MG21/21E Technical Specifications

Connectivity is critical for any organization that depends on reliable internet access in order to function. Wireless WAN connectivity options, such as cellular networks, serve as a reliable backup internet uplink in the event of a primary uplink failure.

The MG21 cellular gateway simplifies the path to wireless WAN connectivity and makes cellular a viable uplink option for many networks. The MG21 acts as a gateway to cellular networks by converting LTE signal from a cellular provider to an Ethernet handoff, which can be used as an internet uplink for a variety of use-cases.

Features

Highlights	• 300 Mbps CAT 6 LTE Integrated modem • Supports 2 separate downstream router connections • Small form factor • PoE or DC powered

	• IP67 rating
Management	• Manageability from the Cisco Meraki dashboard • Self-configuring Cellular Gateway • Automatic firmware upgrades with scheduling control
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

The MG21 celluar gateway uses 6 to 8 megabytes a day of data for telemetry on dashboard and connection monitoring when the unit is idle. Any additional Cisco Meraki devices that are added to the MG21 may increase data usage further. Cisco Meraki products are cloud connected devices that report telemetry into Dashboard for network monitoring purposes.

Use Cases

Note that the following use-cases refer to using a Meraki MX appliance with the MG21 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 MG21 makes cellular a viable option in situations where the best location for 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 mounted in a data center.
- **Primary WAN**
  - In areas where wired internet services are not available, the MG21 provides a simple, viable option for wireless WAN connectivity.
- **Secondary WAN for Failover**
  - An MX's secondary WAN interface connected to an MG21 may use the cellular network in the event of a primary uplink failure.
- **Secondary WAN for SD-WAN**
  - An MX with an MG21 as a secondary WAN uplink may use the cellular network to establish VPNs for SD-WAN.
- **High Availability Uplink**
  - The MG21 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.

Technical Breakdown

Physical Specifications

Models	MG21	MG21E
Dimensions (w x d x h)	160.45 x 160.45 x 34.45mm	165.7 x 160.45 x 34.45mm
Weight (without accessories)	497g	489g
Power Supply	12V/1A, 48-57V DC/0.35A	12V/1A, 48-57V DC/0.35A
Power Load	10 Watt Maximum (PoE 802.3AF)	10 Watt Maximum (PoE 802.3AF)
Operating Temperature	-22°F to 122°F (-30°C to 50°C)	-22°F to 122°F (-30°C to 50°C)
Humidity	5% to 95% non-condensing	5% to 95% non-condensing

Interfaces

LAN Interfaces	2x GbE
WAN Interfaces	1x CAT 6 LTE cellular modem
SIM Card Slot	Nano (4FF)

Cellular

	North America	Worldwide
FDD-LTE	2, 4, 5, 12, 13, 17, 29	1, 3, 5, 7, 18, 19, 20, 26, 28
TDD-LTE		38, 39, 40, 41
TD-SCDMA Bands		34 (Band A), 39 (Band F)
HSPA+	BC2(1900), BC4(1700), BC5(850)	BC1(2100), BC3(1800), BC5(850), BC6(800), BC8(900)
GSM Bands	850, 900, 1800, 1900	900, 1800
Standard	300 Mbps CAT 6 LTE	300 Mbps CAT 6 LTE
CA	2xDL-CA up to 40Mhz: 2+17, 4+17, 2+29, 4+29, 4+5, 2+5	2xDL-CA up to 40Mhz: 3+20, 3+8, 7+20, 1+8, 1+5, 3+5
Certifications	PTCRB (US)	RCM (ANZ, APAC), GCF (EU)

Tested Carriers	AT&T (United States), Verizon (United States), T-Mobile (United States) Rogers (Canada), Telus (Canada)	Deutsche Telekom (Germany), Sunrise (Switzerland), Vodafone (NZ, UK, Germany, Ireland), Telstra (Australia), Optus (Australia), NTT docomo (Japan), KDDI (Japan)

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 maybe many unlisted carriers 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.

MTBF Rating

Model	MTBF at 25°C
MG21	2,689,019
MG21E	2,689,019

Ordering Guide

To place an order for an MG cellular gateway, pair a specific hardware model with a single license (which includes cloud services, software upgrades and support). For example, to order an an MG21E with 3 years of enterprise licensing for use in North America, order an MG21E-HW-NA with LIC-MG21-ENT-3Y. A lifetime warranty with advanced replacement is included on all MG hardware (excluding accessories) at no additional cost.

Models

Model SKU	Description
MG21-HW-NA	Meraki MG21 Cellular Gateway – North America
MG21-HW-WW	Meraki MG21 Cellular Gateway – Worldwide
MG21E-HW-NA	Meraki MG21E Cellular Gateway External Antennas – North America
MG21E-HW-WW	Meraki MG21E Cellular Gateway External Antennas – Worldwide

Licensing

License SKU	Description
LIC-MG21-ENT-1Y	Meraki MG21 Enterprise License and Support, 1YR
LIC-MG21-ENT-3Y	Meraki MG21 Enterprise License and Support, 3YR
LIC-MG21-ENT-5Y	Meraki MG21 Enterprise License and Support, 5YR
LIC-MG21-ENT-7Y	Meraki MG21 Enterprise License and Support, 7YR
LIC-MG21-ENT-10Y	Meraki MG21 Enterprise License and Support, 10YR

Accessories

Accessory SKU	Description
MA-PWR-30W-XX	Standard power adapter. Regional plugs per SKU.
MA-INJ-4	Gigabit 802.3at PoE injector
MA-PWR-MV-LV	Low Voltage Power Converter
MA-ANT-C1-A	Dipole Antenna pair included with MG21E
MA-ANT-C1-B	Patch Antenna for the MG21E

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. The usae 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.