP phones.

Low-profile, modern, user friendly design

Despite its extensive capabilities, the MR42 is packaged in a sleek, low-profile enclosure that blends seamlessly into any environment. This makes it ideal for modern offices, high end retail locations, and discrete deployments. Using human interface design principles, even the physical installation and mounting experience has been developed to eliminate error and simplify installation process.

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

When plugged in, the MR42 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 maintained with bug fixes, security updates, and new features managed for you.

Advanced analytics

Drill down into exceptional detail with highly granular traffic analytics. Understand how your network is used with access to numerous datasets. Extend your visibility to the physical world with journey tracking through location analytics. View visitor numbers, dwell time, repeat visit rates, and track trends. Fully customize your analysis with raw data available via simple APIs.

Specifications

Radios

2.4 GHz 802.11b/g/n client access radio

5 GHz 802.11a/n/ac client access radio

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

2.4 GHz Bluetooth radio with Bluetooth Low Energy (BLE) and Beacon support

Concurrent operation of all four radios

Max aggregate frame rate 1.9 Gbit/s

Supported frequency bands (country-specific restrictions apply):

2.412-2.484 GHz

5.150-5.250 GHz (UNII-1)

5.250-5.350 GHz (UNII-2)

5.470-5.600, 5.660-5.725 GHz (UNII-2e)

5.725 -5.825 GHz (UNII-3)

Antenna

Integrated omni-directional antennas (5 dBi gain at 2.4 GHz, 5.5 dBi gain at 5 GHz)

Individual antenna elements for each radio

802.11ac Wave 2 and 802.11n Capabilities

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

SU-MIMO and MU-MIMO support

Maximal ratio combining (MRC) & beamforming

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

Up to 256-QAM on both 2.4 GHz & 5 GHz

Packet aggregation

Power

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

Alternative 12 V DC input

Power consumption: 20W max (802.3at)

Power over Ethernet injector and DC adapter sold separately

LED Indicators

Multi color & multi function status indicator

Interfaces

1x 10/100/1000Base-T Ethernet (RJ45)

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)

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% 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)

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

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 and OKC credential support 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, per application

Warranty

Lifetime hardware warranty with advanced replacement included

Ordering Information

MR42-HW: Meraki MR42 Cloud Managed 802.11ac AP

MA-PWR-30W-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 access point license required.

Compliance & Standards

IEEE Standards

802.11b

802.11g

802.11a

802.11n

802.11ac

802.11h

802.11i

802.11e

802.11k

802.11r

802.11u

Safety Approvals

UL 60950-1

CAN/CSA-C22.2 No. 60950-1

IEC 60950-1

EN 60950-1

UL 2043 (Plenum Rating)

Radio Approvals

FCC Part 15C, 15E

RSS-247 (Canada)

EN 300 328, EN 301 893 (Europe)

AS/NZS 4268 (Australia/NZ)

NOM-121 (Mexico)

NCC LP0002 (Taiwan)

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

EMI Approvals (Class B)

FCC Part 15B

ICES-003 (Canada)

EN 301 489-1-17, EN 55032, EN 55024 (Europe)

CISPR 22 (Australia/NZ)

VCCI (Japan)

Exposure Approvals

FCC Part 2

RSS-102 (Canada)

EN 50385, EN 62311, EN 62479 (Europe)

AS/NZS 2772 (Australia/NZ)



RF Performance Table

2.4 GHz

Operating Band	Operation Mode	Data Rate	TX Power	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s	21 dBm	-98 dBm
		2 Mb/s	21 dBm	-93.5 dBm
		5.5 Mb/s	21 dBm	-92 dBm
		11 Mb/s	21 dBm	-86 dBm
2.4 GHz	802.11g	6 Mb/s	21 dBm	-93 dBm
		9 Mb/s	21 dBm	-92.5 dBm
		12 Mb/s	20.5 dBm	-91 dBm
		18 Mb/s	20.5 dBm	-89 dBm
		24 Mb/s	19 dBm	-85 dBm
		36 Mb/s	19.5 dBm	-82.5 dBm
		48 Mb/s	18.5 dBm	-78 dBm
		54 Mb/s	18.5 dBm	-76 dBm
2.4 GHz	802.11n (HT20)	MCS0/8/16	21/24/25.7 dBm	-93/-96/-97.7 dBm
		MCS1/9/17	20.5/23.5/25.2 dBm	-89/-92/-93.7 dBm
		MCS2/10/18	20.5/23.5/25.2 dBm	-87/-90/-91.7 dBm
		MCS3/11/19	19/22/23.7 dBm	-83/-86/-87.7 dBm
		MCS4/12/20	19.5/22.5/24.2 dBm	-80/-83/-84.7 dBm
		MCS5/13/21	18.5/21.5/23.2 dBm	-76/-79/-80.7 dBm
		MCS6/14/22	18.5/21.5/23.2 dBm	-74/-77/-78.7 dBm
		MCS7/15/23	18/21/22.7 dBm	-73/-76/-77.7 dBm
2.4 GHz	802.11n (VHT20)	MCS0/0/0	21/24/25.7 dBm	-93/-96/-97.7 dBm
		MCS1/1/1	20.5/23.5/25.2 dBm	-89/-92/-93.7 dBm
		MCS2/2/2	20.5/23.5/25.2 dBm	-87/-90/-91.7 dBm
		MCS3/3/3	19/22/23.7 dBm	-83/-86/-87.7 dBm
		MCS4/4/4	19.5/22.5/24.2 dBm	-80/-83/-84.7 dBm
		MCS5/5/5	18.5/21.5/23.2 dBm	-76/-79/-80.7 dBm
		MCS6/6/6	18.5/21.5/23.2 dBm	-74/-77/-78.7 dBm
		MCS7/7/7	18/21/22.7 dBm	-73/-76/-77.7 dBm
		MCS8/8/8	17/xx/xx dBm	-73/xx/xx dBm
MCS9/9/9	17/xx/xx dBm	-68/xx/x dBm		

RF Performance Table

5 GHz

Operating Band	Operation Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11a	6 Mb/s	22 dBm	-92 dBm
		9 Mb/s	22 dBm	-91 dBm
		12 Mb/s	22 dBm	-90 dBm
		18 Mb/s	22 dBm	-88 dBm
		24 Mb/s	20 dBm	-84 dBm
		36 Mb/s	19 dBm	-81 dBm
		48 Mb/s	19 dBm	-76 dBm
		54 Mb/s	19 dBm	-74 dBm
5 GHz	802.11n (HT20)	MCS0/8/16	22/25/26.7 dBm	-92/-95/-96.7 dBm
		MCS1/9/17	22/25/26.7 dBm	-88/-91/-92.7 dBm
		MCS2/10/18	22/25/26.7 dBm	-86/-89/-90.7 dBm
		MCS3/11/19	22/23/24.7 dBm	-82/-85/-86.7 dBm
		MCS4/12/20	19/22/23.7 dBm	-79/-82/-83.7 dBm
		MCS5/13/21	19/22/23.7 dBm	-74/-77/-78.7 dBm
		MCS6/14/22	19/22/23.7 dBm	-73/-76/-77.7 dBm
		MCS7/15/23	19/22/23.7 dBm	-71/-74/-75.7 dBm
5 GHz	802.11n (HT40)	MCS0/8/16	2/25/26.7 dBm	-88/-91/-92.7 dBm
		MCS1/9/17	21.5/24.5/26.2 dBm	-85/-88/-89.7 dBm
		MCS2/10/18	20/23/24.7 dBm	-83/-86/-87.7 dBm
		MCS3/11/19	20/23/24.7 dBm	-79/-82/-83.7 dBm
		MCS4/12/20	19.5/22.5/24.2 dBm	-76/-79/-80.7 dBm
		MCS5/13/21	19.5/22.5/24.2 dBm	-72/-75/-76.7 dBm
		MCS6/14/22	18.5/21.5/23.2 dBm	-70/-73/-74.7 dBm
		MCS7/15/23	18/21/22.7 dBm	-69/-72/-73.7 dBm

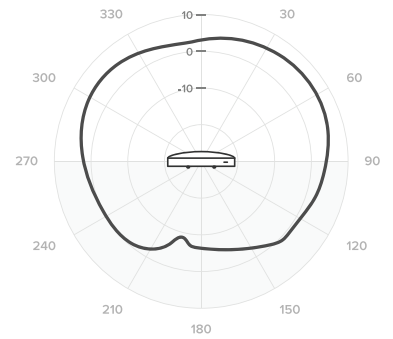
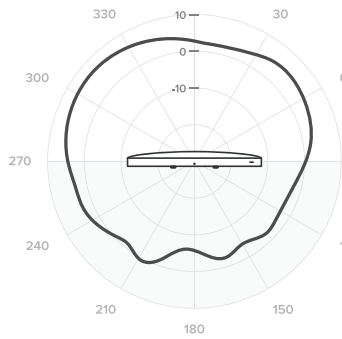
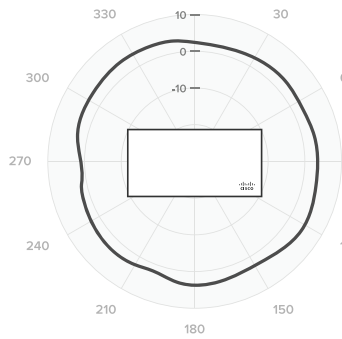
RF Performance Table

5 GHz

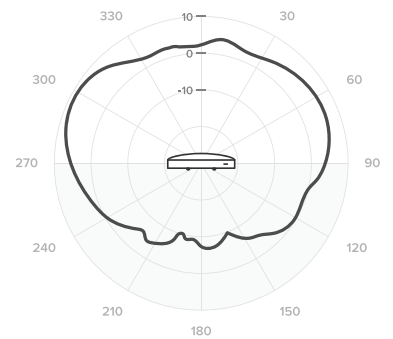
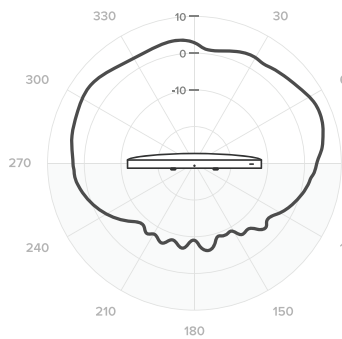
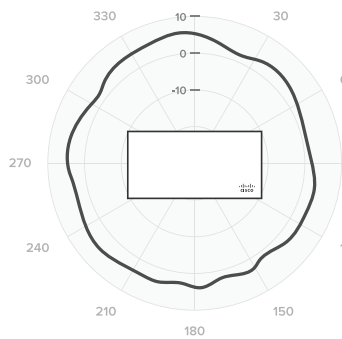
Operating Band	Operation Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ac (HT20)	MCS0/0/0	22/25/26.7 dBm	-92/-95/-96.7 dBm
		MCS1/1/1	22/25/26.7 dBm	-88/-91/-92.7 dBm
		MCS2/2/2	22/25/26.7 dBm	-86/-89/-90.7 dBm
		MCS3/3/3	22/23/24.7 dBm	-82/-85/-86.7 dBm
		MCS4/4/4	19/22/23.7 dBm	-79/-82/-83.7 dBm
		MCS5/5/5	19/22/23.7 dBm	-74/-77/-78.7 dBm
		MCS6/6/6	19/22/23.7 dBm	-73/-76/-77.7 dBm
		MCS7/7/7	19/22/23.7 dBm	-71/-74/-75.7 dBm
		MCS8/8/8	18.5/21.5/23.2 dBm	-67/-70/-71.7 dBm
		MCS9/9/9	18.5/21.5/23.2 dBm	-63/-66/-67.7 dBm
5 GHz	802.11ac (HT40)	MCS0/0/0	22/25/26.7 dBm	-88/-91/-92.7 dBm
		MCS1/1/1	21.5/24.5/26.2 dBm	-85/-88/-89.7 dBm
		MCS2/2/2	20/23/24.7 dBm	-83/-86/-87.7 dBm
		MCS3/3/3	20/23/24.7 dBm	-79/-82/-83.7 dBm
		MCS4/4/4	19.5/22.5/24.2 dBm	-76/-79/-80.7 dBm
		MCS5/5/5	19.5/22.5/24.2 dBm	-72/-75/-76.7 dBm
		MCS6/6/6	18.5/21.5/23.2 dBm	-70/-73/-74.7 dBm
		MCS7/7/7	18/21/22.7 dBm	-69/-72/-73.7 dBm
		MCS8/8/8	18/21/22.7 dBm	-67/-70/-71.7 dBm
		MCS9/9/9	18/21/22.7 dBm	-63/-66/-67.7 dBm
5 GHz	802.11ac (VHT80)	MCS0/0/0	22/25/26.7 dBm	-86/-89/-90.7 dBm
		MCS1/1/1	21.5/24.5/26.2 dBm	-82/-85/-86.7 dBm
		MCS2/2/2	21.5/24.5/26.2 dBm	-80/-83/-84.7 dBm
		MCS3/3/3	20.5/23.5/24.2 dBm	-76/-79/-80.7 dBm
		MCS4/4/4	20.5/23.5/24.2 dBm	-73/-76/-77.7 dBm
		MCS5/5/5	19.5/22.5/24.2 dBm	-69/-72/-73.7 dBm
		MCS6/6/6	19/22/23.7 dBm	-67/-70/-71.7 dBm
		MCS7/7/7	19/22/23.7 dBm	-66/-69/-70.7 dBm
		MCS8/8/8	18/21/22.7 dBm	-61/-64/-65.7 dBm
		MCS9/9/9	18/21/22.7 dBm	-59/-62/-63.7 dBm

Signal Coverage Patterns

Radiation Pattern for 2.4GHz Antennas



Radiation Pattern for 5GHz Antennas



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

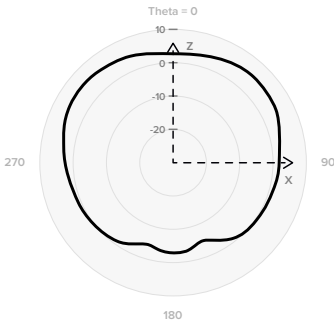
Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ac (VHT20)	MCS0	26.0 dBm	-93 dBm
		MCS1	26.0 dBm	-90 dBm
		MCS2	24.0 dBm	-88 dBm
		MCS3	24.0 dBm	-85 dBm
		MCS4	24.0 dBm	-82 dBm
		MCS5	23.0 dBm	-78 dBm
		MCS6	22.0 dBm	-77 dBm
		MCS7	22.0 dBm	-75 dBm
		MCS8	21.0 dBm	-71 dBm
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
		MCS4	24.0 dBm	-83 dBm
		MCS5	23.0 dBm	-79 dBm
		MCS6	22.0 dBm	-77 dBm
		MCS7	22.0 dBm	-75 dBm
		MCS8	21.0 dBm	-72 dBm
		MCS9	21.0 dBm	-70 dBm
		MCS10	19.0 dBm	-67 dBm
		MCS11	19.0 dBm	-67 dBm
5 GHz	802.11ax (HE40)	MCS0	24.0 dBm	-90 dBm
		MCS1	24.0 dBm	-89 dBm
		MCS2	24.0 dBm	-86 dBm
		MCS3	24.0 dBm	-83 dBm
		MCS4	24.0 dBm	-81 dBm
		MCS5	23.0 dBm	-76 dBm
		MCS6	22.0 dBm	-75 dBm
		MCS7	21.5 dBm	-73 dBm
		MCS8	20.5 dBm	-69 dBm
		MCS9	20.0 dBm	-68 dBm
		MCS10	18.5 dBm	-64 dBm
		MCS11	18.5 dBm	-61 dBm

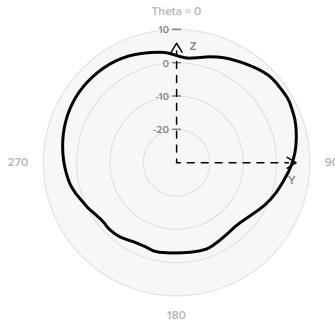
Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ax (HE80)	MCS0	24.0 dBm	-87 dBm
		MCS1	24.0 dBm	-85 dBm
		MCS2	24.0 dBm	-83 dBm
		MCS3	24.0 dBm	-80 dBm
		MCS4	24.0 dBm	-77 dBm
		MCS5	22.0 dBm	-73 dBm
		MCS6	22.0 dBm	-73 dBm
		MCS7	20.0 dBm	-70 dBm
		MCS8	19.0 dBm	-67 dBm
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

MR45

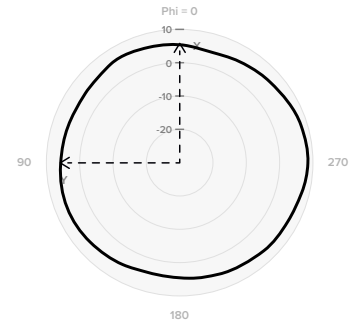
Radiation Pattern for 2.4 GHz Antennas



XZ-cut



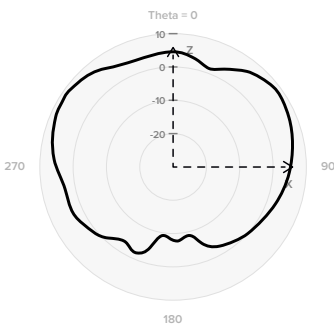
YZ-cut



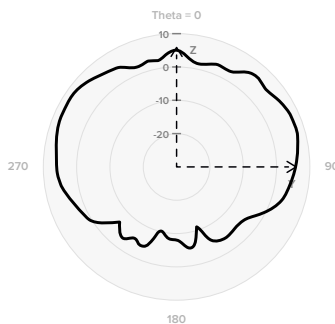
XY-cut
(Theta = 90°)

MR45

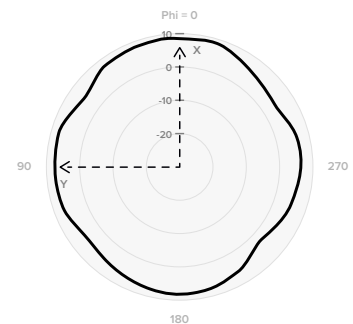
Radiation Pattern for 5 GHz Antennas



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**, BSS Coloring**
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

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

Safety Approvals

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

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

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

Exposure Approvals

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

*** Software features can be enabled via firmware updates*

MR46 Datasheet

High-Performance 802.11ax Wireless

The Cisco Meraki MR46 is a cloud-managed 4x4:4 802.11ax access point that raises the bar for wireless performance and efficiency. Designed for next-generation deployments in offices, schools, hospitals, shops, and hotels, the MR46 offers high throughput, enterprise-grade security, and simple management.

The MR46 provides a maximum of 2.98 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. 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 MR46 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.



MR46 and Meraki Cloud Management

Management of the MR46 is performed through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without time-consuming training or costly certifications. Because the MR46 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 a 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 MR46'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

- 4x4:4 MU-MIMO 802.11ax
- 2.98* Gbps dual-radio aggregate frame rate
- 24x7 real-time WIDS/WIPS and spectrum analytics via dedicated third radio
- Integrated Bluetooth Low Energy beacon
- Integrated scanning radio
- Enhanced transmit power and receive sensitivity
- Integrated enterprise security and guest access
- Application-aware traffic shaping
- Optimized for voice and video
- Self-configuring, plug-and-play deployment
- Sleek design blends into office environments
- Full-time Wi-Fi location tracking via dedicated third radio

Features

Dual-radio aggregate frame rate of up to 2.98 Gbps*

The 5 GHz 4x4:4 radio and the 2.4 GHz 4x4:4 radio offer a combined dual-radio aggregate frame rate of 2.98 Gbps*, with up to 2,402 Mbps in the 5 GHz band and 574 Mbps in the 2.4 GHz band. Technologies like transmit beamforming and enhanced receive sensitivity allow the MR46 to support a higher client density than typical enterprise-class access points, resulting in better performance for more clients from each AP.

 * Refers to maximum over-the-air data frame rate capability of the radio chipset, and may exceed data rates allowed by IEEE 802.11ax operation.

Multi-user multiple input multiple output (MU-MIMO)

With support for features of 802.11ax, the MR46 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.

Dedicated third radio delivers 24x7 wireless security and RF analytics

The MR46'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.

Bluetooth Low Energy beacon and scanning radio

An integrated fourth Bluetooth® radio provides seamless deployment of Bluetooth Low Energy beacon functionality and effortless visibility of Bluetooth® devices. The MR46 enables the next generation of location-aware applications while future-proofing deployments, ensuring it's ready for new customer engagement strategies.

Automatic cloud-based RF optimization

The MR46's sophisticated and automated RF optimization means 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 MR46 features integrated, easy-to-use security technologies to provide secure connectivity for employees and guests. 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.

Enterprise mobility management (EMM) and mobile device management (MDM) integration

Meraki Systems Manager natively integrates with the MR46 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 MR46 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.

Voice and video optimizations

Industry-standard QoS features are built-in and easy to configure. Wireless multimedia (WMM) access categories, 802.1p, and DSCP standards support and ensure important applications get prioritized correctly, not only on the MR46, 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 MR46 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

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.

Specifications


Category	Specifications
Radios	<ul style="list-style-type: none"> • 2.4 GHz 802.11b/g/n/ax client access radio • 5 GHz 802.11a/n/ac/ax client access radio • 2.4 GHz and 5 GHz dual-band WIDS/WIPS, spectrum analysis, and location analytics radio • 2.4 GHz Bluetooth Low Energy (BLE) radio with beacon and scanning support • Concurrent operation of all four radios • Supported frequency bands (country-specific restrictions apply): <ul style="list-style-type: none"> ◦ 2.401 - 2.484 GHz ◦ 5.150 - 5.250 GHz (UNII-1) ◦ 5.250 - 5.350 GHz (UNII-2A) ◦ 5.490 - 5.730 GHz (UNII-2C) ◦ 5.735 - 5.825 GHz (UNII-3)
Antenna	<ul style="list-style-type: none"> • Internal antenna (5.4 dBi gain at 2.4 GHz, 6 dBi gain at 5 GHz)
802.11ax, 802.11ac Wave 2 and 802.11n Capabilities	<ul style="list-style-type: none"> • DL-OFDMA**, UL-OFDMA**, TWT support**, BSS coloring** • 4 x 4 multiple input, multiple output (MIMO) with four spatial streams

- SU-MIMO, UL MU-MIMO**, and DL MU-MIMO support
- Maximal ratio combining (MRC) & beamforming
- 20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac Wave 2); 20, 40 and 80 MHz channels (802.11ax)
- Up to 1024-QAM on both 2.4 GHz and 5 GHz bands
- Packet aggregation

 ** Feature is automatically enabled via firmware update to MR 27+

Power

- Power over Ethernet: 42.5 - 57 V (802.3at compliant)
- Alternative: 12 V DC input
- Power consumption: 30W max (802.3at **required**)
- Power over Ethernet injector and DC adapter sold separately

 **Note:** Actual power consumption may vary depending on the AP usage.

Interfaces

- 1x 100/1,000/2.5G BASE-T Ethernet (RJ45)
- 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 altitude: Up to 40,000 feet (12,192 meters)
- Operating temperature: 32 °F to 104 °F (0 °C to 40 °C)
- Humidity: 5% to 95% non-condensing

Reliability

- Mean time between failure (MTBF): 1,406,652 hrs at +25°C operating temperature

Physical Dimensions


- 12.05" x 5.06" x 1.74" (30.6 cm x 12.84 cm x 4.43 cm), not including desk mount feet or mount plate
- Weight: 28.22 oz (800 g)

Security

- Integrated layer 7 firewall with mobile device policy management

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- 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, WPA3 - Personal**, WPA3 - Enterprise**, WPA3 - Enhanced Open (OWE)***
- EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM
- TKIP and AES encryption
- Enterprise mobility management (EMM) and Mobile device management (MDM) integration
- Cisco ISE integration for guest access and BYOD posturing

 * Feature can be enabled by contacting support

** Feature supported on firmware MR 27+ and can be made available on MR 26; see the [WPA3](#) article for more information

*** Feature will be made available via a future software update

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 layer 7 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

- MR46-HW: Meraki MR46 cloud managed 802.11ax AP
- MA-PWR-30W-XX: Meraki AC adapter for MR series (XX = US/EU/UK/AU)
- MA-INJ-4: Meraki MR 802.3at PoE Injector (Power Cord Not Included)
- MA-INJ-6: Meraki MR MultiGigabit 802.3bt Injector (Power Cord Not Included)
- Note: Meraki access point license required

Compliance and Standards

Category	Standards
IEEE Standards	<ul style="list-style-type: none"> 802.11a, 802.11ac, 802.11ax, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11k, 802.11n, 802.11r, and 802.11u* <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;">  * Feature can be enabled by contacting support; see the Hotspot 2.0 article for more information </div>
Safety Approvals	<ul style="list-style-type: none"> CSA and CB 60950 & 62368 Conforms to UL 2043 (plenum rating)
Radio Approvals	<ul style="list-style-type: none"> 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
EMI Approvals (Class B)	<ul style="list-style-type: none"> Canada: FCC part 15B, ICES-003 Europe: EN 301 489-1-17, EN 55032, EN 55024 Australia/NZ: CISPR 22 Japan: VCCI
Exposure Approvals	<ul style="list-style-type: none"> Canada: FCC part 2, RSS-102 Europe: EN 50385, EN 62311, EN 62479 Australia/NZ: AS/NZS 2772
EMC	<ul style="list-style-type: none"> EN 61000

Context and Comparisons

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

MR36	MR44	MR46	MR56
DL-OFDMA, UL-OFDMA, TWT support, BSS coloring	DL-OFDMA, UL-OFDMA, TWT support, BSS coloring	DL-OFDMA, UL-OFDMA, TWT support, BSS coloring	DL-OFDMA, UL-OFDMA, TWT support, BSS coloring

2 x 2 multiple input, multiple output (MIMO) with two spatial streams	2.4 GHz: 2 x 2 multiple input, multiple output (MIMO) with two spatial streams 5 GHz: 4 x 4 multiple input, multiple output (MIMO) with four spatial streams	4 x 4 multiple input, multiple output (MIMO) with four spatial streams	8 x 8 multiple input, multiple output (MIMO) with eight spatial streams on 5 GHz 4 x 4 multiple input, multiple output (MIMO) with four spatial streams on 2.4 GHz
Maximal ratio combining (MRC) and beamforming	Maximal ratio combining (MRC) and beamforming	Maximal ratio combining (MRC) and beamforming	Maximal ratio combining (MRC) and beamforming
SU-MIMO, UL MU-MIMO, and DL MU-MIMO support	SU-MIMO, UL MU-MIMO, and DL MU-MIMO support	SU-MIMO, UL MU-MIMO, and DL MU-MIMO support	SU-MIMO, UL MU-MIMO, and DL MU-MIMO support
20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac wave 2); 20, 40 and 80 MHz channels (802.11ax)	20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac wave 2); 20, 40 and 80 MHz channels (802.11ax)	20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac wave 2); 20, 40 and 80 MHz channels (802.11ax)	20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac wave 2); 20, 40 and 80MHz channels (802.11ax)
Up to 1024-QAM on both 2.4 GHz and 5 GHz bands	Up to 1024-QAM on both 2.4 GHz and 5 GHz bands	Up to 1024-QAM on both 2.4 GHz and 5 GHz bands	Up to 1024-QAM on both 2.4 GHz and 5 GHz bands
Packet aggregation	Packet aggregation	Packet aggregation	Packet aggregation

Power

MR36	MR44	MR46	MR56
Power over Ethernet: 37 - 57 V (802.af compliant)	Power over Ethernet: 42.5 - 57 V (802.3at) or 37 - 57 V (802.3af) - low power mode **	Power over Ethernet: 42.5 - 57 V (802.3at compliant)	Power over Ethernet: 42.5 - 57 V (802.3at compliant)
Alternative: 12 V DC input	Alternative: 12 V DC input	Alternative: 12 V DC input	Alternative: 12 V DC input
Power consumption: 15W max (802.3af)	Power consumption: 30W max (802.3at) or 15W max (802.3af) - low power mode **	Power consumption: 30W max (802.3at required)	Power consumption: 30W max (802.3at required)
Power over Ethernet injector and DC adapter sold separately	Power over Ethernet injector and DC adapter sold separately	Power over Ethernet injector and DC adapter sold separately	Power over Ethernet injector and DC adapter sold separately

 **Note:**

Actual power consumption may vary depending on the AP usage.



** Feature available via firmware update to MR 27.6+. Please see our [Low Power Mode](#) article for more information.

Interfaces

MR36	MR44	MR46	MR56
1x 10/100/1000 BASE-T Ethernet (RJ45)	1x 100/1000/2.5G BASE-T Ethernet (RJ45)	1x 100/1000/2.5G BASE-T Ethernet (RJ45)	1x 100/1000/2.5G/5G BASE-T Ethernet (RJ45)
1x DC power connector (5.5 mm x 2.5 mm, center positive)	1x DC power connector (5.5 mm x 2.5 mm, center positive)	1x DC power connector (5.5 mm x 2.5 mm, center positive)	1x DC power connector (5.5 mm x 2.5 mm, center positive)

Physical Dimensions

MR36	MR44	MR46	MR56
9.84" x 4.72" x 1.42" (25 cm x 12 cm x 3.6 cm), not including desk mount feet or mount plate	12.05" x 5.06" x 1.74" (30.6 cm x 12.84 cm x 4.43 cm), not including desk mount feet or mount plate	12.05" x 5.06" x 1.74" (30.6 cm x 12.84 cm x 4.43 cm), not including desk mount feet or mount plate	12.83" x 5.54" x 1.76" (32.6 cm x 14.079 cm x 4.47 cm), not including desk mount feet or mount plate
Weight: 17.35 oz (492 g)	Weight: 26.07 oz (739 g)	Weight: 28.22 oz (800 g)	Weight: 35.27 oz (1 kg)

RF Performance Table

2.4 GHz

Operating Band	Operating Mode	Data Rate	TX Power (conducted)
2.4 GHz	802.11b	1 Mb/s	26.0
		2 Mb/s	26.0
		5.5 Mb/s	26.0

		11 Mb/s	26.0
2.4 GHz	802.11g	6 Mb/s	26.0
		9 Mb/s	26.0
		12 Mb/s	24.0
		18 Mb/s	24.0
		24 Mb/s	23.0
		36 Mb/s	23.0
		48 Mb/s	22.0
		54 Mb/s	22.0
2.4 GHz	802.11n (HT20)	MCS0	26.0
		MCS1	26.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	22.0
		MCS6	22.0
		MCS7	21.0
2.4 GHz	802.11ac (VHT20)	MCS0	26.0
		MCS1	26.0

		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	22.0
		MCS6	22.0
		MCS7	21.0
		MCS8	20.0
2.4 GHz	802.11ax (HE20)	MCS0	26.0
		MCS1	26.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	23.0
		MCS6	22.0
		MCS7	21.0
		MCS8	20.0
		MCS9	20.0
		MCS10	19.0
		MCS11	19.0

5 GHz

Operating Band	Operating Mode	Data Rate	TX Power
5 GHz	802.11a	6 Mb/s	26.0
		9 Mb/s	26.0
		12 Mb/s	24.0
		18 Mb/s	24.0
		24 Mb/s	23.0
		36 Mb/s	23.0
		48 Mb/s	22.0
		54 Mb/s	22.0
		5 GHz	802.11n (HT20)
MCS1	26.0		
MCS2	24.0		
MCS3	24.0		
MCS4	24.0		
MCS5	23.0		
MCS6	22.0		
MCS7	22.0		

5 GHz	802.11n (HT40)	MCS0	24.0
		MCS1	24.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	23.0
		MCS6	22.0
		MCS7	22.0
5 GHz	802.11ac (VHT20)	MCS0	26.0
		MCS1	26.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	23.0
		MCS6	22.0
		MCS7	22.0
5 GHz	802.11ac (VHT40)	MCS0	24.0
		MCS1	24.0

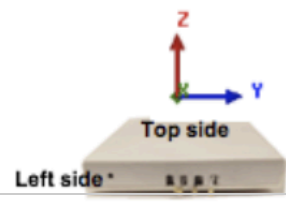
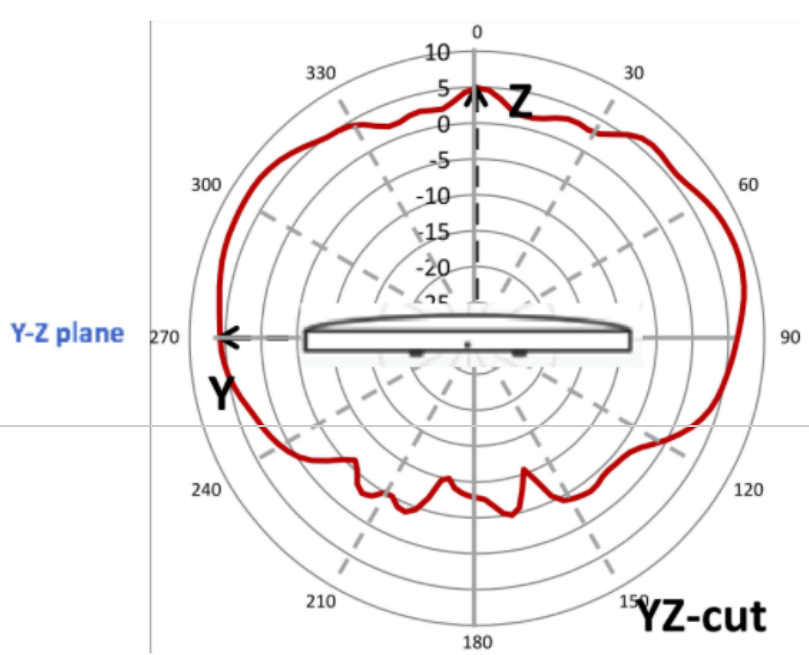
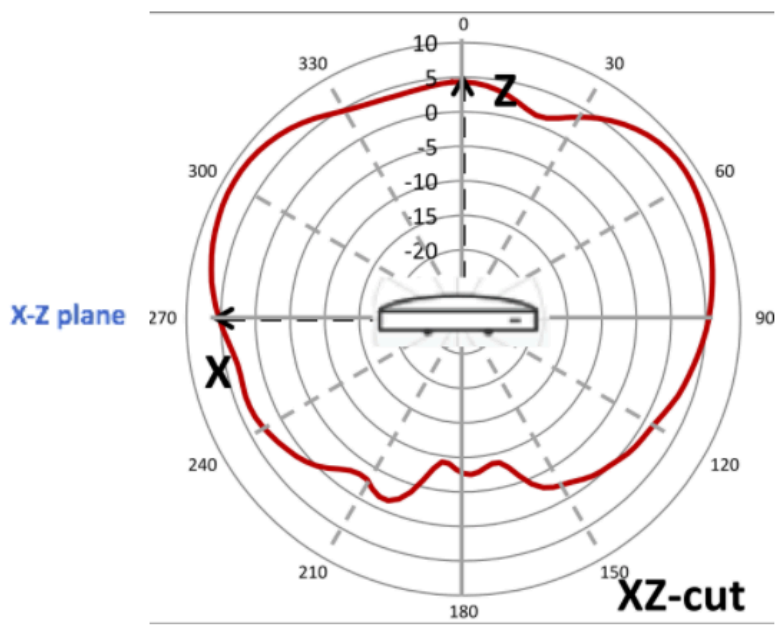
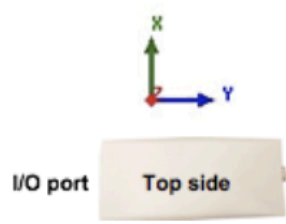
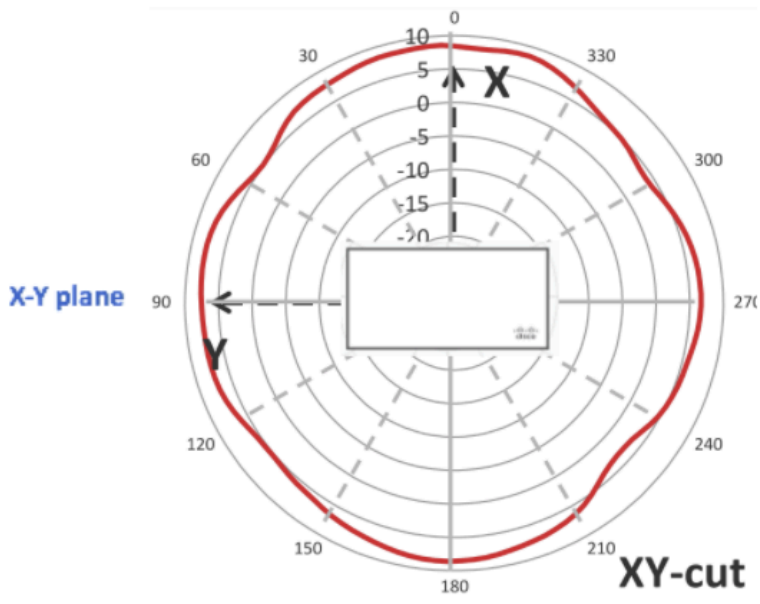
		MCS2	24.0
		MCS3	24.0
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		MCS5	23.0
		MCS6	22.0
		MCS7	22.0
		MCS8	20.5
		MCS9	20.0
5 GHz	802.11ac (VHT80)	MCS0	24.0
		MCS1	24.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	22.0
		MCS6	22.0
		MCS7	20.0
		MCS8	19.0
		MCS9	19.0
5 GHz	802.11ax (HE20)	MCS0	26.0

		MCS1	26.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	23.0
		MCS6	22.0
		MCS7	22.0
		MCS8	21.0
		MCS9	21.0
		MCS10	19.0
		MCS11	19.0
5 GHz	802.11ax (HE40)	MCS0	24.0
		MCS1	24.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	23.0
		MCS6	22.0
		MCS7	21.5

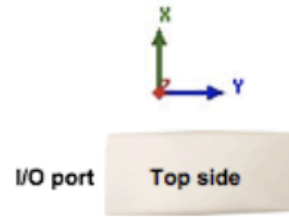
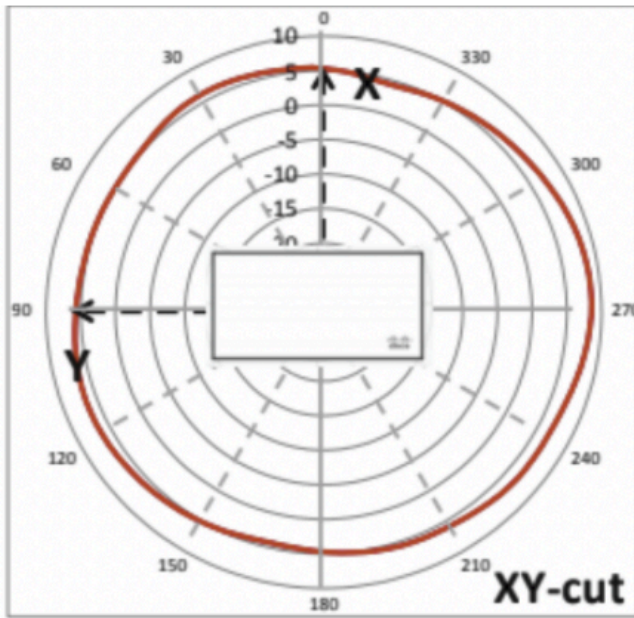
		MCS8	20.5
		MCS9	20.0
		MCS10	18.5
		MCS11	18.5
5 GHz	802.11ax (HE80)	MCS0	24.0
		MCS1	24.0
		MCS2	24.0
		MCS3	24.0
		MCS4	24.0
		MCS5	22.0
		MCS6	22.0
		MCS7	20.0
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		MCS9	19.0
		MCS10	17.0
		MCS11	17.0

Signal Coverage Patterns

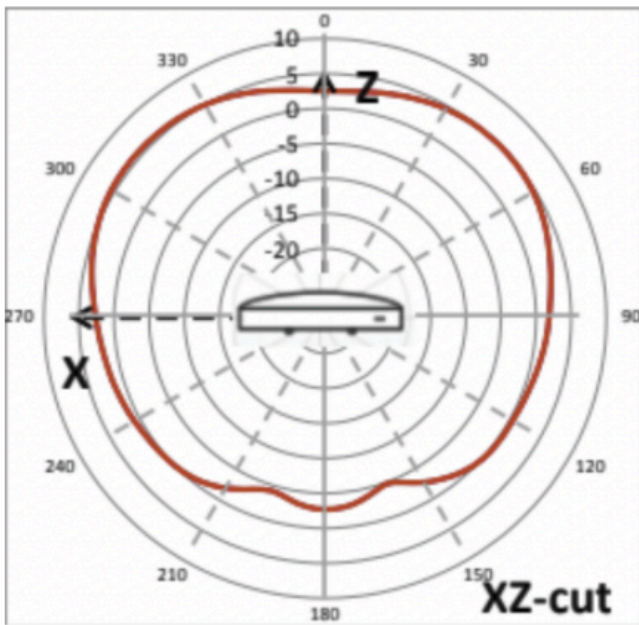
5 GHz - Wireless



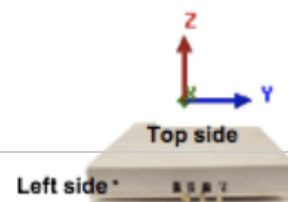
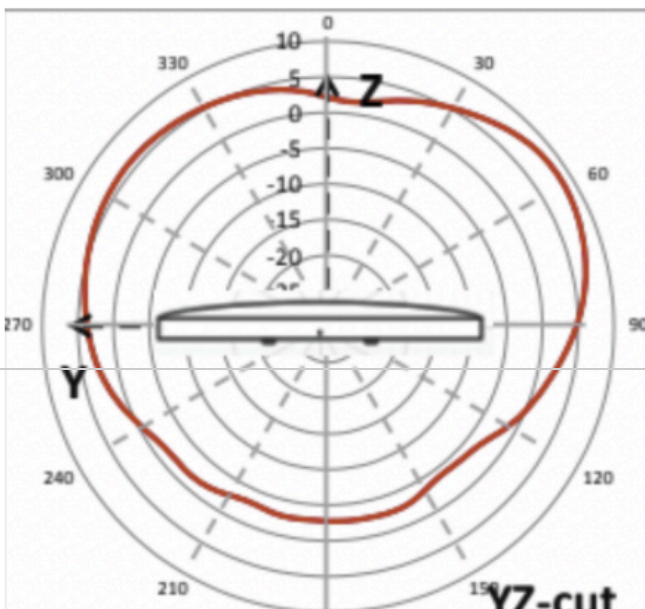
X-Y plane



X-Z plane

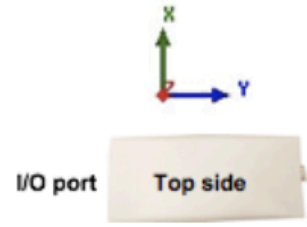
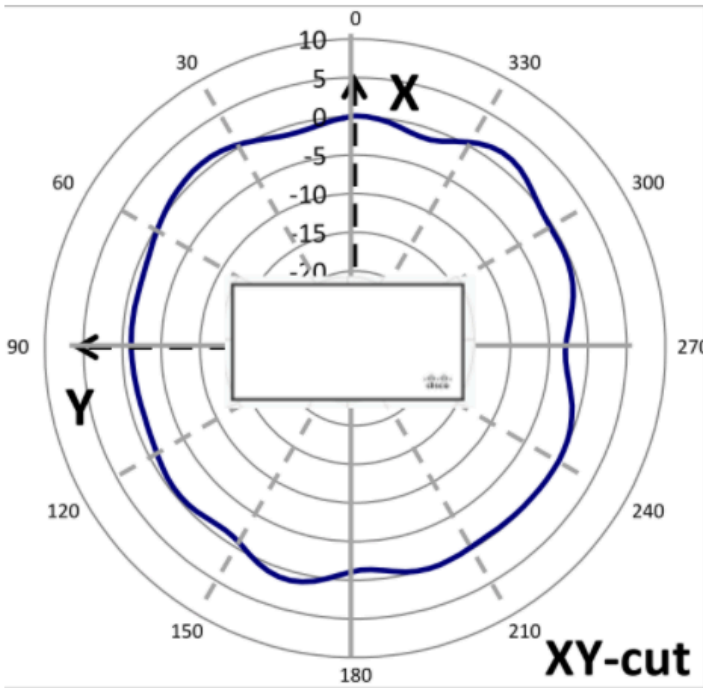


Y-Z plane

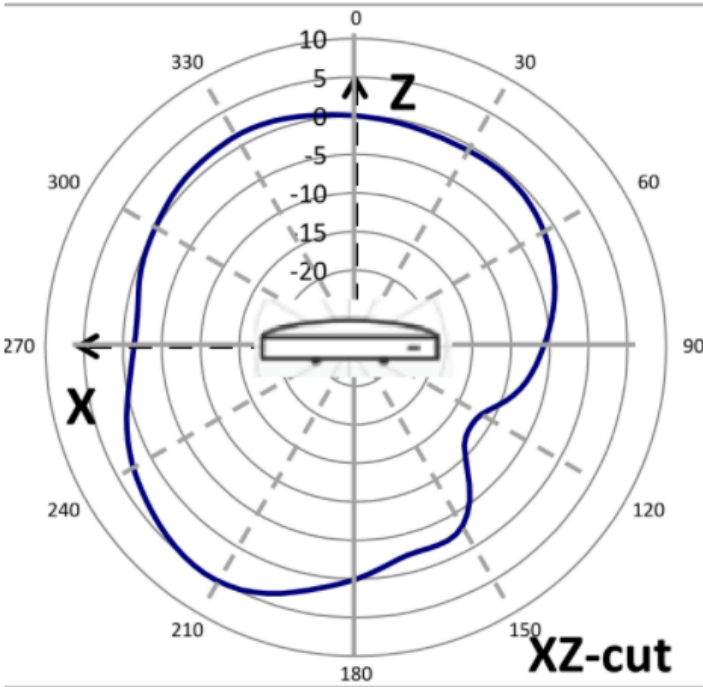


2.4 GHz - Bluetooth®

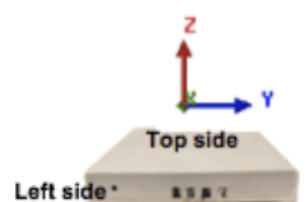
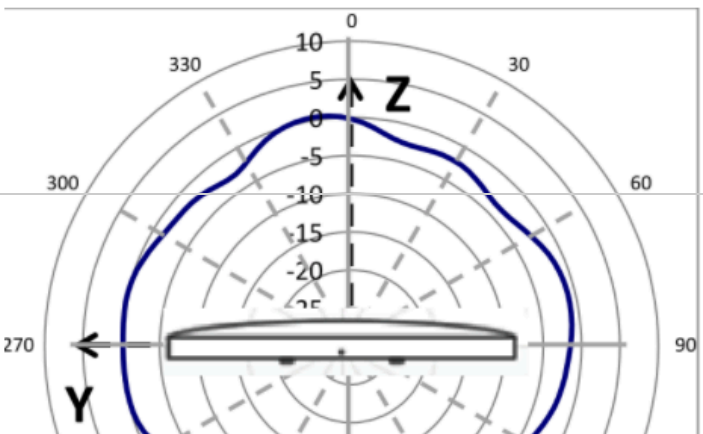
X-Y plane



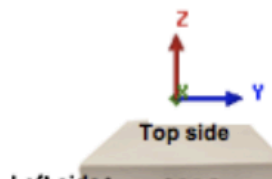
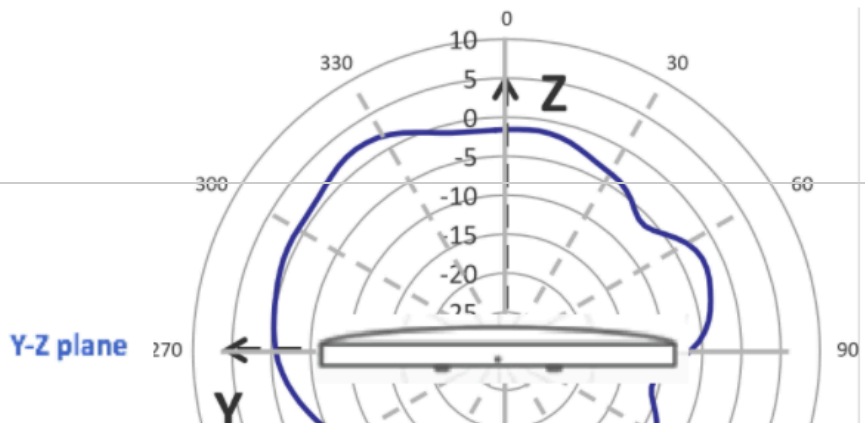
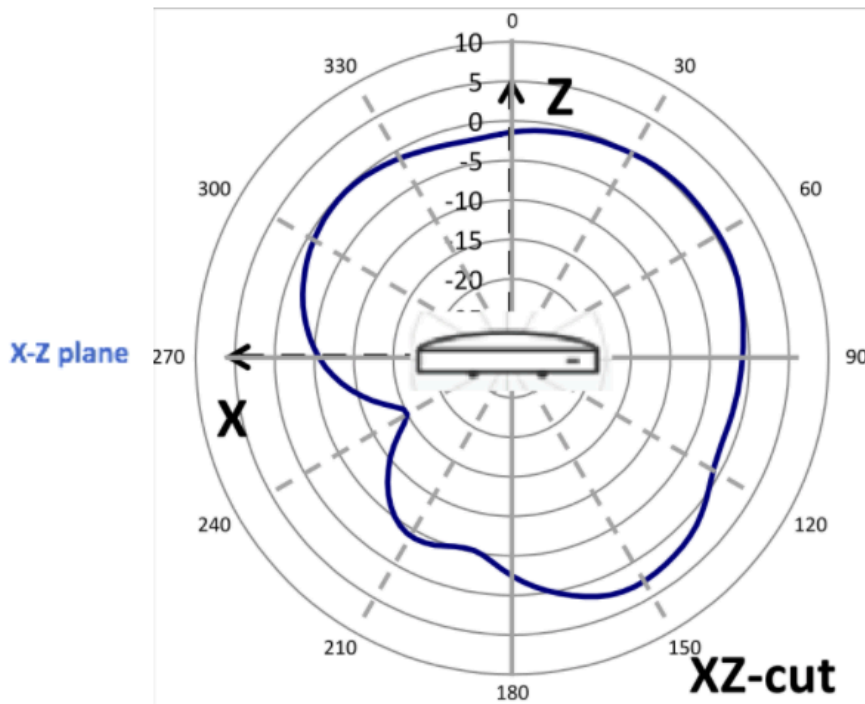
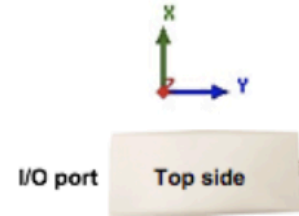
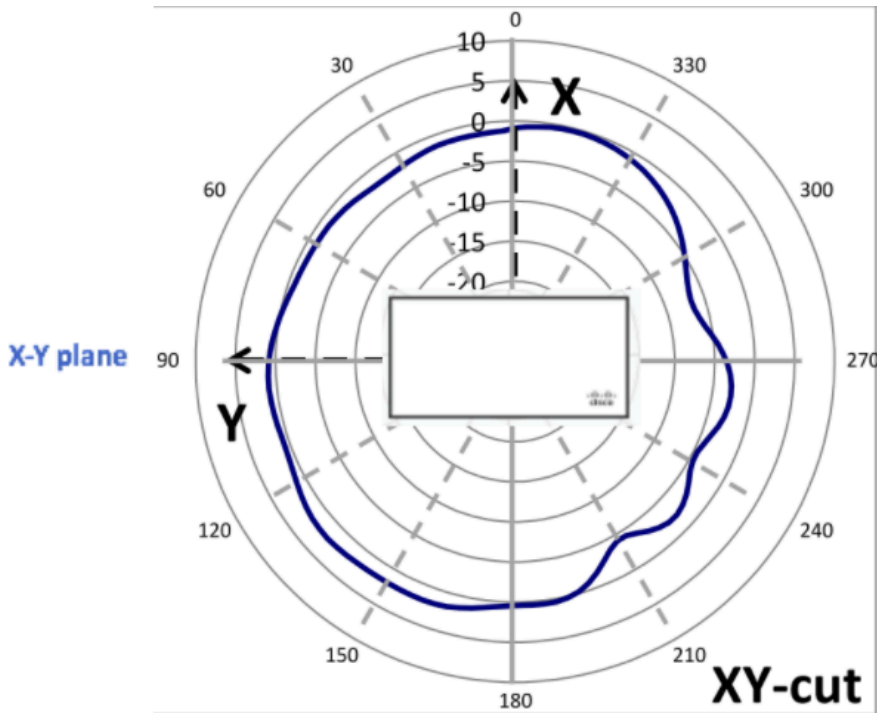
X-Z plane

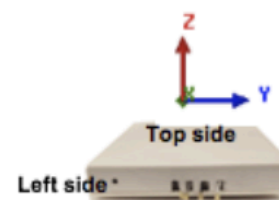
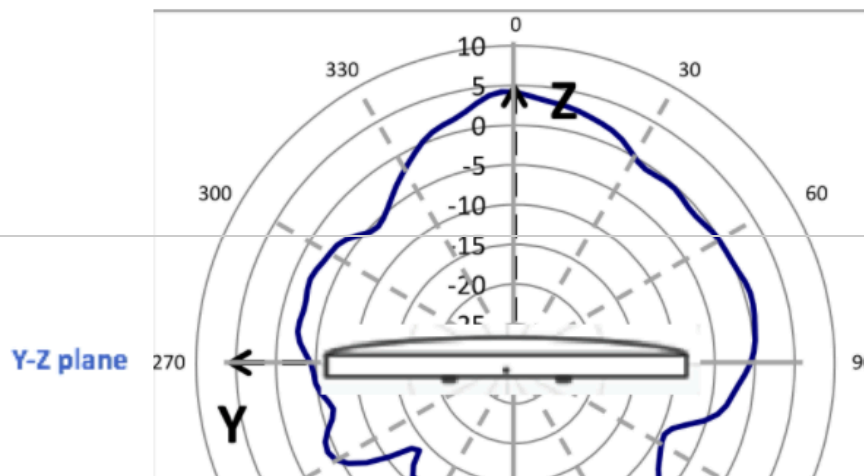
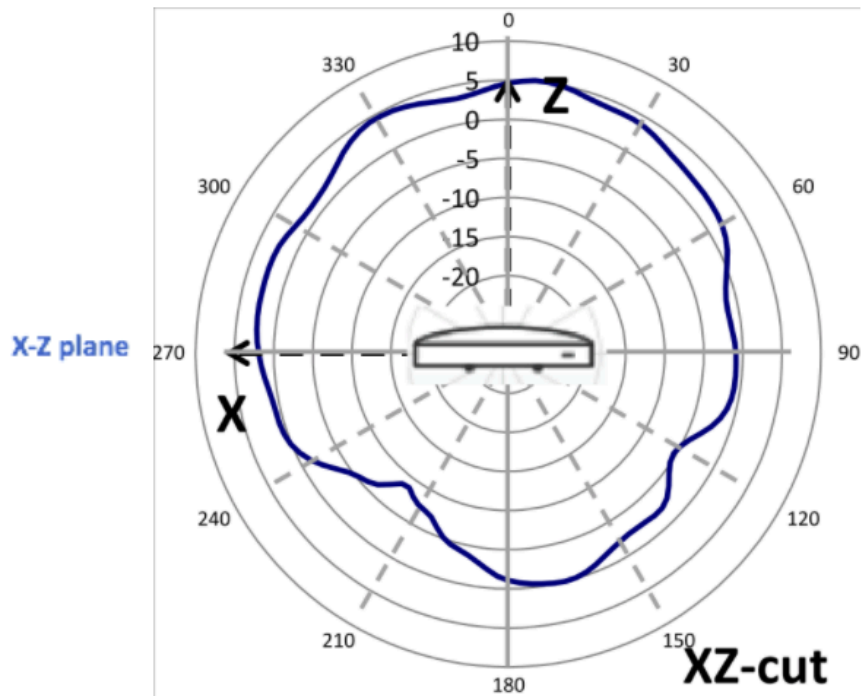
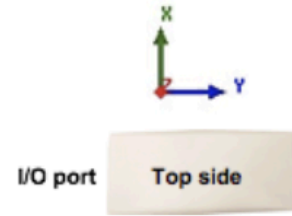
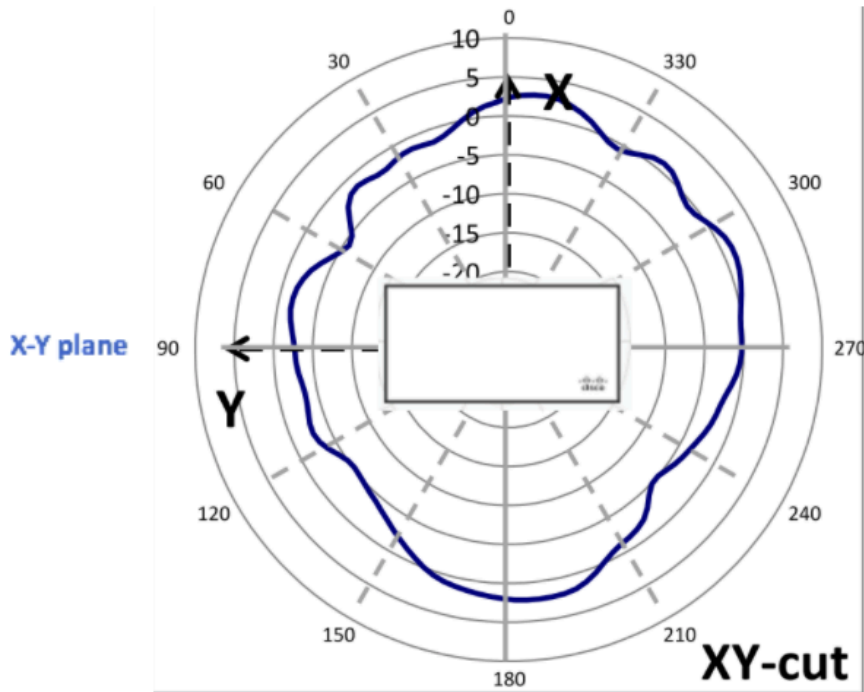


Y-Z plane



2.4 GHz - Scanning





Installation Guide

For instructions on how to install and configure MR46 access points, please refer to the [MR46 Installation Guide](#).