

MGS4220E and MGS4227E Installation Guide

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About this Guide

This document provides general installation practices for the Mitrastar MGS4220E and MGS4227E.

This document also provides a general description of the products, and guidance for planning, site preparation, power installation, splicing to the outside plant, and basic troubleshooting.

Intended Audiences

This document is intended for use by network planning engineers, outside plant engineers, field support personnel, and craft personnel responsible for installation and maintenance of customer premises equipment.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area may cause harmful interference; the user will be required to correct the interference at his expense.

Safety Notices

This document uses the following safety notice conventions.



DANGER! Danger indicates the presence of a hazard that will cause severe personal injury or death if not avoided.



WARNING! Warning indicates the presence of a hazard that can cause severe personal injury if not avoided.



CAUTION! Caution indicates the presence of a hazard that can cause minor to moderate personal injury if not avoided.



ALERT! Alert indicates the presence of a hazard that can cause damage to equipment or software, loss of data, or service interruption if not avoided.



DANGER! CLASS 1 LASER PRODUCT. INVISIBLE LASER RADIATION MAY BE PRESENT. Fiber optic radiation can cause severe eye damage or blindness. Do not look into the open end of an optical fiber.

IMPORTANT SAFETY INSTRUCTIONS

When using your equipment, basic safety precautions must always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- Do not use this product near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
- Use only the power cord indicated in this manual.
- For external power supplies, the external power supply used in this device is to be Class II or a Limited Power Source (LPS) power supply.

DOCUMENT CONVENTIONS

Throughout this guide, references to both the MGS4220E and the MGS4227E may be referred to as MGS422xE. In these cases, application will include both models.

Chapter 1

MGS422xE Overview

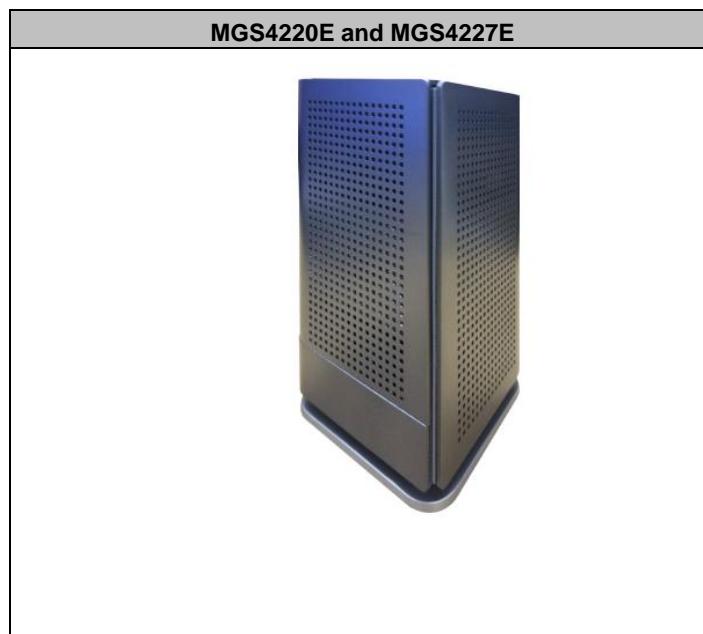
The MGS422xE is the next generation residential premises service delivery platform that extends the access network into the home and acts as a strategic location for control of the voice recognition experience. Besides supporting broadband connectivity of data and video services, this intelligent, high-performance multi-Gigabit service platform is the industry's only premises-based wireless access point (WAP) that offers the latest 802.11ax Wi-Fi technology, and extends voice recognition capabilities. The MGS422xE provides switching and routing functions that support speeds up to Gigabit symmetrically WAN throughput with two LAN and WAN Gigabit Ethernet (GE) ports for IPTV video and data services.

Product Name	MGS4220E	MGS4227E
Ethernet WAN (10/100/1000)	1	No
Ethernet WAN (10/1000/2500)	No	1
LAN	GE 1-4	GE 1-4
Wi-Fi - 2.4 GHz	2x2 802.11ax (Wi-Fi 6)	2x2 802.11ax (Wi-Fi 6)
Wi-Fi - 5 GHz	4x4 802.11ax (Wi-Fi 6)	4x4 802.11ax (Wi-Fi 6)
Voice Recognition	No	No
Bluetooth	N/A	BT/BLE
Security	PuF	PuF
LTEN/A	m2	m2
Housing	5" L x 5" W x 9" H	5" L x 5" W x 9" H

The MGS2026E and MGS4227E are the industry's only voice recognition wireless access point (WAP) that delivers the latest Wi-Fi technology (802.11ax) and voice recognition on a single platform. The MGS4220E and MGS4227E service delivery platform uses a Gigabit Ethernet link at the subscriber's premises to provide carrier-class Wi-Fi and Gigabit Ethernet interfaces for customer multi-media devices. The MGS4220E and MGS4227E enable residential subscribers to receive Gigabit broadband data, Internet Protocol (IP) video, and Voice over IP (VoIP) services. The MGS4220E and provide 2x2 (2.4 GHz) and 4x4 (5 GHz) streams. In addition, with multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the MGS4220E and MGS4227E allows service providers to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services. A USB port is available for connectivity and data storage applications.

With Wi-Fi being the de facto wireless data communication technology of choice for consumers, the MGS4220E and the MGS4227E were engineered for optimal whole-home coverage with simultaneous dual-band 2.4 GHz and 5 GHz operation and dynamic beam forming at 5 GHz. Leveraging the latest 802.11ax features, these devices provides longer range, higher efficiency and less interference compared to earlier generations of Wi-Fi technology. For maximum performance, the MGS4227E supports high-power 8x8 MIMO spatial diversity MU-MIMO at 5 GHz. They also support the entire 5 GHz band including Dynamic Frequency Selection (DFS) channels and can be provisioned to support 160 MHz channel bandwidth at 5 GHz. The MGS4220E and the MGS4227E solution easily delivers high definition (HD) and ultra-HD (UHD) video and data throughout a subscriber's home in an increasingly video-rich and mobile broadband environment.

Each MGS4220E and MGS4227E product can have a dual personality. It can either be a Gateway or a Mesh point depending on the software being implemented. For example, if the MGS4220E is loaded with the Gateway EXOS software, it will be a Gateway.



Agency Listing

FCC WARNING: These devices comply with Part 15 of the FCC Rules and Regulations. Operation is subject to the following conditions.

This device may not cause harmful interference, and, this device must withstand any interference received, including interference that may cause undesired operation.

The ONT has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules and Regulations. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this guide, may cause harmful interference to radio and television communications.

Hazardous Materials

There are no hazardous materials identified for either the MGS4020 or MGS4227.

Application Standards

Following is a list of standards that apply to this product:

MGS4020/MGS4227 Standards		
FCC Part 15, Sub Part B, class B	UL 60950-1	EN 300 328
CAN ICES-003 Class B	CSA C22.2 No. 60950-1	EN 301 893
ANSI C63.4	IEC 60950-1	EN 301 489-1
FCC Part 2.1091	IEC 60825-1 / CDRH Class 1 Laser	EN 301 489-17
FCC Part 15.247	ITU-T K21	EN 55032 Class B
FCC Part 15.203	ITU-T K44	EN 61000-3-2
FCC Part 15.207	EN 60950-1	EN 61000-3-3
FCC Part 15. 209	EN 60825-1	EN 50581
RSS 102	EN 62311	EN 50564
RSS 247	CE / RED, RoHS, WEEE, Energy	CISPR 32 Class B
FCC Part 15.407	Telcordia GR-63	IEEE: 802.3, 802.3AB, 302.3U, 802.11p, 802.11Q
NEC (National Electrical Code)	Telcordia-GR-1089	RCM
Telcordia GR-909	Telcordia GR-950	Telcordia GR-2890
Telcordia GR-49	Telcordia GR-1244	

Radiated Emissions

- This Class-B digital device complies with radiated emissions requirements as defined in Canadian ICES-003.

Power Cables

- The unit must be powered by an external power source as follows: CE marked (EU), FCC (US), UL listed power source marked Class II, Limited Power Source (LPS) and rated output between 10-15 VDC (12 VDC nominal), 1 Amp minimum.

Power Supply

Note: When using the standard power adapter, units will be inoperable after loss of main power.

An external power supply is included with the following rating:

MGS4220E and MGS4227E

- Input voltage: 12 VDC (nominal)
- 10 VDC (min.), 15 VDC (max)
- External Power Adapter: 12 VDC, 3A

DANGER! Using non-approved or incorrect power adapters can result in injury.

Site Preparation

Before you install any MGS4220E and MGS4227E, you need to consider the routing of the power adapter cord and Ethernet cable (if used).

Note: It is critical that you maintain the proper airflow in and around the unit. MGS4220E and MGS4227E devices are designed for surface mounting only. Do not install cabinetry or other building material around the outside of the unit.

Power Cords

In order to complete the installation, a power cords is required:

- MGS4220E and MGS4227E - Connectorized Power and Signal Cable - A 2-pin barrel connector to the local AC power receptacle (Type A).

Before you Begin

Before starting the installation process, check that the following conditions are met:

- Ensure the site preparation steps are complete based on the model being installed.
- Ensure that all components are on-site or readily available in order to complete the installation.
- The customer is aware of your planned visit and will provide access to the inside of the home.

Introduction

This document describes the installation of the following:

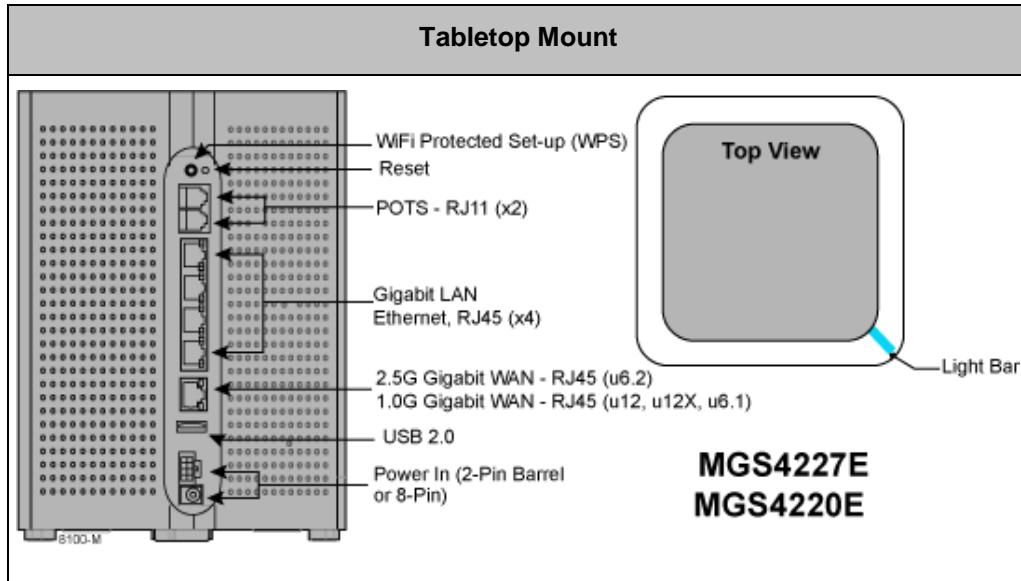
The MGS4220E and MGS4227E are designed to be placed in a horizontal table-top configuration or can be wall mounted using the optional wall mount bracket.

Powering Options

- By attaching to any 110/220 VAC power outlet using the supplied 12 VDC wall transformer.
- Incorporating a UPS with alarm telemetry and an MGS4220E or MGS4227E with the provided 8-pin connector which attaches to an 8-pin connector on the UPS.

Note: For all models, the power cord configuration must be appropriate for use in the country where the device is being deployed.

Note: Only provided and approved power cords or voltage adapters should be used to connect to this product(s).



Chapter 2

Installation

Installation Tips

CAUTION! Use of controls or adjustments or performance of procedures other than those specified here may result in hazardous radiation exposure.

Follow these tips when installing a MGS4220E or MGS4227E device.

- For subscribers using data services, all data wiring inside the home must be CAT5 cable or better.
- Make sure subscriber connections are tightened properly.
- Check the contents of each box carefully as you receive them. Components may not be located where you might expect them due to certain items being tested immediately before shipment.

About Wi-Fi Placement

Certain building materials are particularly effective at blocking Wi-Fi signals (see table below) and should be considered when locating the MGS4220E or MGS4227E. Line of sight is not necessary since MIMO technology takes advantage of reflections in the over-the-air path to carry additional data. However, it is recommended that when possible, the MGS4220E and MGS4227E should be placed in a centralized location within the home to yield the best possible results for Wi-Fi coverage.

Building Materials and Their Effect on Wi-Fi Signals	
Material	Wi-Fi Attenuation
Wood, Drywall, Particle Board, Tile	Low
Glass	Low
Water	Medium
Bricks, Cinder Block	Medium
Plaster, Stucco	High
Concrete	High
Tinted or Low-E Glass (metalized)	Very High
Metal	Very High
Note: Low attenuation is considered to be best performance.	

Installation Variables

Before installing the MGS4220E or MGS4227E, consider what additional services may be implemented. Various access points are available on the back of the unit which may or may not be used. Prior to determining the unit's final location, you need to account for the following variables:

- Optional: Where will the Ethernet cable be routed?
- What type of building material is used in this facility? Make sure you have the appropriate drills, drill bits and fasteners for routing Ethernet or power cables as they pass through walls and the like.

Unpacking the MGS4220E or MGS4227E

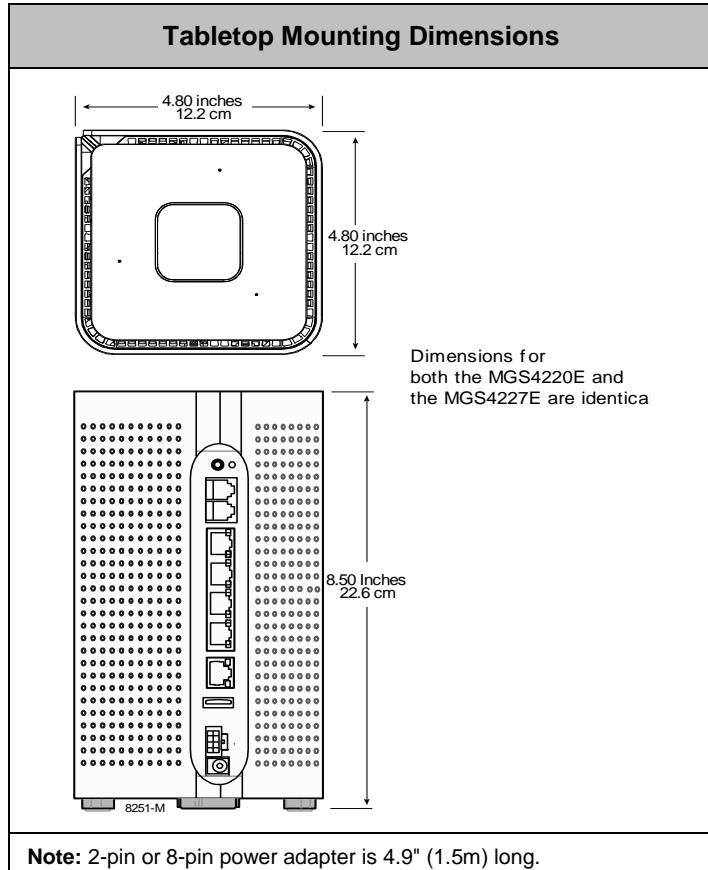
Each MGS4220E or MGS4227E is shipped individually in its own carton and contains the following:

- (1) MGS4220E or MGS4227E
- (1) Power Adapter interface cord (wall wart)
- (1) Safety and Regulatory Statements Guide
- (2) Product Identification Labels with Login Credentials

After opening the carton, remove the protective packaging, ensure all components above are present, and prepare for mounting the unit.

Tabletop Mounting Dimensions

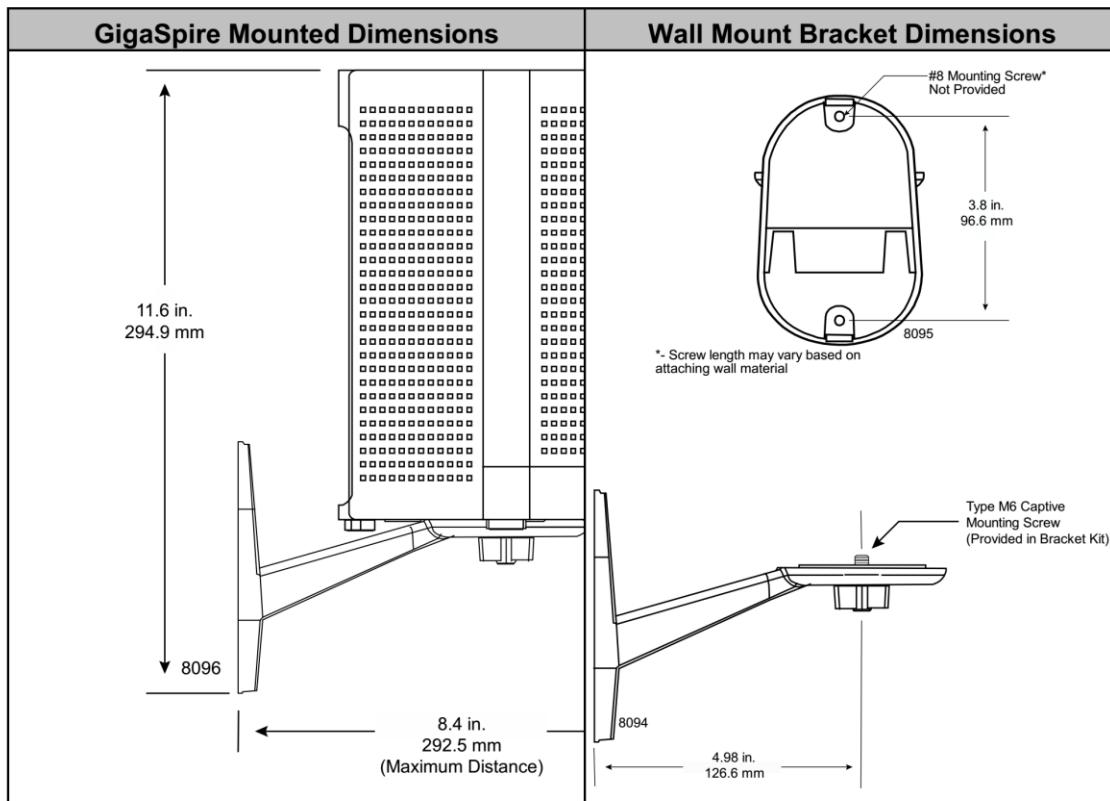
Dimensions for tabletop mounting of a MGS4220E and MGS4227E are included here for reference.



Wall Mounting Dimensions

Dimensions for wall mounting of a MGS4220E and MGS4227E are included here for reference.

Note: The wall mount bracket is available separately.



Tabletop Mounting the MGS422xE

Any Mitrastar MGS4220E and MGS4227E can be mounted flat on a tabletop, in a tower configuration. Four (4) rubberized feet are pre-installed on the bottom of the unit to provide a non-skid surface when placing the MGS4220E or MGS4227E on a table or shelf.

Keep the following information in mind when considering tabletop mounting:

- Due to component placement inside the chassis, do not remove the rubber feet that are installed on the bottom of the unit. Locate the MGS4220E or MGS4227E on the desktop in a location that is unlikely to be bumped or jostled.
- Make sure that the Ethernet cable (if used) and power supply wiring attached to the MGS4220E or MGS4227E are secured properly and out of harm's way.

Note: Once the MGS4220E or MGS4227E is connected and turned up, Wi-Fi network parameters are persisted in memory. For this reason, if power is lost to the MGS422xE, it will be re-discovered on the network automatically, without operator intervention.

Wall Mounting the MGS4220E and MGS4227E

The Mitrastar MGS4220E and MGS4227E can be wall mounted using the optional wall mount bracket. The MGS4220E and MGS4227E models includes a 6mm captive receptacle built into the base for attaching to the captive M6 screw assembled into the wall mount bracket.

Keep the following information in mind when considering wall mounting:

- Locate the MGS4220E or MGS4227E on the wall in a location that is unlikely to be bumped or jostled.
- Make sure that the Ethernet cable(s) (if used) and power supply wiring attached to the MGS422xE are secured properly and out of harm's way.

Note: Once the MGS4220E or MGS4227E is connected and turned up, Wi-Fi network parameters are persisted in memory. For this reason, if power is lost to the device, it will be re-discovered on the network automatically, without operator intervention.

To wall mount the MGS4220E and MGS4227E**Typical Wall Mount Location**

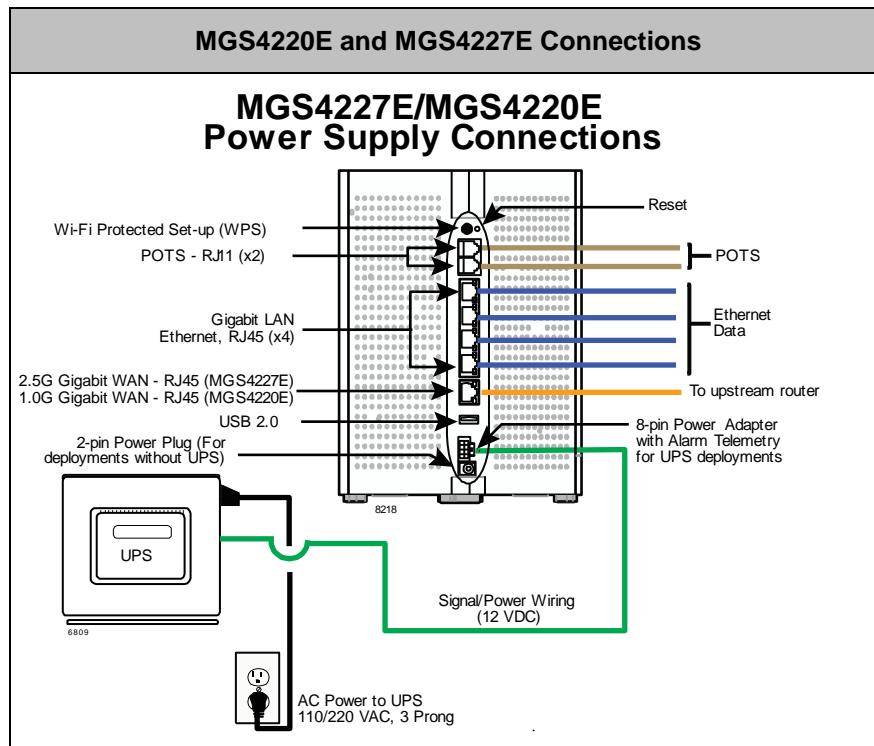
1. Find a suitable location for attaching the wall mount bracket to the wall. Be mindful of the power source and Ethernet cable requirements then determining a mounting location.
2. Using the wall mount bracket as a template, mark the two screw locations on the wall, making sure the bracket is level.

Note: The holes of the bracket are designed to accommodate a #8 screw (not provided). Depending on the material you are attaching to, use a screw of sufficient length and strength to support the MGS4220E and MGS4227E once attached to the bracket.

Note: If attaching to sheet rock or gypsum board, it is recommended that a wall anchoring system be used to ensure the bracket is securely attached to the wall.

3. Drill holes in the wall and attach the bracket using two #8 screws.

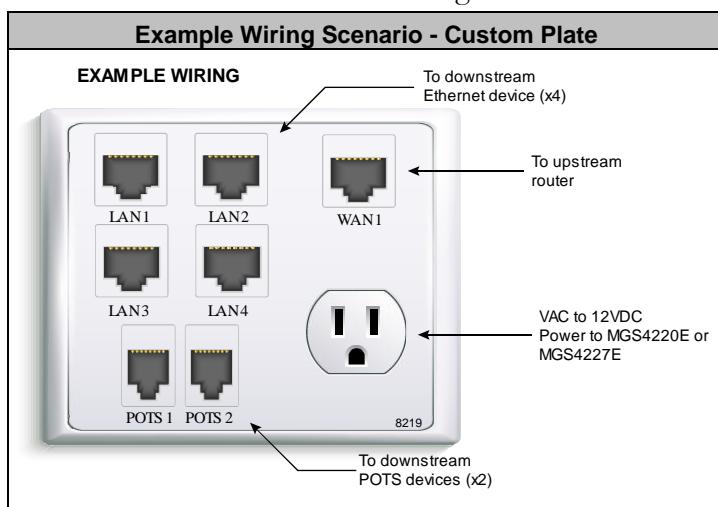
4. Thread the MGS4220E or MGS4227E on to the bracket using the captive M6 screw on the bracket.
5. Attach Ethernet cable(s) to the MGS4220E or MGS4227E and route them to the upstream/downstream devices.
6. Attach the power supply wiring to the MGS4220E or MGS4227E and route to the power source.
7. Secure all wiring conforming to local code.



Additional Mounting Considerations

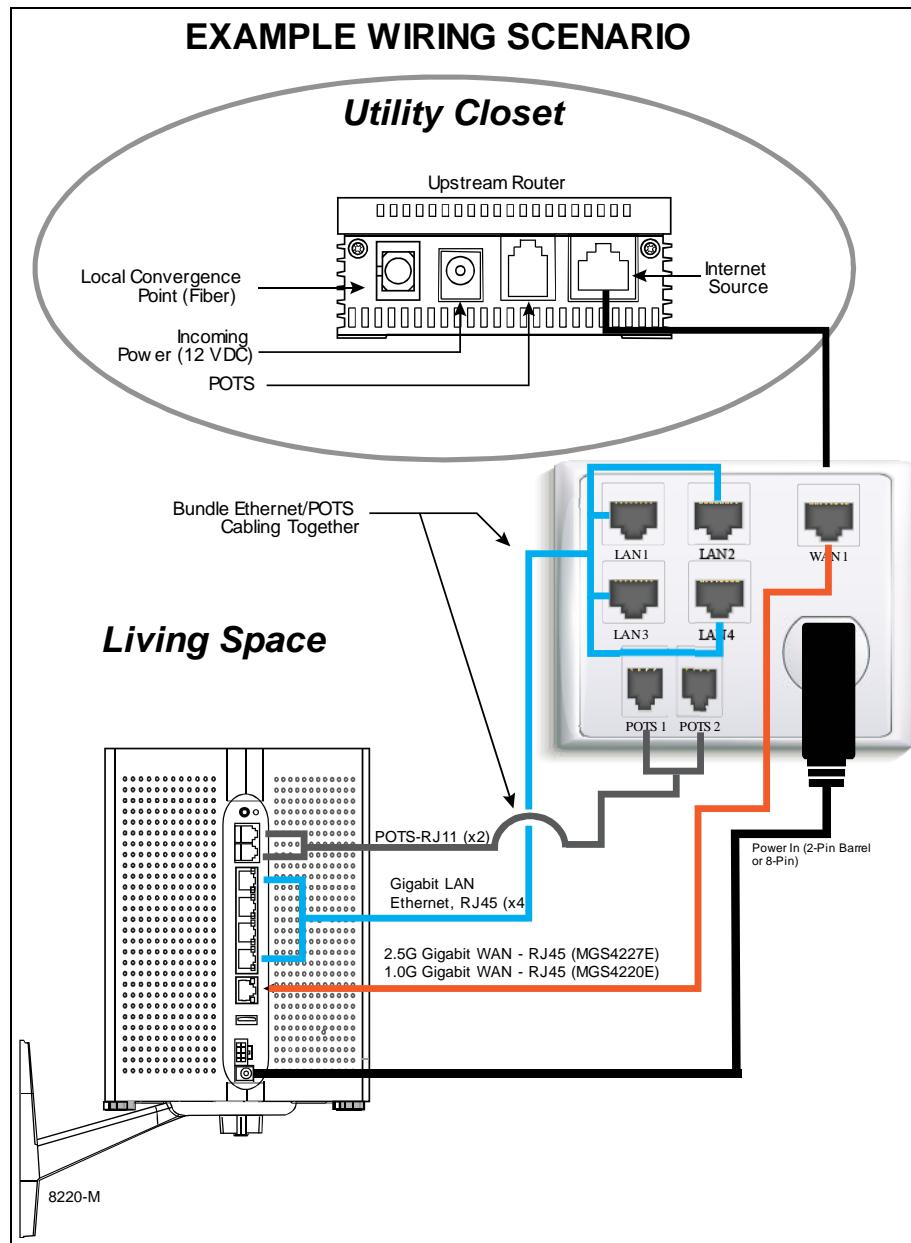
The options for mounting a MGS4220E or MGS4227E system are many. From a best practice's standpoint, keep the following in mind:

- We recommend mounting the device as high as possible for Wi-Fi performance reasons. However, this deployment scenario still mandates that an AC power outlet is located within the power cord distance of the Wi-Fi source. If installing in a greenfield environment (initial installation), plan on placing the MGS422xE within 4 feet of the power supply. As an alternative, longer power cords are available to extend the distance between the BLAST and the power supply.
- Keep cabling neat and well secured wherever possible. A tidy installation allows for increased safety and an overall neater appearance. Common tools used for this purpose include cable ties and velcro straps for routing cable out of the way. Also, custom made wall plates are often used where most of the cabling is hidden behind a wall.



- With so many options available for deployment, your network architecture is no doubt going to be different from other subscribers. The diagram directly below is one of hundreds of options. This example provides the following:
 - A Local Convergence Point (LCP) for bringing fiber into the home. In this case, a Residential Gateway is located near the services panel in a climate-controlled utility room or storage room that can be locked with limited access by others.
 - A customized interface panel (see above) for providing LAN, WAN, and POTS ports pre-wired near the MGS4220E or MGS4227E. This allows for short cable runs and an overall cleaner deployment reducing clumsy and ill-terminated cable runs.
 - A MGS4220E or MGS4227E mounted near the ceiling on the optional Wall Mount Bracket. This device provides Wi-Fi radios inside the home in a location that provides the optimal Wi-Fi signal throughout the home. The MGS4220E or MGS4227E also provides a mechanical hub for deploying additional Ethernet ports or POTS ports in the home.

- In this deployment, a UPS is not being used and as such, only the 2-pin barrel connector is needed for powering the device.



Chapter 3 Final Set-up and Testing

MGS422xE Reset Behavior

EDGE systems support a variety of system reset functions and provide multiple methods for invoking each of these functions, as described in this topic. These reset functions and behaviors are as follows:

1. Basic reset (reboot): Restarts the router.
2. Configuration reset: Resets the RG configuration settings (those visible to the subscriber/Admin user in the EWI, such as SSIDs, LAN IP scope, etc.) to defaults, but retains operator-configured management settings (those visible only to the Support user in the EWI, such as ACS URL and SPID).
3. Factory reset: Resets the router (and any attached mesh satellites) to factory default settings. A factory reset also removes devices from network management systems, where applicable.

These reset functions can be used as troubleshooting and/or operations tools for reset/removal scenarios, whether the device is deployed as a Residential Gateway or as a subtended WAP or Satellite (MGS4220E or MGS4227E). Hardware-invoked resets behave differently depending on how long the reset button is pressed, as described below.

Function	Where Performed
1 Basic Reset	Hardware: Press Mechanical Reset button once for 1 second
	Software: EWI > Utilities > Reboot
2 Configuration Reset	Hardware: Press and hold Reset button for 15+ seconds
	Software: EWI > Utilities > Restore Defaults
Factory Reset	Hardware: no option
	Software (for support user only): EWI > Support > Tools > Smart Activate > Factory Reset
Note: For operators with remote reset capabilities, these resets can be invoked as follows:	
1 <i>System Tools > Reboot</i> (https://www.calix.com/content/calix/en/site-prod/library-html/software-products/cloud/nm/support/help/index.htm#88688.htm)	
2 <i>System Tools > Factory Reset</i> (https://www.calix.com/content/calix/en/site-prod/library-html/software-products/cloud/nm/support/help/index.htm#88687.htm) (option actually performs just a configuration reset)	

The table below provides additional notes for each Reset event:

Reset Behavior			
Reset Type	How Invoked	Expected Behavior	Notes
Basic Reset - Hardware	Press Reset button	<ul style="list-style-type: none"> Router or satellite reboots RG configuration and subscriber's custom settings persist 	Pressing the Reset button performs a standard power cycle. All configuration information persists. Device goes offline for 2-3 minutes while it completes the reboot process.

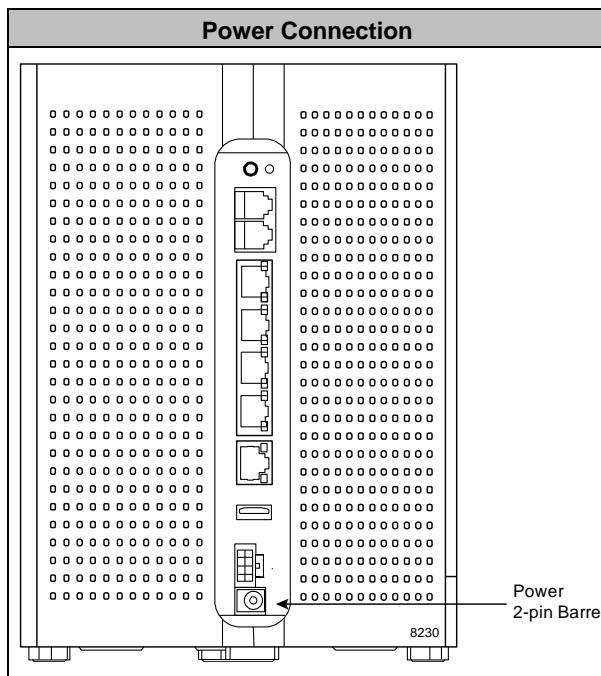
Basic Reset - Software	EWI > Utilities > Reboot	<ul style="list-style-type: none"> Router reboots RG configuration and subscriber's custom settings persist 	Subscriber (Admin user) has access to the EWI to invoke a soft reset. All configuration information persists. Device goes offline for 2-3 minutes while reboot process completes.
Configuration Reset - Hardware	Press and hold Reset button (10+ seconds)	<ul style="list-style-type: none"> Router or satellite reboots RG configuration and subscriber's custom settings reset to defaults Service provider applied management settings persist 	Reset button must be pressed and held until LEDs flash (after about 10 seconds). Device goes offline while it completes the reboot process. Residential Gateway (RG) configuration settings include all subscriber-configurable information such as login credentials for Admin user, SSIDs, LAN IP scope, etc., all of which reset to defaults.
Configuration Reset - Software	EWI > Utilities > Restore Defaults	<ul style="list-style-type: none"> Router reboots RG configuration and subscriber's custom settings reset to defaults Service provider applied management settings persist 	Subscriber (Admin user) has access to the EWI to invoke a configuration reset. Device goes offline while it completes the reboot process. Residential Gateway (RG) configuration settings include all subscriber-configurable information such as login credentials for Admin user, SSIDs, LAN IP scope, etc., all of which reset to defaults.
Factory Reset - Software	EWI > Support Menu > Tools > Smart Activate > Factory Reset	<ul style="list-style-type: none"> Router reboots RG configuration settings reset to factory defaults Service provider applied management settings reset to factory defaults 	Function available only to operators via EWI Support user (not available to subscriber/Admin user). Service provider management settings include all information visible on the EWI Support tab, such as login credentials for Support user, TR-69 ACS URL and login credentials, SPID, etc., all of which reset to defaults.

Powering the MGS422xE - No UPS

The information below describes the powering of any system that **does not** include a UPS.

To power up the device

1. Locate the 12 VDC Power Adapter.
2. Attach one end (2-pin barrel connector) to the rear of the MGS422xE.
3. Plug the other end into any available 110/220 VAC wall outlet.
4. The unit begins its start-up sequence.



(Optional) Mounting the UPS

Prior to putting the device into service, the UPS must be mounted to ensure the low voltage power cord that is connected between the UPS and the MGS422xE is long enough to span the distance between the two devices.

Depending on your configuration, power cords of varying lengths may be included:

- The AC power cord that runs from the UPS to the AC wall outlet is 8-feet long. Make sure an AC outlet is available within that distance.
- The power/signal cord that runs from the UPS to the MGS422xE is available in any of the following configurations based on model.

Any MGS422xE incorporating a UPS (Sold Separately)

- Connectorized Power and Signal Cable - An 8-pin (MGS422xE end) to 8-pin terminal block (UPS end) cable available in 3-foot (1 meter) or 10-foot (3 meters) lengths.
- Connectorized Power and Signal Cable - An 8-pin (MGS422xE end) to dressed and tinned (un-terminated) cable available in 20-foot (6 meter) length.

Mounting the UPS



WARNING! High voltage electrical and pressurized natural gas lines may be present. Make sure you fully understand the locations of these and all other utility connections before drilling through any surface.

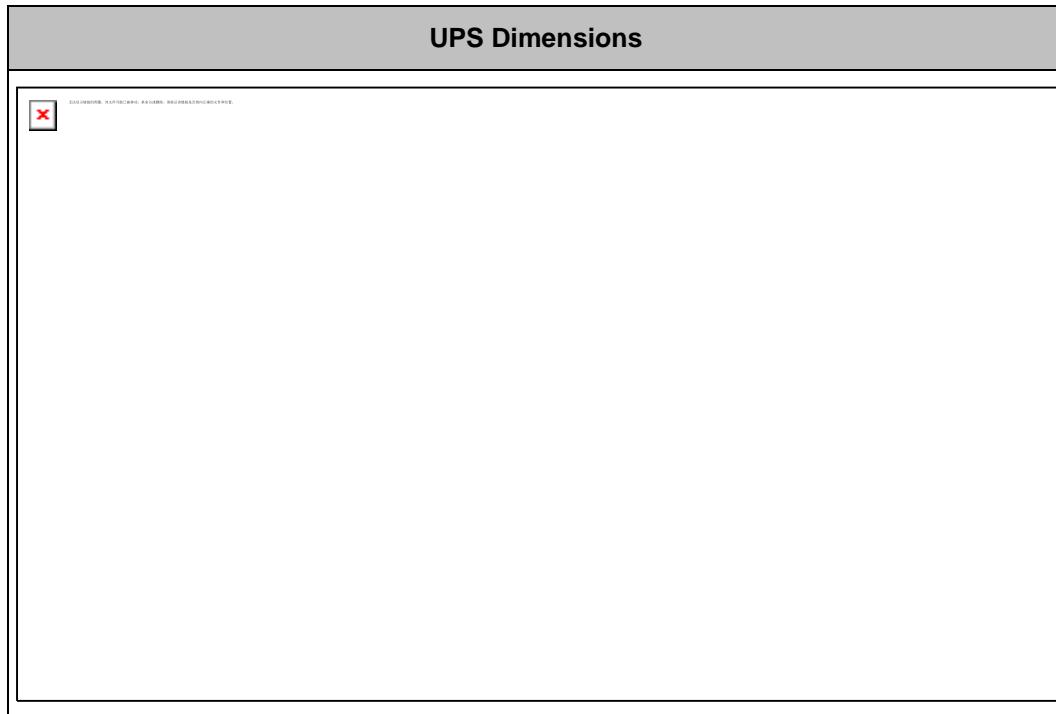


CAUTION! The UPS is designed for indoor installation and must be installed in a location with adequate airflow.

Make sure the UPS is not installed under water pipes which may leak or drip from condensation.

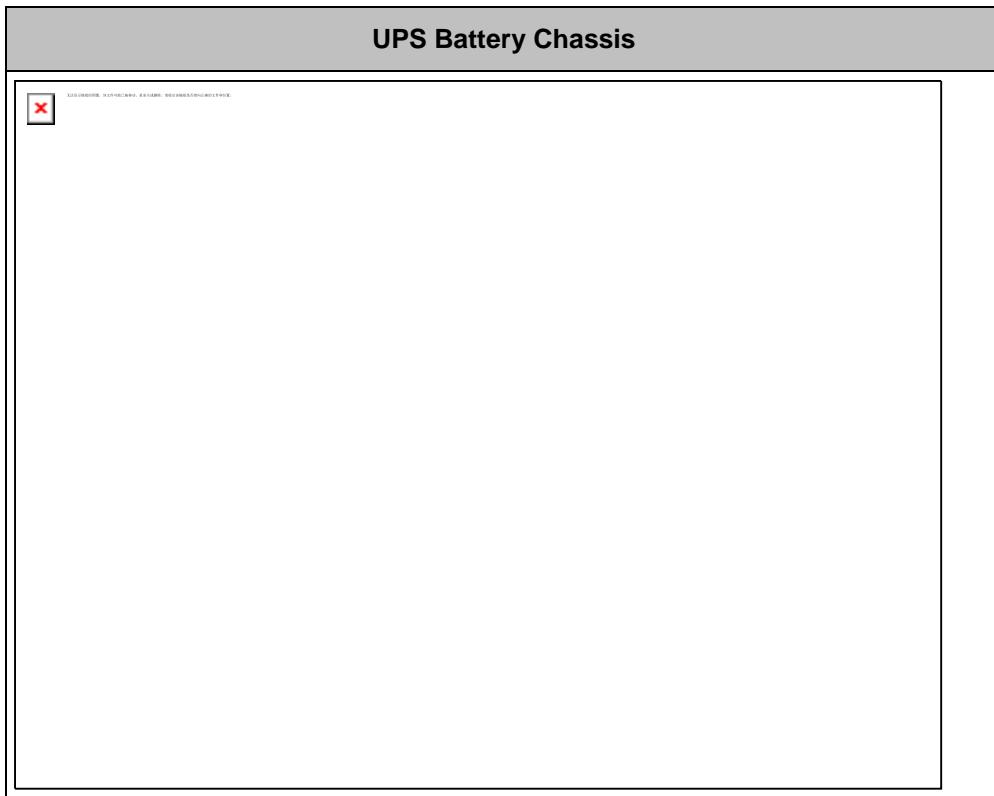
Reference: The UPS must be located less than 50 feet (15.2 meters) from the MGS422xE when using an 18 AWG Type I power cord or less than 70 feet (21.3 meters) from the MGS422xE when using 16 AWG Type II power cord.

1. Unpack the UPS and associated hardware from the carton.
2. Find a suitable location for the UPS and prepare mounting screws per the mounting hole pattern shown below.



1. Pre-drill mounting holes (to accept an 8-32 pan head screw - not provided) of the appropriate size.

Important: Make sure the material you are mounting the UPS to is of enough strength to support its weight of 7.16 pounds (3.25 kgs).
2. Insert a screw into each hole, leaving 3/16-inch (.48 cm) of the screw protruding from the wall.
3. Align the key slots on the top of the UPS with the screws and slide the unit down into place.
4. If the UPS is not snug after test fitting the mounting screws, remove the UPS and tighten the mounting screws slightly to allow for a tighter fit.



5. Unpack the battery and slide it into the UPS housing.
6. Attach the battery leads to the battery (red to red, black to black).
7. Re-install the battery cover.

Connecting to the Internet

The method by which the MGS422xE is deployed will impact the internet connection. With power applied to the MGS422xE, perform the following steps based on the role the MGS422xE plays in the network.

Connecting to a residential gateway

If the MGS422xE is configured as a Residential Gateway, connect an Ethernet Cable to its WAN port from the WAN modem (ONU, cable modem, or DSL modem).

Connecting as a Mesh point

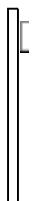
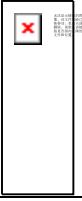
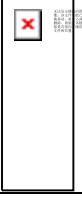
If the MGS422xE is configured as a MESH point, connect an Ethernet cable from its WAN port to another MGS422xE or wirelessly connect the two devices.

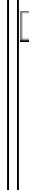
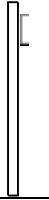
Additional Comments

- Once your MGS422xE LED turns BLUE, you are connected to the upstream WAN modem.
- At start-up, MGS422xE Wi-Fi radios are defaulted to on.
- To configure your MGS422xE, connect an Ethernet cable between your PC and the LAN port of your MGS422xE and enter the default IP Address of the device (192.168.1.1) into your browser.
- Wi-Fi radios can be configured using the default settings:
 - SSID: Printed on the product label in the gift box. (CXNKxxxxxxxx)
 - Number of radios: 2 (2.4 GHz and 5 GHz)
 - Wi-Fi Protocol supported: 802.11a/b/n/g/ac/ax
 - Credentials: Login and password printed on the product label in the gift box.

LED States - MGS422xE Turn-up

The LED's located on the corner of the MGS422xE provide information on the status and current state of the device. Below, you will find a detailed status of the power-up cycle.

Unit Status		
Power-up Status	Function	LED Status
Off	<p>Power is off.</p> <ul style="list-style-type: none"> • The unit has not been turned on or • There is no power to the unit or • The UPS battery has been discharged and there is insufficient power to continue operation. <p>Note: All four LED's are off</p>	
Booting Up, Software Upgrade in Process	<p>Unit is in the boot-up process or service/software is being upgraded. Flashes cyan every second assuming software has taken over.</p> <p>Note: All four LEDs On.</p>	
Boot-up Failure	<p>Boot-up failed (assuming software has taken over)</p> <p>Note: Cycles at 8/10 of a second</p> <p>Note: All four LEDs on.</p>	

Unit Status		
Power-up Status	Function	LED Status
Connected to Internet	Unit has successfully booted up, local services are up, and connected to the Internet. Note: LED 1 is lit, LED 2,3,4 are Off	
Service Failure, No Internet	No service, no Internet. Note: All four LED's on. Notes: Cycles at 1.6 seconds	
Alexa has been triggered; Alexa is listening	Alexa is listening and active. Listing once the trigger word is heard. Note: All four LED's on. Note: Cyan on continuously.	

LED States - WPS Functionality

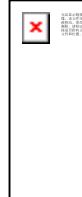
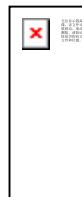
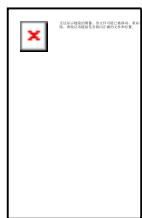
WPS is enabled upon pressing the WPS button a single time. After pressing the button, the MGS422xE will stay in pairing mode for 120 seconds.

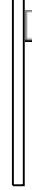
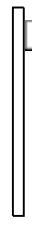
During this time, other Wi-Fi capable devices can be paired to the MGS422xE Gateway Wi-Fi radios (5 GHz band) by initializing a similar WPS function on the other MGS422xE satellite thereby creating an association with the Gateway SSID and the mesh satellite. When the Gateway and the mesh satellite are successfully paired, they will have the same primary SSID (2.4 and 5 GHz).

Sequence of WPS operation

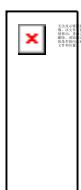
1. Press WPS button a single time (3+ seconds in a 10-second window).
2. MGS422xE Gateway enters pairing mode (up to 120 seconds).
3. If another device is found, the MGS422xE pairs with the device.
4. If no device is found, the MGS422xE will exit pairing mode after 120 second.

Note: WPS LED behavior takes priority even if Alexa is in use during the pairing period.

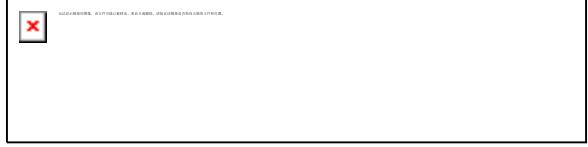
WPS Status			
Power-up Status	Function	LED Appearance	LED Status
MGS422xE booting up	<p>Unit is in the process of booting up or service/software is currently being upgraded. LEDs flash every second assuming software can control the LEDs.</p> <p>Note: If the MGS422xE is connected via WIRED backhaul, ignore pairing and signal strength behavior and proceed to step 6 below.</p>	Alternating on/off at 1000 m/sec per cycle	
Boot-up Failure	Unit boot-up failed (assume failure occurs after software has taken control of the LEDs)	Alternating on/off at 800 m/sec per cycle	
WPS Pressed, Pairing Attempt Started	<p>WPS is enabled upon pressing the WPS a single time. The MGS422xE will stay in pairing mode for 120 seconds.</p> <p>During this time, other Wi-Fi capable devices can be paired to the MGS422xE Gateway Wi-Fi radios (5.0 GHz band) by initializing a similar WPS function on the other MGS422xE mesh satellite thereby creating an association with the Gateway SSID and the mesh satellite. When the Gateway and the mesh satellite are successfully paired, they will have the same primary SSID (2.4 and 5.0 GHz).</p> <p>WPS LED behavior takes priority even if Alexa is used during the pairing period.</p>	LED bar begins flashing at 500 m/sec intervals and continues for 120 seconds.	
Display Signal Strength (Positioning)	<p>Displays signal strength after any one of the following conditions are met (after IP address has been obtained):</p> <ul style="list-style-type: none"> Successful pairing completed Re-start completed (and previous pairing with gateway has been restored) Re-association of the link with the gateway after lost link (gateway was powered down then restored) 	<p>If pairing succeeds:</p> <ul style="list-style-type: none"> If the MGS422xE is too close to the gateway but still connected, top LED will light steady green. If the MGS422xE is too far from the gateway, bottom LED will light steady green. When at the ideal location, the entire light bar (all 4 LEDS light steady green) <p>Note: After 60 seconds, the light bar begins to reflect gateway status (not shown)</p>	

WPS Status			
Power-up Status	Function	LED Appearance	LED Status
Gateway Not Found	If no device is found after the initial 120 second time-out, the WPS/Strength LED bar shifts from the blinking green to solid red.	LED bar remains red for another 60 seconds, then reverts to the "No Internet failure status.	
After pairing, monitor gateway status	After pairing is complete (60 seconds after the signal strength has been displayed), the light bar indicates the gateway status as being on-line.	If the Mesh is connected via WIRED Ethernet and if boot-up was successful, the light bar indicates the actual gateway status (single top LED is lit). Refer to <i>LED Stats - MGS422xE Turn-up</i> (on page 31) for additional information	

LED States - Miscellaneous Controls

Additional LED States		
Alexa Status	Function	LED Status
Alexa System/Configuration Change	<p>Alexa status has changed (perhaps a changing of the Wake word from within the Alexa App).</p> <p>Note: All four LED's on.</p> <p>Note: Toggles off and on every 1.26 seconds until update is complete. Returns to MGS422xE behavior when done.</p>	
Alexa System Alarm	<p>Alexa is not functional. Alarm status is triggered after:</p> <ul style="list-style-type: none"> The Wake word is uttered and there is no response from Alexa Cloud The local Internet connection has been lost. <p>Note: All four LED's on.</p> <p>Note: Toggles three times only at .62 seconds before returning to MGS422xE LED status.</p>	

Additional LED States		
Alexa Status	Function	LED Status
Mute Microphone	<p>Applies to the square LED on the top of the MGS422xE.</p> <p>Default position is microphone on. (LED Off)</p> <p>Pressing the Mute microphone icon causes the LED to illuminate solid red.</p> <p>Note: The functionality of the top LED is hardware controlled.</p>	See Below



LED States - Alexa

Alexa behaviors are detailed below.

Alexa LED States		
Power-up Status	Function	LED Status
Alexa has been triggered; Alexa is listening	<p>Alexa is listening and active. Listening once the trigger word is heard.</p> <p>Note: All four LED's on.</p> <p>Note: Cyan on continuously.</p>	
Alexa Thinking	<p>Alexa is thinking waiting for a response from AVS.</p> <p>Note: All four LED's on.</p> <p>Note: Toggles from Cyan to Blue every .62 seconds</p>	

Alexa LED States		
Power-up Status	Function	LED Status
Alexa Responding	<p>Response received from AVS and voices the response.</p> <p>Note: All four LED's on.</p> <p>Note: Toggles from Cyan to Blue every 1.26 seconds.</p>	
Ongoing Alexa Activities	<p>On-going Alexa actives such as playing music, reading news, reading e-books.</p> <p>Note: All four LED's affected</p> <p>Note: MGS422xE LED status's return once Alexa activities are complete.</p>	
Alexa Notifications	<p>Alexa notifications have arrived. One .62 second burst followed by an off cycle (same duration) for each received notification.</p> <p>Note: All four LED's affected</p> <p>Note: Toggles for .62 seconds between yellow and off.</p>	
Alexa Notifications Queued	<p>Alexa Notifications have arrived but have not be requested by the user. Continuous slow pulse until notifications are picked up. This state continues unless a temporary interruption by a regular Alexa listen/think/respond interaction is requested.</p> <p>Returns to MGS422xE LED status once all notifications have been picked up.</p> <p>Note: All four LED's affected</p> <p>Note: Toggles for 1.26 seconds between yellow and off.</p>	
Alexa Do Not Disturb	<p>Alexa DND has been provisioned (Enable DND, Disable DND)</p> <p>Note: All four LED's affected</p> <p>Note: Toggles for 1.26 seconds</p>	

Satellite LED Behavior

WPS is enabled upon pressing the WPS button a single time. After pressing the button, the MGS422xE will stay in pairing mode for 120 seconds.

During this time, other Wi-Fi capable devices can be paired to the MGS422xE Gateway Wi-Fi radios (5 GHz band) by initializing a similar WPS function on the other MGS422xE satellite thereby creating an association with the Gateway SSID and the mesh satellite. When the Gateway and the mesh satellite are successfully paired, they will have the same primary SSID (2.4 and 5 GHz).

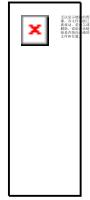
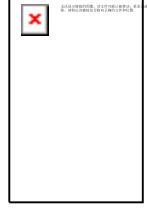
Sequence of WPS operation

1. Press WPS button a single time (3+ seconds in a 10-second window).
2. MGS422xE Gateway enters pairing mode (up to 120 seconds).
3. If another device is found, the MGS422xE pairs with the device.
4. If no device is found, the MGS422xE will exit pairing mode after 120 second.

Note: WPS LED behavior takes priority even if Alexa is in use during the pairing period.

Note: Backhaul pairing can be initiated by:

- Pressing the WPS button for at least 3 seconds
- Selecting the WPS button in the GUI
- Initiating a WPS pairing session via the Mobile Application.

WPS Status			
Power-up Status	Function	LED Appearance	LED Status
MGS422xE booting up	<p>Unit is in the process of booting up or service/software is currently being upgraded.</p> <p>Note: If the GigaMesh is connected via WIRED backhaul, ignore pairing and signal strength behavior and proceed to step x below.</p>	Alternating on/off at 1000 m/sec per cycle	
Boot-up Failure	MGS4220E satellite boot-up failed (assume failure occurs after software has taken control of the LEDs)	Alternating on/off at 800 m/sec per cycle	
WPS Pressed, Pairing Attempt Started	<p>WPS is enabled upon pressing the WPS a single time. The MGS422xE will stay in pairing mode for 120 seconds.</p> <p>During this time, other Wi-Fi capable devices can be paired to the MGS422xE Gateway Wi-Fi radios (5.0 GHz band) by initializing a similar WPS function on the other MGS422xE satellite thereby creating an association with the Gateway SSID and the mesh satellite. When the Gateway and the mesh satellite are successfully paired, they will have the same primary SSID (2.4 and 5.0 GHz).</p> <p>WPS LED behavior takes priority even if Alexa is used during the pairing period.</p>	LED bar begins flashing at 500 m/sec intervals and continues for 120 seconds.	
Display Signal Strength (Positioning)	<p>Displays signal strength after any one of the following conditions are met (after IP address has been obtained):</p> <ul style="list-style-type: none"> Successful pairing completed Re-start completed (and previous pairing with gateway has been restored) Re-association of the link with the gateway after lost link (gateway was powered down the restored) 	<p>If pairing succeeds:</p> <ul style="list-style-type: none"> If the GigaMesh is too close to the gateway but still connected, top LED will light steady green. If the GigaMesh is too far from the gateway, bottom LED will light steady green. When at the ideal location, the entire light bar (all 4 LEDS light steady green) Note: After 60 seconds, the light bar begins to reflect gateway status (not shown) 	

WPS Status			
Power-up Status	Function	LED Appearance	LED Status
Gateway Not Found	If no device is found after the initial 120 second time-out, the WPS/Strength LED bar shifts from blinking green to solid red.	LED bar remains red for another 60 seconds, then reverts to the "No Internet failure status. If pairing is accomplished, LED bar changes to reflect gateway status.	
After pairing, monitor gateway status	After pairing is complete (60 seconds after the signal strength has been displayed), the light bar indicates the gateway status as being on-line.	If the Mesh is connected via WIRED Ethernet and if boot-up was successful, the light bar indicates the actual gateway status (top LED is lit). Refer to <i>LED Stats - MGS422xE Turn-up</i> (on page 31) for additional information	



Language	Declaration of Conformity
Ελληνική [Greek]	Διο του παρόντος, Mitrastar Αυτό δηλώνει αυτό το Wireless Terminal Εύρωζωνηκή πρόσβαση είναι σε συμμόρφωση με την οδηγία 2014/53 / ΕΕ. Το πλήρες κείμενο της δηλώσεως συμμόρφωσης ΕΕ είναι διαθέσιμα στο διαδίκτυο από την ιστοσελίδα Mitrastar Δηλώσεις (https://www.Mitrastar.com/declarations).
français [French]	Par la présente, Mitrastar Cet accès qui déclare haut débit sans fil terminal est conforme à la directive 2014/53 / UE. Le texte intégral de la déclaration de conformité C'est disponible en ligne à partir des déclarations de site Mitrastar (https://www.Mitrastar.com/declarations).
Italiano [Italian]	Con la presente, Mitrastar Cio dichiara questo terminale di accesso wireless a banda larga è conforme alla Direttiva 2014/53 / UE. Il testo integrale della dichiarazione di conformità UE è disponibile online dal sito Dichiarazioni Mitrastar (https://www.Mitrastar.com/declarations).
Latvijas [Latvian]	Ar šo, Mitrastar Tas paziņo, Šis bezvadu plātjoslas piekļuves termināls atbilst Direktīvas 2014/53 / ES. Pilns teksts ES atbilstības deklarācijas ir pieejama tiešsaistē no Mitrastar tīmekļa deklarācijas (https://www.Mitrastar.com/declarations).
Lietuvių [Lithuanian]	Šiuo dokumentu Mitrastar Inc Tai deklaruja tai beveidžia platiplėsias prieigos terminālis atitinka Direktyvos 2014/53 / ES. Visą tekstą ES atitikties deklaracija galima i rasti internete nuo MITRASTAR svetainės deklaracijas (https://www.Mitrastar.com/declarations).
Magyar [Hungarian]	Ezáltal Mitrastar Hogy kijelenti ezt Wireless Broadband Access Terminal irányelvnek megfelelően 2014/53 / EU. A teljes szöveg az EU-megfelelőségi nyilatkozat elérhető online az Mitrastar honlapján Nyilatkozatok (https://www.Mitrastar.com/declarations).
Polski [Polish]	Niniejszym, Mitrastar Deklaruję, że ten Szerokopasmowy dostęp bezprzewodowy terminal jest zgodny z dyrektywą 2014/53 / UE. Pełny tekst deklaracji zgodności UE jest dostępny on-line na stronie internetowej Mitrastar deklaracji (https://www.Mitrastar.com/declarations).
português [Portuguese]	Por este meio, Mitrastar Que declara esta Terminal de Acesso de Banda Larga sem fios está em conformidade com a Directiva 2014/53 / UE. O texto completo da declaração UE de conformidade está disponível online a partir de declarações do Web site da Mitrastar (https://www.Mitrastar.com/declarations).
română [Romanian]	Prin prezență, Mitrastar Inc poate declară que acces de bandă largă fără fir Terminal este în conformitate cu Directiva 2014/53 / UE. Textul integral al declarării de conformitate UE este disponibil online din Mitrastar declarăriile site-ului (https://www.Mitrastar.com/declarations).
slovenščina [Slovenian]	S tem lahko Mitrastar razglasí, da širokopasovnega brezžičnega dostopa Terminal je v skladu z Direktivo 2014/53 / EU. Celočno besedilo izjave EU o skladnosti je na voljo na spletni strani izjavami Mitrastar (https://www.Mitrastar.com/declarations).
slovenský [Slovak]	Týmto Mitrastar môže vyhľásiť tento čo Broadband Wireless Access Terminal je v súlade so smernicou 2014/53 / EÚ. Uplné znenie vyhľásenia o zhode EÚ je k dispozícii online na webovej stránke výhľásenie kalichu (https://www.Mitrastar.com/declarations).

For Non-Radio Equipment Only

European Community Declaration of Conformity

This device complies with the essential requirements of the Electromagnetic Compatibility (EMCD) DIRECTIVE: 2014 / 30 / EU, and Low Voltage (LVD) DIRECTIVE 2014/35/EU.

The following test methods have been applied to prove presumption of conformity with the essential requirements of the **EMCD and LVD**:
EN 55032, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61204-3, EN 60950-1, EN 60825-1.

Mitrastar Safety and Regulatory Statements –

MGS4220E and MGS4227E

NOTE: This Safety and Regulatory Statements Guide applies to the MGS4220E and MGS4227E devices

Before you Begin

IMPORTANT SAFETY INSTRUCTIONS

When using your equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- Read all the instructions listed here and/or in the user manual before you operate this device. Give attention to all safety precautions. Retain the instructions for future reference.
- Always use caution when handling live electrical connections.
- Do not install electrical equipment in wet or damp conditions.
- Ensure that the power source for the system is adequately rated to assure safe operation and provides current overload protection.
- Do not allow anything to rest on the power cable, and do not place this product where people will stand or walk on the power cable.
- To avoid electric shock caused by over-voltage from the PSTN, DO NOT connect the POTS port on this unit directly to any external PSTN line.
- This unit must only be used with the certified power adapter model inside the package, which complies with the requirement of a limited power source.
- Installation of this device must be in accordance with national wiring codes and conform to local regulations and electrical codes.
- Do not use any accessories other than those approved by the manufacturer or your service provider. Use of non-original or non-approved accessories may result in loss of performance, damage to the product, fire, electric shock or injury, and may violate regulations. The warranty does not cover product failures that have been caused by use of non-original or non-approved accessories.
- It is recommended that the customer install an AC surge protector in the AC outlet to which this device is connected. This is to avoid damaging the device by local lightning strikes and other electrical surges.
- The minimum distance between the user and/or any bystander and the radiating structure of the transmitter varies based on the country where it is deployed. For US deployments, 27 cm is the minimum distance while Canada requires a minimum of 33 cm.
- The pluggable external power supply provided with the unit should be mounted indoors. If other power supplies are employed, they should be LISTED ITE with a Limited Power Source (LPS) output or LISTED with a National Electric Code (NEC) Class 2 output.
- All installation methods shall be in accordance with national and local regulations and practices. The wiring method should include the use of Listed wire/cable acceptable for the application per the National Code, and should be one that an Authority Having Jurisdiction (AHJ) can approve per the Code.
- For US products, no wiring to the product should be exposed in lengths beyond 140 feet, as the circuits should avoid exposure to accidental contact with lightning and power conductors in accordance with NEC Article 725-57 (NEC 2005). The installer should also consider Articles 210, 240, 250, 770, and 810 of the NEC.

Federal Communications Commission (FCC)

INTERFERENCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.

CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

CAUTION: This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

ADDITIONAL CONSIDERATIONS

The country code selection is for non-US models only and is not available on any US models. Per FCC regulations, all Wi-Fi products marketed in the US must be fixed to US operational channels only.

RF FREQUENCY REQUIREMENTS

This device is for indoor use only when using all channels in the 5.150 GHz - 5.250 GHz and 5.725 GHz - 5.850 GHz frequency range. High power radars are allocated as primary users of the 5.150 GHz - 5.250 GHz and 5.725 GHz - 5.850 GHz bands. These radar stations can cause interference with and/or damage this device. It is restricted to indoor environment only.

FCC RADIATION EXPOSURE STATEMENT

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 27cm between the radiator & your body.

Industry Canada Requirements - English

The manufacturer declares that this product is in conformity with the requirements and other relevant provisions of the following Canadian standards:

- CAN ICES-3 (B)/NMB-3(B)
- This device complies with ISED's licence-exempt RSS standards. Operation is subject to the following two conditions:
 - (1) This device may not cause interference, and
 - (2) This device must accept any interference, including interference that may cause undesired operation of the device.

CAUTION:

- (i) The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) The maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate.
- (iii) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

RADIATION EXPOSURE STATEMENT

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 33cm between the radiator & your body.

Industrie Canada Exigences - français

Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

- CAN-ICES-3 (B)/NMB-3(B)
- Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
 - (1) L'appareil ne doit pas produire de brouillage, et
 - (2) L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

AVERTISSEMENT

- (i) Les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) Le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.
- (iii) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont designés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

DECLARATION D'EXPOSITION AUX RADIATIONS

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 33 cm de distance entre la source de rayonnement et votre corps.

European Union

DISPOSING OF AND RECYCLING YOUR PRODUCT

WEEE Directive: Requirement according to WEEE directive 2012/19/EU

Disposal of old electrical and electronic equipment (Applicable in the European countries with separate collection systems).



This symbol on the product indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. Mitrastar offers take-back and recycling services for products in many locations around the world. Customers are advised to contact the local Mitrastar representative for further information.

MITRASTAR AND THE ENVIRONMENT

At Mitrastar, we understand and are committed to reducing any impact our operations and products may have on the environment. To minimize this impact, Mitrastar designs and builds its products to be as environmentally friendly as possible, by using recyclable, low toxic materials in both products and packaging.

ROHS COMPLIANCE

This equipment meets the requirements detailed in the European RoHS Directive 2011/65/EU.

For Radio Equipment Only



You must set the correct country code with the set WLAN country-code command to avoid violating local radio spectrum laws. This command sets the selectable channel range and transmit power level so that a WLAN connection can be established. For more information about country codes, see the hardware guide for your device.

FREQUENCIES	MAX POWER	INDOOR/OUTDOOR
2400-2483.5	100 mW	Indoor
5150-5250	200 mW	Indoor

NOTICE OF WIRELESS RADIO LAN USAGE IN THE EUROPEAN COMMUNITY		
BE	BG	CZ
DK	DE	EE
IE	EL	ES
FR	HR	IT
CY	LV	LT
LU	HU	MT
NL	AT	PL
PT	RO	SE
SK	FI	SE
UK	LI	IS
NO	TR	CH

This device is restricted to **indoor use** when operated in the European Community using channels in the 5.15-5.35 GHz band to reduce the potential for interference. This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France where restrictive use applies. This device may not be used for setting up outdoor radio links in France and in some areas, the RF output power may be limited to 10 mW EIR P in the frequency range of 2454 - 2483.5 MHz. For detailed information, the end-user should contact the national spectrum authority in France. This equipment may be operated in AL, AD, BE, BG, DK, DE, FI, FR, GR, GW, IS, IT, HR, LI, LU, MT, MK, MD, MC, NL, NO, AT, OL, PT, RO, SM, SE, RS, SK, ES, CI, HU, CY

Allowable 802.11a Frequencies and Channels	Countries
5.15-5.25 GHz (Channels 36, 40, 44, 48)	Liechtenstein
5.15-5.25 GHz and 5.725-5.875 GHz (Channels 36, 40, 44, 48, 149, 153, 157, 161, 165, 169)	Austria
5.15-5.35 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64)	France
5.15-5.35 and 5.47-5.725 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)	Denmark, Germany, Iceland, Finland, Netherlands, Norway, Poland, Sweden, Slovenia, Luxembourg, U.K., Ireland, Slovak, Switzerland, Hungary, Italy
5.15-5.35 GHz and 5.725-5.875 GHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165, 169)	Czech Republic

Language	Declaration of Conformity
български [Bulgarian]	С настоящото Mitrastar Това декларира тази Wireless Broadband Terminalна до дъстъп е в съответствие с Директива 2014/53 / ЕС. Пълният текст на ЕС декларацията за съответствие е достъпна онлайн от сайта на декларациите на Mitrastar (https://www.Mitrastar.com/declarations).
hrvatski [Croatian]	Ovojim Mitrastar To izjavljuje ovaj bežični širokopojasni pristop terminala u skladu s Direktivom 2014/53 / EU. Puni tekst izjave o sukladnosti do EU je dostupan online od kalkus web deklaracije (https://www.Mitrastar.com/declarations).
English	Hereby, Mitrastar declares that this Broadband wireless Access Terminal is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available online from the Mitrastar Declarations site (https://www.Mitrastar.com/declarations).
česky [Czech]	Tím Mitrastar Která deklaruje toto Wireless Broadband Access Terminal je v souladu se směrnicí 2014/53 / EU. Úplný znění EU prohlášení o shodě je k dispozici online na webové stránce prohlášení kalichu (https://www.Mitrastar.com/declarations).
Deutsch [German]	Hiermit Mitrastar Das erklärt der Wireless Broadband Access Terminal in Übereinstimmung mit der Richtlinie 2014/53 / EU. Der vollständige Wortlaut der EU-Konformitätsdeklaration wird online von der Mitrastar Website Erklärungen zur Verfügung (https://www.Mitrastar.com/declarations).
Eesti [Estonian]	Käesolevaga Mitrastar See kinnitab seda traadita lairibahenduse Terminal on kõoskälas direktiivi 2014/53 / EL. Tervikteksti EL vastavusdeklaratsiooni on saadaval võrgus Mitrastar veebilehel deklaratsioonid (https://www.Mitrastar.com/declarations).
español [Spanish]	Por la presente, Mitrastar Que declara esta Terminal de banda ancha de acceso inalámbrico está en conformidad con la Directiva 2014/53 / EU. El texto completo de la declaración de conformidad de la UE está disponible en línea desde el sitio web Declaraciones de Mitrastar (https://www.Mitrastar.com/declarations).