MR36H Datasheet

High Performance 802.11ax Wireless

The Cisco Meraki MR36H is a Dual-band, 802.11ax 2x2:2 Wall Switch Access Point with dedicated security, wired access ports, and RF management radio as well as an integrated Bluetooth Low Energy (BLE) beacon and scanning radio.

The MR36H provides a maximum of 1.5 Gbps* aggregate frame rate with concurrent 2.4 GHz and 5 GHz radios. A dedicated third radio provides real-time WIDS/WIPS with automated RF optimization, and a fourth integrated radio delivers Bluetooth scanning and beaconing as well as IoT solutions.

With the combination of cloud management, high performance hardware, multiple radios, and advanced software features, the MR36H makes an outstanding platform for the most demanding of uses—including high-density deployments and bandwidth or performance-intensive applications like voice and high-definition video.

MR36H and Meraki Cloud Management

Management of the MR36H is performed through the Meraki cloud, with an intuitive browser-based interface that enables rapid deployment without time-consuming training or costly certifications. Because the MR36H is self-configuring and managed over the web, it can be deployed at a remote location in a matter of minutes, even without on-site IT staff.

24x7 monitoring via the Meraki cloud delivers real-time alerts if a network encounters problems. Remote diagnostic tools enable immediate troubleshooting over the web so that distributed networks can be managed with a minimum of hassle.

The MR36H's firmware is automatically kept up to date via the cloud. New features, security fixes, and enhancements are delivered seamlessly over the web. This means no manual software updates to download or missing security patches to worry about.

Product Highlights

- 2x2:2 MU-MIMO 802.11ax
- 1.5* Gbps dual-radio aggregate frame rate
- 3 wired access ports and a Passthrough port integrated.
- 24x7 real-time WIDS/WIPS and spectrum analytics via dedicated third radio
- Integrated Bluetooth Low Energy Beacon
- Integrated scanning radio
- Enhanced transmit power and receive sensitivity
- Integrated enterprise security and guest access
- Application-aware traffic shaping
- Optimized for voice and video
- Self-configuring, plug-and-play deployment
- Sleek design blends into office environments
- Full-time Wi-Fi location tracking via dedicated 3rd radio

Features

Dual–radio aggregate frame rate of up to 1.5 Gbps*

5 GHz 2x2:2 radio and 2.4 GHz 2x2:2 radio offer a combined dual–radio aggregate frame rate of 1.5 Gbps*, with up to 1,201 Mbps in the 5 GHz band and 286 Mbps in the 2.4 GHz band. Technologies like transmit beamforming and enhanced receive sensitivity allow the MR36H to support a higher client density than typical enterprise-class access points, resulting in better performance for more clients, from each AP.

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

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

With support for features of 802.11ax, the MR36H offers MU-MIMO and UL/DL OFDMA for more efficient transmission to multiple clients. Especially suited to environments with numerous mobile devices, MU-MIMO enables multiple clients to receive data simultaneously. This increases the total network performance and improves the end-user experience.

Dedicated third radio delivers 24x7 wireless security and RF analytics

The MR36H's dedicated dual-band scanning and security radio continually assesses the environment, characterizing RF interference and containing wireless threats like rogue access points. There's no need to choose between wireless security, advanced RF analysis, and serving client data - a dedicated third radio means that all functions occur in real-time, without any impact to client traffic or AP throughput.

Bluetooth Low Energy Beacon and scanning radio

An integrated fourth Bluetooth radio provides seamless deployment of BLE Beacon functionality and effortless visibility of Bluetooth devices. The MR36H enables the next generation of location-aware applications while future proofing deployments, ensuring it's ready for any new customer engagement strategies.

Automatic cloud-based RF optimization

The MR36H's sophisticated and automated RF optimization means that there is no need for the dedicated hardware and RF expertise typically required to tune a wireless network. The RF data collected by the dedicated third radio is continuously fed back to the Meraki cloud. This data is then used to automatically tune the channel selection, transmit power, and client connection settings for optimal performance under even the most challenging RF conditions.

Integrated enterprise security and guest access

The MR36H 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 Enterprise authentication with 802.1X and Active Directory integration provide wired-like security while still being easy to configure. One-click guest isolation provides secure, Internet-only access for visitors. PCI compliance reports check network settings against PCI requirements to simplify secure retail deployments.

Enterprise Mobility Management (EMM) & Mobile Device Management (MDM) integration

Meraki Systems Manager natively integrates with the MR36H to offer automatic, context-aware security. Systems Manager's self-service enrollment helps to rapidly deploy MDM without installing additional equipment, and then dynamically tie firewall and traffic shaping policies to client posture.

Application-aware traffic shaping

The MR36H includes an integrated layer 7 packet inspection, classification, and control engine, enabling the configuration of QoS policies based on traffic type,

helping to prioritize mission-critical applications while setting limits on recreational traffic like peer-to-peer and video streaming. Policies can be implemented per network, per SSID, per user group, or per individual user for maximum flexibility and control.

Voice and video optimizations
Industry standard QoS features are built-in and easy to configure. Wireless MultiMedia (WMM) access categories, 802.1p, and DSCP standards support all ensure important applications get prioritized correctly, not only on the MR36H but on other devices in the network. Unscheduled Automatic Power Save Delivery (U-APSD) and new Target Wait Time features in 802.11ax clients ensure minimal battery drain on wireless VoIP phones.

Self-configuring, self-maintaining, always up-to-date
When plugged in, the MR36H automatically connects to the Meraki cloud, downloads its configuration, and joins the appropriate network. If new firmware is required, this is retrieved by the AP and updated automatically. This ensures the network is kept up-to-date with bug fixes, security updates, and new features.

Advanced analytics
Drilling down into the details of network usage provides highly granular traffic analytics. Visibility into the physical world can be enhanced with journey tracking through location analytics. Visitor numbers, dwell time, repeat visit rates, and track trends can all be easily monitored in the dashboard and deeper analysis is enabled with raw data available via simple APIs.

Pass-through port.
MR36H has a unique port which is called Pass-through port, which links directly the second port on the back in the first physical port on the bottom of the Access point. This ports works similar to an extension cord, meaning it will physically link the input of the back port to the output of the bottom first port.
The pass-though port it is a physical extension of the lower back port.

Specifications

Category	Specifications
Radios	• 2.4 GHz 802.11b/g/n/ax client access radio • 5 GHz 802.11a/n/ac/ax client access radio • 2.4 GHz & 5 GHz dual-band WIDS/WIPS, spectrum analysis, & location analytics radio • 2.4 GHz Bluetooth Low Energy (BLE) radio with Beacon and BLE scanning support • Concurrent operation of all four radios • Supported frequency bands (country-specific restrictions apply): ◦ 2.401 - 2.484 GHz ◦ 5.150 - 5.250 GHz (UNII-1) ◦ 5.250 - 5.350 GHZ (UNII-2) ◦ 5.490 - 5.730 GHz (UNII-2C) ◦ 5.735 - 5.825 GHz (UNII-3)
Antenna	• Internal Antenna (5.4 dBi gain at 2.4 GHz, 6 dBi gain at 5 GHz)
802.11ax, 802.11ac Wave 2 and 802.11n Capabilities	• DL-OFDMA**, UL-OFDMA**, TWT support**, BSS Coloring** • 2 x 2 multiple input, multiple output (MIMO) with two spatial streams • SU-MIMO, UL MU-MIMO** and DL MU-MIMO support • Maximal ratio combining (MRC) & beamforming • 20 and 40 MHz* channels (802.11n); 20, 40*, and 80 MHz channels (802.11ac Wave 2); 20, 40* and 80 MHz channels (802.11ax) **Note:** *40MHz channels are supported only in the 5GHz band.

	• Up to 1024-QAM on both 2.4 GHz & 5 GHz bands • Packet aggregation
Power	• Power over Ethernet: 37 - 57 V (802.3at compatible) • Power consumption: 30W max (802.3at). Note: actual power consumption may vary depending on the AP usage. • Power over Ethernet injector sold separately **Note:** Actual power consumption may vary depending on the AP usage.
Interfaces	• 1x 10/100/1000 BASE-T Ethernet (RJ45) (Uplink on the back) • 1x 10/100/1000 BASE-T Ethernet (RJ45) with 802.3af Power over Ethernet output • 2x 10/100/1000 BASE-T Ethernet (RJ45) outputs • 1x Passthrough port (non-managed).
Mounting	• All standard mounting hard wares, including MA-MNT-MR-H1A, Wall Mount Kit for MR30H/36H • Desktop, ceiling, and wall mount capable • Ceiling tile rail (9/16, 15/16 or 1 1⁄2" flush or recessed rails), assorted cable junction boxes • Bubble level on mounting cradle for accurate horizontal wall mounting
Physical Security	• Two security screw options (included) (10 mm long and 2.5 mm diameter and 4.7 mm head) • Kensington lock hard point
Environment	• Operating temperature: 32 °F to 104 °F (0 °C to 40 °C) • Humidity: 5 to 95% non-condensing • Operating altitude: Up to 40,000 feet (12,192 meters)
Reliability	• Mean Time Between Failure (MTBF): 257,215hrs at +25°C operating temperature
Physical Dimensions	• 15.5 cm x 11 cm x 2.3 cm (6.1" x 4.33"x 0.9") not including desk mount feet or mount plate • Weight: 17.35 oz (492 g)
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, WPA3 - Personal, WPA3 - Enterprise, WPA3 - Enhanced Open (OWE)**

	• EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM • TKIP and AES encryption • Enterprise Mobility Management (EMM) & Mobile Device Management (MDM) integration • Cisco ISE integration for Guest access and BYOD Posturing
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, & 802.11r for fast Layer 2 roaming • Distributed or centralized layer 3 roaming
Analytics	• Embedded location analytics reporting and device tracking • Global L7 traffic analytics reporting per network, per device, & per application
LED Indicators	• 1 power/booting/firmware upgrade status
Regulatory	• RoHS • For additional country-specific regulatory information, please contact Meraki sales
Warranty	• Indoor access point • Lifetime hardware warranty with advanced replacement included
Ordering Information	• MR36H-HW: Meraki MR36H Cloud Managed 802.11ax AP • MA-INJ-4: Meraki MR 802.3at PoE Injector (Power Cord Not Included) • Note: Meraki access point license required.

** Software features that can be enabled via firmware updates

Compliance and Standards

Category	Standards
IEEE Standards	• 802.11a, 802.11ac, 802.11ax, 802.11b, 802.11e, 802.11g, 802.11h, 802.11i, 802.11k, 802.11n, 802.11r, and 802.11u***

Safety Approvals	• CSA and CB 60950 & 62368 • Conforms to UL 2043 (Plenum Rating)
Radio Approvals	• Canada: FCC Part 15C, 15E, RSS-247 • Europe: EN 300 328, EN 301 893 • Australia/NZ: AS/NZS 4268 • Mexico: IFT, NOM-208 • 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 22 • Japan: VCCI
Exposure Approvals	• Canada: FCC Part 2, RSS-102 • Europe: EN 50385, EN 62311, EN 62479 • Australia/NZ: AS/NZS 2772

*** Denotes a feature that can be enabled for required networks.

Context and Comparisons

802.11ax, 802.11ac Wave 2 and 802.11n Capabilities

MR36H	MR44	MR46	MR56
DL-OFDMA**, UL-OFDMA**, TWT support**, BSS coloring**	DL-OFDMA**, UL-OFDMA**, TWT support**, BSS coloring**	DL-OFDMA**, UL-OFDMA**, TWT support**, BSS coloring**	DL-OFDMA**, UL-OFDMA**, TWT support**, BSS coloring**
2 x 2 multiple input, multiple output (MIMO) with two spatial streams	2.4GHz: 2 x 2 multiple input, multiple output (MIMO) with two spatial streams 5GHz: 4 x 4 multiple input, multiple output (MIMO) with four spatial streams	4 x 4 multiple input, multiple output (MIMO) with four spatial streams	8 x 8 multiple input, multiple output (MIMO) with eight spatial streams on 5 GHz 4 x 4 multiple input, multiple output (MIMO) with eight spatial streams on 2.4 GHz
Maximal ratio combining	Maximal ratio combining	Maximal ratio combining	Maximal ratio combining

(MRC) & beamforming	(MRC) & beamforming	(MRC) & beamforming	(MRC) & beamforming
SU-MIMO, UL MU-MIMO** and DL MU-MIMO support	SU-MIMO, UL MU-MIMO** and DL MU-MIMO support	SU-MIMO, UL MU-MIMO** and DL MU-MIMO support	SU-MIMO, UL MU-MIMO** and DL MU-MIMO support
20 and 40 MHz* channels (802.11n); 20, 40*, and 80 MHz channels (802.11ac Wave 2); 20, 40* and 80 MHz channels (802.11ax)	20 and 40 MHz* channels (802.11n); 20, 40*, and 80 MHz channels (802.11ac Wave 2); 20, 40* and 80 MHz channels (802.11ax)	20 and 40 MHz* channels (802.11n); 20, 40*, and 80 MHz channels (802.11ac Wave 2); 20, 40* and 80 MHz channels (802.11ax)	20 and 40 MHz* channels (802.11n); 20, 40*, and 80 MHz channels (802.11ac Wave 2); 20, 40* and 80 MHz channels (802.11ax)

Note: *40MHz channels are supported only in the 5GHz band.

Up to 1024-QAM on both 2.4 GHz & 5 GHz bands	Up to 1024-QAM on both 2.4 GHz & 5 GHz bands	Up to 1024-QAM on both 2.4 GHz & 5 GHz bands	Up to 1024-QAM on both 2.4 GHz & 5 GHz bands
Packet aggregation	Packet aggregation	Packet aggregation	Packet aggregation

Power

Note: Actual power consumption may vary depending on the AP usage.

MR36H	MR44	MR46	MR56
Power over Ethernet: 37 - 57 V (802.at compliant)	Power over Ethernet: 42.5 - 57 V (802.3at) **or** 37 - 57 V (802.3af) - low power mode	Power over Ethernet: 42.5 - 57 V (802.3at compliant)	Power over Ethernet: 42.5 - 57 V (802.3at compliant)
Alternative: Only PoE	Alternative: 12 V DC input	Alternative: 12 V DC input	Alternative: 12 V DC input
Power consumption: 30W max (802.3at) **or** 15W max (802.3af) - low power mode (Disables POE out functionality)	Power consumption: 30W max (802.3at) **or** 15W max (802.3af) - low power mode **	Power consumption: 30W max (802.3at **required**)	Power consumption: 30W max (802.3at **required**)
Power over Ethernet injector sold separately	Power over Ethernet injector and DC adapter sold separately	Power over Ethernet injector and DC adapter sold separately	Power over Ethernet injector and DC adapter sold separately

Interfaces

MR36H	MR44	MR46	MR56
1x 10/100/1000 BASE-T Ethernet (RJ45)	1x 100/1000/2.5G BASE-T Ethernet (RJ45)	1x 100/1000/2.5G BASE-T Ethernet (RJ45)	1x 100/1000/2.5G/5G BASE-T Ethernet (RJ45)
No DC Power plug	1x DC power connector (5.5 mm x 2.5 mm, center positive)	1x DC power connector (5.5 mm x 2.5 mm, center positive)	1x DC power connector (5.5 mm x 2.5 mm, center positive)
1x Gigabit Ethernet (RJ45) with 802.3af Power over Ethernet output			
2x Gigabit Ethernet (RJ45) outputs			
1x Passthrough port (non-managed).			

Physical Dimensions

MR36H	MR44	MR46	MR56
15.5 cm x 11 cm x 2.3 cm (6.1" x 4.33"x 0.9") not including desk mount feet or mount plate	12.05" × 5.06" × 1.74" (30.6 cm × 12.84 cm × 4.43 cm), not including desk mount feet or mount plate	12.05” x 5.06” x 1.74” (30.6 cm x 12.84 cm x 4.43 cm), not including desk mount feet or mount plate	12.83” x 5.54” x 1.76” (32.6 cm x 14.079 cm x 4.47 cm), not including desk mount feet or mount plate
Weight: 17.35 oz (492 g)	Weight: 26.07 oz (739 g)	Weight: 28.22 oz (800 g)	Weight: 35.27 oz (1 kg)

RF Performance Table

2.4 GHz

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
2.4 GHz	802.11b	1 Mb/s	20	-100

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		2 Mb/s	20	-90
		5.5 Mb/s	20	-90
		11 Mb/s	20	-90
		6 Mb/s	19	-94
		9 Mb/s	19	-93
		12 Mb/s	19	-91
		18 Mb/s	19	-89
2.4 GHz	802.11g			
		24 Mb/s	16	-86
		36 Mb/s	16	-82
		48 Mb/s	16	-78
		54 Mb/s	16	-77
		MCS0	18.5	-95
		MCS1	18.5	-92
		MCS2	18.5	-90
2.4 GHz	802.11n (HT20)	MCS3	18.5	-87
		MCS4	18.5	-83
		MCS5	14.5	-79
		MCS6	14.5	-78

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		MCS7	14.5	-76
		MCS0	18.5	-95
		MCS1	18.5	-92
		MCS2	18.5	-90
		MCS3	18.5	-87
2.4 GHz	802.11ac (VHT20)	MCS4	18.5	-83
		MCS5	14.5	-79
		MCS6	14.5	-78
		MCS7	14.5	-77
		MCS8	14	-72
		MCS0	19	-93
		MCS1	19	-90
		MCS2	19	-88
		MCS3	19	-85
2.4 GHz	802.11ax (HE20)			
		MCS4	19	-81
		MCS5	14.5	-77
		MCS6	14.5	-76
		MCS7	14.5	-75

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		MCS8	14	-70
		MCS9	14	-68
		MCS10	13.5	-65
		MCS11	13.5	-63

5 GHz

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
5 GHz	802.11a	6 Mb/s	17.5	-92
		9 Mb/s	17.5	-91
		12 Mb/s	17.5	-89
		18 Mb/s	17.5	-87
		24 Mb/s	15	-83
		36 Mb/s	15	-80
		48 Mb/s	15	-76
		54 Mb/s	15	-76
5 GHz	802.11n (HT20)	MCS0	17.5	-93
		MCS1	17.5	-90
		MCS2	17.5	-88

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		MCS3	17.5	-85
		MCS4	17.5	-81
		MCS5	13.5	-77
		MCS6	13.5	-76
		MCS7	13.5	-75
		MCS0	17.5	-91
		MCS1	17.5	-88
5 GHz		MCS2	17.5	-86
	802.11n (HT40)	MCS3	17.5	-83
		MCS4	17.5	-79
		MCS5	13.5	-75
		MCS6	13.5	-74
		MCS7	13.5	-73
5 GHz		MCS0	17.5	-94
		MCS1	17.5	-91
	802.11ac (VHT20)	MCS2	17.5	-89
		MCS3	17.5	-86
		MCS4	17.5	-82

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		MCS5	13.5	-78
		MCS6	13.5	-77
		MCS7	13.5	-76
		MCS8	13.5	-70
		MCS0	17.5	-91
		MCS1	17.5	-88
5 GHz		MCS2	17.5	-86
		MCS3	17.5	-83
	802.11ac (VHT40)	MCS4	17.5	-79
		MCS5	13.5	-75
		MCS6	13.5	-74
		MCS7	13.5	-73
		MCS8	13.5	-68
		MCS9	13.5	-67
5 GHz		MCS0	17.5	-88
	802.11ac (VHT80)	MCS1	17.5	-85
		MCS2	17.5	-83
		MCS3	17.5	-80

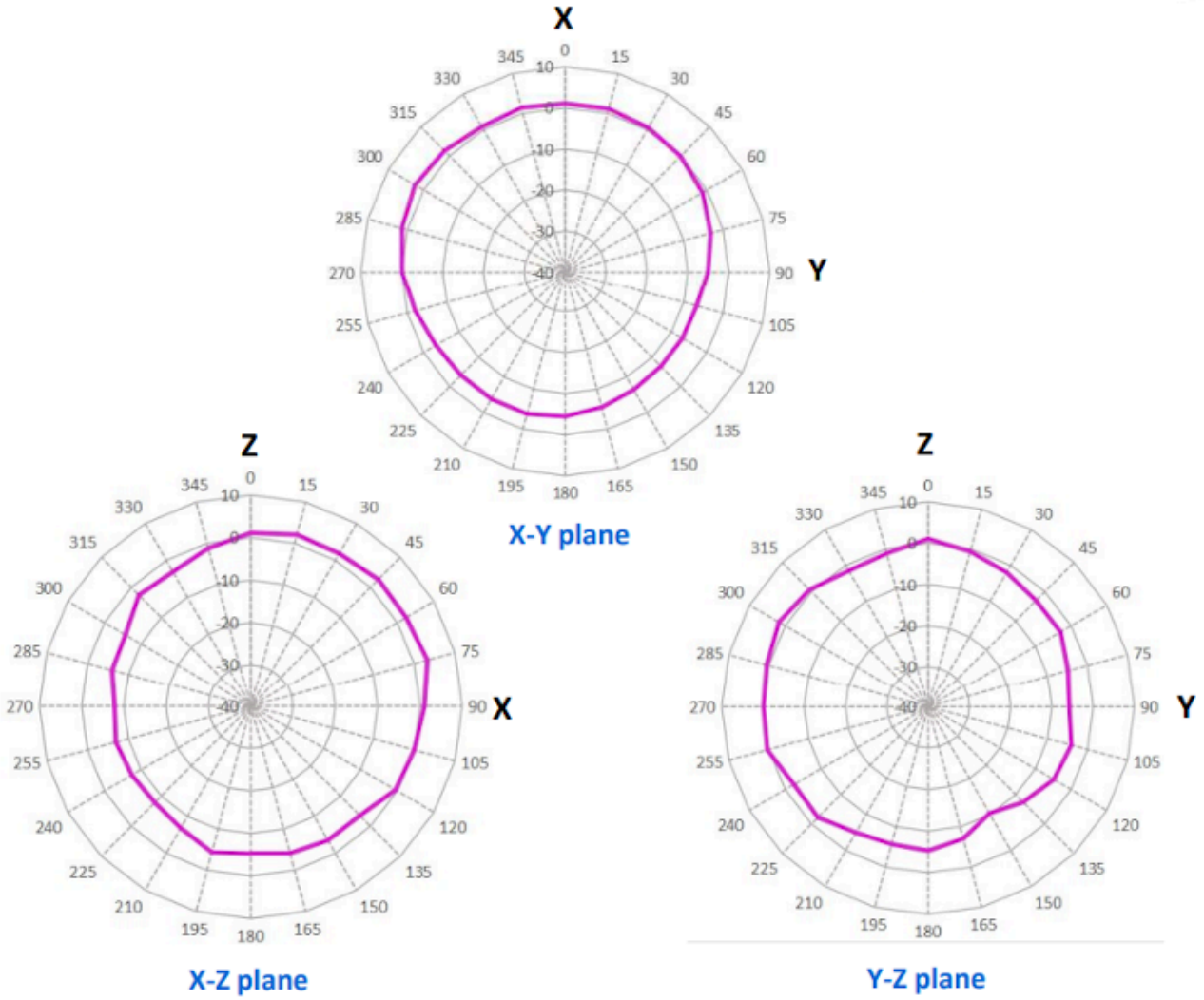
Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		MCS4	17.5	-76
		MCS5	13.5	-72
		MCS6	13.5	-71
		MCS7	13.5	-70
		MCS8	13.5	-65
		MCS9	13.5	-64
		MCS0	17.5	-93
		MCS1	17.5	-92
5 GHz		MCS2	17.5	-88
		MCS3	17.5	-85
		MCS4	17.5	-81
	802.11ax (HE20)	MCS5	13.5	-77
		MCS6	13.5	-76
		MCS7	13.5	-75
		MCS8	13.5	-70
		MCS9	13.5	-68
		MCS10	12	-65
		MCS11	12	-60

Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
5 GHz	802.11ax (HE40)	MCS0	17	-91
		MCS1	17	-88
		MCS2	17	-86
		MCS3	17	-83
		MCS4	17	-79
		MCS5	13.5	-75
		MCS6	13.5	-74
		MCS7	13.5	-73
		MCS8	13.5	-68
		MCS9	13.5	-66
		MCS10	12	-63
		MCS11	12	-62
5 GHz	802.11ax (HE80)	MCS0	17	-88
		MCS1	17	-85
		MCS2	17	-83
		MCS3	17	-80
		MCS4	17	-76
		MCS5	13.5	-72

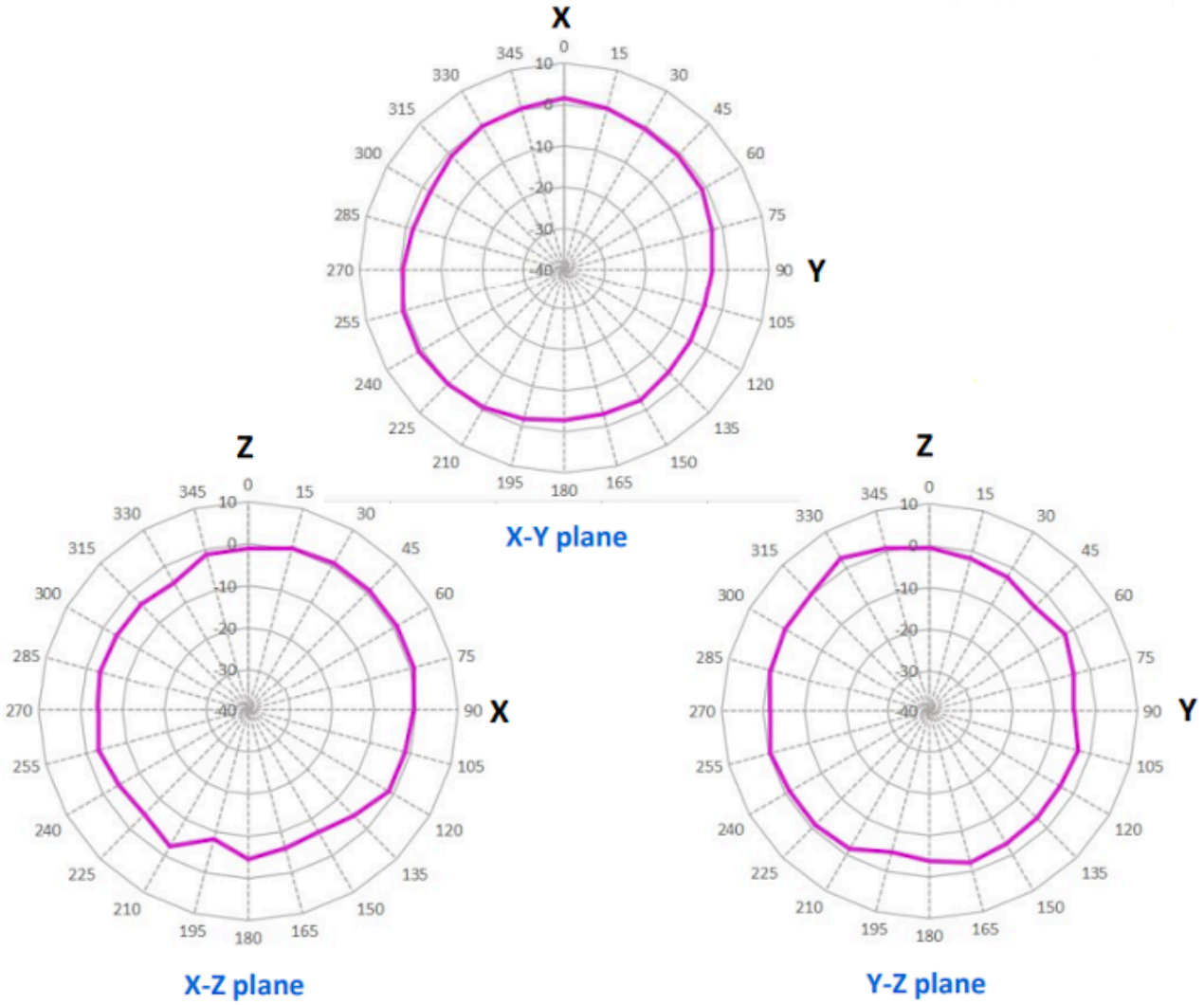
Operating Band	Operating Mode	Data Rate	TX Power (conducted)	RX Sensitivity
		MCS6	13.5	-71
		MCS7	13.5	-70
		MCS8	13.5	-65
		MCS9	13.5	-63
		MCS10	12	-60
		MCS11	12	-59

Signal Coverage Patterns

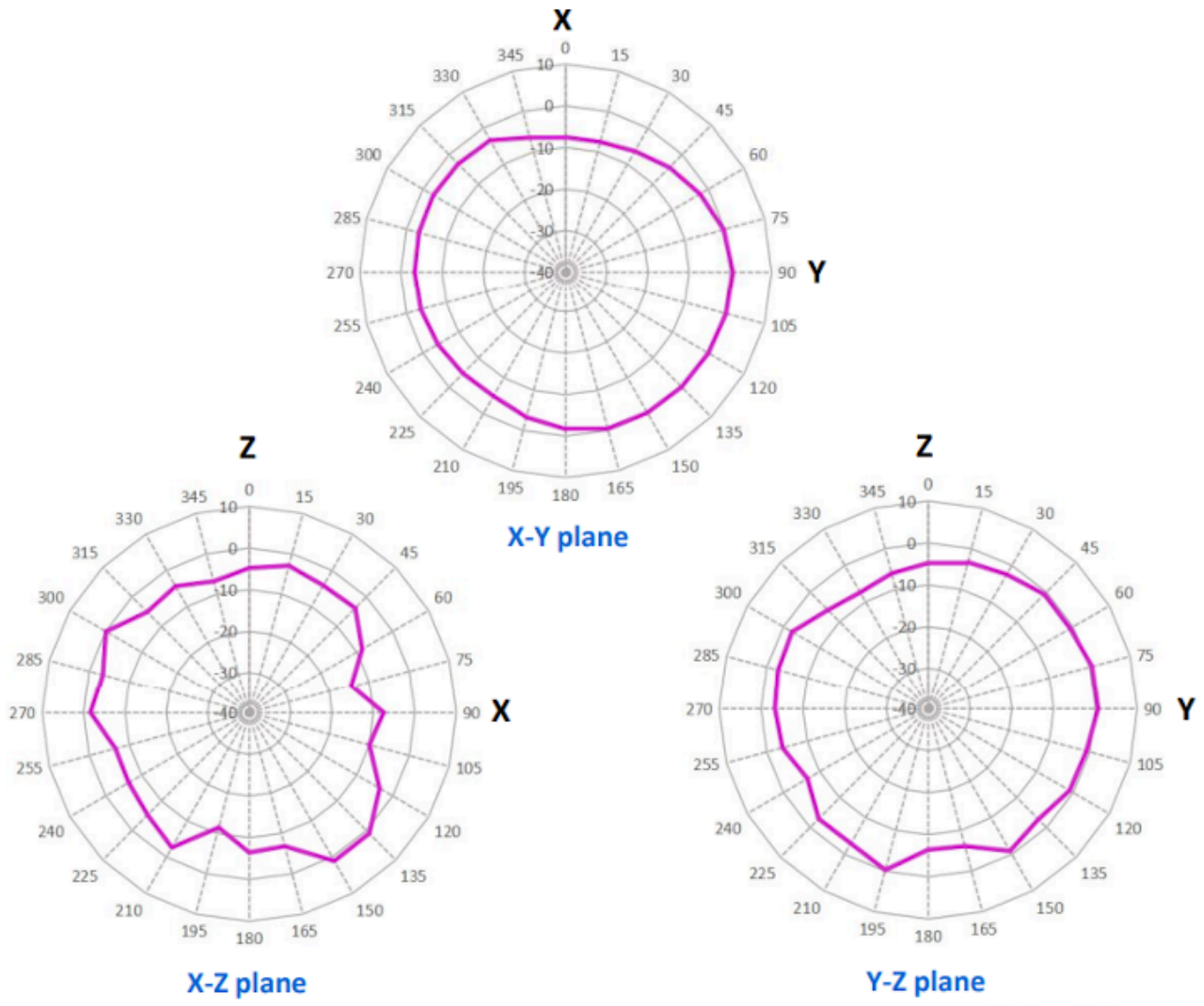
5 GHz - Wireless



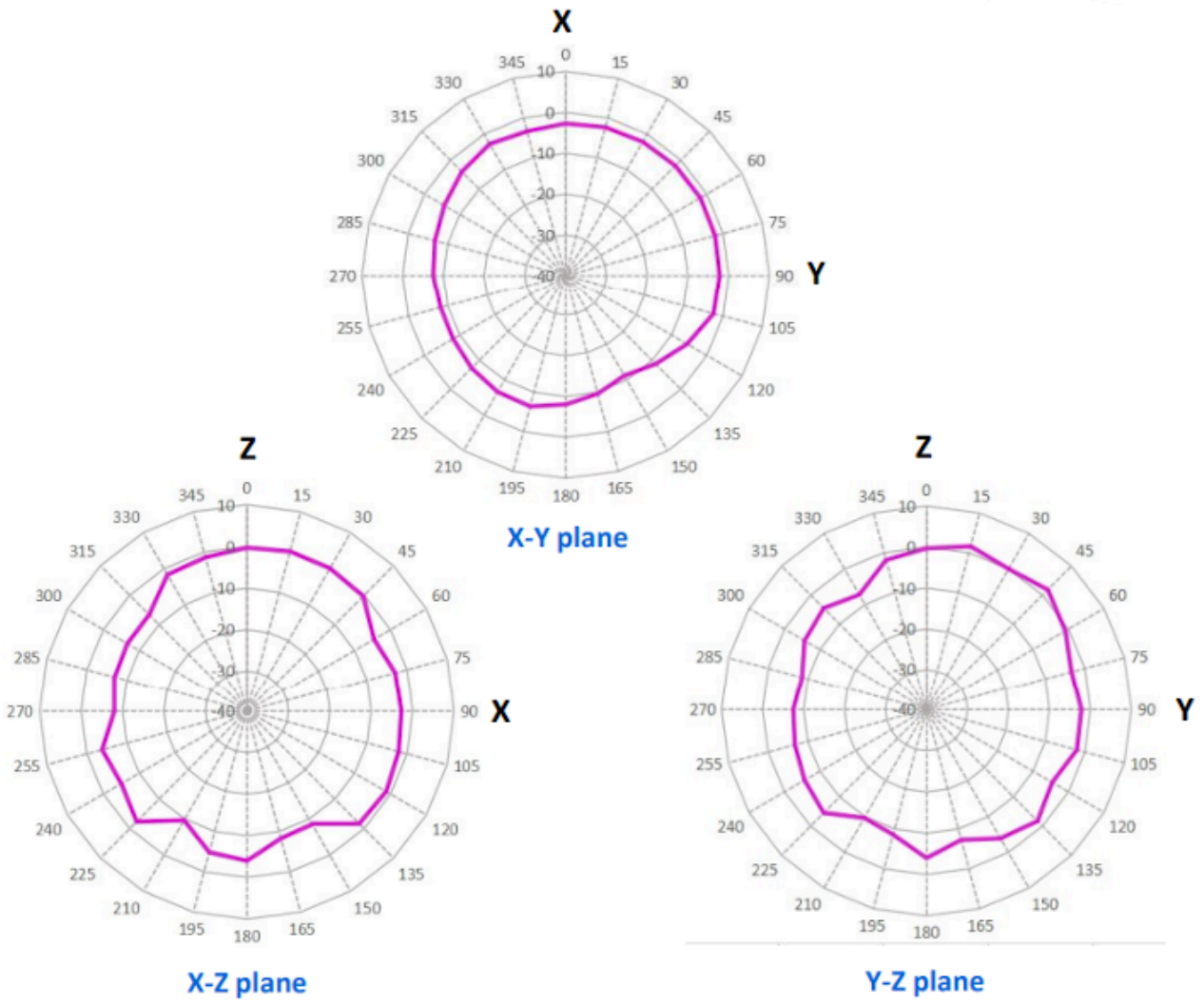
2.4 GHz - Wireless



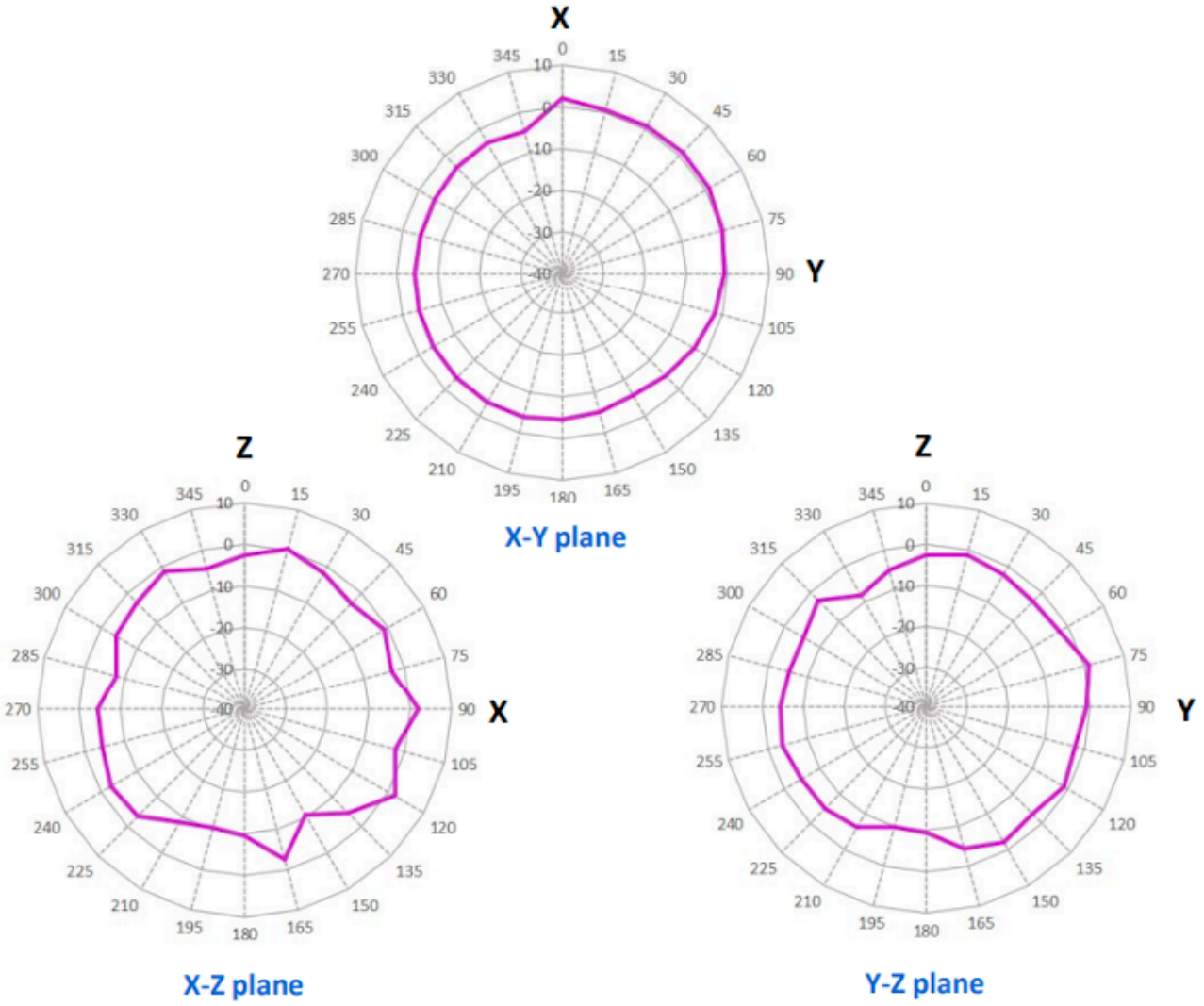
2.4GHz - Bluetooth



2.4 GHz - Scanning



5 GHz - Scanning



Installation Guide

For instructions on how to install and configure MR36H access points please refer to the MR36H Installation Guide.