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## MG52/52E Technical Specifications

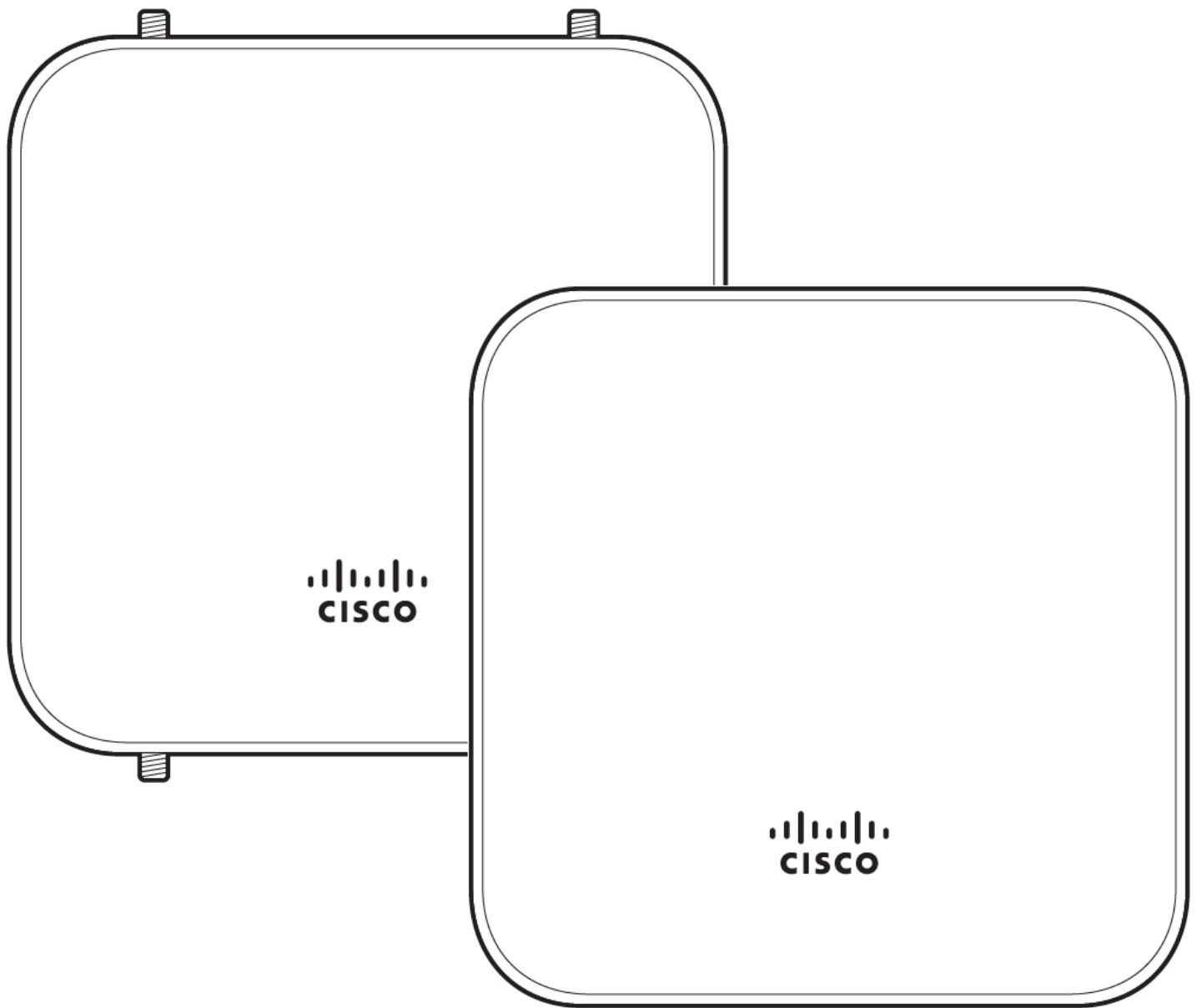
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### Overview

In cases of primary uplink failure, wireless WAN connectivity options, like cellular networks, can serve as a backup for ensuring connectivity.

MG52 cellular gateway is a 5G StandAlone (SA)/ Non-StandAlone (NSA) device which enables the delivery of high-speed internet access with low latency and increased capacity. The use of standalone 5G allows for advanced features like network slicing, which allows the creation of virtualized, dedicated slices of the network tailored for specific applications or services.

MG52/E is compatible with both Meraki and non-Meraki security appliances, routing, or switching devices by leveraging Ethernet and IP-based protocols. Its additional 802.3AT compatibility allows it to be positioned anywhere by using power over Ethernet (PoE), similar to any access point. This flexibility gives users the choice of an ideal physical placement to optimize signal quality.



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## MG Series and Meraki Cloud Management

All Meraki devices are managed via the Meraki cloud. The MG series are self-configuring and managed over the web, and can be deployed at remote locations without any assistance from end-users.

Meraki Cloud services monitor all devices 24x7 and deliver real-time alerts if any devices encounter a problem. Remote diagnostics tools enable real-time troubleshooting through any web browser. New features, enhancements and critical security patches are delivered over the web, removing the need to manually download software updates.

## Features

- Highlights**
  - Built in 5G SA/NSA Sub6 LTE CAT20
  - Cloud managed eSIM
  - Dual SIM support
  - Supports 2 separate downstream Ethernet connections
  - Small form factor
  - PoE+ or DC powered
  - IP67 rating
  - Optional Patch antenna (MG52E)
- Management**
  - Manageability from the Cisco Meraki dashboard
  - Self-configuring Cellular Gateway
  - Automatic firmware upgrades with scheduling control
  - Extensive API support
- Remote Diagnostics**
  - Email, SMS and Mobile push notification alerts
  - Ping, traceroute, cable testing, and link failure detection with alerting
  - Remote packet capture
  - Combined event and configuration change logs with instant search
  - DM logging via Local Status Page

The MG52/E cellular gateway uses 6 to 8 megabytes a day of data for telemetry on dashboard and connection monitoring when the unit is idle. Any additional devices that are downstream of the MG52/E may increase data usage. Cisco Meraki products are cloud connected devices that report telemetry into Dashboard for network monitoring purposes. The usage will be reduced in future firmware updates.



**Note:** MG52/52E now features cloud managed eSIM. This allows you to connect your device directly to a cellular network without needing to install a physical sim.

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## Use Cases

Note that the following use cases refer to using a Meraki MX appliance with the MG52/E as a WAN uplink. However, the use cases can also apply to non-Meraki devices.

- **Antenna placement where cellular coverage is best**
  - Signal strength is key for cellular performance. The MG52/E makes cellular a viable option in situations where high bandwidth or throughput is needed or locations where the MX is not necessarily the best location for a strong cellular signal. The separation of cellular antenna and MX expands cellular options for all networks, particularly for mid-range MXs deployed in a data center or medium/large branch location. The 4 x 4 DL MIMO is capable of supporting deployments that demand higher throughput capacity.
- **Primary WAN**
  - In areas where wired internet services are not available or wired connectivity takes too long or is expensive, the MG52/E provides a simple, viable option for wireless WAN connectivity.

- **Secondary WAN for Failover**
  - An MX's primary or secondary WAN interface connected to an MG52/E may use the cellular network for both primary and secondary uplinks
- **Primary/Secondary WAN for SD-WAN**
  - An MX with an MG52/E as a primary and/or secondary WAN uplink may use the cellular network to establish VPNs for SD-WAN.
- **High Availability Uplink**
  - The MG52/E can be used as either a primary or secondary internet uplink for MX HA topologies. Its two LAN ports allow the MXs to share access to the same cellular network.

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## Technical Breakdown

### Physical Specifications

Models	MG52	MG52E
Dimensions (w x d x h)	173 x 173 x 36.5mm	173 x 173 x 36.5mm
Weight (without accessories)	560g	710g
Power Supply	12V/1A, 48-57V DC/0.35A	12V/1A, 48-57V DC/0.35A
Power Load	16 Watt Maximum (PoE 802.3at)	16 Watt Maximum (PoE 802.3at)
Operating Temperature	-40°F to 122°F (-40°C to 50°C)	-40°F to 122°F (-40°C to 50°C)
Humidity	5% to 95% non-condensing	5% to 95% non-condensing
Storage and Transportation Temperature	-22°F - 158°F	-22°F - 158°F
	-30°C - 70°C	-30°C - 70°C
Product Category	5G SA/ NSA Sub6 LTE CAT20	5G SA/ NSA Sub6 LTE CAT20
Maximum Wireless Data Rate (Down/Up) Passthrough	2 Gbps / 300 Mbps	2 Gbps / 300 Mbps
Maximum Wireless Data Rate (Down/Up) NAT	1.5 Gbps/ 300 Mbps	1.5 Gbps/ 300 Mbps
Antennas	Internal	Internal

<b>LAN Interfaces - Dedicated</b>	1x Dedicated 2.5 GbE RJ45	1x
<b>LAN Interfaces - Convertible</b>	1x Convertible LAN/WAN 2.5 GbE RJ45	1x
<b>SIM Slots</b>	2	2
<b>eSIM</b>	1	1

## Interfaces

<b>LAN Interfaces</b>	2x 2.5 GbE
<b>WAN Interfaces</b>	1x 5G SA/NSA Sub6 LTE CAT20 Cellular modem
<b>SIM Card Slot</b>	Nano (4FF)

## Product Category and Certifications

5G Category	5G SA/NSA Sub 6GHz
LTE Category	CAT20
Bands and CA combos	<a href="#">List</a>
Certifications	PTCRB (US), RCM (ANZ, APAC), GCF (EU), IC (CA), FCC (US)
Certified Carriers	AT&T, T-Mobile, Verizon , ATT Firstnet
Carriers leveraging GCF	<a href="https://www.globalcertificationforum...f-members.html">https://www.globalcertificationforum...f-members.html</a>
Carrier Certification in Progress	Optus, Telstra

Carrier compatibility is generally based on having compatible bands on the modem. In the open market, carriers may only require regulatory domain certifications and open market certifications, like the PTCRB and GCF, to be compatible for their network. Sometimes carriers will require additional testing before a device can be used on their network. The section Tested Carriers is based on Meraki device certifications being approved by those specific carriers. A carrier being listed above means that they have officially certified the Meraki product for their cellular network. There may be many unlisted carriers that could be functionally compatible with Meraki devices. The list of tested certified carriers is based on the carrier validating Meraki per their network parameter

requirements. If a carrier you are looking to use is not listed above, it could be that they do not require additional compliance testing for their network.



**Cellular Radio Models:** FN990A40

Radio hardware support is determined by Carrier availability, not necessarily the physical location of the device.

The FN990A40 is a 5G/LTE radio, meaning it is capable of doing carrier aggregation for improved DL speeds over 5G and LTE. It is also a CAT 20 modem, meaning it is limited to a maximum of 2000/300 Mbps (DL/UL) over 5G+LTE.

## MTBF Rating

Model	MTBF at 25°C
MG52	1,663,492
MG52E	1,663,492

## Accessories

Accessory SKU	Description
MA-PWR-30W-XX	Standard power adapter. Regional plugs per SKU.
MA-INJ-6	Gigabit 802.3bt PoE injector
MA-ANT-C2-B	Dipole Antenna pair included with MG52E
MA-ANT-DUAL-C3	Patch Antenna pair for MG52E

## Included In The Box

Model	Contents
MG52	1 x MG52-HW 1 x Mounting plate
MG52E	1 x MG52E-HW 1 x Mounting plate

4 x dipole antennas



We only support and recommend having all 4 antennas connected on the MG52/E.



### Non-Meraki Antenna not supported

Note: Non-Meraki antennas are not supported. The socket is a reversed RP-SMA that is designed to detect the official MG smart dipole antennas and smart patch antenna. Usage of non-Meraki accessories may damage the MG and degrade performance. The Cisco Meraki antennas are designed for the maximum allowable gain without exceeding the EIRP for local regulatory domains on their supported bands.



Power Adapter vs PoE: The MG can be powered using a PoE or via a power adapter. The power adapter always takes the first preference i.e if the MG is already powered via the PoE and then the power adapter is connected, then the MG will power off and power on using the adapter as the power source. The same scenario applies when the PoE and power adapter are connected simultaneously and the power source from the adapter goes down, the MG will power off and then power on. Plugging/unplugging PoE when power adapter is connected to the MG does not have any bearing on the operation of the MG as the device will always draw power from the adapter whenever it is connected.