



GigaPro p4 GPR1027E Installation Guide

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About this Guide

This document provides the installation practice for the Calix GigaPro GPR1027E (p4) dual band, PoE or locally powered Wi-Fi 6 RG/Mesh system. The GPR1027E is a new generation, dual-band, PoE or locally powered Wi-Fi 6 RG/Mesh system,

This document provides the installation procedures required for the Calix GigaPro p4 (GPR1027E) indoor Wi-Fi AP systems.

Intended Audiences

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

Safety and Regulatory Information

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 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 radio/TV technician for help.

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

- Professional installation is required.

IMPORTANT NOTE: 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 minimum distance 50cm between the radiator & your body.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

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

Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes au (x) RSS (s) exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:

- (1) Cet appareil ne doit pas provoquer d'interférences.
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

IMPORTANT NOTE: IC Radiation Exposure Statement

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 30cm between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 30cm de distance entre la source de rayonnement et votre corps.

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.

DANGER! Danger indique la présence d'un danger qui entraînera des blessures graves ou la mort s'il n'est pas évité.



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

ATTENTION! Avertissement indique la présence d'un danger pouvant entraîner des blessures graves s'il n'est pas évité.



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

MISE EN GARDE! Attention indique la présence d'un danger qui peut causer des blessures légères à modérées s'il n'est pas évité



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

ALERTE! L'alerte indique la présence d'un danger susceptible d'endommager l'équipement ou les logiciels, de perdre des données ou d'interrompre le service s'il n'est pas évité.



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.

DANGER! PRODUIT LASER DE CLASSE 1. UN RAYONNEMENT LASER INVISIBLE PEUT ÊTRE PRÉSENT. Le rayonnement de la fibre optique peut causer de graves lésions oculaires ou la cécité. Ne regardez pas dans l'extrémité ouverte d'une fibre optique.

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.



Chapter 1

GigaPro GPR1027E (p4) Product Overview

This chapter introduces the Calix GigaPro GPR1027E (p4) indoor Wi-Fi access point (AP) system and provides an overview of installation considerations.

Topics Covered

This chapter covers the following topics:

- Introducing the GigaPro p4 indoor Wi-Fi AP system
- Product dimensions
- Exploring the access compartment
- Powering options
- Mounting options
- Installation considerations

Introducing the GigaPro™ GPR1027E (p4)

The Calix GigaPro GPR1027E (p4) is a new generation, dual-band, PoE or locally powered Wi-Fi 6 RG/Mesh system, ideal for business applications, bringing high-bandwidth services to restaurants, offices, small businesses, and more. This intelligent, high-performance system offers the latest 802.11ax Wi-Fi 6 technology as well as a 2.5GE LAN/WAN interface, allowing support for multi-Gigabit throughput in video and data service delivery.



Key features of the GigaPro GPR1027E include:

- Dual-band radios provide 4X4 streams of Wi-Fi delivery (2x2 @ 2.4 GHz, 2x2 @ 5 GHz) with dynamic beamforming in all spectrums.
- 2.5 Gigabit Ethernet LAN/WAN interface; single port of multi-rate 10/100/1000/2500 BASE-T Ethernet, auto-negotiating for residential IPTV and data services
- Supports Wi-Fi AP operation as either a residential gateway (RG) system or as a mesh satellite.
- Supports optional Power over Ethernet (PoE) input power on its 2.5GE WAN port to operate as a PoE Powered Device (PD), or can be powered locally with a traditional AC/DC power adapter.
- **Calix power of platforms:** Runs the Calix EXOS operation system, allowing you to easily integrate the system into your existing management and workflows in Calix Cloud.

MULTI-GIGABIT SUBSCRIBER EXPERIENCE

The GigaPro p4 is a dual-band, PoE or locally powered Wi-Fi 6 system that leverages the 2.4 and 5 GHz spectrum. Using a 2.5 Gigabit Ethernet interface supporting either WAN or LAN services allows broadband service providers (BSPs) to support high-bandwidth applications and/or services for the most demanding environments. With integrated Power over Ethernet (PoE), the GigaPro GPR1027E can accommodate new use cases within locations that could not be supported before—even in areas without power availability. Coupled with the Calix GigaPro GPR8802x, the GigaPro GPR1027E can be powered via an ethernet cable. In addition, the p4 can also be powered locally (with a traditional power adapter), offering the ultimate location flexibility.

The GigaPro GPR1027E enables business subscribers to receive Multi-Gigabit broadband data, Internet Protocol (IP) video and services. Using the latest 802.11ax technology in the 2.4 and 5 GHz radios, the GigaPro GPR1027E incorporates 4x4 streams of Wi-Fi delivery (2x2 @ 2.4 GHz, 2x2 @ 5 GHz). In addition, with multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the p4 allows BSPs to extend the access network outside smart homes, establishing a strategic location for the delivery and control of broadband services.

With Wi-Fi being the de facto wireless data communication technology, Calix engineered the GigaPro GPR1027E for optimal coverage with simultaneous dual-band 2.4 GHz and 5 GHz operation and dynamic beamforming in all spectrums. Leveraging the latest Wi-Fi 6 features, the p4 provides long range and higher efficiencies compared to earlier generations of Wi-Fi technology.

The GigaPro GPR1027E also supports the Dynamic Frequency Selection (DFS) channels at 5 GHz to maximize transmission capabilities. The p4 quickly and easily delivers HD and UHD (ultra-HD) video and data services to subscribers within any demanding video-rich and mobile broadband environments.

Ensuring subscribers can have ultra-fast Wi-Fi throughout their premises, the p4 can operate in either a residential gateway (RG) or mesh satellite mode, while providing the latest generation of redundant Wi-Fi 6 connectivity. With multiple GigaPro GPR1027Es provisioned as mesh satellites with any GigaPro or GigaSpire RG, subscribers can truly realize the ultimate whole premises experience.

EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GigaPro GPR1027E, Calix has redefined how to install and activate residential services. When deployed with a wired connection it's as simple as plugging a Cat 5/6 cable in between the GigaPro GPR1027E RJ-45 port and the ONT. The GigaPro GPR1027E leverages its TR-069 interface to communicate its presence to the Calix Support Cloud, which adds the GigaPro GPR1027E to the subscriber account.

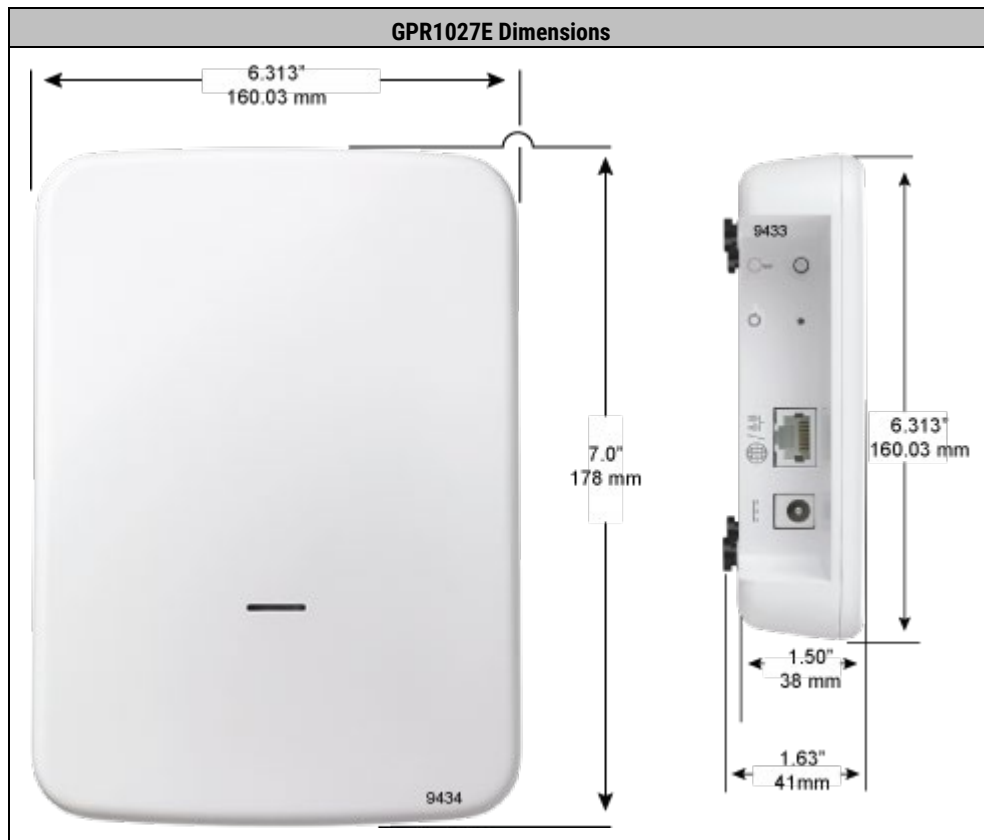
The system harmonizes the services on the GigaPro GPR1027E. This removes all human error-prone touch points. When deployed with a wireless mesh, the subscriber uses the Wi-Fi Protected Setup (WPS) button on both the GigaPro GPR1027E and the GigaPro or GigaSpire RG to pair the mesh network.

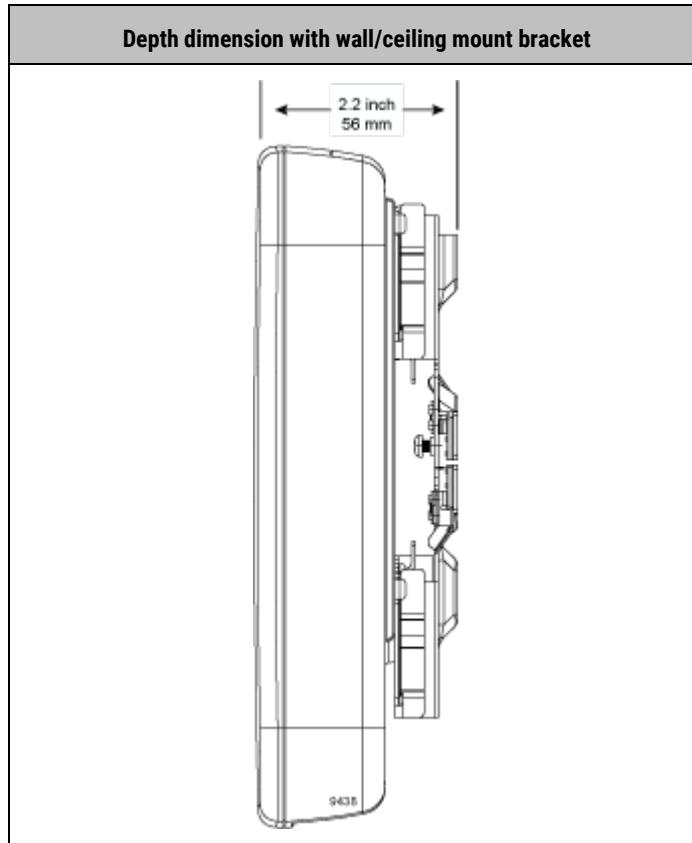
Once this step is done, the discovery, configuration and harmonization steps occur. Support Cloud's extensive troubleshooting capabilities, remote software downloads, and easy-to use service activation features ensure that services are delivered and maintained without needless truck rolls and hardware upgrades. Employing a GigaPro GPR1027E RG and/or GigaPro GPR1027E satellites allows BSPs to reduce their operational expenses while effectively delivering an elevated Gigabit experience to their subscribers.

Product Dimensions

The GigaPro p4 system's exterior dimensions are:

- Height: 7 inches (178 mm)
- Width: 6.3125 inches (160 mm)
- Depth: 1.625 inches (41 mm)
- Depth with Wall Mount Bracket - 2.2" (56mm)

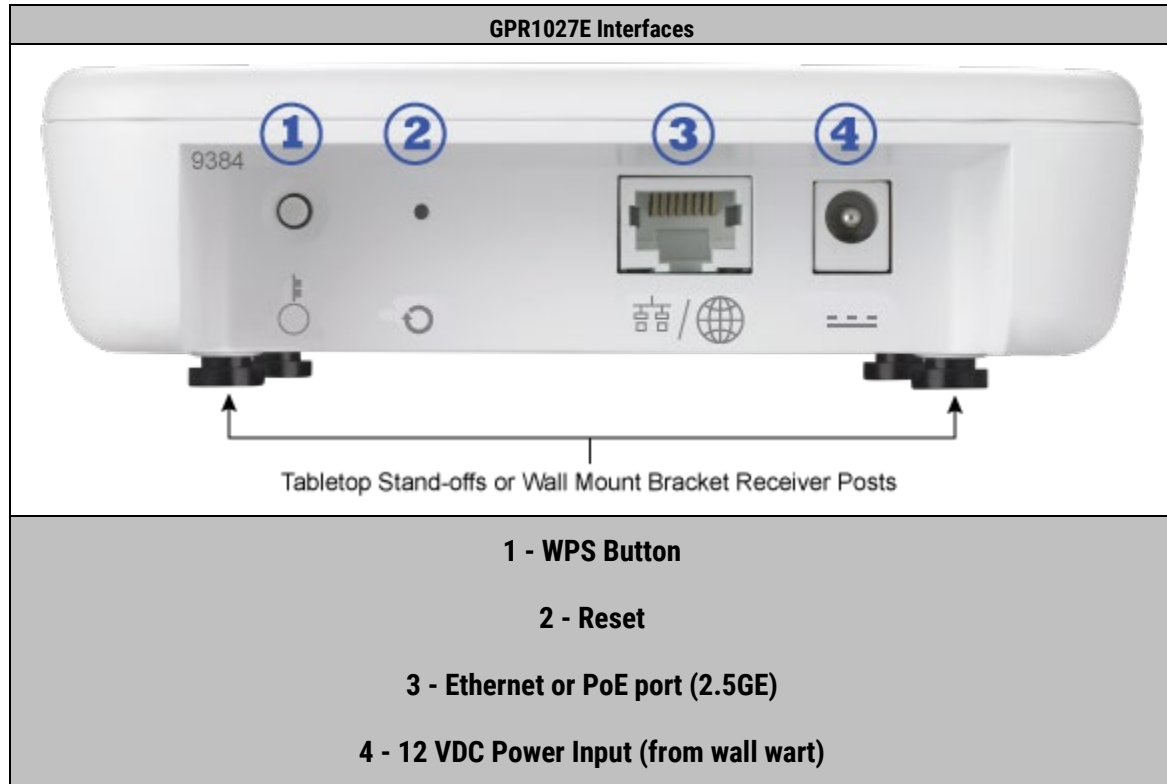




Exploring the Access Compartment

The GigaPro GPR1027E has a recessed interface compartment located on one side of the unit. The interface panel includes:

- Wi-Fi Protected Setup (WPS) start button
- Reset Button (simple reboot)
- 2.5GE WAN/LAN ethernet port or PoE 802.3AT PD 2.5GE
- DC power in port from wall wart



Note: Interfaces are recessed into the bottom of the unit. To ensure the best possible performance, make sure the interfaces are pointing down after installation.

Powering Options

The GigaPro p4 system supports two options for power:

- **Local AC power:** You can power the system via a standard AC power outlet using a Calix power adapter cable.
- **Power over Ethernet (PoE):** You can line-power the system via the Ethernet uplink data cable using a PoE injector or PoE switch.

Use the local power option *or* PoE option for each system, but not both at the same time.

Local Power Option

The GigaPro p4 system accepts local power using a Calix-supplied adapter cable that plugs into any standard AC power outlet. The DC end of the adapter cable has a two-pin barrel connector to connect to the p4 system's local power interface.

Power cable availability

A single 12VDC power adapter is included with the p4 GigaPro:

- **100-06003 - Indoor-only** power adapter, 12 VDC, 1.5A, Type A (2-prong), C-temp rated; 10-foot (300 cm) length.



Each p4 system includes an indoor-only power cable; however, this cable is *not* rated for outdoor use. **Do not use the indoor cable for outdoor applications.** Only use the included cable for indoor applications such as staging a system before deployment or for indoor installations (warehouse, barn, etc.).

Note: Use only a Calix-supplied power cable with the p4 system, as only these cables have been tested and approved for use with this product.

PoE Power Option



Make sure the access point is powered using a UL-compliant PoE power source. Connect the access point to the PoE network without routing to the outside plant.

The GigaPro p4 system includes an 802.3at Power over Ethernet (PoE) Powered Device (PD). The p4 system accepts PoE power via an Ethernet data cable connected to its WAN uplink port.

To employ the PoE option, you must provide the following:

1. Standard PoE power sourcing equipment¹ (PSE) —either a PoE injector¹ or PoE switch²— to apply power to the Ethernet cable. Install the PoE injector or switch at an indoor location upstream of the p4 system, between it and the ONT.²
2. An Ethernet data cable for dual-purpose use —as the network uplink connection and as the PoE power input. Use Cat6 Ethernet cable; maximum 328-foot (100m) length.

¹ **Note:** To ensure the best possible performance, Calix recommends using a PSE offering from Calix because these devices have been thoroughly tested for all supported use cases. Calix PSE options include a PoE injector (100-06005) and a PoE++ switch (100-05774).

² **Note:** The Calix PoE switch option (GPR8802x) is also an ONT, so separate switch and ONT equipment is not required when using a GPR8802x for PoE power supply.

Note: Under-powered PoE systems may experience a decrease in over-all CPU frequency to compensate for a lower power source. If the CPU cannot compensate appropriately, radio power may drop which will result in lower Wi-Fi performance.

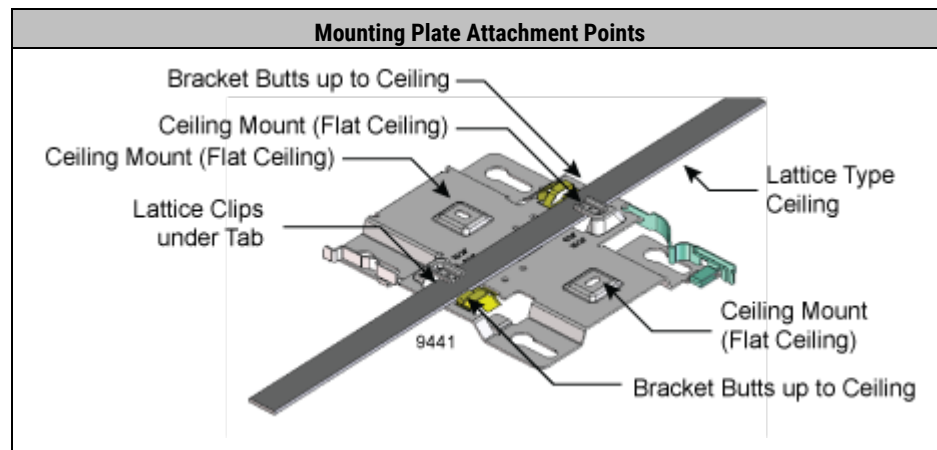
Mounting Options

Calix provides a wall/ceiling mount bracket in the giftbox of the GigaPro p4.

The bracket does not require any fasteners to physically pair the p4 with the bracket. However, fasteners are not provided when attaching the bracket to a wall or finished ceiling.

Note: In the example shown below, the bracket is mechanically attached to a metal strap that pre-exists in the ceiling. If a finished wall or ceiling is used, wood screws or wall anchors are the appropriate choice.

Every installation site has different structural options available. Ensure you pre-plan the mounting option based on the on-site conditions.



Installation Considerations

Review the following considerations and guidelines before starting installation activities.

General Guidelines

Follow these general guidelines and practices:

- Read this document completely before starting any installation activities.
- Determine the system powering method to use for your installation, from among two options. See Powering Options and Selecting an Installation Location for details and guidance.
- Determine the system mounting method to use for your installation, from among two options (wall or ceiling mount). See Mounting Options and Selecting an Installation Location for details and guidance.
- Follow standard safety precautions when performing installation tasks.
- Keep all cabling neat and secured for safety and strain relief. Use cable ties, screw clips, and velcro straps for dressing cables as needed.

Network Uplink

The GigaPro p4 system is equipped with a 2.5GE WAN Ethernet port for uplink connections to the network. Connect the system to the network following these guidelines:

- **RG mode:** Connect to an ONT LAN port for network access using a standard Ethernet data cable (up to 328 feet/100 m long). If the system will use PoE power, connect to a PoE injector's PD port instead.

Note: Calix recommends connecting the p4 system to an ONT equipped with a 2.5GE LAN port to provide maximum uplink bandwidth. Typically, this means using an XGS-PON ONT (many equipped with 2.5GE LAN ports) or 10GE AE ONT. For example, the Calix GP4200A indoor ONT is commonly used for this application.

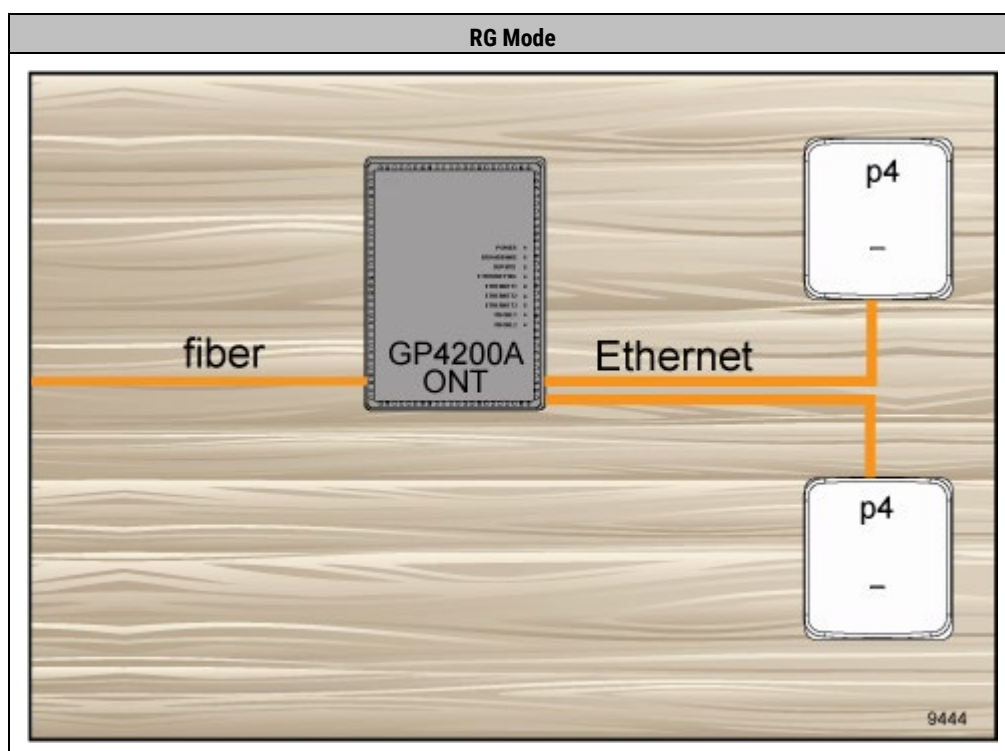
- **Satellite mode (Mesh):** Use either a wired (Ethernet) or wireless backhaul link to connect to the RG system.

Supported Topologies

The GigaPro p4 Wi-Fi AP system can operate in either RG mode or satellite mode. Supported deployment topologies depend on the operating mode.

RG mode

When operating as an RG, the p4 system must connect to an ONT for its network uplink (point-to-point topology). If the ONT has multiple LAN ports, it can serve multiple p4 RG systems in a star topology.





Chapter 2

Installing the GigaPro p4 System

This chapter describes how to install the GigaPro p4 system hardware in an indoor location. This process includes guidance for identifying an appropriate installation location, system hardware installation instructions, and cabling instructions.

Topics Covered

This chapter covers the following topics:

- Unpacking the system
- Selecting an installation location
- Installing the system on a wall or ceiling
- Grounding the unit
- Installing power and network cables

Unpacking the System

Each GigaPro p4 system ships in a box that contains the following items:

- (1) GigaPro p4 (GPR1027E) system
- (1) AC/DC power adapter with input/output cord.
- (1) Wall/ceiling mount bracket
- (1) Safety and regulatory statements guide
- (2) Spare product identification labels (shows default Wi-Fi SSID and RG login credentials)

Mounting bracket

The included wall/ceiling mount bracket is located inside the giftbox with the p4 resting over the top of the bracket.

To unpack the system

- Open the box for the GigaPro p4 system
- Remove the p4 device from the carton and set aside
- Remove the cardboard that secures the mounting bracket inside the carton
- Remove the mounting bracket and set aside
- Remove the power adapter
- Locate the product identification label and store it in a safe place for use during initial start-up

Selecting an Installation Location

Based on the information provided in the *Installation Considerations* (on page 18) topic, consider several factors when selecting an installation location:

- Proximity to the network termination point
 - **Distance from the ONT (RG systems):** All systems operating in RG mode must use a wired Ethernet uplink. The maximum distance from the ONT providing the network termination must be 328 feet / 100 meters (the maximum supported length of Ethernet cables). This total span length could potentially double for systems using PoE power, where that cable span length can be used on *both* sides of a PoE injector.
 - **Distance from the RG (Satellite systems):** Systems operating in satellite mode can use either a wired (Ethernet) or wireless backhaul link to the RG system. For wired connections, the maximum distance from the RG must be 328 feet / 100 meters (the maximum supported length of Ethernet cables). For wireless connections, the maximum distance from the RG may vary from site to site based on environmental factors that affect signal strength. As a general rule of thumb, Calix recommends locating satellites at a distance where they can receive a signal of -60 dBm or better.
- Proximity to power
 - **Distance from AC power outlet (local power option):** The Calix indoor power adapter cable is 10 feet long. Therefore, unless you use an indoor rated (and user supplied) power extension cord to extend the reach for power, you must locate the system within 10 feet of an AC power outlet.
 - **Distance from PoE injector (PoE power option):** The same distance limits for the wired Ethernet cable described above apply here. If the ONT's LAN Ethernet port providing the link is PoE powered (for example, from a Calix GP4200A ONT's 2.5GE port), the maximum distance must be 328 feet / 100 meters. If using a PoE injector, that distance can be up to twice as far.
- **Mounting type:** The system must be installed on a high vertical surface (wall or ceiling) using the wall/ceiling mount bracket included with the p4. Is there a suitable wall, ceiling, or header of sufficient height at the targeted location? The answers to this question should help identify an appropriate location for AP placement.
- **Location within targeted Wi-Fi serving area:** Several environmental factors, including proximity to the center of a coverage space, elevation above the ground, and the composition of surrounding structures should also factor into AP placement selection. See the section below for additional details to consider.

Consider all factors above before selecting a location and proceeding with installation.

Wi-Fi AP placement

In a Wi-Fi serving area, direct line-of-sight to the AP is not essential for signal quality, thanks to MIMO technology and an omni-directional antennae array. However, to achieve the best possible Wi-Fi coverage and performance, Calix recommends the following guidance:

- Prioritize a centralized location; the closer the AP system is to the center of the target area, the better.
- Elevate the system as high up as possible; higher elevation helps the signal clear lower/ground-level obstructions.

Some building materials block Wi-Fi signals more than others. See the table below for reference; lower attenuation yields better performance. Consider the materials in surrounding structures when selecting an installation location for the system.

Building Materials: Effect on Wi-Fi Signals	
Material	Wi-Fi Attenuation
• Wood, Drywall, Particle Board, Tile • Glass	Low
• Bricks, Cinder Block • Water	Medium
• Plaster, Stucco • Concrete	High
• Metal • Tinted or Low-E Glass (metalized)	Very High



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

MISE EN GARDE! L'utilisation de commandes ou de réglages ou l'exécution de procédures autres que celles spécifiées ici peuvent entraîner une exposition à des rayonnements dangereux.

Installing the System on a Wall or SWE

Use the Calix wall/ceiling mount bracket to install the GigaPro p4 system on a wall/SWE or other flat surface.

Installing the bracket involves first attaching the bracket to a wall or ceiling, then mounting the p4 system onto the bracket. Refer to "*Mounting Options* (on page 17)" for additional information. For required tools, see "*Installation Considerations* (on page 18)."

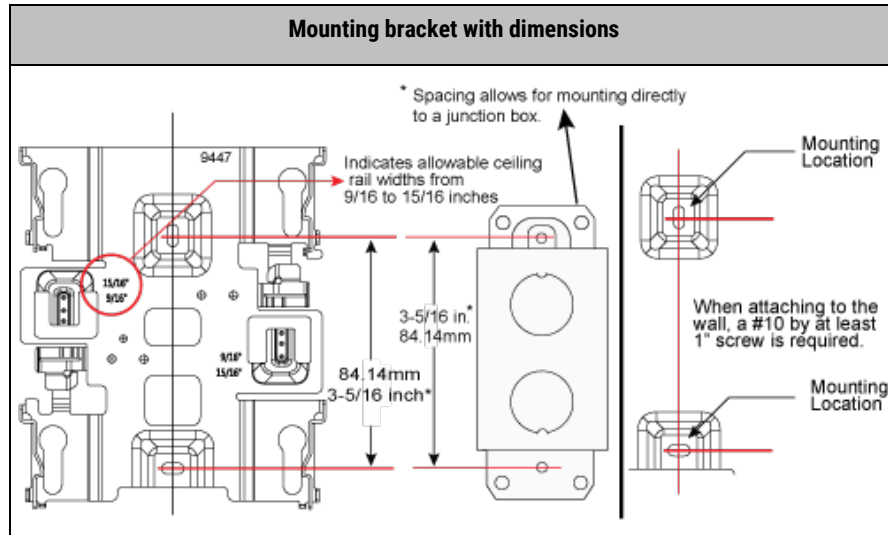
Note: An accessory "Structured Wiring Enclosure" kit is available for mounting the p4 in an indoor enclosure.

Installing the system on a wall

Follow the instructions below to install the p4 system using the supplied bracket.

To install the bracket onto a wall

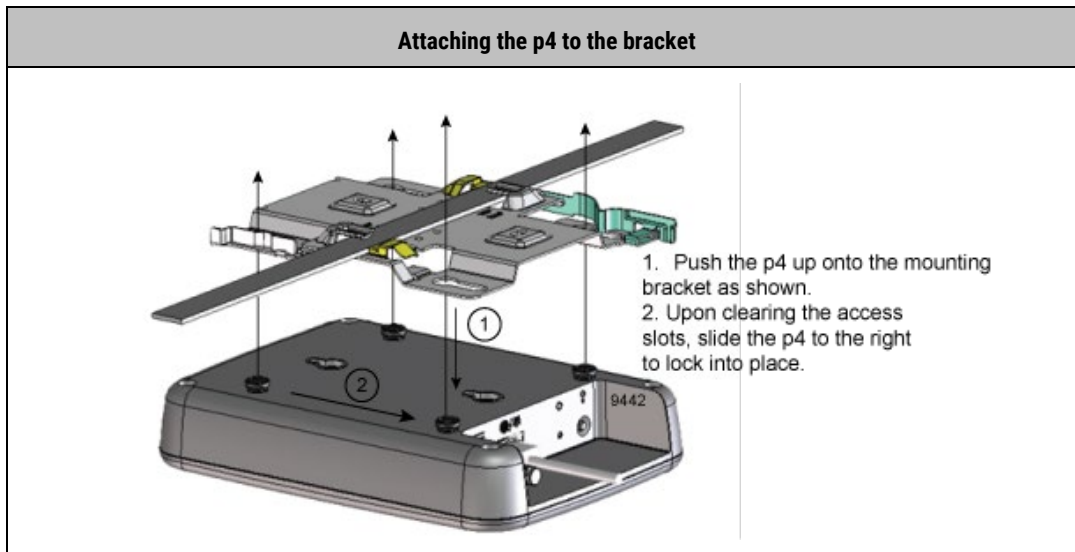
1. At the mounting location, hold the bracket against the wall and use a level to adjust it to a level position, assuring:
 - The flat (back) side of the bracket is against the wall.
 - The orientation arrow is pointed up.
2. Using a pencil, mark the screw locations on the wall while keeping the bracket level:
 - To attach to a wall stud, mark the (2) center-line holes.
 - To attach to a drywall surface using wall anchors, mark one set of (2) holes:
3. Attach the bracket to the wall as follows:
 - a. Drill holes in the wall at the marked locations.
 - b. If using wall anchors, install the anchors into the drilled holes as required. Otherwise, skip to step 3c.
 - c. Thread the mounting screws into the drilled holes (or wall anchors) and fully tighten, until the bracket is securely attached to the wall.



To install the p4 system onto the bracket

1. Attach the supplied hardware to the back of the p4 chassis:
 - a. Push the p4 onto the mounting bracket as shown below.
 - b. Once all four bracket mounting posts are aligned with the p4, slide the p4 to the right (ceiling mount) or down (wall mount).
2. Verify the p4 and the bracket are locked into place.

Refer to the illustration below for attaching the bracket to the p4.



Installing Power and Network Cables

After mounting the GigaPro p4 system on a wall or ceiling, and after establishing a ground connection for the system, you must connect power and/or network cables to the p4 system before completing the installation.

The type and count of cables to install for the p4 system may vary from site to site depending on several factors, including the powering option selected and the operating mode of the Wi-Fi AP. Each p4 installation site requires from one to three cables installed based on these factors.

Determine the type and count of cables to install:

If ...	and ...	and ...	and ...	then ...	with ...
Wi-Fi AP mode =	Network uplink =	Power option =	Will link a wired satellite =	Cable count =	Cable types ¹ =
RG	Wired	Local	<i>not supported</i> ²	X	n/a
			No	2	Power, Eth. 1
		PoE	<i>not supported</i> ²	X	n/a
			No	1	Eth. 1
Satellite	Wired	Local	<i>not supported</i> ²	2	Power, Eth. 1
	Wireless	Local	<i>not supported</i> ²	1	Power
		PoE	<i>not supported</i> ²	1	Eth. 1

¹ Where 'Eth. 1' = WAN Ethernet cable, and 'Eth. 2' = LAN Ethernet cable

² Daisy-chained satellites are supported, but only with wireless connections between satellites.

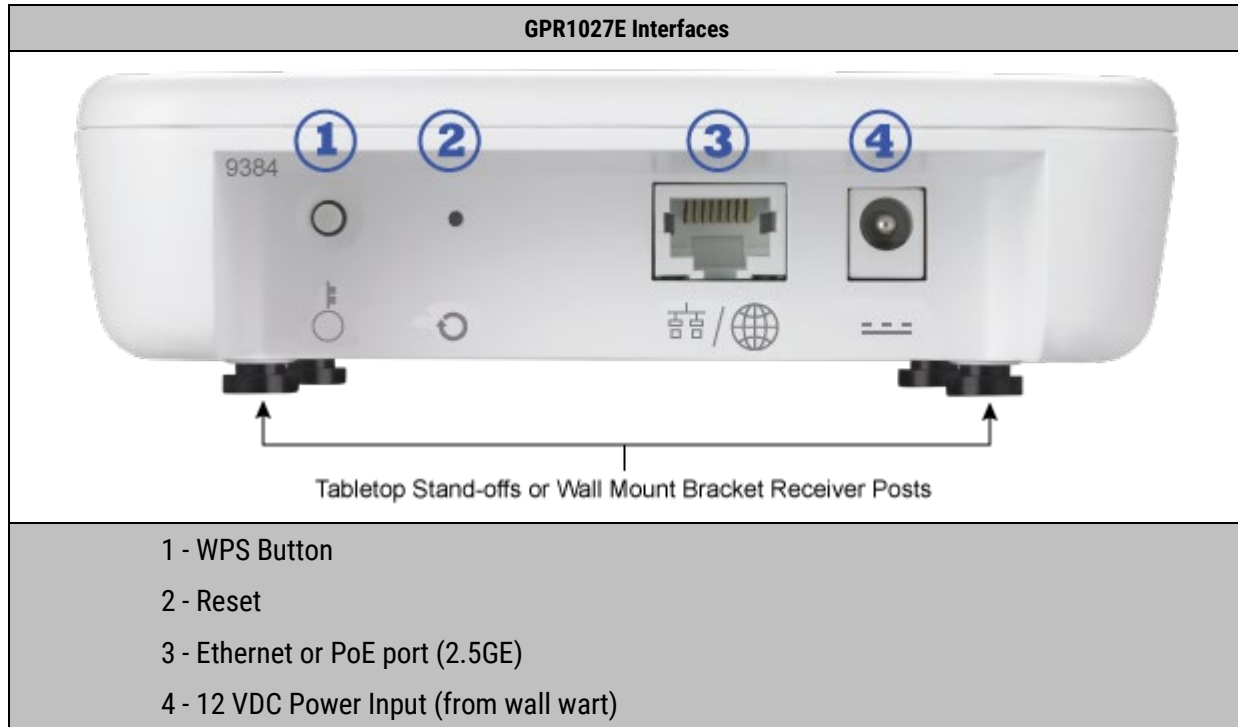
For details about power options, see *Powering Options* (on page 14). For details about network uplink options and requirements, see *Installation Considerations* (on page 18).

Preparing the access panel for cable entry

The access panel has two possible ports for cable entry. Follow this guidance when attaching cables:

- Refer to "*Exploring the Access Compartment* (on page 13)" for complete details about which entry ports to use. As a quick reference:
 - Local power cable entry
 - WAN Ethernet/PoE cable entry

Note: The two remaining ports are reserved for WPS initiation and device reset.



1. Route the cable(s) down and away from the p4 mounting location toward the far-end termination point.
2. Dress and secure the cable(s) using cable ties or velcro straps.

***Note:** Before proceeding, Calix recommends verifying that the p4 system powers up properly and comes into service as expected. Continue to the next chapter "*Final Setup and Activation* (on page 29)" to perform these tasks before completing the installation.

Chapter 3

Final Setup and Activation

This chapter describes how to finish the GigaPro p4 installation process and activate the system for service.

Topics Covered

This chapter covers the following topic:

- Powering up the system

Powering Up the System

After you have installed cables, the GigaPro™ p4 system is ready to power up and connect to the network.

Use one of the following procedures to apply power to the system.

- If you installed a Calix power adapter cable* to use a local AC power supply, follow the first procedure below.
- If you installed just an Ethernet cable* to use a Power over Ethernet (PoE) supply, follow the second procedure below.

***Note:** Refer to "Installing Power and Network Cables (on page 27)" for details about installing these cables.

Procedure 1: To apply local power to the system

1. Verify that the Calix-supplied power cable (installed previously*) is connected to the p4 power input.
2. Route the power cable's far end to the nearest AC power outlet, and plug its 2-prong connector into the outlet.
3. Observe as the GigaPro™ p4 system powers up. Refer to *System LED Behavior* (on page 34) for expected behavior.
4. Dress and secure the power cable between the GigaPro™ p4 and the power outlet as appropriate.

Procedure 2: To apply PoE power to the system

1. Verify that an Ethernet data cable (installed previously*) is connected to the p4 WAN Ethernet port.
2. Route the Ethernet cable's far end to the PoE Power Sourcing Equipment (PSE) located upstream (PoE injector or switch) and connect it to an available PoE port.
3. If the PSE is not already powered up, apply power to the PSE so that it can supply the PoE line feeding the GigaPro™ p4 system. Otherwise, skip to step 4.
4. Observe as the GigaPro™ p4 system powers up. Refer to *System LED Behavior* (on page 34) for expected behavior.
5. Dress and secure the Ethernet cable between the GigaPro™ p4 unit and the PoE PSE as appropriate.

Next steps

Before completing the installation, verify system startup operation:

- Verify that the system LED shows expected 'in service' status. Refer to *System LED Behavior* (on page 34) for expected behavior.
- Verify with your back office that the system checked in to Calix Cloud as needed.



Appendix A

Appendix

This appendix provides general reference information about the GigaPro GPR1027E (p4).

Topics Covered

This appendix covers the following topics:

- System LED behavior
- System specifications
- Agency listings

System LED Behavior - RG Mode

The table below includes the various status's with their corresponding LED pattern (front of the p4).

The GPR1027E includes a single LED cluster located on the front of the p4.

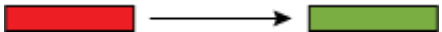
LED Behavior - RG Mode			
Status	Status	Description - RG Mode	Color
Power Off and Boot-up	Off	Power is OFF The unit has not been turned on, or * There is no power to the unit or * UPS battery has been discharged and can no longer power the unit	 Solid Gray
	Boot-up, SW Upgrade in Progress	* Unit is in the process of being booted up or service/software is being upgraded * Flashing amber every 1 second assuming SW can control the LEDs.	 Off and Amber (1000 msec cycle)
	Boot-up Failure	* Unit boot up failed assuming SW can control the LEDs.	 Off and Red (800 msec cycle)
GigaSpire LED Status	Connected to Internet	Unit has successfully booted up, local services are up and connected to the Internet	 Solid Green
	Service Failure - no Internet	No service, no Internet access	 Off and Red (1600 msec cycle)

System LED Behavior - Mesh (Satellite) Mode

The table below includes the various status's with their corresponding LED pattern (front of the p4).

Note: For the p4 Mesh satellite, backhaul pairing can be started by pressing the WPS button for 3 seconds or an equivalent method via a GUI or smartphone application.

LED Behavior - Mesh Mode (Satellite)		
Status	Description - Mesh Mode	Color
Off	Power is OFF * The unit has not been turned on, or * There is no power to the unit or * UPS battery has been discharged and can no longer power the unit	 Solid Gray
Boot-up, SW Upgrade in Progress	* Unit is in the process of being booted up or service/software is being upgraded * Flashing amber every 1 second - assuming SW can control the LEDs.	 Off and amber (1000 msec cycle)
Boot-up Failure	* Unit boot up failed (if SW can control the LEDs)	 Off and red (800 msec cycle)
WPS Pressed, pairing attempt has started	* For Satellite/Mesh mode, upon pressing the WPS button a single time (3+ seconds), WPS is enabled. * The LED bar begins to flash 0.5 second green/off and continues to do so for up to 120 seconds. * If the Gateway has also initialized WPS during this time, the Satellite can be paired to the Gateway Wi-Fi radios (5.0 GHz band) thereby creating an association with the Gateway SSID.	 Off and green (500 msec)
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 revert to the <i>No Internet failure</i> status. * If pairing is accomplished, LED bar will change to reflect Gateway status.	 Solid Red

LED Behavior - Mesh Mode (Satellite)		
After pairing, follow the gateway status	After the pairing is complete (60 seconds after the signal strength has been displayed), the light bar indication follows the Gateway not found status as described directly above. If the mesh is connected via Ethernet connection, if boot up successfully, the light bar indication shall follow the Gateway status as described on the Light Bar tab in this spreadsheet.	 After 60 seconds, green or red, then gray
Lost control plane but data plane still in connection	Regardless of what stage the mesh unit is in, if the control plane is lost but the data plane is still connected. Then the LED flashes red for 15 seconds, and then returns the LED to green	 Flashes Red for 15 seconds, then green

System Specifications

Hardware specifications for the GPR1027E system follow:

Dimensions	
Width	5 in (12.7 cm)
Height	7 in (17.8 cm)
Depth	1.6 in (3.9 cm)
Weight	2.4 pounds (1.1 kg)
Data	
Drop Length	328 feet (100 m)
CAT5	CAT 5E cable for 2.5 GigE
Management	Includes QoS 802.11Q VLAN, 802.11p Voice - Video, data and Q-in-Q tagging
Wireless	
2.4 GHz: 802.11 b/g/n/ac/ax	2 x 2 UL/DL MU-MIMO
5 GHz: 802.11 a/n/ac/ax	2 x 2 UL/DL MU-MIMO, explicit high power, dynamic beam forming
2.4 GHz, 5 GHz Simultaneous	DCM, TWI, extended GI
Autochannel selecting and interference detection	Wireless Security: Wi-Fi protected access (WPA/WPA2/WPA3) WEP, Wi-Fi multimedia (WMM) 802.11k,802.11v,802.11r
WPS push button	MAC address filtering
Remote Management	
TR-069 Remote Management	
TR-098 Internet Gateway Device Data Model	
Powering and Alarms	
AC / DC	External Power Adapter (20 ft/6 m): 12 VDC, 1.5A 2-pin barrel connector Input voltage: 12 VDC (nominal), 10 VDC (min), 15 VDC (max)
Power over Ethernet (PoE)	PoE 802.3AT PD

Network Interfaces	
WAN/LAN	- Wired: 10/100/1000/2500 - BASE-TX Ethernet Port, RJ-45 connector
Wireless	2x2 2.4 GHz, 2x2 5 GHz internal antennas - Power: 2-pin barrel connector
Environmental	
Operating temperature (ambient) Operating and storage relative humidity	Indoor ambient temperature: 0° C to 40° C 10 to 90 % and 5 to 95% non-condensing - Operating and storage relative humidity: 10 to 90 % and 5 to 95% non-condensing respectively
Certification and Compliance	
Emissions	- FCC Part 15 Class B - Industry Canada (IC) ICES-003 Class B - ICES-003 Class B, CISPR-22
Safety	UL 62368 and UL 1697 approved
Compliance	IEEE: 802.3, 802.3ab, 802.3u, 802.11p, 802.11Q Wi-Fi Alliance Certified 802.11ax (Wi-Fi 6) 

Agency Listings

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 accept any interference received, including interference that may cause undesired operation.

These devices have 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 the GigaPro GPR1027E.

Application Standards

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

Standards		
FCC Part 15, Sub Part B, class B	UL 62368-1	Telcordia GR-2890
CAN ICES-003 Class B	CSA C22.2 No. 62368-1	Telcordia GR-1244
ANSI C63.4	IEC 62368-1	Telcordia GR-909
FCC Part 15.247	ITU-T K21	Telcordia GR-950
FCC Part 15.203	ITU-T K44	Telcordia-GR-1089
FCC Part 15.207	EN 62368-1	Telcordia GR-63
FCC Part 15.209	IC: 4009A-U4X	NEC (National Electrical Code)
FCC ID: 2ABLKGP1027E 4009A-GPR1027E	EN 62311	IEEE: 802.3, 802.3AB, 302.3U, 802.11p, 802.11Q
RSS 102	CE / RED, RoHS, WEEE, Energy	FCC Part 15.407
RSS 247		
Wi-Fi Alliance Certified 802.11ax		

Radiated Emissions

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

Product Compliance

GigaSpire BLAST systems have achieved National Fire Protection Association (NFPA) compliance.

Conformité du Produit

Les systèmes GigaSpire BLAST sont maintenant conformes à la National Fire Protection Association (NFPA).

Power Supply

The unit must be powered by a listed power adapter or DC power source marked "LPS" (Limited Power Source) and rated output between 12 VDC, 1.5 A minimum, TMA = 40° Celsius minimum. If additional help is needed on implementing a power supply, please contact your local Calix service professional.

An external power supply is included with the following rating:

GigaPro p4 (GPR1027E)

- Input voltage: 12 VDC (nominal)
- 10 VDC (min.), 15 VDC (max)
- External Power Adapter: 12 VDC, 1.5 A
- PoE 802.3at PD



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

DANGER! L'utilisation d'adaptateurs d'alimentation non approuvés ou incorrects peut entraîner des blessures.

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

ALIMENTATION ÉLECTRIQUE

- Connectez le cordon d'alimentation uniquement à une prise d'alimentation CA conforme aux spécifications GigaSpire.
- Ne modifiez jamais le cordon d'alimentation CA. Si nécessaire, faites installer la bonne prise par un électricien qualifié ou appelez votre fournisseur de service pour obtenir de l'aide.
- Pour réduire le risque d'endommager le cordon électrique, retirez-le de la prise en le tenant par la fiche moulée de l'adaptateur secteur plutôt que par le cordon.
- Assurez-vous que le cordon est positionné de sorte qu'il ne puisse pas marcher dessus, trébucher ou subir d'autres dommages ou contraintes.



Attention ! N'utilisez pas d'autre adaptateur secteur que celui qui accompagne cet appareil ou une alimentation électrique autre que celle identifiée dans la liste ci-dessous. L'utilisation d'un autre adaptateur pourrait endommager l'appareil. Pour éviter les chocs électriques, n'ouvrez pas le couvercle. L'adaptateur électrique suivant est qualifié pour être utilisé avec le GigaSpire.

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 5.250 GHz - 5.350 GHz and 5.470 GHz - 5.725 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 ICSED'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 ICSED 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 désignés 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 ICSED 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. Calix offers take-back and recycling services for products in many locations around the world. Customers are advised to contact the local Calix representative for further information.

CALIX, INC. AND THE ENVIRONMENT

At Calix Inc., we understand and are committed to reducing any impact our operations and products may have on the environment. To minimize this impact, Calix Inc. 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.

This device complies with the essential requirements of the Radio Equipment directive: 2014 / 53 / EU. The following test methods have been applied to prove presumption of conformity with the essential requirements of the Radio Equipment directive: 2014 / 53 / EU: EN 300 328 (2.4 GHz), EN 301 893 (5 GHz) EN 62311:2008, EN 50385, EN 301489-1, EN 301489-17, EN62368-1.

FREQUENCIES	MAX POWER	INDOOR/OUTDOOR
2400-2483.5	100 mW	Indoor
5150-5250	200 mW	Indoor
5250-5350	200 mW	Indoor
5470-5725	1000 mW	Indoor

RADIATION EXPOSURE STATEMENT

The minimum distance between the user and/or any bystander and the radiating structure of the transmitter is 20 cm.

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

Usage Notes

- To remain in conformance with European National spectrum usage regulations, frequency and channel limitations will be applied on the products per the country where the equipment is deployed.
- Access points will support DFS (Dynamic Frequency Selection) and TPC (Transmit Power Control) functionality as required when operating in 5 GHz within the EU.

5 GHz Wireless Frequency and Channel Operation in EEC Countries

The table below provides a list of allowable frequency ranges and channels in various EEC countries.

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

License Information

OPEN SOURCE SOFTWARE UTILIZATION NOTICE

The GigaSpire family uses Open Source software programs. Such software programs are made available subject to certain third-party terms and conditions.

The fact that you are about to begin using or have purchased this product requires that you be informed of the use of these software packages and/or libraries and in some cases, the third-party terms and conditions applicable to such software. This information can be found on the manufacturer's support portal. Refer to the appropriate software release notes for additional information on Open Source software programs used by this product.

Declaration of Conformity

Language	Declaration of Conformity
български [Bulgarian]	С настоящото Calix Inc. Това декларира тази Wireless Broadband Терминал за достъп е в съответствие с Директива 2014/53 / EC. Пълният текст на ЕС декларацията за съответствие е достъпна онлайн от сайта на декларациите на Calix (https://www.calix.com/declarations).
hrvatski [Croatian]	Očvrme Calix Inc. To izjavljuje ovaj bežični širokopolasni pristup terminala u skladu s Direktivom 2014/53 / EU. Puni tekst izjave o sukladnosti za EU je dostupan online od kaliks web deklaracije (https://www.calix.com/declarations).
English	Hereby, Calix Inc. 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 Calix Declarations site (https://www.calix.com/declarations).
český [Czech]	Tím Calix Inc., která deklaruje toto Wireless Broadband Access Terminal je v souladu se směrnici 2014/53 / EU. Úplné znění EU prohlášení o shodě je k dispozici online na webové stránce prohlášení kalichu (https://www.calix.com/declarations).
Deutsch [German]	Hiermit Calix Inc. Das erklärt der Wireless Broadband Access Terminal in Übereinstimmung mit der Richtlinie 2014/53 / EU. Der vollständige Wortlaut der EU-Konformitätserklärung wird online von den Calix Website Erklärungen zur Verfügung (https://www.calix.com/declarations).
Eesti [Estonian]	Käesolevaga Calix Inc. See kinnitab seda traadita lairühenduse Terminal on kooskõlas direktiivi 2014/53 / EL. Tervikteksti ELi vastavusdeklaratsiooni on saadaval võrgus Calix veebilehel deklaratsioonid (https://www.calix.com/declarations).
español [Spanish]	Por la presente, Calix Inc. Que declara esta Terminal de banda ancha de acceso inalámbrico está en conformidad con la Directiva 2014/53 / UE. El texto completo de la declaración de conformidad de la UE está disponible en línea desde el sitio web Declaraciones de Calix (https://www.calix.com/declarations).
Ελληνική [Greek]	Δια του παρόντος, Calix Inc. Αυτό δηλώνει αυτό το Wireless Terminal Ευρυζωνική πρόσβαση είναι σε συμμόρφωση με την οδηγία 2014/53 / ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ είναι διαθέσιμο στο διαδίκτυο από την ιστοσελίδα Calix Δηλώσεις (https://www.calix.com/declarations).
français [French]	Par la présente, Calix Inc. 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 Calix (https://www.calix.com/declarations).
Italiano [Italian]	Con la presente, Calix Inc. Che 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 Calix (https://www.calix.com/declarations).
Latvijas [Latvian]	Ar šo, Calix Inc. Tas paziņo, šis bezvadu platjoslas piekļuves termināls atbilst Direktīvas 2014/53 / ES. Pilns teksts ES atbilstības deklarācijas ir pieejama tiešsaistē no Calix tīmekļa deklarācijas (https://www.calix.com/declarations).
Lietuvos [Lithuanian]	Šiuo dokumentu Calix Inc Tai deklaruoja tai bevielės plačiajuostės prieigos terminalas atitinka Direktyvos 2014/53 / ES. Visą tekstą ES atitikties deklaraciją galima rasti internete nuo CALIX svetainės deklaracijos (https://www.calix.com/declarations).
Magyar [Hungarian]	Ezáltal Calix Inc. Hogy kijelenti ezt Wireless Broadband Access Terminal irányelvnek megfelelelően 2014/53 / EU. A teljes szöveg az EU-megfelelősegi nyilatkozat elérhető online az Calix honlapján Nyilatkozatok (https://www.calix.com/declarations).
Polski [Polish]	Niniejszym, Calix Inc. Deklaruje, że ten Szerokopasmowy dostęp bezprzewodowy terminal jest zgodny z dyrektywą 2014/53 / UE. Pełny tekst deklaracji zgodności UE jest dostępna on-line ze strony internetowej calix deklaracji (https://www.calix.com/declarations).
português [Portuguese]	Por este meio, Calix Inc. 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 Calix (https://www.calix.com/declarations).
român[Romanian]	Prin prezenta, Calix Inc poate declara que acces de bandă largă fără fir Terminal este în conformitate cu Directiva 2014/53 / UE. Textul integral al declarației de conformitate UE este disponibilă online din calix declarațiile site-ul (https://www.calix.com/declarations).
slovenščina[Slovenian]	S tem lahko Calix Inc. razglasi, da širokopasovnega brezžičnega dostopa Terminal je v skladu z Direktivo 2014/53 / EU. Celotno besedilo izjave EU o skladnosti je na voljo na spletu na spletni strani izjavami calix (https://www.calix.com/declarations).
slovenský [Slovak]	Týmto Calix Inc. môže vyhlásiť tento, že Broadband Wireless Access Terminal je v súlade so smernicou 2014/53 / EÚ. Úplné znenie vyhlásenia o zhode EÚ je k dispozícii online na webovej stránke vyhlásenie kalichu (https://www.calix.com/declarations).



Calix Safety and Regulatory Statements - GigaSpire

NOTE: This *Safety and Regulatory Statements Guide* applies to **a**l GigaSpire devices that may or may not include a Wi-Fi radio. Disregard any statements made here if the feature or function is not present on any particular model.

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.
- **Children:** Do not allow children to play with the GigaSpire. It contains small parts that could become detached and create a choking hazard.
- 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.

ENVIRONMENTAL CONDITIONS

- Maximum environmental values during use:
- Temperature: 0° C to +40° C (32° to 104° F), Humidity: 10% to 90% RH, non-condensing, -200 to 10,000 feet altitude.

REQUIRED SAFETY STATEMENTS

- **Potentially Explosive Atmosphere:** Do not use the GigaSpire in an area where a potentially explosive atmosphere exists.
- **Atmosphère potentiellement explosive:** N'utilisez pas le GigaSpire dans un endroit où existe une atmosphère potentiellement explosive.
- **Intended Use:** This product is classified as telecommunication equipment not intended for direct purchase by the public.
- This product is designed and approved for use in an indoor location only.



CAUTION! Use of any controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.

- **Utilisation prévue:** Ce produit est classé comme équipement de télécommunication non destiné à l'achat direct par le public. Ce produit est conçu et approuvé pour utilisation en intérieur uniquement.



MISE EN GARDE ! L'utilisation de contrôles, réglages ou procédures autres que ceux spécifiés dans ce manuel peut entraîner une exposition dangereuse à des rayonnements.

- Connect the power supply cord only to an AC power outlet that meets GigaSpire specifications.
- Never alter the AC power cord. If necessary, have the correct outlet installed by a qualified electrician or call your service provider for assistance.
- To reduce the risk of damage to the electric cord, remove it from the outlet by holding onto the AC power adapter rather than the cord.
- Make sure the cord is positioned so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.



WARNING! Do not use any other power adapter except the one that accompanies this unit or a power supply identified in the list below. Use of another adapter could result in damage to the unit. To prevent electrical shock, please do not open the cover. The following power adapter is qualified for use with this GigaSpire.

