

# MR24

Dual-Radio 3x3 MIMO 802.11n Access Point



## Ultra-high performance cloud-managed wireless LAN

The Meraki MR24 is an enterprise class, dual-concurrent 3x3 MIMO 802.11n access point designed for high-density deployments in large offices, schools, hospitals and hotels that require premium performance. The MR24 features dual-concurrent, dual-band operation with the unprecedented speed of 3x3 MIMO 802.11n with three spatial streams, delivering the ultra-high throughput and reliable coverage required by the most demanding business applications like voice and high-definition streaming video.

### MR24 and Meraki Cloud Management: A Powerful Combo

The MR24 is managed through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without training or certifications. Since the MR24 is self-configuring and managed over the web, it can even be deployed at a remote location without on-site IT staff.

The MR24 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 MR24'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 802.11n MIMO with three spatial streams
- Up to 900 Mbps combined 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
- Optimized for voice and video
- Real-time WIPS with Air Marshal

# Features

## Dual 3x3 MIMO 802.11n radios, up to 900 Mbps

The MR24 is the first 3x3 MIMO enterprise access point to use three spatial streams. This advanced radio technology enables the MR24 to provide up to 450 Mbps of throughput per radio, for a combined 900 Mbps. Technologies like transmit beamforming and enhanced receive sensitivity give the MR24 increased range compared to typical enterprise-class access points, resulting in fewer required APs for a given deployment. In addition, the MR24 uses band steering to automatically serve 5 GHz-capable clients with the 5 GHz radio, maximizing capacity in the 2.4 GHz range for older 802.11b/g clients.

## Application-aware traffic shaping

The MR24 includes an integrated layer 7 packet inspection, classification, and control engine, enabling you to set QoS policies based on traffic type. Integrated support for Wireless Multi Media (WMM) and 802.1p DSCP tagging. Prioritize your mission critical applications, while setting limits on recreational traffic, e.g., peer-to-peer and video streaming.

## Automatic cloud-based RF optimization

The MR24'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 Meraki cloud then automatically tunes the MR24's channel selection, transmit power, and client connection settings for optimal performance even under challenging RF conditions.

## Integrated enterprise security and guest access

The MR24 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.

## 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.

## Low profile, environmentally friendly design

Despite its robust feature set, the MR24 is packaged in a sleek,

low profile enclosure that blends seamlessly into any environment. 90% of the access point materials are recyclable. A maximum power draw of only 12.5 watts and a cloud-managed architecture mean that pollution, material utilization and your electric bill are kept to a minimum.

## High performance mesh

The MR24's advanced mesh technologies like multi-channel routing protocols and multiple gateway support make it possible to cover hard-to-wire areas and improve network resilience. In the event of a switch or cable failure, the MR24 will automatically revert to mesh mode.

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

When plugged in, the MR24 automatically connects to the Meraki Enterprise Cloud Controller, downloads its configuration, and joins the appropriate network. It self optimizes, determining the ideal channel, transmit power, and client connection parameters. It self heals, responding automatically to switch failures and other errors.



# Specifications

## Radios

One 802.11b/g/n and one 802.11a/n radio

Dual concurrent operation in 2.4 and 5 GHz bands

Max throughput 900 Mbit/s

Operating bands:

FCC (US)	EU (Europe)
2.412-2.484 GHz	2.412-2.484 GHz
5.150-5.250 GHz (UNII-1)	5.150-5.250 GHz (UNII-1)
5.725 -5.825 GHz (UNII-3)	5.250-5.350, 5.470-5.725 GHz (UNII-2)

## 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

Packet aggregation

Cyclic shift diversity (CSD) support

## Power

Power over Ethernet: 37 - 57 V (802.3af compatible)

12 V DC

Power consumption: 12.5 W max

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 1/2" flush or recessed rails), assorted cable junction boxes

## Physical Security

Security screw included

Kensington lock hard point

Padlock hard point (Master Lock 120T or equivalent)

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

8.6" x 6.2" x 1.4" (218 mm x 157 mm x 36 mm) not including deskmount feet or mount plate

Weight: 22 oz (0.62 kg)

## Antenna

Integrated omni-directional antennas

Gain: 3 dBi @ 2.4 GHz, 5 dBi @ 5 GHz

## Interfaces

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

1x DC power connector (5 mm x 2.1 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

Wireless Quality of Service (WMM/802.11e)

Advanced Power Save (U-APSD)

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

## Certifications

Wi-Fi Alliance

## Warranty

Lifetime hardware warranty with advanced replacement included

## Ordering Information

MR24-HW Meraki MR24 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.

## RF Performance Table

Operating Band	Operating Mode	Data Rate	TX Power (dBm)	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s	22	-96
		2 Mb/s	22	-93
		5.5 Mb/s	21	-96
		11 Mb/s	20	-92
2.4 GHz	802.11g	6 Mb/s	23	-95
		9 Mb/s	23	-94
		12 Mb/s	22	-95
		18 Mb/s	22	-96
		24 Mb/s	21	-94
		36 Mb/s	21	-90
		48 Mb/s	21	-84
		54 Mb/s	20	-82
2.4 GHz	802.11n (HT20)	MCS0/8 HT20	21	-97
		MCS1/9 HT20	21	-95
		MCS2/10 HT20	21	-93
		MCS3/11 HT20	20	-90
		MCS4/12 HT20	20	-86
		MCS5/13 HT20	20	-83
		MCS6/14 HT20	19	-82
2.4 GHz	802.11n (HT40)	MCS0/8 HT40	20	-93
		MCS1/9 HT40	20	-92
		MCS2/10 HT40	20	-90
		MCS3/11 HT40	20	-87
		MCS4/12 HT40	20	-83
		MCS5/13 HT40	19	-79
		MCS6/14 HT40	18	-79
5 GHz	802.11a	6 Mb/s	23	-97
		9 Mb/s	23	-96
		12 Mb/s	22	-94
		18 Mb/s	22	-92
		24 Mb/s	21	-91
		36 Mb/s	20	-87
		48 Mb/s	19	-85
54 Mb/s	19	-82		
5 GHz	802.11n (HT20)	MCS0/8 HT20	22	-99
		MCS1/9 HT20	22	-97
		MCS2/10 HT20	21	-93
		MCS3/11 HT20	20	-90
		MCS4/12 HT20	20	-79
		MCS5/13 HT20	19	-77
		MCS6/14 HT20	18	-77
5 GHz	802.11n (HT40)	MCS0/8 HT40	22	-96
		MCS1/9 HT40	21	-95
		MCS2/10 HT40	20	-92
		MCS3/11 HT40	19	-92
		MCS4/12 HT40	18	-89
		MCS5/13 HT40	18	-82
		MCS6/14 HT40	17	-78
MCS7/15 HT40	14	-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 Patterns

