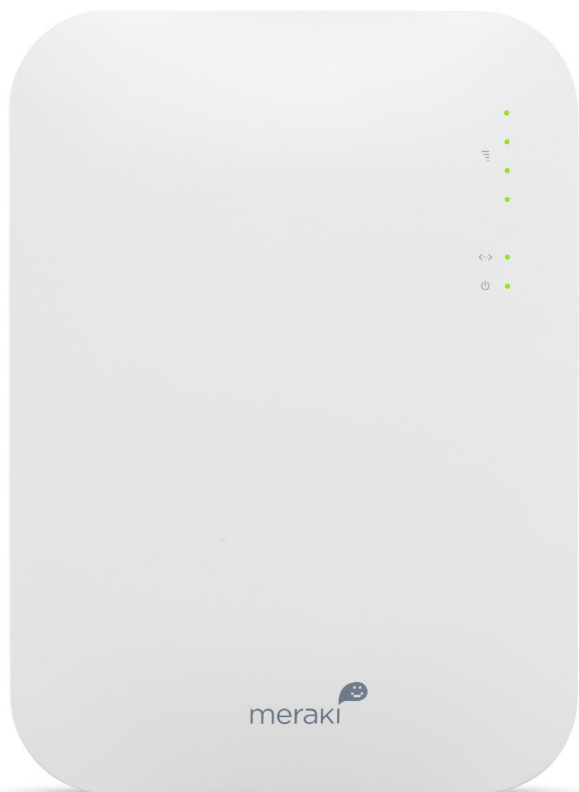# MR12

802.11n Access Point

Incredibly affordable, cloud-managed wireless LAN

The Meraki MR12 is an enterprise class, single-radio 802.11n cloud-managed access point designed for deployments in small-to-medium businesses, home and branch offices, hotels and retail stores. The MR12 uses advanced 802.11n technologies including MIMO, beam forming and channel bonding to deliver the throughput and reliable coverage required by the most demanding business applications.

MR12 and Meraki Cloud Management: A Powerful Combo

The MR12 is managed via the Meraki cloud, with an intuitive browser-based interface that lets you get up and running quickly without training or certifications. Since the MR12 is self-configuring and managed over the web, you can even deploy the MR12 at a remote location without on-site IT staff.

The MR12 is monitored 24x7 via the cloud, which delivers real-time alerts if your network encounters problems. Remote diagnostics tools enable real-time troubleshooting over the web, meaning multi-site, distributed networks can be managed remotely.

The MR12's firmware is always kept up to date from the cloud. New features, bug fixes, and enhancements are delivered seamlessly over the web, so you never have to manually download software updates or worry about missing security patches.

Product Highlights

- 802.11n MIMO provides up to 300 Mbps throughput

- Enhanced transmit power and receive sensitivity

- Self-healing, zero-configuration mesh

- Integrated enterprise security and guest access

- Application-aware traffic shaping

- Self-configuring, plug-and-play deployment

- Sleek, low profile design blends into office environments

- Additional Ethernet port for printers and other wired devices

- Real-time WIPS with Air Marshal

Features

Enterprise class 802.11n radio, up to 300 Mbps
The MR12 features a powerful radio and advanced RF design for enhanced receive sensitivity. Combined with 802.11n technologies including 2x2 MIMO and transmit beamforming, the MR12 delivers up to 300 Mbps throughput and up to 50% increased range compared to typical enterprise class 802.11n access points, meaning fewer access points are required for a given deployment.

Application-aware traffic shaping
The MR12 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.

Automatic cloud-based RF optimization with spectrum analysis
The MR12's sophisticated, automated RF optimization means that there is no need for the dedicated hardware or RF expertise typically required to tune a wireless network. An integrated spectrum analyzer monitors the airspace for neighboring WiFi devices as well as non-802.11 interference – microwave ovens, Bluetooth headsets, etc. The Meraki cloud then automatically optimizes the MR12's channel selection, transmit power, and client connection settings, providing optimal performance even under challenging RF conditions.

Integrated enterprise security and guest access
The MR12 features integrated, easy-to-configure 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 with the convenience of wireless mobility. 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.

Secure wireless environments using Air Marshal
Meraki wireless comes equipped with Air Marshal, a built-in wireless intrusion prevention system (WIPS) for threat detection and attack remediation. APs will scan their environment opportunistically or in real-time based on intuitive 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.

High performance mesh
The MR12's advanced mesh technologies like multi-channel routing protocols and multiple gateway support enable scalable, high throughput coverage of hard-to-wire areas with zero configuration. Mesh also improves network reliability - in the event of a switch or cable failure, the MR12 will automatically revert to mesh mode, providing continued gateway connectivity to clients.

Self-configuring, self-optimizing, self-healing
When plugged in, the MR12 automatically connects to the Meraki cloud, downloads its configuration, and joins your network. It self optimizes, determining the ideal channel, transmit power, and client connection parameters. And it self heals, responding automatically to switch failures and other errors.

Low profile, environmentally friendly design
Despite its incredible power and feature set, the MR12 is the lowest profile 802.11n access point available - at just one inch thick, it blends seamlessly into any environment. In addition to looking great, the MR12 is earth friendly: we've eliminated excess packaging and documentation, and 90% of the access point materials are recyclable. A maximum power draw of only 6.5 watts and a cloud-managed architecture mean that pollution, material utilization and your electric bill are kept to a minimum.

Specifications

Radio

802.11b/g/n radio

Max throughput 300 Mbit/s

Operating band: 2.412-2.484 GHz

802.11n Capabilities

2 x 2 multiple input, multiple output (MIMO) with two spatial streams

Maximal ratio combining (MRC)

Beamforming

Packet aggregation

20 and 40 MHz channels

Cyclic shift diversity (CSD) support

Power

Power over Ethernet: 24 - 57 V (802.3af compatible)

12V DC

Power consumption: 6.5 W max

Power over Ethernet injector and DC adapter sold separately

Mounting

All standard mounting hardware included

Desktop

Wall mount

Ceiling tile rail (9/16, 15/16 or 1 ½" flush or recessed rails), assorted cable junction boxes

Physical Security

Security screw included

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

7.3" x 5.8" x 1.0" (185 mm x 147 mm x 25 mm) not including deskmount feet or mount plate

Weight: 16 oz (0.45 kg)

Antenna

Integrated omni-directional antennas

Gain: 3 dBi

Interfaces

1x 100/1000Base-T Ethernet (RJ45) with 48V DC 802.3af PoE,

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

1x DC power connector (5mm x 2.1mm, center positive)

Security

Integrated policy firewall (Identity Policy Manager)

Mobile device policies

Air Marshal: Real-time WIPS (wireless intrusion prevention system) with alarms

Rogue containment policies

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

Wireless Quality of Service (WMM/802.11e)

DSCP (802.1p)

Layer 7 application traffic shaping and firewall

Mobility

PMK and OKC credential support for fast Layer 2 roaming

L3 roaming

LED Indicators

4 signal strength

1 Ethernet connectivity

1 power/booting/firmware upgrade status

Regulatory

FCC (US), IC (Canada), CE (Europe), C-Tick (Australia/New Zealand)

Anatel (Brazil), Cofetel (Mexico), TK (Turkey)

RoHS

Mean Time Between Failure (MTBF)

450,000 hours

Warranty

Lifetime hardware warranty with advanced replacement included

Ordering Information

MR12-HW	Meraki MR12 Cloud Managed AP
POE-INJ-3-XX	Meraki 802.3af Power over Ethernet Injector (XX = US, EU, UK or AU)
AC-MR-1-XX	Meraki AC Adapter for MR Series (XX = US, EU, UK or AU)

Note: Meraki Enterprise license required.

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RF Performance Table

Operating Band	Operating Mode	Data Rate	TX Power (dBm)	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s 2 Mb/s 5.5 Mb/s 11 Mb/s	22 22 21 21	-96 -94 -95 -92
2.4 GHz	802.11g	6 Mb/s 9 Mb/s 12 Mb/s 18 Mb/s 24 Mb/s 36 Mb/s 48 Mb/s 54 Mb/s	26 26 26 26 25 25 24 23	-95 -94 -93 -93 -91 -87 -83 -81
2.4 GHz	802.11n (HT20)	MCS0/8 HT20 MCS1/9 HT20 MCS2/10 HT20 MCS3/11 HT20 MCS4/12 HT20 MCS5/13 HT20 MCS6/14 HT20 MCS7/15 HT20	21 21 21 21 21 21 19 18	-96 -94 -92 -89 -85 -82 -81 -79
2.4 GHz	802.11n (HT40)	MCS0/8 HT40 MCS1/9 HT40 MCS2/10 HT40 MCS3/11 HT40 MCS4/12 HT40 MCS5/13 HT40 MCS6/14 HT40 MCS7/15 HT40	21 22 21 22 21 21 19 18	-93 -91 -89 -86 -82 -79 -78 -76

* Maximum hardware capability shown above. Transmit power is configurable in increments of 1 dB and is automatically limited by the Meraki cloud to comply with local regulatory settings.

Signal Coverage Pattern

2.4 GHz

2.4 GHz

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