GigaSpire BLAST u4.2 GS2029E
Installation Guide

December 2024

#220-01356 R10

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About this Guide

This document provides the installation practice for Calix GigaSpire u4.2 (GS2029E) indoor Wi-Fi gateway systems.

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.

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 within a minimum distance of 27 cm 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 within a minimum distance of 33 cm 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 33 cm de distance entre la source de rayonnement et votre corps.

- Safety Notices

Safety Notice Conventions

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.

Current Safety Notices

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

Attention! L'utilisation des commandes ou réglages ou l'exécution des procédures autres que celles spécifiées dans les présentes exigences peuvent être la cause d'une exposition à un rayonnement dangereux.

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

GigaSpire u4.2 Product Overview

This chapter introduces the u4.2 indoor Wi-Fi gateway system and provides an overview of installation considerations.

Topics Covered

This chapter covers the following topics:

- Introducing the GigaSpire u4.2 indoor Wi-Fi gateway system
- Product dimensions
- Exploring the ONT interfaces
- Powering options
- Mounting options
- Installation considerations

Introducing the GigaSpire u4.2 indoor Wi-Fi gateway system

The GigaSpire® u4.2 (GS2029E) is a Wi-Fi 6 system that brings the access network into the home and delivers a robust Wi-Fi experience. With broadband connectivity of data and video services, the system offers 802.11ax 'Wi-Fi 6' technology. The u4.2 provides switching and routing functions that support multi-Gigabit throughput supporting IPTV video and data services.

The GigaSpire u4.2 is a smart home system that delivers the latest 'Wi-Fi 6' certified technology (802.11ax). The GigaSpire u4.2 provides a 2.5 Gigabit Ethernet WAN link at the subscribers' premises, carrier-class Wi-Fi, and a 2.5 Gigabit Ethernet interface for customer multimedia devices. The unit also enables residential subscribers with Multi-Gigabit broadband data and Internet Protocol (IP) video services. Using 802.11ax technology in both the 2.4 and 5 GHz radios, the GigaSpire u4.2 uses dual band 2x2 streams of Wi-Fi delivery in both the 2.4 and 5 GHz range. In addition, with multi- user multiple-input and multiple-output (MU-MIMO) and beamforming, the GigaSpire u4.2 allows service providers to extend the access network inside the home.

Calix engineered the GigaSpire u4.2 for optimal whole-home coverage with simultaneous dual-band 2.4 GHz and 5 GHz operation and dynamic beamforming at 5 GHz. For maximum performance, the GigaSpire u4.2 supports 2x2 MIMO spatial diversity at 2.4 GHz and 2x2 MU-MIMO at 5 GHz. Leveraging Wi-Fi 6 features, the GigaSpire u4.2 provides longer range, higher efficiency (with less interference) compared to earlier Wi-Fi generations. The GigaSpire u4.2 also supports the entire 5 GHz band, including Dynamic Frequency Selection (DFS) channels.

The GigaSpire u4.2 provides the latest generation of redundant mesh using either another u4.2 or using the GigaSpire u4m (GM1028). GigaSpire. With the GigaSpire u4.2 as the hub, and with another GigaSpire u4.2 or u4m as the satellite, consumers gain the entire home/smart home experience. For even higher mesh performance, multiple Mesh GigaSpire u4.2 or u4m satellites can be connected to the GigaSpire u4.2.

Calix GigaSpire u4.2


With the GigaSpire u4.2, the following interfaces are available:

Interface	u4.2
Wi-Fi	2x2 @ 2.4 GHZ (Wi-Fi 6) 2x2 @ 5 GHz (Wi-Fi 6)
WAN	2.5 GE
LAN	2.5 GE
USB	USB 2.0 Type A

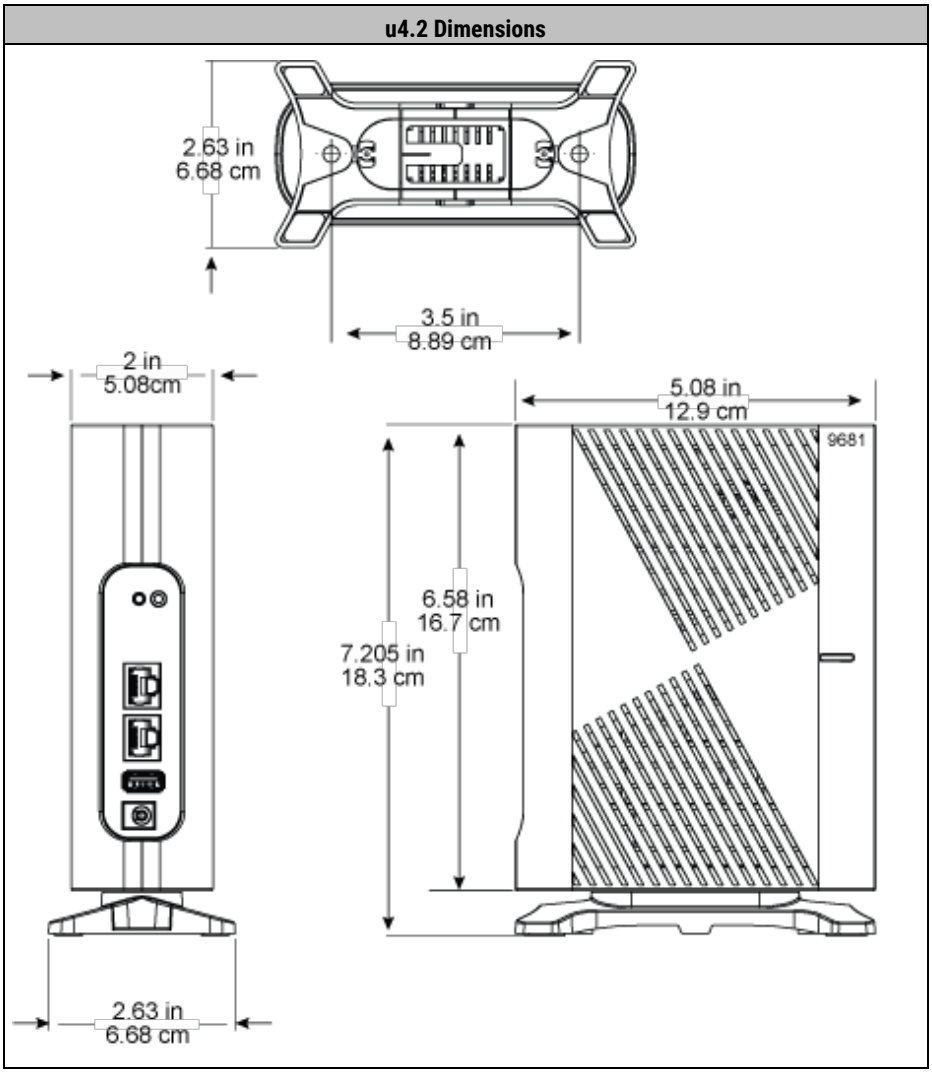
Refer to the product data sheets on calix.com for complete details regarding features and specifications.

Product Dimensions

The u4.2 system product dimensions are shown below for reference.

When installed, total dimensions vary slightly between tabletop (foot/bracket below) and wall mount (bracket behind) configurations.

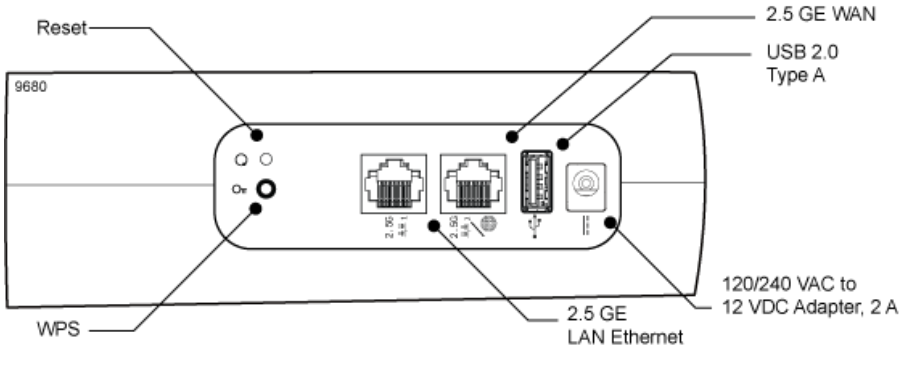
u4.2 Dimensions



Exploring the ONT Interfaces

The system interfaces for the GigaSpire u4.2 system are shown below.

u4.2 System Interfaces



Powering Options

The GigaSpire u4.2 supports the following power option:

- **Local AC power:** Connect to a standard AC power outlet using the Calix-supplied power adapter cable with AC/DC adapter.

  Note: The system must be powered using a UL Listed power source compliant with ES1, PS2/LPS, rated output 12VDC, 2.0A, Tma = 40° C minimum, Altitude 5000m.

The GigaSpire u4.2 system accepts local AC power using a Calix-supplied AC/DC adapter cable. The DC end of the adapter cable has a two-pin barrel connector that connects to the GigaSpire power input connection. Plug the AC end into any standard AC power outlet.

Spare AC/DC power cables are also available from Calix:
100-06024: Power adapter cable, white; 12 V, 2A, Type A; 5-foot (150 cm) length. C-temp rated (indoor-only).

Mounting Options

GigaSpire u4.2 system ships with a multi-purpose stand that supports mounting on horizontal or vertical surfaces:

- **Horizontal surfaces** - For "desktop" orientation —free standing on a flat horizontal surface such as a desktop, shelf, or table— attach the stand to the bottom of the system via its snap-in posts, to serve as a foot.
  See Installing the System on a Horizontal Surface for instructions.
- **Vertical surfaces** - To mount the system on a vertical surface —a wall, back of a cabinet, or back of a structured wiring enclosure— attach the stand to the side of the system to serve as a mounting bracket. In this configuration, first attach the stand to the vertical surface using (2) mounting screws, and then attach the system to the stand via its snap-in posts.
  See Installing the System on a Vertical Surface for instructions.

For horizontal surfaces	For vertical surfaces
	

User-supplied hardware

For mounting on a vertical surface, some user-supplied hardware is required. Specifically, two (2) screws are required to attach the stand (bracket) to the wall or other vertical surface, but are not included in the kit.

Calix recommends using wall mounting screws with the following spec: #10 (M4.8) x 1-inch length.

Installation Considerations

Review the following guidelines before starting installation activities.

Guidelines

Follow these general guidelines and practices:

- Determine which mounting and powering methods to use for each site before beginning the installation. See Powering Options and Mounting Options for details and guidance.
- Follow all standard safety precautions when performing installation tasks.
- Keep cabling neat and secure for safety and strain relief. Use cable ties and screw clips for dressing long-run cables as needed.

User-supplied items

Bring the following tools and materials to the installation site, as needed:

Materials

- WAN link cabling:
  - Ethernet: Cat6 Ethernet cable
  - Mounting screws (2) for stand/bracket (wall-mounts only); spec: #10 (M4.8) x 1-inch length.

Tools

Bring the following tools to the installation site:

- Level
- Pencil (to mark bracket and drill hole locations; wall-mount)
- Power drill with drill and driver bits (to install mounting screws; wall-mount)

Chapter 2

Installing the GigaSpire System

This chapter describes how to install the GigaSpire system at the service 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 GigaSpire system at the service location:
  - Option 1: Installing the system on a horizontal surface (desktop or shelf)
  - Option 2: Installing the system on a vertical surface (wall or structured wiring enclosure)
- Connecting to the network
- Connecting power
- Activating the system

Unpacking the System

Each GigaSpire u4.2 system ships in a box containing the following items:

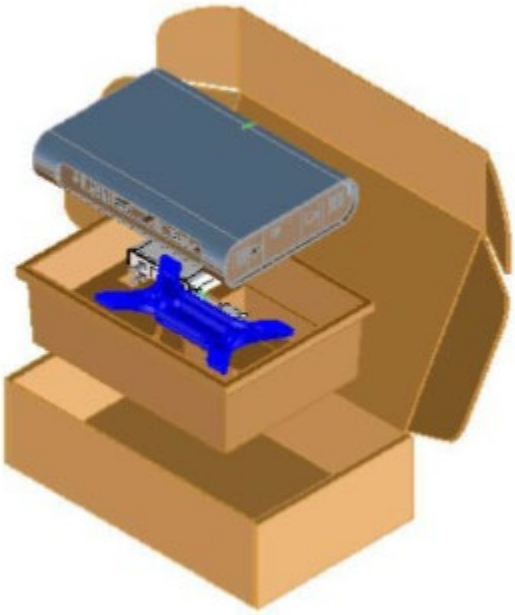
Qty	Description
1	GigaSpire system GS2029E (u4.2)
1	Stand / mounting bracket*
1	Power cable with AC/DC (120VAC to 12VDC) adapter
2	Product identification labels (with default Wi-Fi SSID and RG admin user login info)
1	Safety and regulatory statements guide

***Note:** Mounting screws are not included. See Mounting Options for screw spec recommendation.

To unpack the system

1. Open the box containing the u4.2 system.
2. Remove the system from the pulp tray to retrieve items packed underneath.

u4.2 Packaging



3. Check to ensure supplied items are present before proceeding:
   - Remove the stand/bracket and set aside for use during installation.
   - Remove the power adapter with cable and set aside for use during installation.

Selecting an Installation Location

Consider several factors when selecting an installation location for the system:

- Proximity to power:
  - **AC power:** The supplied power cable is five feet long. You must locate the system within (5 feet) reach of an AC power outlet to use standard AC power.
- Proximity to network termination point:
  - **Distance from ONT:** The system uses a wired Ethernet link to connect to the WAN. The maximum distance to the network termination device (ONT or modem) equals the maximum Ethernet cable length of 100 meters (328 feet).
- **Mounting type:** Depending on the selected mounting type (horizontal or vertical surface) per site, select a location with a surface that can support that mounting type.
- **Location within serving area:** Environmental factors including centralized location and structural materials can affect Wi-Fi performance. Consider the factors described below.

Wi-Fi AP placement

Direct line-of-sight to the Wi-Fi access point (AP) is not essential for client signal quality, thanks to MIMO technology and an omni-directional antennae array in the AP. 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 serving area, the better.
- Elevate the system as high up as practical; higher elevation helps the Wi-Fi signal clear lower/ground-level obstructions including items such as couches and furniture.
- Generally speaking, it is a Calix best practice to place the Wi-Fi gateway in an open area to enable Wi-Fi signal to broadcast freely with minimal 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.

Effects of Building Materials 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.

Option 1: Installing the System on a Horizontal Surface

This topic describes how to install a GigaSpire GS2029E onto any flat horizontal surface, such as a desktop, shelf, or table.

With a "desktop" arrangement, the system's multi-purpose stand/bracket attaches to the bottom of the unit, serving as a foot for free-standing operation on a horizontal surface. The stand snaps onto the bottom of the system via a pair of mating posts, and has rubber pads underneath to reduce accidental slippage on flat surfaces.

Option 2: Installing the System on a Vertical Surface

This topic describes how to install GigaSpire u4.2 system onto a flat vertical surface, such as a wall, the back of a cabinet, or inside a structured wiring enclosure (SWE). For simplicity, this topic shall refer to this installation option as simply a wall-mount installation.

To support wall-mount installations, the system's multi-purpose stand attaches to the *side* of the unit to serve as a mounting bracket.

First, you attach the stand/bracket to the vertical surface using (2) mounting screws, and then you hang the system onto the bracket in snap-on fashion —where slots on the side of the system (located behind a removable cover panel) fit onto counterpart posts on the stand.

Wall Mount Option

Guidelines

Follow these installation guidelines for wall-mount installations:

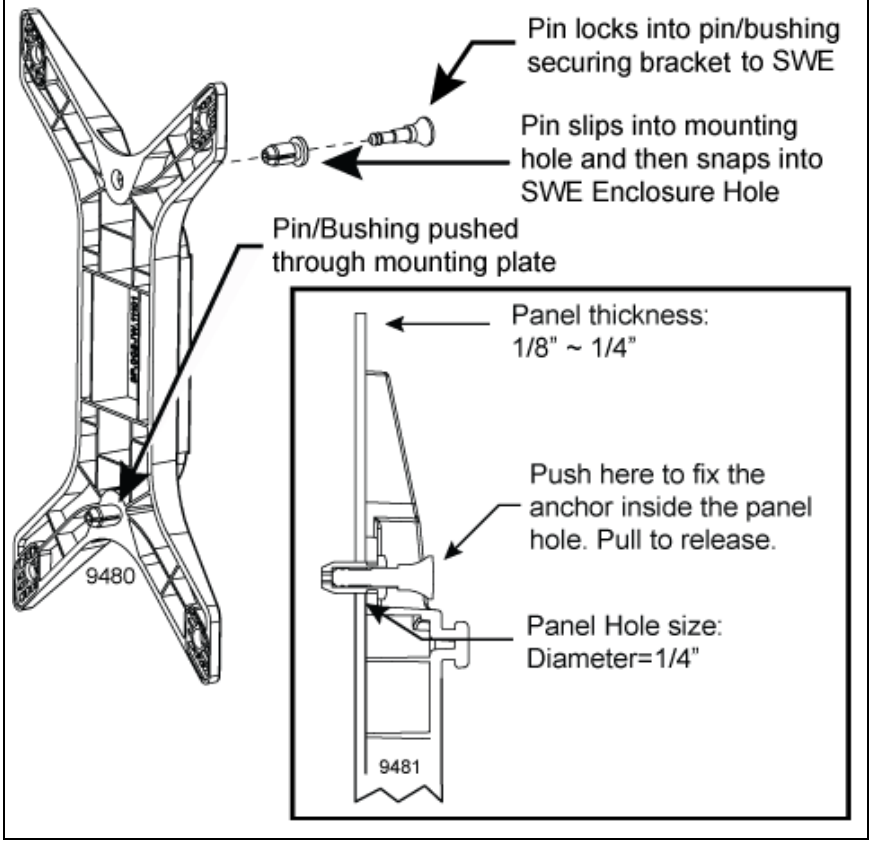
- User-supplied hardware is required to attach the stand/bracket to a wall. Mounting screws are not included. See Mounting Options for screw specs.
- The wall-mount instructions below assume the drilling is into a stud. If no stud is close enough, use wall anchors instead (not supplied).
- When selecting an installation location, Calix recommends locating the system within five feet of an AC power outlet to avoid needing a power extension cord.

To install the bracket onto a vertical surface (wall or SWE)

1. Get the stand/bracket from the ship kit.
2. At the mounting location, mark the position for the bracket on the wall.
   a. Hold the bracket against the wall at the mounting position.
   b. Using a pencil, mark the two (2) hole locations to drill for screws.

   Note: For structured wiring enclosure (SWE) installations, skip to step 4.
3. Drill two (2) holes into the wall at the marked locations.
4. Hold the bracket against the wall or SWE at the marked location and attach it as follows:
   a. Attach to a wall:
      - Insert the first mounting screw into the upper of (2) holes in the bracket, and then use a screwdriver to screw it completely into the hole.
        DO NOT OVER-TIGHTEN the screw or else risk cracking the plastic bracket.
      - Insert the second mounting screw into the lower of (2) holes in the bracket, and then use a screwdriver to screw it completely into the hole.
   b. Attach to a SWE rear panel:
      - Insert the first pin/bushing into the upper of (2) holes in the bracket and push it all the way through the aligned holes in the SWE rear panel, as shown.
      - Insert the second pin/bushings into the lower of (2) holes in the bracket and push it all the way through the aligned holes in the SWE rear panel.

SWE Mounting Option

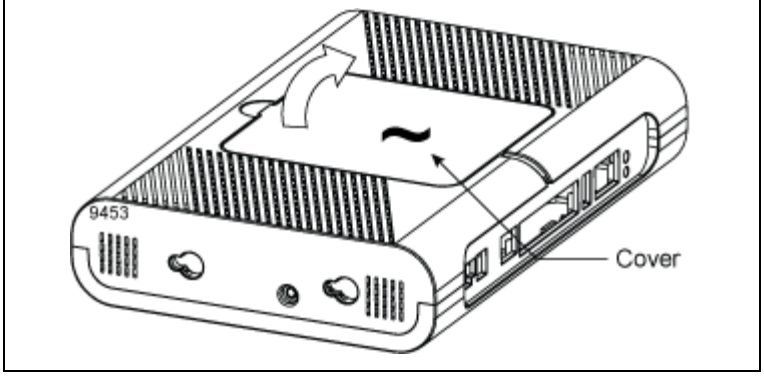


5. Once both screws or pin/bushing sets are installed, check the bracket to confirm it is tightly attached to the wall or SWE before proceeding to the next task below.

To install the system onto the mounting bracket

1. Get the u4.2 system from the ship kit.
2. Remove the cover from the system's side panel to access its interior compartment.
   a. With a finger, press on the tab to release the catch.
   b. Pull on the tab to remove the cover away from the side panel.

Fiber Access Cover

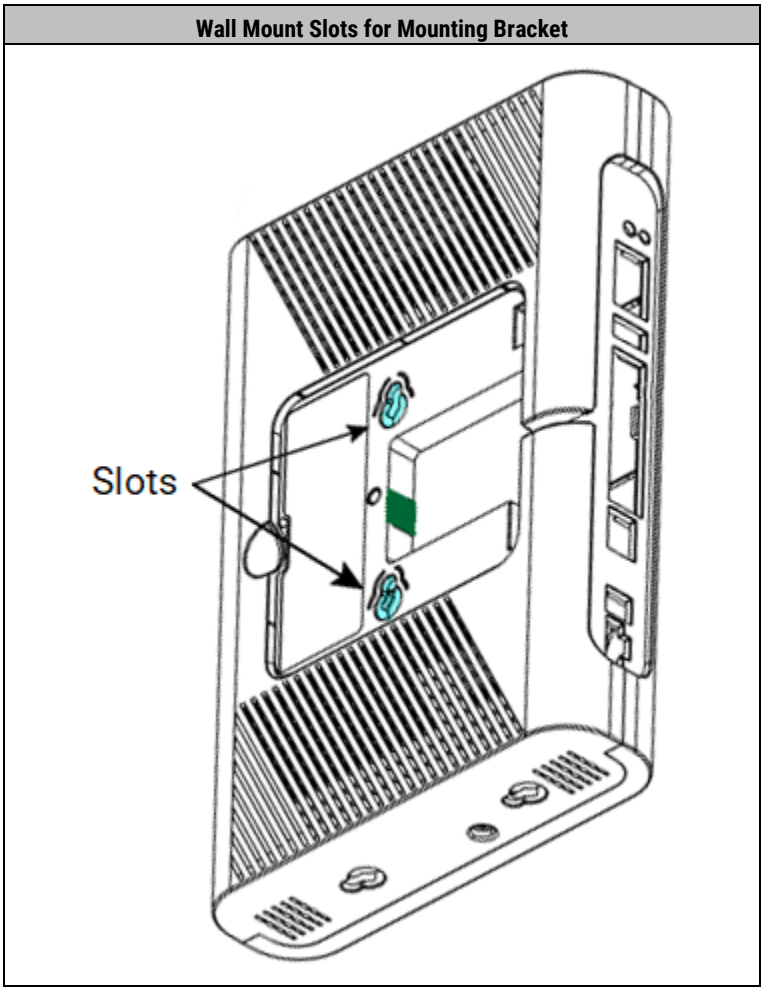


c. Discard the cover, as it will not be used with wall-mount installations.

3. Attach the u4.2 to the mounting bracket:

a. Align the (2) keyhole slots on the system (located inside the compartment) with the (2) counterpart posts on the bracket.

Wall Mount Slots for Mounting Bracket



b. Hang the system onto the bracket posts at the wide end of the keyholes.

c. Slide the system down onto the posts until the posts fit into the narrow ends of the keyholes.

Proceed to topics Connecting to the Network and Connecting Power for instructions to connect power and network cables to the system.

Chapter 3

Connecting to the Network

Connect the GigaSpire u4.2 system to the wide-area network (WAN). If applicable, also connect any wired services or devices to the gateway.

- Network uplink
  - **Ethernet link** - Connect the u4.2 gateway system to the network via a WAN Ethernet link to the broadband service device (ONT or modem). See Connecting the WAN Ethernet Link for instructions.
- Wired LAN-side connections
  - **Data services** - To support data services to wired Ethernet devices on the LAN, connect those client devices to the gateway system. See Connecting Wired Services Interfaces for instructions.

Connecting the WAN Ethernet Link

The GigaSpire u4.2 system is equipped with a 2.5GE WAN Ethernet port for connecting to the broadband network. Follow these guidelines to connect the system to the network:

- **RG mode:** For systems that will operate in gateway (RG) mode, use a standard Ethernet data cable (not supplied) to connect the system's WAN Ethernet port to a LAN Ethernet port on the broadband service device (ONT or modem).

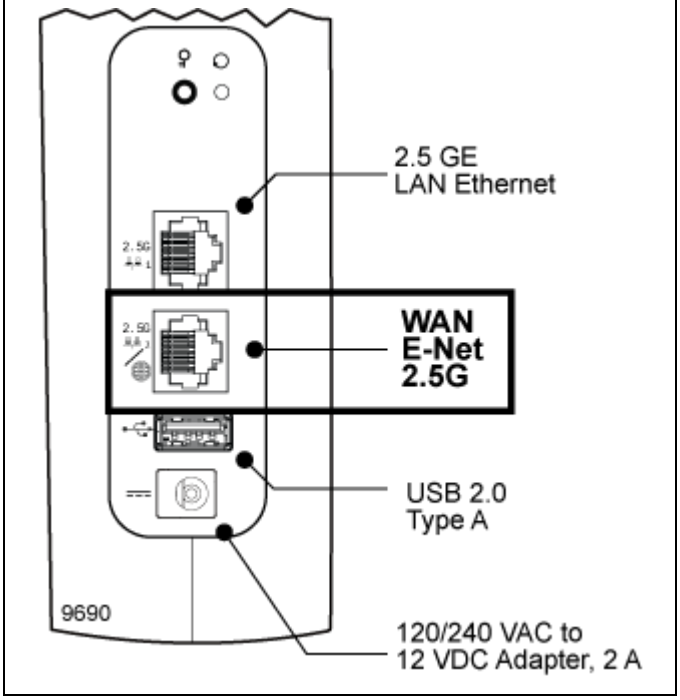
  Note: To allow maximum throughput bandwidth to the gateway, Calix recommends connecting to an ONT equipped with a multi-gigabit LAN port. For example, connect to an XGS-PON ONT (most are equipped with a 10GE or 2.5GE LAN port), such as the Calix GP1101X ONT.

- **Satellite mode:** For systems that will operate in mesh satellite mode, you can use either a wired (Ethernet) or wireless backhaul link to connect to the RG system. Follow the instructions below only for systems that will use a wired connection to the gateway.

To connect to the network

1. Bring an Ethernet data cable (not supplied) to the GigaSpire location.
2. Connect the Ethernet cable to the system's WAN Ethernet port located on the u4.2 interface panel.

2.5G WAN Ethernet Port



3. Connect the Ethernet cable's other end to the upstream device:
   - For gateways, connect the uplink cable to the broadband service device's LAN Ethernet port.
   - For satellites, connect the uplink cable to an available LAN Ethernet port on the gateway system.
4. Dress, tuck, or tie back any cable slack to prevent accidental catching or snags on the cable, as needed.

Connecting Wired Services Interface

This section describes how to connect service lines to the system's LAN-side interfaces.

The GigaSpire u4.2 system is equipped with a single LAN Ethernet port supporting Base-T copper (100/1000/2500) with an RJ-45 interface.

To provide wired services on the LAN, connect an Ethernet cable to the LAN ports as described below.

To connect the LAN Ethernet cable

1. Bring an Ethernet data cable to the GigaSpire location.
2. Connect the Ethernet cable to the LAN Ethernet port on the system's interface panel:
3. Connect the far end of the Ethernet cable to any LAN device located on the premises.

Chapter 4

Connecting Power

Connect power to the GigaSpire u4.2 system using the power cable supplied with the system to connect it to a standard AC power outlet. See Connecting AC Power for instructions.

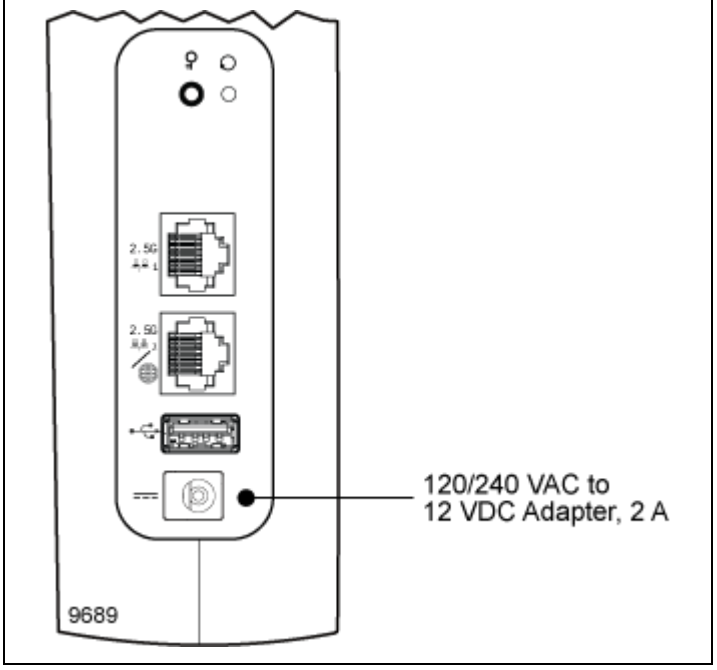
Connecting AC Power

Calix provides an AC power cable (with AC/DC adapter) with each system. Connect the system to AC power as described below.

To connect the system to AC power

1. Get the AC power adapter cable from the installation kit.
2. Connect the power cable's device end (2-pin barrel connector) to the GigaSpire's power input jack.

ONT Power Ports



3. Route the cable's other end (3-prong connector) to a nearby AC power outlet and plug into the outlet.

Note: Indoor installations assume that grounding support for the system is provided via the power cable connected to a Ground Fault Circuit Interrupt (GFCI) outlet.

Activating the System

Once the system is cabled out, it is ready to activate and connect to the network.

To activate the system

1. If you have not done so already, apply power to the GigaSpire system to initiate activation. Plug the power cable's 3-prong connector into an AC power outlet. (Refer to Connecting AC Power for instructions.)

Next steps

Before completing the installation, verify system startup operation:

- Verify that the system's status LED shows expected 'in service' state (green) before considering the installation complete. Refer to System LED Behavior for expected behavior.
- Verify with your back office that the system checked in to Calix Cloud as applicable.
- For gateway system turn-up instructions, refer to the following related user documentation:
  - *EXOS Systems: Service Provider's Guide*
  - *Calix Deployment Cloud Help*
- For systems that will operate in mesh satellite mode, pair the satellite system to the gateway system using the WPS button on each unit. Refer to the *EXOS Systems: Service Provider's Guide* for instructions.

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Appendix A

Appendix

This appendix provides general reference information about the systems.

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 statuses with their corresponding LED pattern.

The ONT(s) includes a single LED located on the front of the unit.

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 (for compatible models only)	 Solid Gray (Off)
	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	 Off and Amber (1000 msec cycle)
	Boot-up Failure	• Unit boot up failed.	 Off and Red (800 msec cycle) - R24.2 and earlier Off and Red (1000 msec cycle) - R24.3 and later
In Service	**Connected to Internet**	• System is "In Service" and connected to the internet.	 Solid Green
Service Failure, no internet	**No Internet**	• No service, no internet	 Solid Red

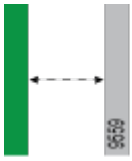
System LED Behavior - Mesh Mode

The table below includes the various statuses with their corresponding LED pattern (front or side of the unit).

Note: For any 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.

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

During this time, other Wi-Fi capable devices can be paired to the Gateway Wi-Fi radios (5 GHz band) by initializing a similar WPS function on other ONTs or satellites 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).

LED Behavior - Mesh Satellite Mode			
Mode	**Status**	**Description - Mesh Mode**	**Color**
Mesh	**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 1 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 GHz band) thereby creating an association with the Gateway SSID.	 Green and Off (500 msec)
	Mesh Connected	• Meshing is complete, is in service, and connected to the internet.	 Solid Green
	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 No Internet failure status. • If pairing is accomplished, LED bar will change to reflect Gateway status.	 Solid Red

System Specifications

Hardware specifications for the u4.2 system follow:

Dimensions	
Width	2.0 in (5.1 cm); 3.7 in (9.4 cm) with stand
Height	6.6 in (25.7 cm) without stand; 7.2 in (27.3 cm) with stand
Depth	5.1 in (17.8 cm)
Weight	1.4 lbs. (1.2 kg)
Power	
AC / DC	Input voltage: 12 VDC (nominal) External Power Adapter (1.5 m): 12 VDC, 2A 2-pin barrel connector
Network Interfaces	
WAN	One (1) 2.5GE (100/1000/2500 Base-T) port, RJ-45
LAN	One (1) 2.5GE (100/1000/2500 Base-T) port, RJ-45
Wireless	Dual-band internal antennas, 4x4 streams (2x2 2.4 GHz, 2x2 5 GHz, simultaneous) 2.4 GHz 802.11 b/g/n/ac/ax 5 GHz 802.11 a/b/g/n/ac/ax 4x4 UL/DL MU-MIMO, Explicit high-power, dynamic beamforming
Other interfaces	One (1) USB 2.0 Type A One (1) WPS push-button actuator One (1) reset button
Environmental	
Operating temperature	Indoor ambient temperature: 0 to 40 degrees C (32 to 104 degrees F)
Operating and storage relative humidity	10 to 90 % and 5 to 95% non-condensing respectively
Certification and Compliance	
Emissions	FCC Part 15 Class B, ICES-003 Class B, CISPR-22
Safety	UL 62368 and UL 1697 approved

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 GigaSpire u4.2.

Application Standards

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

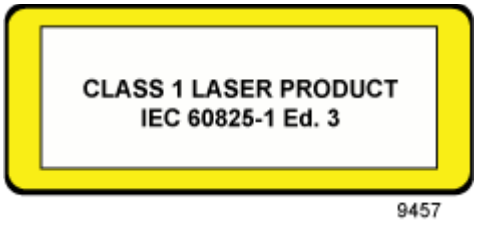
Standards		
FCC Part 15, Sub Part B, class B	UL 62368-1	EN 300 328
CAN ICES-003 Class B	CSA C22.2 No. 62368-1	EN 301 893
ANSI C63.4	IEC 62368-1	EN 301 489-1
FCC Part 15.247	ITU-T K21	EN 301 489-17
FCC Part 15.203	ITU-T K44	EN 55032 Class B
FCC Part 15.207	EN 62368-1	EN 61000-3-2
FCC Part 15.209	IC: 4009A-U4X	EN 61000-3-3
FCC ID: 2ABLKGPR1027E 4009A-GPR1027E	EN 62311	EN 50581
RSS 102	CE / RED, RoHS, WEEE, Energy	
RSS 247	Telcordia GR-63	EN 50564
FCC Part 15.407	Telcordia-GR-1089	CISPR 32 Class B
NEC (National Electrical Code)	Telcordia GR-950	IEEE: 802.3, 802.3AB, 302.3U, 802.11p, 802.11Q
Telcordia GR-909	Telcordia GR-1244	RCM
	Telcordia GR-2890	CISPR-22
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 labeling

The following required labeling shows the laser class and IEC standard that defines the laser used in this product.



Laser specifications

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 56, dated May 8, 2019.

Nominal laser wavelength: 1270 nm

Nominal laser wavelength (XGS PON): 1577 nm

Laser Radiation Maximum Output: +9 dBm (7.9 mW)

Pulse Duration: 6.45 x 10^{-11} s to 6.45 x 10^{-10} s

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.

Note: When servicing this product during operation, care must be taken to avoid intrabeam viewing of the laser.