

GigaSpire® u4.2



The GigaSpire® u4.2 (GS2029E) is a Wi-Fi 6 system that extends the access network into the home and delivers the ultimate Wi-Fi experience. Besides supporting broadband connectivity of data and video services, this intelligent, high-performance system offers the latest 802.11ax 'Wi-Fi 6' technology. The GigaSpire u4.2 provides switching and routing functions that support multi-Gigabit throughput for IPTV video and data services.

MULTI-GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire u4.2 is a premium 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 GigaSpire u4.2 enables residential subscribers to receive Multi-Gigabit broadband data and Internet Protocol (IP) video services. Using the latest 802.11ax technology in both the 2.4 and 5 GHz radios, the GigaSpire u4.2 incorporates dual band 2x2 streams of Wi-Fi delivery (2x2 @ 2.4 GHz and 2x2 @ 5 GHz). 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 and establish a strategic location for the delivery and control of broadband services.

With Wi-Fi being the de facto wireless data communication technology of choice for consumers, 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 high-power 2x2 MIMO spatial diversity at 2.4 GHz and 2x2 MU-MIMO at 5 GHz. Leveraging the latest Wi-Fi 6 features, the GigaSpire u4.2 provides longer range, higher efficiency and less interference compared to earlier generations of Wi-Fi technology. The GigaSpire u4.2 also supports the entire 5 GHz band, including Dynamic Frequency Selection (DFS) channels. The GigaSpire u4.2 easily delivers HD and UHD (ultra-HD) video and data throughout a subscriber's home in an increasingly video-rich and mobile broadband environment.

Ensuring consumers can have ultra-fast Wi-Fi throughout their premises, the GigaSpire u4.2 provides the latest generation of redundant mesh either with another u4.2 or using the GigaSpire u4m (GM1028 - please see the Mesh GigaSpire u4m data sheet for more information). With the GigaSpire u4.2 as the hub, and with another GigaSpire u4.2 or u4m as the satellite, consumers can truly gain the whole 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.

EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GigaSpire u4.2, Calix has redefined how to install and activate residential services at a subscriber's premises. Using the Calix CommandIQ® app and a phone or laptop, a field technician can install and apply the subscriber's service profile without special equipment or assistance from the central office. Calix also provides the innovative Calix Service Cloud, which allows the service provider to configure, activate and upgrade the GigaSpire u4.2 quickly from a remote location using in-band management or TR-069.

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 GigaSpire u4.2 systems allows service providers to reduce their operational expenses while effectively delivering the Gigabit experience to their subscribers.

CALIX UNLIMITED SUBSCRIBER

Unlimited Subscriber brings the power of Calix Cloud into the daily lives of your residential and small business subscribers. High-capacity Unlimited Subscriber Wi-Fi systems can be deployed indoors and outdoors, on desks, walls, and poles – in any combination you need. And with Calix Cloud, your staff gets the insights and tools they need to differentiate your brand through amazing customer support.

All GigaSpire models are powered via the Calix Broadband Platform and operate from a common operating system, Experience OS (EXOS). This container-based operating system architecture allows service providers to quickly change and adapt their services to embrace innovative technologies and offer new, value-added services. This approach can generate recurring revenue and increase subscriber satisfaction.



SmartLife™ Managed Services

The Calix SmartLife suite of managed Wi-Fi solutions provides everything your community needs to connect and thrive, in the places they live, work, learn, and play. With SmartLife, you deliver unrivaled subscriber experiences everywhere and elevate life for all in your community. Calix SmartHome™ gives your subscribers the tools to enhance, operate and secure their connected lifestyle through a growing portfolio of managed services. Your subscribers SmartLife does not end at the front door. Re-imagine community Wi-Fi as a ubiquitous, secure, managed experience across your service area by making your town a SmartTown®. With SmartMDU™ properties managers expect more than business-as-usual broadband, as the multi-dwelling unit (MDU) market experiences rapid growth of new multifamily housing properties, driven by economic growth, changing demographics, and evolving lifestyles. SmartBiz™ meets the needs of the small business with an all-in-one managed service that increases staff productivity, secures critical business systems, and drives customer loyalty. Enable your small business customers to maximize their productivity and drive customer engagement.



KEY ATTRIBUTES

Home gateway

- Layer 2 bridge and Layer 3 routing for High-Speed Internet(HSI) data and IPTV video services
- DHCP server options
- DHCP (IPoE) and PPPoE network connections
- Network Access Translation (NAT), public to private IP addressing
- Configurable IP address schemes, subnets, static-IP addresses
- DNS server
- Bridge port assignment and data traffic mappings
- Port forwarding
- Firewall and security
- Application and website filtering
- Selectable forwarding and blocking policies
- DMZ hosting
- Parental controls, time of day usage
- Denial of service (DoS) protection
- Time/Zone support
- Universal Plug-and-Play (UPnP)

2.5 Gigabit Ethernet (2.5GE) WAN interface

- 10/100/1000/2500 BASE-T Ethernet, auto-negotiating

Wi-Fi

- 2.4 GHz and 5 GHz, simultaneous dual-band
- 2.4 GHz 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
- DCM (Dual Carrier Modulation)
- TWT (Target Wake Time) for IoT clients

Wi-Fi redundant mesh

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

2.5 Gigabit ethernet (2.5GE) LAN interfaces

- One (1) port of multi-rate 10/100/1000/2500 BASE-T Ethernet, auto-negotiating for residential IPTV and data services

USB port

- USB 2.0 - Type A host interface

Supports multiple data service profiles

Traffic management and quality of service (QoS)

- 2.1Q VLANs
- 802.1p service prioritization
- Q-in-Q tagging
- Multiple VLANs
- DiffServ
- Pre-defined QoS on service type
- MAP-T

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: 5.1"
- Height: 7.2" (with stand); 6.6" (without stand)
- Thickness: 2.0"
- Weight: 1.4 pounds

WAN Interface

- Interface: One 2.5 Gigabit-EthernetPort, RJ-45 connector

Interfaces

- Wireless: 2.4 GHz 2x2 and 5 GHz 2x2 internal antennas
- LAN Data/IPTV: One (1) 10/100/1000/2500 BASE-T Ethernetport, RJ-45 connector
- WAN: One (1) 10/100/1000/2500
- USB: USB 2.0 Type A
- 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 QoS802.11Q VLAN; 802.11p voice, video, data, and management priorities; Q-in-Q tagging

Wireless

- 2.4 GHz 802.11 b/g/n/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)
- DCM, TWT, extended GI
- Auto channel selecting and interference detection
- WPS, WPS push button
- 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

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, 802.1p, 802.1Q
- Wi-Fi Alliance Certified 802.11ax



- USB-IF Compliance USB 2.0



Powering and Alarms

- Single barrel connector
- 12 V DC (nominal)
- External Power Adapter: 12 V DC, 2 A

Ookla-based Performance Testing

- Subscribers can run an Ookla-based performance test from within the Calix CommandIQ[®] mobile app
- Symmetrical speed test results in excess of 2 Gbps are possible with the GigaSpire u4.2 system (owing to the 2.5 GigE WAN port)

ORDERING INFORMATION

Product Number	Description
Systems	
100-06034	u4.2 GS2029E Dual band 2x2 Wi-Fi 6, 2.5GE WAN, 2.5GE LAN, AM Power Adapter
Accessories	
100-06146	GigaSpire u4.2 stand/wall mount - spare
100-06148	GigaSpire u4.2 branding plate – Quantity : 40
Power Adapter	
100-06120	Power Adapter, 12V, 2A – white AM Type A

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.