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CISCO

MR42

MCS

BUSINESS TELEPHONES AND DATA SYSTEMS
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Dual-band 3x3 MU-MIMO 802.11ac Wave 2 Access Point
with dedicated security and RF management radio
and Bluetooth Low Energy Beacon and scanning radio

High performance cloud-managed 802.11ac wireless

The Cisco Meraki MR42 is a three–radio, cloud-managed 3x3 MIMO 802.11ac Wave 2 access point. Designed for general purpose next-generation deployments in offices, schools, hospitals and hotels, the MR42 provides performance, security, and manageability.

The MR42 provides a maximum 1.5 Gbps frame rate with concurrent 802.11ac Wave 2 and 802.11n 3x3:3 MIMO radios, and security and spectrum visibility via a third radio dedicated to 24x7 WIDS/WIPS and automated RF optimization. An integrated Bluetooth low energy (BLE) radio delivers Beacon functionality and BLE device scanning.

The combination of cloud management, 802.11ac Wave 2, full-time RF environment scanning, and an integrated Bluetooth technology delivers the high throughput, reliability, and flexibility required by the most demanding business applications like voice and high-definition streaming video, both today and tomorrow.

MR42 and Meraki Cloud Management: A Powerful Combo

The MR42 is managed through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without training or certifications. Since the MR42 is self-configuring and managed over the web, it can even be deployed at a remote location without on-site IT staff.

The MR42 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 MR42'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 MU-MIMO 802.11ac Wave 2

- 1.9 Gbps aggregate dual-band frame rate

- 24x7 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 Wifi location tracking via dedicated 3rd radio

- 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 1.9 Gbps
A 5 GHz 3x3:3 802.11ac Wave 2 radio and a 2.4 GHz 2x2:2 802.11ac radio offer a combined aggregate dual-band data rate of 1.9 Gbps. Supports up to 1,300 Mbps in the 5 GHz band (with 3SS/VHT80 clients) and 600 Mbps in the 2.4 GHz band (with 3SS/VHT40 clients). 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 required APs for a given deployment.

Dedicated third radio delivers 24x7 wireless security and RF analytics
The MR42'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.

Bluetooth low energy Beacon and scanning
An integrated Bluetooth low energy radio provides seamless deployment of BLE Beacon functionality and effortless visibility of BLE devices within range of the AP. The MR42 enables the next generation of location-aware applications and engagement right out of the box.

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 real-time full-spectrum RF analysis data collected by the dedicated third radio is continuously fed back to the Meraki cloud. The Meraki cloud then automatically tunes the MR42's channel selection, transmit power, and client connection settings for optimal performance under the most challenging RF conditions.

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, Air Marshal, a highly optimized built-in WIPS, scans continuously for threats and remediates them as commanded, all without disrupting client service. Alarms and optional auto-containment of 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 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 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 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.

Voice and Video optmizations
Industry standard QoS features are easy to configure like Wireless Multi Media (WMM) Access Categories, 802.1p, and DSCP.

Low-profile, environmentally friendly design
Despite its robust feature set, the MR42 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.

Self-configuring, self-optimizing, self-healing
When plugged in, the MR42 automatically connects to the Meraki cloud, downloads its configuration, and joins the appropriate network. The MR42 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.
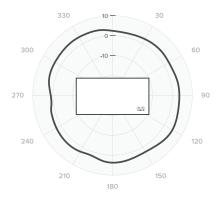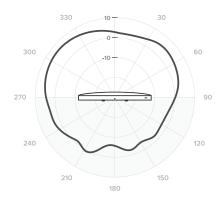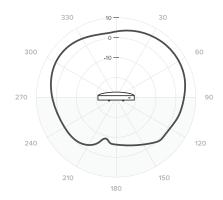
RF Performance Table

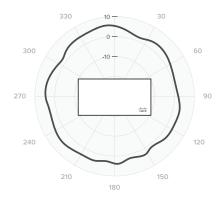| Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s	21 dBm	-98 dBm
		2 Mb/s	21 dBm	-93.5 dBm
		5.5 Mb/s	21dBm	-92 dBm
		11 Mb/s	21 dBm	-86 dBm
2.4 GHz	802.11g	6 Mb/s	21 dBm	-93 dBm
		9 Mb/s	21 dBm	-92.5 dBm
		12 Mb/s	20.5 dBm	-91 dBm
		18 Mb/s	20.5 dBm	-89 dBm
		24 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 (HT40)	MCS0/8/16	20.5/23.5/25.2 dBm	-90/-93/-94.7 dBm
		MCS1/9/17	20.5/23.5/25.2 dBm	-87/-90/-91.7 dBm
		MCS2/10/18	20/23/24.7 dBm	-84/-87/-88.7 dBm
		MCS3/11/19	20/23/24.7 dBm	-81/-84/-85.7 dBm
		MCS4/12/20	19.5/22.5/24.2 dBm	-78/-81/-82.7 dBm
		MCS5/13/21	19.5/22.5/24.2 dBm	-73/-76/-77.7dBm
		MCS6/14/22	17/20/21.7 dBm	-72/-75/-76.7 dBm
		MCS7/15/23	17/20/21.7 dBm	-70/-73/-74.7 dBm
2.4 GHz	802.11ac (HT20)	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
2.4 GHz	802.11ac (HT40)	MCS0/0/0	20.5/23.5/25.2 dBm	-90/-93/-94.7 dBm
		MCS1/1/1	20.5/23.5/25.2 dBm	-87/-90/-91.7 dBm
		MCS2/2/2	20/23/24.7 dBm	-84/-87/-88.7 dBm
		MCS3/3/3	20/23/24.7 dBm	-81/-84/-85.7 dBm
		MCS4/4/4	19.5/22.5/24.2 dBm	-78/-81/-82.7 dBm
		MCS5/5/5	19.5/22.5/24.2 dBm	-73/-76/-77.7dBm
		MCS6/6/6	17/20/21.7 dBm	-72/-75/-76.7 dBm
		MCS7/7/7	17/20/21.7 dBm	-70/-73/-74.7 dBm
		MCS8/8/8	16.5/xx/xx dBm	-66/xx/xx dBm
		MCS9/9/9	16/xx/xx dBm	-64/xx/xx dBm

Signal Coverage Patterns
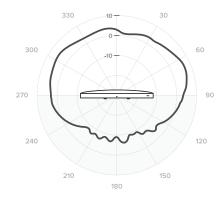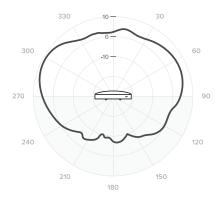
Radiation Pattern for 2.4GHz Antennas

Radiation Pattern for 5GHz Antennas

RF Performance Table

Operating Band	Operating 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	22/25/26.7 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/-76.7dBm
		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
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/-76.7dBm
		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 (HT80)	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

Specifications

Radios

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

Concurrent operations of all four radios

Max aggregate rate 1.9 Gbit/s

SU-MIMO and MU-MIMO support

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)

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: 20W max (802.3at)

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 ½" 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 (5 dBi gain at 2.4 GHz, 5.5 dBi gain at 5 GHz)

Interfaces

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

1x DC power connector (5.5 mm x 2.5 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

Advanced Power Save (U-APSD)

WMM Access Categories

DSCP

802.1p

Layer 7 application traffic shaping and firewall

Mobility

PMK and OKC credential support for fast Layer 2 roaming

802.11r and 802.11k

Layer 3 roaming

LED Indicators

2 Ethernet status

1 power/booting/firmware upgrade status

Regulatory

RoHS

UL2043 (Plenum rating)

EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC

Warranty

Lifetime hardware warranty with advanced replacement included

Ordering Information

MR42-HW: Meraki MR34 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 Enterprise license required.