

# GigaSpire®

u6t



The GigaSpire u6t (GS5229E) is a new generation of Wi-Fi 6 smart home system that offers 10GE WAN and 10GE LAN residential gateway functionality into a single system. It delivers the ultimate indoor 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 BLAST u6t provides switching and routing functions that support 10-Gigabit throughput for IPTV video and data services.

## 10-GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire u6t is an exceptional residential or small business system delivering Wi-Fi 6 technology. The GigaSpire u6t provides integrated 10GE supporting a 10 Gigabit link at the subscriber's premises to provide carrier class WAN. On the LAN side, a single 10 Gigabit Ethernet and four (4) Gigabit Ethernet interfaces are available for subscribers' multi-media devices.

The GigaSpire u6t enables residential subscribers to receive 10-Gigabit broadband data, Internet Protocol (IP) video, and voice (POTS) services. Using the latest 802.11ax technology in both the 2.4 and 5 GHz spectrum bands, the GigaSpire u6t incorporates 6x6 streams of Wi-Fi delivery (2x2 @ 2.4 GHz, 4x4 @ 5 GHz). In addition, with multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the GigaSpire u6t allows broadband 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 u6t for optimal whole-home coverage with simultaneous dual-band 2.4 GHz and 5 GHz operation with dynamic beamforming in both spectrums. Leveraging the latest Wi-Fi 6 features, the GigaSpire u6t provides long range and higher efficiency compared to earlier generations of Wi-Fi technology.

The GigaSpire u6t also supports Dynamic Frequency Selection (DFS) channels. The GigaSpire u6t 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 u6t provides the latest generation of redundant Wi-Fi mesh via the Calix GigaSpire u4m (GM1028). With the GigaSpire u6t as the gateway, and the GigaSpire u4m as a satellite extender, consumers can truly gain the whole home / SmartHome experience.

**VOICE SUPPORT:** GigaSpire u6t also provides two voice ports supporting a comprehensive family of voice protocols such as SIP and H.248.

## EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GigaSpire u6t integrated system, 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 broadband service provider to configure, activate and upgrade the GigaSpire u6t 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 costly truck rolls being deployed and/or hardware upgrades.

Deploying GigaSpire u6t systems allows broadband service providers to reduce their operational expenses while effectively delivering an unparalleled Multi-Gigabit experience to their subscribers.

## CALIX BROADBAND PLATFORM

All GigaSpire systems are powered by the Calix Broadband Platform. This container-based platform allows broadband service providers to quickly change and adapt their services to embrace new technologies and offer new, value-added managed services. This approach can generate recurring revenue and increase subscriber satisfaction.



## 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
- MAC filtering
- Time/Zone support
- Universal Plug-and-Play (UPnP)

### Wi-Fi

- 2.4 GHz, 5 GHz, simultaneous dual-band
- 2.4 GHz 802.11ax (Wi-Fi 6) certified, 802.11b/g/n compatible
- 5 GHz 802.11ax (Wi-Fi 6) certified, 802.11a/n/ac compatible
- 6x6 streams (2x2 @ 2.4 GHz, 4x4 @ 5 GHz)
- WPA/WPA2/WPA3

- PuF (Physical Unclonable Functions)
- WPS push-button
- 4x4 DL/UL MU-MIMO, implicit/explicit high-power, dynamic beamforming
- 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: backhaul failover; diagnostics; events

### 10GE WAN interface

- Full 10 Gigabit bandwidth

### Gigabit Ethernet (GE) LAN interfaces

- Four (4) ports of multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiating for residential IPTV and data services

### 10 Gigabit Ethernet (10 GE) LAN interface

- Single port of multi-rate 100/1000/2500/5000/10000 BASE-T Ethernet, auto-negotiating for residential IPTV and data services

### Two voice lines

- Carrier grade SIP, H.248 (aka Megaco) and MGCP

### USB Port

- USB 2.0 - Type A host interface

### Supports multiple data service profiles

### Traffic Management and Quality of service (QoS)

- 802.1Q VLANs
- 802.1p service prioritization
- Q-in-Q tagging
- Multiple VLANs
- DiffServ
- Pre-defined QoS on service type
- LAG of GE ports
- MAP-T

### IPTV, IGMPv2, future support of IGMPv3

- IGMP Snooping and Proxy
- IGMP Fast Leaves

### Gateway Management

- Calix Support Cloud
- TR-069
- Local Home Gateway GUI, access provisionable
- Remote WAN side GUI access
- Default username/password

### AC to 12 V DC power adapter

### UPS power unit

## SPECIFICATIONS

### Dimensions

- Width: 2 in (3.7 inch with stand) (5/7,6 cm)
- Height: 10.1 in (10.75 inch with stand) (25.7/27.3 cm)
- Depth: 7 in (17.8 cm)
- Weight: 2.6 pounds (1.18 kg)

### WAN Interface

- Single (1)  
100/1000/2500/5000/10000  
BASE-T Ethernet port, RJ 45  
connector

### LAN Interfaces

- One  
100/1000/2500/5000/10000  
BASE-T Ethernet port, RJ 45  
connector
- Four 10/100/1000 BASE-T  
Ethernet ports, RJ 45  
connectors

### Voice Interfaces

- Two ports supporting  
Metaswitch; C15; C20 SIP;  
H.248 and MGCP

### Other Interfaces

- USB 2.0 Type A
- WPS 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
- 10GBT: 98.4 feet (30m)  
CAT6A/7 cable
- Traffic Management and QoS:  
802.11Q VLAN; 802.11p voice,  
video, data, and management  
priorities; Q-in-Q tagging

### Wireless

- Wireless: 2.4 GHz 2x2, 5 GHz  
4x4 internal antennas
- 2.4 GHz 802.11b/g/n/ax
- 2x2 UL/DL MU-MIMO
- 5 GHz 802.11a/n/ac/ax
- 4x4 DL MU-MIMO,
- explicit high-power, dynamic  
beamforming
- 2.4 GHz, 5 GHz simultaneous
- DCM, TWT, extended GI
- Auto channel selecting and  
interference detection
- WPS, WPS push button
- Wi-Fi multimedia (WMM)
- 802.11k,802.11v
- Supports up to 500 wireless  
clients

### 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 62368 and UL 1697  
approved
- USB-IF Compliance USB 2.0
- IEEE: 802.3, 802.3AB, 802.3U,  
802.11p, 802.11Q
- Wi-Fi Alliance Certified 802.11ax  
(Wi-Fi 6)



### Powering and Alarms

- Input voltage: Single pin and 8-pin 12 V  
DC (nominal)
- External Power Adapter: 12 V DC, 3A
- UPS Power Unit

### Speed Performance Testing

- Subscribers can run an Ookla-  
based performance test from  
within the Calix CommandIQ<sup>®</sup>  
mobile app
- Calix Speed and Performance  
Test provides 10Gbps DL and  
5Gbps UL speed test

## ORDERING INFORMATION

Product Number	Description
<b>System</b>	
100-05921	<b>u6t (GS5229E)</b> Dual band 2x2+4x4 Wi-Fi 6 RG/Mesh, 10GE WAN, 10GE and 4 GE LAN, 2 POTS, USB, AM PA
<b>Power Adapter</b>	
100-06024	Power Adapter white, CPA6 12V 3Amp - AM Type A
<b>Branding Plate</b>	
100-06014	<b>u6t/u6txg (GS5229E/GS5229XG)</b> Branding plate, GigaSpire u6t/u6txg, quantity : 10
<b>Optional Uninterruptable Power Supply (UPS) and UPS Cords</b>	
100-04068	Indoor UPS, Wall Mount or Desktop, 12V 7.2AH 36W, Black - AM Type B Grounded
100-05345	UPS MDU Indoor 12V 20AH 75W, Audible Alarm, Regulated Output R3

**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.