


GigaSpire®
u4hm



The GigaSpire u4hm (GM1028H) is a new generation, dual-band, outdoor PoE or locally powered Wi-Fi 6 mesh system, ideal for residential applications, bringing high-bandwidth services outdoors to the backyard, patio, pool area, barn, and more. It features the latest Wi-Fi 6 technology, offering the optimal Wi-Fi experience. Besides supporting data and video services, this intelligent, high-performance system has GE LAN and WAN interface, allowing it to support Gigabit throughput for video and data services.

GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire u4hm is a dual-band, outdoor PoE or local powered Wi-Fi 6 system that leverages the 2.4 and 5 GHz spectrum. Using a Gigabit Ethernet interface supporting either WAN or LAN allows broadband service providers (BSPs) to provide high bandwidth for the most demanding environments.

With integrated power of Ethernet (PoE), the GigaSpire u4hm can be placed in an optimal location; even without power availability. Coupled with the Calix GigaPro GPR8802x, the GigaSpire u4hm can be powered via an Ethernet cable. In addition, the GigaSpire u4hm can also be powered locally (with a traditional power adapter), offering the ultimate outdoor location flexibility.

The GigaSpire u4hm offers wide temperature range support from -20° C to 60° C. It also supports Ingress Protection (IP55) preventing dust and water penetration. For public venues, such as outdoor hotspots or patios, the GigaSpire u4hm provides the ideal Wi-Fi coverage with Wi-Fi 6.

The GigaSpire u4hm enables residential subscribers to receive Gigabit broadband data, Internet Protocol (IP) video and services. Using the latest 802.11ax technology in the 2.4 and 5 GHz radios, the GigaSpire u4hm incorporates 4x4 streams of Wi-Fi delivery (2x2 @ 2.4 GHz, 2x2 @ 5 GHz).

In addition, with multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the GigaSpire u4hm allows BSPs to extend the access network outside smart homes, establishing 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 u4hm for optimal coverage for outdoor areas with simultaneous dual-band 2.4 GHz and 5 GHz operation and dynamic beamforming in all spectrums. Leveraging the latest Wi-Fi 6 features, the GigaSpire u4hm provides long range and higher efficiency compared to earlier generations of Wi-Fi technology.

The GigaSpire u4hm also supports the Dynamic Frequency Selection (DFS) channels at 5 GHz to maximize transmission. The GigaSpire BLAST u4hm easily delivers HD and UHD (ultra-HD) video and data throughout a subscriber's outdoor in an increasingly video-rich and mobile broadband environment.

Ensuring consumers can have ultra-fast Wi-Fi throughout their premises, the GigaSpire u4hm can provide the latest generation of redundant Wi-Fi 6 mesh when connected to any GigaSpire residential gateway (RG) system. With multiple GigaSpire u4hm provisioned as mesh satellites with any GigaSpire RG, consumers can truly gain the whole home experience.

EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GigaSpire u4hm satellites, Calix has redefined how to install and activate residential services. When deployed with a wired connection it is as simple as plugging a Cat 5/6 cable in between the GigaSpire u4hm RJ-45 port and the parent GigaSpire system. The GigaSpire u4hm leverages its TR-069 interface to communicate its presence to the Calix Support Cloud, which adds the GigaSpire u4hm to the subscriber account. The system harmonizes the services on the GigaSpire u4hm. 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 u4hm and the GigaSpire RG to pair the mesh network. Once this step is done, discovery, configuration and harmonization steps occur. 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 a GigaSpire and GigaSpire u4hm satellites allows BSPs to reduce their operational expenses while effectively delivering an elevated Gigabit experience to their subscribers.

UNLIMITED SUBSCRIBER PLATFORM

As part of the Unlimited Subscriber, the GigaSpire u4hm uses the world's only hardware independent, modular, standards-based, software platform. With the power of the Broadband Platform, BSPs can utilize the containerized architecture to quickly deploy new services that leverage a range of pre-integrated value-added managed solutions (e.g., enhanced parental controls or home network security). This allows BSPs to generate additional recurring revenue or further differentiate their service, while increasing subscriber satisfaction levels. Once integrated with your business and operations support systems (B/OSSs), adding additional GigaSpire Wi-Fi systems is simple - taking days instead of weeks.



KEY ATTRIBUTES

Home Mesh

- 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
- Bridge port assignment and data traffic pings
- MAC filtering

Wi-Fi

- 2.4 GHz and 5 GHz, simultaneous dual-band
- 2x2 @ 2.4 GHz; 2x2 @ 5 GHz)
- 2.4 GHz and 5 GHz 802.11ax (Wi-Fi 6) certified, 802.11a/b/g/n/ac compatible
- WPA/WPA2/WPA3
- PUF (Physical Unclonable Functions)
- WPS push-button
- DL/UL MU-MIMO with 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

Interfaces

- Gigabit Ethernet LAN/WAN interface; single port of multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiating for residential IPTV and data services

IPTV, IGMPv2, IGMPv3

- IGMP Snooping and Proxy
- IGMP Fast Leaves

Mesh Management

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

AC to 12 V DC power adapter

PoE 802.3at PD

SPECIFICATIONS

Dimensions

- Width: 7.1 inches (18.0 cm)
- Height: 12 inches (30.4 cm)
- Depth: 1.3 inches (3.30 cm)
- Weight: 2.4 pounds (1.1 kg)

LAN/WAN Interface

- (1) 10/100/1000BASE-T Ethernet Port, RJ-45 connector

Data

- Drop length: 328 feet (100 m)
- CAT5/6 cable for GigE
- Auto MDI/MDIX crossover for 1000BASE-T, 100BASE-T
- Traffic Management and QoS: 802.1Q VLAN; 802.1p voice, video, data, and management priorities; Q-in-Q tagging

Wireless

- 2.4 GHz 802.11 b/g/n/ax; 2x2 UL/DL MU-MIMO
- 5 GHz 802.11 a/n/ac/ax, 2x2 UL/DL MU-MIMO
- Explicit high-power, dynamic beamforming
- 2.4 GHz, 5 GHz simultaneous
- DCM, TWT, extended GI
- Auto channel selecting and interference detection
- Wireless Security: Wi-Fi protected access (WPA/ WPA2/ WPA3), MAC address filtering
- Wi-Fi multimedia (WMM)
- 802.11v client steering
- WPS push button

Remote Management

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

Environmental

- Operating temperature: ambient temperature, -30° C to 60° C
- Operating and storage relative humidity: 10 to 90 % and
- 5 to 95% non-condensing respectively
- K.21 lightning support
- IP55 Ingress Protection

Certification and Compliance

- Emissions: FCC Part 15 Class B, IC ICES-003 Class B, ISPR-22
- Safety: UL 62368 and UL 1697 approved
- IEEE: 802.3, 802.3ab, 802.1p, 802.1Q
- Wi-Fi Alliance Certified 802.11ax (Wi-Fi 6)



Powering and Alarms

- PoE 802.3at PD
- 2-pin barrel connector
- Input voltage: 12 V DC (nominal), 10 V DC (min.), 15 V DC (max)
- External Power Adapter: 12 V DC, 3A

ORDERING INFORMATION

Product Number	Description
System	
100-05839	u4hm GM1028H Outdoor, Dual-band Wi-Fi 6, Mesh, GE LAN/WAN, Standard Mounting Kit (AM power adapter sold separately)
System Bundles	
000-01277	u4hm GM1028H u4hm Package: u4hm and outdoor power adapter
Mounting Brackets	
100-05967	u4hm Pole Mounting Bracket
Power Adapters/PoE Injector	
100-05866	AM Outdoor Power Adapter for GigaSpire 3 A, 12V
100-05669	802.3at PoE Injector; 1Gbps WAN, 1Gbps LAN, AC Power Cord
100-06005	802.3bt PoE Injector; 5Gbps WAN, 5Gbps LAN, AC Power Cord

Note: Calix believes the information in this publication to be accurate as of the publication date. Product specifications are subject to change without notice.