

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

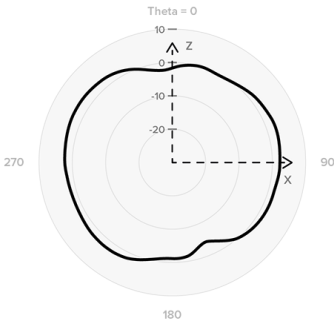
MR20 Tx / Rx Tables | 5 GHz

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

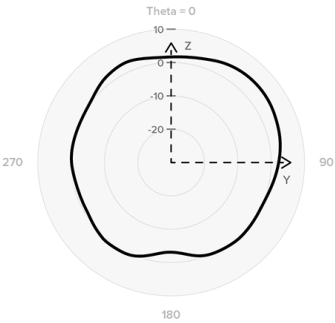
Operating Band	Operating Mode	Data Rate	TX Power	RX Sensitivity
5 GHz	802.11ac (VHT20)	MCS0	18 dBm	-92 dBm
		MCS1	18 dBm	-89 dBm
		MCS2	18 dBm	-88 dBm
		MCS3	18 dBm	-85 dBm
		MCS4	18 dBm	-81 dBm
		MCS5	17 dBm	-78 dBm
		MCS6	16 dBm	-75 dBm
		MCS7	15 dBm	-74 dBm
		MCS8	14 dBm	-70 dBm
5 GHz	802.11ac (VHT40)	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

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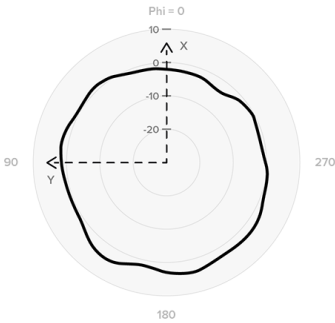
Radiation Pattern for 2.4 GHz Antennas



XZ-cut



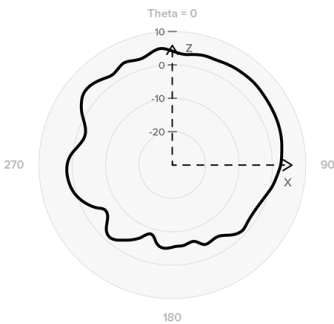
YZ-cut



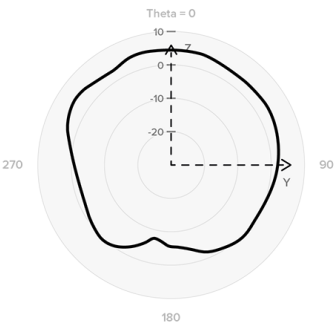
XY-cut
(Theta = 90°)

MR20

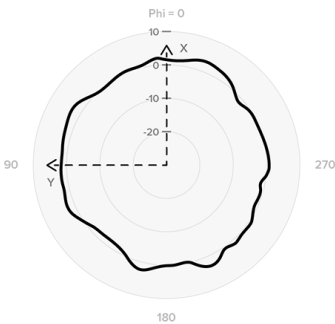
Radiation Pattern for 5 GHz Antennas



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

Safety Approvals

UL 60950-1

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

IEC 60950-1

EN 60950-1

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

EMI Approvals (Class B)

Canada: FCC Part 15B, ICES-003

Europe: EN 301 489-1-17, EN 55032, EN 55024

Australia/NZ: CISPR 32

Exposure Approvals

Canada: FCC Part 2, RSS-102

Europe: EN 50385, EN 62311, EN 62479

Australia: AS/NZS 2772

ThunderIT for the REMC SAVE Contract

ThunderIT offers products and services for REMC SAVE contract customers at a discounted price in accordance to the REMC price list.

Overview for the REMC SAVE contract

REMC SAVE provides large volume contracts for a variety of educational resources, including furniture, school and office supplies, software and digital services, and technology.

The program saves time and money by providing bids compliant with the Michigan Revised School Code that also provides local school districts with the authority to purchase using REMC contracts. The legislation that established REMCs (Michigan Compiled Laws Act 451 Section 380.671), and State Board of Education Rules, enables REMCs to bid on behalf of local school districts and also provide local school districts with the authority to purchase using REMC contracts. All items and vendors are awarded through a sealed bid process by the REMC SAVE Bid Project and approved by the REMC Association.

REMC SAVE is provided as a project of the REMC Association of Michigan for all Michigan schools. REMC SAVE provides large-volume contracts for a variety of educational resources. By using REMC SAVE contracts, Michigan schools have saved more than \$1 billion since 1990. Every dollar saved through REMC SAVE today is one more dollar to invest in instruction tomorrow.

ThunderIT services the following REMC districts; REMC 1, REMC 2N, REMC 2C, REMC 2S, REMC 3, REMC 4, REMC 5, REMC 6, REMC 7, REMC 8, REMC 9, REMC 10, REMC 11, REMC 12W, REMC 12E, REMC 13, REMC 14W, REMC 14E, REMC 15, REMC 16, REMC 17, REMC 18S, REMC 18N, REMC 19W, REMC 19E, REMC 20, REMC 21, REMC 22

ThunderIT services the following REMC customers; AKIVA HEBREW DAY SCHOOL, BIRNEY MIDDLE SCHOOL, BUSSEY CTR-EARLY CHILDHOOD DEV, DEVRY UNIVERSITY - SOUTHFIELD – CENTRAL, HAMILTON ACADEMY CENTRAL OFFICE, LEONHARD ELEMENTARY SCHOOL, MCINTYRE ELEMENTARY SCHOOL, OAKLAND INTERNATIONAL ACADEMY

Other REMC contract holders include: Inacomp Technical Services Group, Sentinel Technologies, Software Services Group, Insight Direct USA, Information Systems Intelligence, Netech, Secant Technologies, CDW Logistics Inc (CDWG)

ThunderIT offers a variety of Solutions & Services to meet your every need

Digital Workplace

Transform your digital workplace and empower employees to drive your business forward. We deliver flexible, tailored, end-to-end solutions to keep your workforce engaged and productive. With an innovative approach centered around exceptional user experiences.

Smart Spaces

We provide smart workspace solutions to help you deliver consistent network performance and give guests, employees and students an uninterrupted experience.

Secure Network Solutions

Our security solutions help protect your network and critical data from cybersecurity threats

Safe Environments

We believe that employee, student, and customer safety is paramount in any environment. That's why our solutions provide a cloud based platform to help you intuitively manage and monitor physical locations to ensure a safe experience for everyone.

Next Generation WiFi

Power new and improved user experiences with our managed wifi solutions, offering faster speeds for enhanced application experience and more capacity for high density indoor and outdoor environments.

Remote Work Solutions

With our remote work solutions, working away from the office is no big deal. Give employees a secure, optimized connection to your entire network from anywhere.

Hybrid Workforce

We provide a seamless hybrid workforce solution that embraces change and operational scale. Give your employees and customers unrivaled experiences with a cloud platform that unifies best-in-class technologies.

Free Network Evaluation & Demo

ThunderIT offers a FREE Network Evaluation and/or product Demo to help ensure you are well informed and confident when choosing the right Cisco Meraki solution for your needs. During our call we'll architect a custom built Cisco Meraki solution for your business or environment.

Migration & Deployment

ThunderIT offers Migration and Deployment Services for your Cisco Meraki solution. Our experienced team of IT Professionals can configure, deploy and support your products to meet your needs. Our custom solutions ensure maximum efficiency and provide a clear path for your business going forward.

Managed Security

ThunderIT offers the best and most cost-effective solution to lower your risk in a heightened threat environment. Our team of certified Cisco engineers are ready to ensure that your network is secure, and your firewall is optimally configured to defend your business.

Mobile device management (MDM) Services

Our Mobile Device Management (MDM) solution unifies management of thousands of endpoint devices in a secure cloud platform, driving your organization's mobility initiatives, while maintaining an environment of agility and security.

Support & Monitoring

ThunderIT offers network support and monitoring services that are designed to fit the needs of every customer.

FAQs for the REMC SAVE Contract

Q: Does REMC SAVE meet the legal requirement for competitive bidding? A: The legislation that established REMCs (Michigan Compiled Laws Act 451 Section 380.671), and State Board of Education Rules, enables REMCs to bid on behalf of local school districts and also provide local school districts with the authority to purchase using REMC contracts. All items are competitively bid by REMC SAVE and awarded by the REMC Association.

Q: Who can Use REMC SAVE contracts? A: The following agencies are eligible to purchase using REMC SAVE contracts: PreK-12 Public, Charter (PSA) and Non-Public Schools, Community Colleges, Universities and Colleges, Public Libraries, Museums, State, County, and Local Government Agencies, Educational Non-profit Organizations and Health Care Facilities. Personal purchases at awarded bid pricing are at the discretion of the vendors.

Q: What is REMC SAVE? A: REMC SAVE is a free service of the REMC Association for all Michigan schools. There are 3 staff of REMC SAVE, and they conduct all of the bids and maintain vendor contracts. You can ask your local REMC Center questions. Find your local REMC Center by scrolling down the REMC SAVE home screen to view the map for your region or look up by zip code.

Q: How do I provide feedback? A: Your local REMC SAVE contact will always listen to any feedback you wish to provide. If you have feedback about the product, scroll down the home screen at remcsave.org and click 'View All Vendors' and you can complete a vendor evaluation form.

Q: What if my company wishes to become an awarded vendor? A: Go to vendorcenter.remcbids.org and create an account by clicking Login or Register in the upper right corner. Follow the directions! The only requirement is that you need five Michigan K12 school references. Customers can send their vendor recommendations to their local REMC contact or email remcsave@remc.org

Q: How are the vendors and products selected? A: Products and Vendors are awarded through a competitive bid process. REMC SAVE staff analyzes all bids and make recommendations to the REMC SAVE Advisory Committee for award. Once the REMC SAVE Advisory Committee votes on the award recommendations, they are then voted on by the REMC Association Board of Directors for final award.

Q: Where do I send my order or contact an awarded vendor? To contact vendors, navigate to the vendor listing by scrolling down the home screen and click 'view all vendors,' or navigate to <https://www.remcsave.org/vendors>. Click on the vendor name to find their contact information.

Q: What do I need to include on my purchase order? Please make sure your purchase order is itemized and includes the REMC item number, the model number/name, the reseller product number (if available), the quantity of each item to be purchased, and the unit price. A quote may be attached, but the purchase order should still be itemized. Sometimes the item numbers for the warranties, accessories, and upgrades are located on the spec sheet, linked from the awarded item page – be sure to include on the Purchase Order.