



# GigaHub (814G)

## DESCRIPTION

The Calix 814G GigaHub is the Calix GigaFamily platform that extends the access network into the home and acts as a strategic location for control of the gigabit experience. The 814G high-performance devices integrate a 2.5 GPON optical WAN interface with switching and routing functions that manage premises network traffic. The 814G supports easy software module upgrades, triple-play, and multi-vendor ecosystems. The GigaHub service interfaces include: four gigabit Ethernet (GE) ports for IPTV video and data services, two integrated voice lines supporting carrier grade VoIP, and integrated dual band 2.4 GHz 802.11n and 5 GHz 802.11ac Wi-Fi for whole home connecting services.





### **GIGAFAMILY PREMISES PLATFORM:**

As the digital home is quickly evolving, and consumer demand is solidifying for new value added services in the home, it is important to enable service providers to profit from these new services by establishing a platform for offering, deploying and supporting a broad set of vertical applications to users in a scalable fashion. The 814G GigaHub is the Calix GigaFamily platform that provides integrated access and gateway solutions that deliver advanced network management for the gigabit experience. The 814G GigaHub also provides modular software for easy upgrades with a multi-vendor ecosystem with features to help service providers with easy deployments and software upgrades, as required.

### **GIGABIT SUBSCRIBER EXPERIENCE:**

The GigaHub premises service delivery platforms terminate a GPON fiber optic link at the subscriber's premises, and provides gigabit Ethernet interfaces and wireless connectivity for customer multi-media devices. The 814G GigaHubs enable residential subscribers to receive gigabit broadband data, IP video, and VoIP on a single fiber. Using bridged or home gateway features and for dual (802.11n 2.4 GHz and 802.11ac 5 GHz) Wi-Fi allows service providers to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services. The GigaHub solution delivers HD video and data throughout a subscriber's home with control and management of an increasingly video-rich and mobile broadband environment.

### **EASY TO INSTALL, ACTIVATE, AND MAINTAIN:**

With the Calix GigaCenter enclosure of 814G GigaHubs, Calix has redefined how to install and activate residential services at a subscriber's premises called zero-touch installation. Using the Calix Smart Activate feature and a phone or laptop, a field technician or subscriber can install and apply the subscriber's service profile without special equipment or assistance from the central office. Calix also provides the innovative cloud software portfolio, including management via Calix Support Cloud (CSC), and Consumer Connect, which allows the service provider to configure, activate and upgrade the GigaHubs quickly from a remote location using in-band management or TR-069. Extensive troubleshooting capabilities, remote software downloads, and easy-to-use service activation ensure that broadband services are delivered and maintained without needless truck rolls and hardware upgrades. Employing GigaHubs allows service providers to reduce their operational expenses while effectively delivering the gigabit experience to their subscribers. With powerful cloud enhanced Flow and Wi-Fi Advisor software, service providers are able to gain meaningful insights into their usage trends to improve network efficiency, to diagnose wireless issues and provide resolutions to increase subscriber satisfaction.

## KEY ATTRIBUTES

### STANDARDS-BASED FULL SERVICE ACCESS NETWORK (FSAN), ITU-T GPON COMPLIANT

#### 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
- MAC filtering
- Time/Zone support
- Universal Plug-and-Play (UPnP)
- Supports multiple data service profiles

#### WIRELESS:

- 2.4 GHz and 5 GHz, simultaneous dual-band
- 5 GHz 802.11ac certified, 802.11a/g/n compatible
- 2.4 GHz 802.11n certified, 802.11b/g compatible
- WPA/WPA2
- WEP 64/128 bit encryption
- Four (4) SSIDs per band (2 SSID subscriber default)
- MAC filtering

#### NEW 814G SOFTWARE PLATFORM:

- Layered, modular architecture – software module management capabilities for easy install, uninstall, upgrade of software for offering a broad set of vertical applications to users in a scalable fashion.
- Provides rich capabilities for applications - meet a multi-vendor ecosystem, enable service provider in rolling out new services to consumers, adding vital service and diagnostics capabilities on the fly, and managing other services and security policies thru the cloud.

#### FOUR GIGABIT ETHERNET (GE) INTERFACES:

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

#### TRAFFIC MANAGEMENT AND QUALITY OF SERVICE (QoS):

- 802.1Q VLANs
- 802.1p service prioritization
- Q-in-Q tagging
- Multiple VLANs
- Rate limiting
- DiffServ
- Pre-defined QoS on service type

#### IPTV, IGMPV2 AND IGMPV3:

- IGMP Snooping and Proxy
- IGMP Fast Leaves

#### COMPLETE OAM&P SUPPORT VIA CALIX MANAGEMENT SYSTEM (CMS)

#### GATEWAY MANAGEMENT:

- TR-069
- Local Home Gateway GUI, access provisionable
- Remote WAN side GUI access
- Default username/password
- Set-up persistence, factory reboot support

#### TWO VOICE LINES:

- FXS ports, ANSI with Carrier grade SIP



## SPECIFICATIONS

### DIMENSIONS

Width: 7.9 in (20 cm)  
Height: 10.6 in (26.9 cm)  
Depth: 1.8 in (4.6 cm)  
Weight: 28 oz. (.8 kg)

### PON CHARACTERISTICS

Max. split: 64 GPON  
Max. reach: 58 km (36 miles) with  
C+/FEC  
Maximum Optical Distribution Network  
(ODN) Attenuation:  
GPON Class B+, 28 dB  
GPON Class C+, 32 dB  
1490 ± 10 nm optical receiver:  
-27.0 to -8.0 dBm  
1310 ± 20 nm optical transmitter:  
0.5 to 5.0 dBm

### INTERFACES

Wireless: 2.4GHz 2x2 internal antennas  
Wireless: 5 GHz 2x2 internal antennas  
Telephony: Two RJ-11 connectors  
Data/IPTV: Four 10/100/1000 BASE-T  
Ethernet ports, RJ-45 connectors  
PON: Single 9/125 μm (single mode)  
fiber, SC/APC connector, minimum  
50 dB return loss

### TELEPHONY

General: SIP  
Number of lines: 2  
RENs per line: 5 maximum  
RENs per unit: 10 maximum  
Drop length: Maximum 500 feet  
(152.4 m)  
DSO Output: 25 mA

### DATA

Drop length: 328 feet (100 m) maximum  
using CAT5 cable  
Auto MDI/MDIX crossover for 1000BASE-  
TX, 100BASE-TX, and 10BASE-T ports  
Traffic Management and QoS: 802.11Q  
VLAN; 802.11p voice, video, data and  
management priorities; Q-in-Q tagging;  
Rate limiting

### WIRELESS

2.4 GHz 802.11 b/g/n  
2x2 MIMO, high-power  
5 GHz 802.11 a/g/n/ac  
2x2 MU-MIMO, implicit/explicit  
dynamic beamforming  
2.4 GHz and 5 GHz simultaneous  
Four (4) SSIDs per band (2 SSID subscriber  
default)  
Auto channel selecting and interference  
detection  
WPS, WPS push button  
Wireless Security: Wi-Fi protected access  
(WPA/WPA2) WEP,  
MAC address filtering  
Wi-Fi multimedia (WMM)

### REMOTE MANAGEMENT

OAM&P via Calix Management System  
(CMS)  
TR-069 remote management  
TR-098 Internet Gateway Device Data  
Model  
TR-104 Provisioning Parameters for VoIP  
CPE

### ENVIRONMENTAL

Operating temperature: Indoor ambient  
temperature, 0° to 40°C (32° to 104°F)  
Operating/storage relative humidity:  
10% to 95 % non-condensing

### CERTIFICATION AND COMPLIANCE

Radio :  
FCC part 15C : 15.247  
EN 300 328  
MPE:  
FCC 47 C.F.R.2.1091,  
EN 62311  
Emissions(EMC):  
FCC Part 15 Class B  
IC ICES-003 Class B  
CISPR-32  
Safety:  
UL 60950 and UL 1697 approved  
IEEE: 802.3, 802.3AB, 802.3U, 802.11p,  
802.11Q  
Wi-Fi Alliance Certified 802.11

### POWERING AND ALARMS

Input voltage: 12 V DC (nominal),



10 V DC (min.), 15 V DC (max)  
814G External Power Adapter: 12 V DC,  
2.5A

### INDOOR MOUNTING

Indoor mounting (Option)



## ORDERING INFORMATION

**100-04989**..... 814G-2 GigaHub, 2 POTS, 4GE, 2.4GHz & 5GHz Wi-Fi (Normal Power), EU PA

**100-04999**..... 814G-1 GigaHub, 2 POTS, 4GE, 2.4 GHz, 5 GHz Dual Wi-Fi, EU PA (IQnet)

**100-05172** ..... 814G-1 GigaHub, 2 POTS, 4GE, 2.4 GHz, 5 GHz Dual Wi-Fi, EU PA

Calix 814G Mounting Bracket

**100-04788**..... GigaCenter Wall Mount Fiber Mgmt Bracket - Quantity 60