

# MR20

Dual-band, 802.11ac Wave 2 access point delivering entry-level enterprise wireless for small businesses and SOHO deployments



## Entry-level cloud-managed 802.11ac wireless

The Cisco Meraki MR20 is a dual-radio, cloud-managed 2x2:2 802.11ac Wave 2 access point with MU-MIMO support. Designed for basic, very low-density deployments, the MR20 provides enterprise-grade security and simple management. The MR20 delivers a maximum 1.3 Gbps\* aggregate frame rate with concurrent 2.4 GHz and 5 GHz radios.

The combination of intuitive cloud management, 802.11ac Wave 2 wireless, and enterprise-grade security provide safe, reliable WiFi for small business and home office networks that want basic connectivity.

## MR20 and Meraki cloud management: a powerful combination

The MR20 is managed through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without training or certifications. Because the access point is monitored 24x7 by the Meraki cloud, the MR20 can deliver real-time alerts if the network encounters problems, and diagnostic tools enable real-time troubleshooting over the web. The MR20'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

- 2x2 MU-MIMO 802.11ac Wave 2
- 1.3 Gbps\* aggregate dual-band frame rate
- Integrated enterprise security and guest access
- Built-in WIPS for threat detection and remediation
- Application-aware traffic shaping
- Self-configuring, plug-and-play deployment
- Integrated location analytics and heat map

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

## Features

### Aggregate data rate of up to 1.3 Gbps\*

A 5 GHz 2x2:2 radio supporting 80 MHz channel widths and a 2.4 GHz 2x2:2 radio supporting 40 MHz channel widths offer a combined dual-radio aggregate frame rate of 1.3 Gbps\*, with up to 866 Mbps in the 5 GHz band thanks to 802.11ac Wave 2 and 400 Mbps in the 2.4 GHz band.

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

With support for the 802.11ac Wave 2 standard, the MR20 offers MU-MIMO for more efficient transmission to multiple clients. This increases the total network performance and improves the end user experience.

### Integrated enterprise security and guest access

The MR20 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 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.

### Secure wireless environments using Air Marshal

The MR20 comes equipped with Air Marshal, a built-in wireless intrusion prevention system (WIPS) for threat detection and attack remediation. MR20 access points will scan their environment opportunistically based on user-defined preferences. Alarms and auto-containment of malicious rogue APs are configured via flexible remediation policies, ensuring optimal security and performance in even the most challenging wireless environments.

### Application-aware traffic shaping

The MR20 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.

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

When plugged in, the MR20 automatically connects to the Meraki cloud, downloads its configuration, and joins the appropriate network. It self-optimizes, determining the ideal channel, transmit power, and client connection parameters. And it self-heals in the event of a switch or cable failure by meshing with nearby Meraki access points, providing continued gateway.

### Integrated analytics

Drill down into the details of your network usage with highly granular traffic analytics. Extend your visibility into the physical world with built-in location analytics that enables you to view visitor numbers, dwell time, repeat visit rates, and track foot traffic trends.

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

## MR20 Tx / Rx Tables | 2.4 GHz

Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s	19 dBm	-99 dBm
		2 Mb/s	19 dBm	-96 dBm
		5.5 Mb/s	19 dBm	-94 dBm
		11 Mb/s	19 dBm	-91 dBm
2.4 GHz	802.11g	6 Mb/s	19 dBm	-94 dBm
		9 Mb/s	19 dBm	-93 dBm
		12 Mb/s	19 dBm	-92 dBm
		18 Mb/s	19 dBm	-89 dBm
		24 Mb/s	19 dBm	-86 dBm
		36 Mb/s	18 dBm	-83 dBm
		48 Mb/s	17 dBm	-78 dBm
		54 Mb/s	16 dBm	-77 dBm
2.4 GHz	802.11n (HT20)	MCS0/8	19/19 dBm	-93/-93 dBm
		MCS1/9	19/19 dBm	-90/-90 dBm
		MCS2/10	19/19 dBm	-88/-88 dBm
		MCS3/11	19/19 dBm	-84/-84 dBm
		MCS4/12	18/18 dBm	-81/-81 dBm
		MCS5/13	17/17 dBm	-77/-77 dBm
		MCS6/14	16/16 dBm	-75/-75 dBm
		MCS7/15	15/15 dBm	-74/-74 dBm

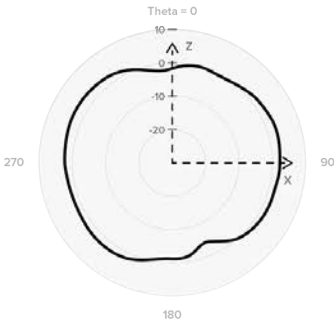
## MR20 Tx / Rx Tables | 5 GHz

Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11a	6 Mb/s	19 dBm	-93 dBm
		9 Mb/s	19 dBm	-92 dBm
		12 Mb/s	19 dBm	-90 dBm
		18 Mb/s	19 dBm	-89 dBm
		24 Mb/s	19 dBm	-85 dBm
		36 Mb/s	18 dBm	-82 dBm
		48 Mb/s	17 dBm	-77 dBm
		54 Mb/s	18 dBm	-76 dBm
5 GHz	802.11n (HT20)	MCS0/8	18/18 dBm	-92/-92 dBm
		MCS1/9	18/18 dBm	-89/-89 dBm
		MCS2/10	18/18 dBm	-87/-87 dBm
		MCS3/11	18/18 dBm	-83/-83 dBm
		MCS4/12	18/18 dBm	-80/-80 dBm
		MCS5/13	17/17 dBm	-76/-76 dBm
		MCS6/14	16/16 dBm	-74/-74 dBm
		MCS7/15	15/15 dBm	-72/-72 dBm
5 GHz	802.11n (HT40)	MCS0/8	18/18 dBm	-89/-89 dBm
		MCS1/9	18/18 dBm	-86/-86 dBm
		MCS2/10	18/18 dBm	-84/-84 dBm
		MCS3/11	18/18 dBm	-80/-80 dBm
		MCS4/12	18/18 dBm	-77/-77 dBm
		MCS5/13	17/17 dBm	-73/-73 dBm
		MCS6/14	16/16 dBm	-72/-72 dBm
		MCS7/15	15/15 dBm	-70/-70 dBm

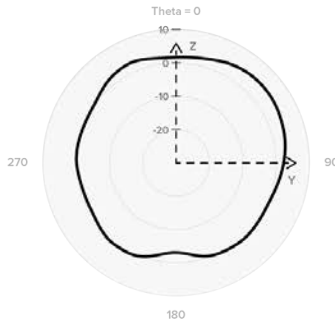
Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ac (VHT20)	MCS0	18 dBm	-92 dBm
		MCS1	18 dBm	-89 dBm
		MCS2	18 dBm	-88 dBm
		MCS3	18 dBm	-85 dBm
		MCS4	18 dBm	-81 dBm
		MCS5	17 dBm	-78 dBm
		MCS6	16 dBm	-75 dBm
		MCS7	15 dBm	-74 dBm
		MCS8	14 dBm	-70 dBm
5 GHz	802.11ac (VHT40)	MCS0	18 dBm	-89 dBm
		MCS1	18 dBm	-87 dBm
		MCS2	18 dBm	-85 dBm
		MCS3	18 dBm	-82 dBm
		MCS4	18 dBm	-78 dBm
		MCS5	17 dBm	-74 dBm
		MCS6	16 dBm	-73 dBm
		MCS7	15 dBm	-71 dBm
		MCS8	14 dBm	-67 dBm
		MCS9	13 dBm	-66 dBm
5 GHz	802.11ac (VHT80)	MCS0	18 dBm	-86 dBm
		MCS1	18 dBm	-84 dBm
		MCS2	18 dBm	-82 dBm
		MCS3	18 dBm	-78 dBm
		MCS4	18 dBm	-76 dBm
		MCS5	17 dBm	-71 dBm
		MCS6	16 dBm	-70 dBm
		MCS7	15 dBm	-69 dBm
		MCS8	13 dBm	-64 dBm
		MCS9	11 dBm	-62 dBm

**MR20**

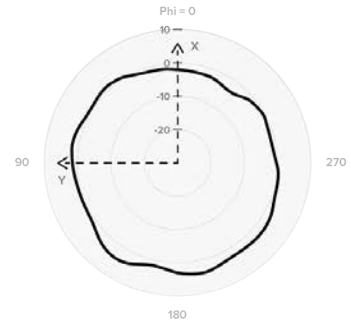
**Radiation Pattern for 2.4 GHz Antennas**



**XZ-cut**



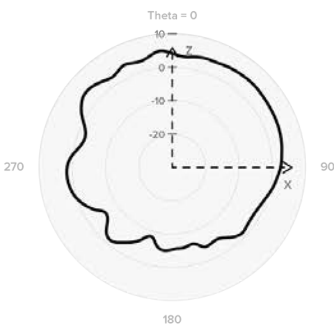
**YZ-cut**



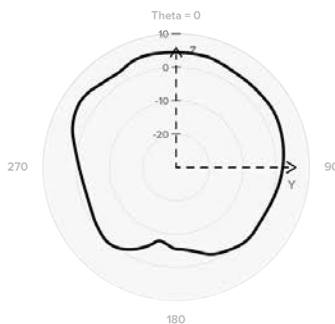
**XY-cut**  
(Theta = 90)

**MR20**

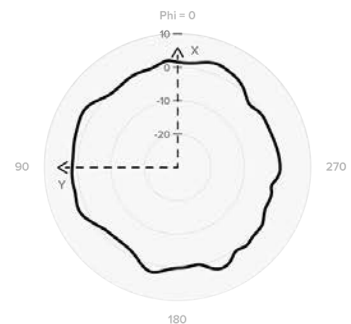
**Radiation Pattern for 5 GHz Antennas**



**XZ-cut**



**YZ-cut**



**XY-cut**  
(Theta = 90)

# Specifications

## Radios

- 2.4 GHz 802.11b/g/n/ac client access radio
- 5 GHz 802.11a/n/ac Wave 2 client access radio

## Operating bands

- 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

- 2x2 multiple input, multiple output (MIMO) with two spatial streams
- 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 and 5 GHz bands
- Packet aggregation

## Power

- Power over Ethernet: 37-57 V (802.3af compatible)
- Alternative 12 V DC input
- Power consumption: 11 W max (802.3af)
- Power over Ethernet injector and DC adapter sold separately

## Mounting

- All standard mounting hardware included
- Desktop, ceiling, and wall mount capable

## 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

- 7.95" x 4.88" x 1.02" (202 mm x 124 mm x 25.8 mm), not including deskmount feet or mount plate
- Weight: 9.6 oz (272 g)

## Antenna

- Integrated omni-directional antennae (5.6 dBi gain at 2.4 GHz, 5.3 dBi gain at 5 GHz)

## Interfaces

- 1x 10/100/1000 BASE-T Ethernet (RJ45)
- 1x DC power connector (5.5 mm x 2.5 mm, center positive)

## 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, OKC, and 802.11r for fast Layer 2 roaming
- Distributed or centralized Layer 3 roaming

## LED Indicators

- 2 Ethernet status for Ethernet port
- 1 power/booting/firmware upgrade status

## Warranty

- Lifetime hardware warranty with advanced replacement included

## Ordering Information

- MR20-HW: Meraki MR20 Cloud Managed 802.11ac AP
- MA-PWR-30W-XX: Meraki AC Adapter for MR Series (XX = US/EU/UK/AU)
- MA-INJ-4-XX: Cisco Meraki 802.3at Power over Ethernet Injector (XX = US/EU/UK/AU)
- Note: Meraki Enterprise license required

## Compliance and Standards

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### Safety Approvals

UL 60950-1

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

IEC 60950-1

EN 60950-1

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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: NOM-121

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 32

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### Exposure Approvals

Canada: FCC Part 2, RSS-102

Europe: EN 50385, EN 62311, EN 62479

Australia: AS/NZS 2772