

The logo for GigaSpire BLAST u4m, featuring a white Wi-Fi symbol above the text 'GigaSpire' in white and orange, with 'BLAST u4m' in white below it.

The GigaSpire® Mesh BLAST® u4m is the new generation Wi-Fi 6 mesh satellite that complements the Calix GigaSpire family of products. With the broad portfolio of GigaSpire smart home systems, the GigaSpire Mesh BLAST u4m extends Wi-Fi coverage and capacity within the subscriber's home. The GigaSpire Mesh BLAST u4m backhaul allows communications service providers (CSPs) to deploy satellites with either a wired or wireless connection to the GigaSpire. When connected wirelessly, the 5 GHz 802.11ax 2x2 radio acts as an access point (AP) to the end subscribers' wirelessly connected devices. The GigaSpire Mesh BLAST u4m enables subscriber self installs and results in fewer costly truck rolls.

## MULTI-GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire Mesh BLAST u4m is a high performance wireless satellite that delivers the latest 802.11ax Wi-Fi technology in a consumer friendly form factor. Subscribers want their Wi-Fi to work with any device in any location throughout their home. Over time, the numbers, types and locations of these devices has exploded. In response to the rapid adoption of Wi-Fi IoT devices – like door locks, IP cameras and thermostats – CSPs must now provide ubiquitous Wi-Fi coverage. In addition, the demand for video content continues to grow and subscribers expect to watch anywhere on any device.

The Calix GigaSpire Mesh BLAST u4m enhances coverage and capacity with the latest 802.11ax Wi-Fi radios, transmitting at the maximum allowable regulatory limits. For homes that need additional coverage and capacity, the Calix Mesh-Enhanced Carrier Class Wi-Fi solution has three components: GigaSpire, GigaSpire Mesh BLAST u4m (GM1028) satellites, and the Calix Cloud. The GigaSpire Mesh BLAST u4m satellites are optimized for interoperability with GigaSpire's 5 GHz 802.11ax radio., thus allowing for the delivery of throughput rates of over 1.2 Gbps. Along with the 2x2 2.4 GHz radio, the GigaSpire Mesh BLAST u4m provides over 1.8 Gbps of total service bandwidth.

In addition to support for high-speed Internet (HSI) services, CSPs need solutions that allow them to support a full complement of additional services, including IPTV and guest Wi-Fi. In response, the Calix solution supports differentiated quality of service (QoS) as well as isolation between the services. To ensure a seamless mobile streaming experience, the software used by the GigaSpire and GigaSpire Mesh BLAST u4m has been enhanced to support both band steering and network-assisted node steering. Steering directs subscriber Wi-Fi devices to connect to the radio signal that results in the best user experience.

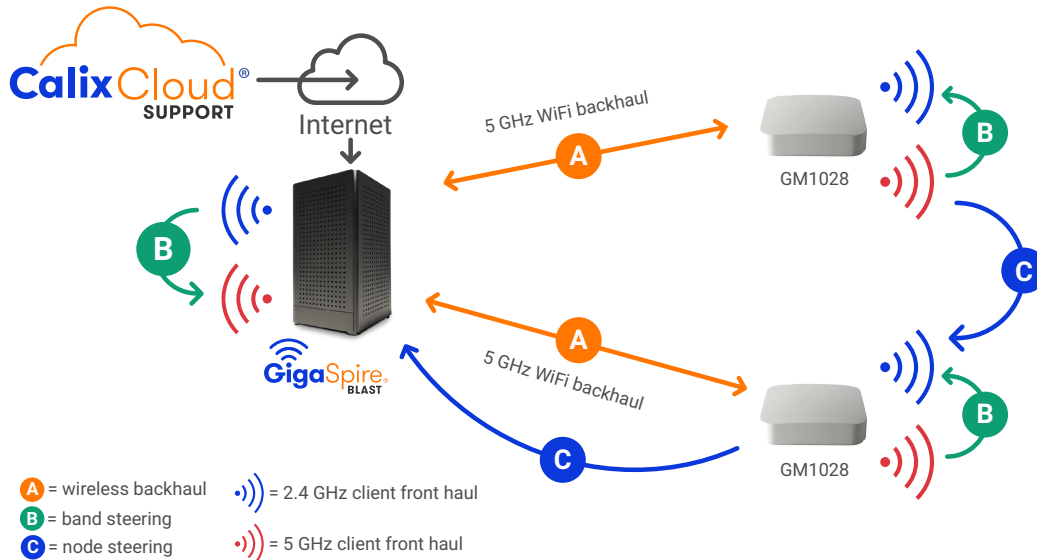
Calix leverages the latest standards for roaming and steering, including 802.11k, 802.11r and 802.11v. The combination of GigaSpire and GigaSpire Mesh BLAST u4m satellites enables subscribers to receive Gigabit broadband data, IP video, and voice over (VoIP). Using the latest 802.11ax 5 GHz technology – incorporating 2x2 multi-user multiple-input and multiple-output (MU-MIMO) with beamforming – the GigaSpire Mesh BLAST u4m satellite allows CSPs to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services.

Calix engineered the GigaSpire Mesh BLAST u4m 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 Mesh BLAST u4m supports high-power 2x2 MU-MIMO spatial diversity at 2.4 GHz and 2x2 MU-MIMO at 5 GHz. The GigaSpire/GigaSpire Mesh BLAST u4m solution easily delivers high definition (HD) and Ultra HD (UHD) video and data throughout a subscriber's home. The Calix solution is scalable, allowing CSPs to initially deploy a GigaSpire and then add GigaSpire Mesh BLAST u4m satellites to the end subscriber's home network as the need arises for additional coverage. One of the strengths of the Calix solution is that CSPs can leverage the instrumentation provided by the GigaSpires and GigaSpire Mesh BLAST u4m satellites to identify when the end subscriber can benefit from an additional GigaSpire Mesh BLAST u4m. This allows them to be proactive and upsell additional services and assets.

Market research projects that tens of billions of residential IoT devices will be deployed in the coming years. The GigaSpire and GigaSpire Mesh BLAST u4m provides powerful Wi-Fi to support the growing IoT deployment. Service providers can now deploy the GigaSpire Mesh BLAST u4m with plug-and-play Wi-Fi IoT devices such as security cameras, sensors and smart plugs.

## CALIX GIGASPIRE AND GIGASPIRE MESH BLAST U4M SOLUTION OVERVIEW

Mesh-enhanced Carrier Class Wi-Fi includes GigaSpire BLAST systems, Calix Cloud, and GigaSpire Mesh BLAST u4m.



## EASY TO INSTALL, ACTIVATE AND MAINTAIN

With the GigaSpire Mesh BLAST u4m satellites, 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 GigaSpire Mesh BLAST u4m RJ-45 port and the parent GigaSpire. The GigaSpire Mesh BLAST u4m leverages its TR-069 interface to communicate its presence to the Calix Support Cloud, which adds the GigaSpire Mesh BLAST u4m to the subscriber account.

The system harmonizes the services on the GigaSpire Mesh BLAST u4m. This removes all human error-prone touch points. When deployed with a wireless connection, the subscriber uses the Wi-Fi Protected Setup (WPS) button on both the GigaSpire Mesh BLAST u4m and the GigaSpire to pair the mesh network. In addition, built-in signal strength indicator on the GigaSpire Mesh BLAST u4m provides identification for the best placement location. Once this step is done, discovery, configuration and harmonization steps occur. The Calix 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 the GigaSpire and GigaSpire Mesh BLAST u4m satellites allows CSPs to reduce their operational expenses while effectively delivering an elevated Gigabit experience to their subscribers.

## KEY ATTRIBUTES

### Whole Home Coverage Wi-Fi Mesh Satellite

- Layer 2 bridge and Layer 3 routing for High Speed Internet (HSI) data and IPTV video services
- Self-Organizing Network (SON)
- Auto configuration
- Band and node steering
- Increased network capacity
- Bridge port assignment and data traffic pings
- MAC filtering Wi-Fi

### Wireless

- 2.4 GHz and 5 GHz, simultaneous dual-band
- 2.4GHz and 5 GHz 802.11ax (Wi-Fi 6) certified, 802.11a/n/ac compatible
- 4x4 streams (2x2 @ 2.4 GHz and 2x2 @ 5 GHz)
- WPA/WPA2/WPA3; WEP 64/128 bit encryption
- PuF (Physical Unclonable Functions)
- WPS push-button
- 2x2 DL/UL MU-MIMO, implicit/explicit high-power, dynamic beamforming (5 GHz radio)
- 2x2 DL/UL MU-MIMO implicit/explicit high-power, dynamic beamforming (2.4 GHz radio)
- 1024 QAM; OFDMA; BSS Coloring
- Support for 802.11k/r/v/s o (11k Radio Resource Management, 11r Fast Roaming, 11v Wireless Network Management)

- Support 4-address WDS mode
- Support 16 SSIDs Replication per band
- 1.2 Gbps Radio Backhaul with GigaSpire
- Channel Optimization DFS
- Wireless Backhaul Signal Strength

### Wi-Fi redundant mesh

- Self Managed: self configuration, Air time fairness
- Dynamic Mesh: load balancing, band/node steering; interference management
- Self Healing; diagnostics; events

### 1 gigabit ethernet (GE) WAN interface

- Symmetrical 1 Gbps for residential IPTV and data services
- Multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiation

### Supports multiple data service profiles

### IPTV, IGMPv2, future support of IGMPv3

- GMP Snooping and Proxy
- IGMP Fast Leaves

### Gateway management

- CSC (Calix Support Cloud)
- TR-069
- Local Home Gateway GUI, access provisional
- Remote WAN side GUI access
- Default username/password

### AC to 12 V DC power adapter

## SPECIFICATIONS

### Dimensions

- Width: 5 in (12.7 cm)
- Height: 1.6 in (4 cm)
- Depth: 5 in (12.7 cm)
- Weight: 10.6 oz. (0.3 kg)

### LAN/WAN INTERFACE

- Wired: 10/100/1000 BASE-TX Ethernet Port, RJ-45 connector

### Interfaces

- Wireless: 2.4 GHz 2x2 and 5 GHz 2x2 internal antennas
- Power: Single barrel connector
- WPS Switch: Push-button actuator
- Reset button for factory default

### Data

- Drop length: 328 feet (100 m) maximum using Cat5/6 cable for GigE
- Auto MDI/MDIX crossover for 1000BASE-TX, 100BASE-TX
- Traffic Management and QoS 802.11Q VLAN; 802.11p voice, video, data and management priorities; Q-in-Q tagging

### Wireless

- 2.4 GHz 802.11 b/g/n/ac/ax
- 5 GHz 802.11 a/n/ac/ax
- 2x2 DL/UL MU-MIMO, implicit/explicit high-power, dynamic beamforming (5 GHz radio)
- 2x2 DL/UL MU-MIMO implicit/explicit high-power, dynamic beamforming (2.4 GHz radio)
- 2.4 GHz and 5 GHz simultaneous 1024 QAM
- Auto channel selecting and interference detection
- WPS push button
- Wireless Security: Wi-Fi protected access (WPA/WPA2/WPA2) WEP, MAC address filtering
- Wi-Fi multimedia (WMM)
- 802.11k, 802.11v, 802.11r
- Supports up to 200 wireless clients
- US Wi-Fi Output Power: 30 dBm
- EU: ETSI Wi-Fi Output Power compliant

### Interoperability

- Calix GigaSpire BLAST portfolio

### Remote Management

- TR-069 remote management
- TR-098 Internet Gateway Device Data Model

### Environmental

- Operating temperature: Indoor ambient temperature, 0° to 40°C (32° to 104° 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 IC ICES-003 Class B CISPR-22
- Safety: UL 60950 and UL 1697 approved
- IEEE: 802.3, 802.3AB, 802.3U, 802.11p, 802.11Q
- Wi-Fi Alliance Certified 802.11ax



### Powering and Alarms

- Single barrel connector
- Input voltage: 12 V DC (nominal)
- External Power Adapter: 12 V DC, 1.5 A

## ORDERING INFORMATION

### Calix GigaSpire Mesh BLAST u4m (GM1028E)

**100-01178**..... GM1028 GigaSpire Mesh BLAST u4m, dual band 2x2 Wi-Fi 6, GE WAN/LAN, AM Power Adapter

### Calix GS2028E/GM1028 Power Adapter

**100-05544**..... GigaSpire BLAST u4/u4m (GS2028E/GM1028) Power Adapter, 12 V, 2 A – AM Type A

### Optional Uninterruptible Power Supply (UPS)

**100-04068**..... Indoor UPS (8 hour support), Wall Mount or Desktop, 12 V, 7.2 AH, 36 W, Black - AM, Type B, Grounded

**100-05345**..... Indoor UPS (24 hour support), Wall Mount or Desktop, 12 V, 20AH, 75W, Audible Alarm, Regulated Output R3 Production

### UPS Power Adapters

**100-04235**..... Indoor UPS Power cord, 7-pin UPS to 2-pin 800 GC, 1m, black

**100-04236**..... Indoor UPS Power cord, 7-pin UPS to 2-pin 800 GC, 3m, black

**Note:** Calix believes the information in this publication to be accurate as of publication date, and is not responsible for error. Product Specifications are subject to change without notice.