


GigaSpire®
u6txg



The Calix GigaSpire u6txg (GS5229XG) is a new generation of Wi-Fi 6 smart home system that integrates ONT and residential gateway functionality into a single system. It supports XGS-PON and Ethernet technology, while providing 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 u6txg provides switching and routing functions that support 10-Gigabit throughput for IPTV video and data services.

10-GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire u6txg is a premium smart home integrated system that delivers the latest Wi-Fi 6 technology. The GigaSpire u6txg provides integrated XGS-PON 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 u6txg 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 u6txg 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 u6txg 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 u6txg 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 u6txg provides long range and higher efficiencies compared to earlier generations of Wi-Fi technology. The GigaSpire u6txg also supports Dynamic Frequency Selection (DFS) channels and can be provisioned to support 160 MHz channel bandwidth at 5 GHz. The GigaSpire u6txg easily delivers HD and UHD (ultra-HD) video and data throughout a subscriber's home within an increasingly video-rich and mobile broadband environment.

Ensuring consumers can have ultra-fast Wi-Fi throughout their premises, the GigaSpire u6txg provides the latest generation of redundant Wi-Fi mesh via the Calix GigaSpire u4m (GM1028 - please see the data sheet for more information). With the GigaSpire u6txg as the hub, and the GigaSpire u4m as satellite extenders, subscribers can truly gain the whole home / SmartHome experience.

VOICE SUPPORT: GigaSpire u6txg 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 u6txg 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 broadband service providers to configure, activate and upgrade the GigaSpire u6txg 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 having to be deployed and/or hardware upgrades.

Deploying GigaSpire u6txg systems allows broadband service providers to reduce their operational expenses while effectively delivering an unparalleled Multi-Gigabit experience to their subscribers. PON configuration and management is done via the OMCI protocol.

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 quickly and easily. This approach can generate recurring revenue streams 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
- 2x2 @ 2.4 GHz; 4x4 @ 5 GHz
- 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

WAN interface

- XGS PON

LAN interfaces

- One 100/1000/2500/5000/10000 Base-T Ethernet, auto-negotiating for residential IPTV and data services
- Four ports of multi-rate 10/100/1000 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

- XGS PON

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

- 2.4 GHz 2x2, 5 GHz 4x4 internal antennas
- 2.4 GHz 802.11b/g/n/ax
- 2x2 UL/DL MU-MIMO
- 5 GHz 802.11 a/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, 802.1p, 802.1Q
- 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[®] mobile app
- Calix Speed and Performance Test provides 10Gbps DL and 5Gbps UL speed test

ORDERING INFORMATION

Order Code	Description
System	
100-05930	u6txg (GS5229XG) XGS PON WAN, 10 GE LAN, (4) GE LAN, 2 POTS, Dual Wi-Fi – AM Power Adapter
Power Adapter	
100-06024	Power Adapter white, CPA6 12V 3Amp - AM Type A
Branding Plate	
100-06014	u6t/u6txg GS5229E/GS5229XG Branding plate, GigaSpire u6t/u6txg, quantity : 10
Uninterruptable Power Supply (UPS)	
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.