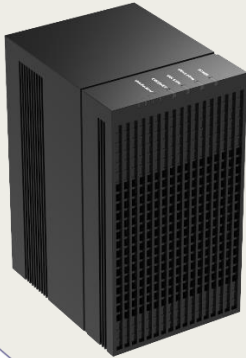


804Mesh Satellite



DESCRIPTION

The Calix 804Mesh satellite complements the GigaCenter service delivery platform by extending Wi-Fi coverage and capacity within the subscriber's home. The 804Mesh's flexible backhaul options allows communications service providers (CSPs) to deploy satellites with either a wired or wireless connection to the GigaCenter. When connected wirelessly, the 5.0 GHz 802.11ac 4x4 radio acts as an access point (AP) to the end subscribers' Stations(STA) or as an STA to the GigaCenter. This enables subscriber self installs and results in fewer costly truck rolls. The combined solution – GigaCenter, 804Mesh satellite and Calix Support Cloud/CC+ – is known as Mesh-Enhanced Carrier Class Wi-Fi and it reduces the time to additional revenue by automating and simplifying the deployment of complex multi-AP networks.

GIGABIT SUBSCRIBER EXPERIENCE: Subscribers want their Wi-Fi to work with any device in any location throughout their home. Over time, the numbers, types and locations of these devices has exploded. In response to the rapid adoption of Wi-Fi devices – like door locks, IP cameras and thermostats – CSPs must now provide ubiquitous Wi-Fi coverage. In addition, the demand for video content continues to grow and subscribers expect to watch anywhere on any device. GigaCenters enhance coverage and capacity with additional Wi-Fi radios, but are already transmitting at the maximum allowable regulatory limits. To improve in-home coverage and capacity, the Calix Mesh-Enhanced Carrier Class Wi-Fi solution has three components: GigaCenters, 804Mesh satellites, and the Calix Cloud. The 804Mesh satellites are optimized for interoperability with GigaCenters matching 5.0 GHz 802.11ac 4x4 radio., thus allowing for the delivery of throughput rates exceeding 1 Gb/s.

In addition to support for high-speed Internet (HSI) services, CSPs need solutions that allow them to support a full complement of additional services, including IPTV and guest Wi-Fi. In response, the Calix solution supports differentiated quality of service (QoS) as well as isolation between the services. To ensure a seamless mobile streaming experience, the software used by the GigaCenter and 804Mesh has been enhanced to support both band steering and network-assisted node steering. Steering directs subscriber Wi-Fi devices to connect to the radio signal that results in the best user experience.

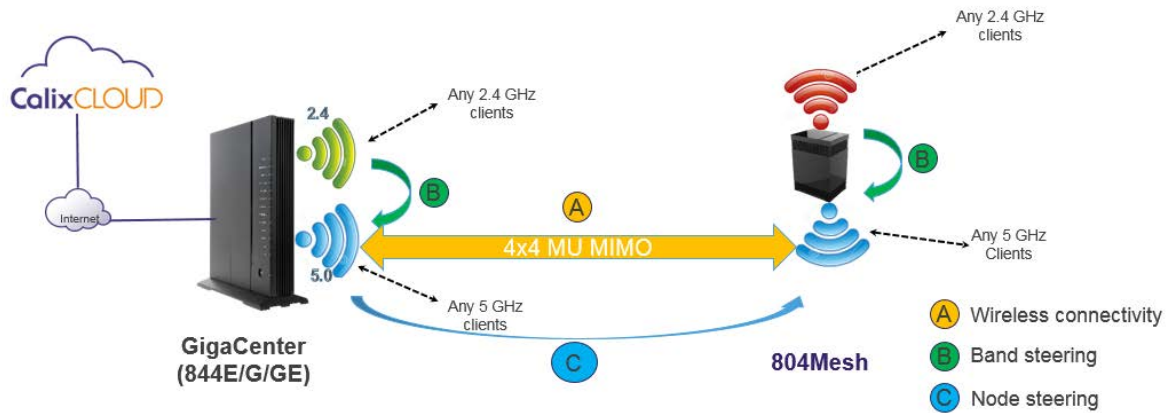
Calix leverages the latest standards for roaming and steering, including 802.11k, 802.11r and 802.11v. The combination of GigaCenters and 804Mesh satellites enables subscribers to receive Gigabit broadband data, IP video, and voice over (VoIP). Using the latest 802.11ac 5 GHz technology – incorporating 4x4 multi-user multiple-input and multiple-output (MU-MIMO) with beamforming – the 804Mesh satellite allows CSPs to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services.

Calix engineered the 804Mesh 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 804Mesh supports high-power 2x2 MIMO spatial diversity at 2.4 GHz and 4x4 MU-MIMO at 5 GHz. The 804Mesh supports the entire 5 GHz band, including Dynamic Frequency Selection (DFS) channels, and can be provisioned to support 80 MHz channel bandwidth at 5 GHz. The GigaCenter solution easily delivers high definition (HD) and Ultra HD (UHD) video and data throughout a subscriber's home.

The Calix solution is scalable, allowing CSPs to initially deploy a GigaCenter and then add 804Mesh satellites to the end subscriber's home network as the need arises for additional coverage. One of the strengths of the Calix solution is that CSPs can leverage the instrumentation provided by the GigaCenters and 804Mesh satellites to identify when the end subscriber can benefit from an additional 804Mesh. This allows them to be proactive and upsell additional services and assets.

Calix GigaCenter and 804Mesh Solution Overview

Mesh-enhanced Carrier Class Wi-Fi includes GigaCenter, Calix Cloud/CC+, and 804Mesh



Note: 804Mesh can also be connected with a wired Ethernet interface

EASY TO INSTALL, ACTIVATE AND MAINTAIN: With the 804Mesh satellites, Calix has redefined how to install and activate residential services. When deployed with a wired connection it's as simple as plugging a Cat 5/6 cable in between the 804Mesh RJ-45 port and the parent GigaCenter. The 804Mesh leverages its TR-69 interface to communicate its presence to the Calix Support Cloud/CC+, which adds the 804Mesh to the subscriber account. The system harmonizes the services on the 804Mesh. This removes all human error prone touch points. When deployed with a wireless connection, there is one additional step required. The end subscriber pairs the 804Mesh to the GigaCenter by interacting with the Wi-Fi Protected Setup (WPS) button. Once this step is done, the same discovery, configuration and harmonization steps occur. The 804Mesh has an innovative signal strength bar indicator, making it simple for subscribers to identify the best placement location. The same Calix Support Cloud/CC+ 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 GigaCenters and 804Mesh satellites allows CSPs to reduce their operational expenses while effectively delivering an elevated Gigabit experience to their subscribers.



Front



Back

KEY ATTRIBUTES

Whole Home Coverage Wi-Fi Mesh Satellite

- Layer 2 bridge and Layer 3 routing for HSI data and IPTV video services
- Self-Organizing Network (SON)
 - o Auto configuration
 - o Band and node steering
- Increased network capacity
- IQ Stream for end-to-end service prioritization
- Bridge port assignment and data traffic pings
- MAC filtering

One gigabit Ethernet (GE) interface

- Symmetrical 1 Gbps for residential IPTV and data services
- Multi-rate 10/100/1000 BaseT Ethernet, auto negotiation
- If 5GHz acts as connection, then port is available as LAN

Supports multiple data service profiles

IPTV, IGMPv2 and IGMPv3:

- IGMP Snooping and Proxy
- IGMP Fast Leaves

Management:

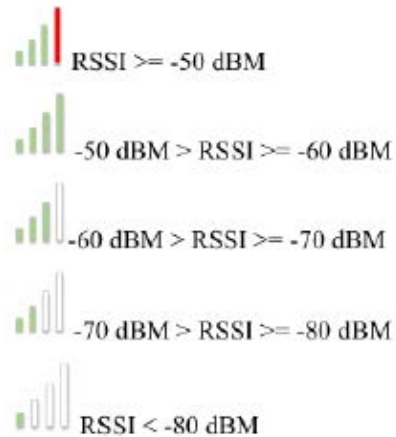
- TR-069 remote management
- Local Home Gateway GUI, access provisionable
- Remote WAN-side GUI access
- Default username/password
- Calix Cloud/CC+

Wireless

- 2.4 GHz 802.11n certified 802.11b/g compatible
- 5.0 GHz 802.11ac certified
- Support for 802.11k/r/v/s
 - o 11k Radio Resource Management
 - o 11r Fast Roaming
 - o 11v Wireless Network Management
- Support 4-address WDS mode
- WPS push button
- WPA/WPA2 Personal and Enterprise
- Support 8 SSIDs Replication
- 1.7 Gbps Radio Backhaul with GigaCenter

Channel Optimization Super DFS and SCS

Wireless Backhaul Signal Strength associated with RSSI



SPECIFICATIONS

DIMENSIONS

Width: 3.0 in (7.6 cm)
Depth: 4.0 in (10.2cm)
Height: 5.4 in (137 cm)
Weight: 8 oz. (0.2 kg)

WAN INTERFACE

Wired: 10/100/1000 BASE-TX Ethernet Port, RJ-45 connector
Wireless: 2.4GHz 5Hz 4x4 internal antennas

INTERFACES

Wireless: 2.4 GHz 2x2 and 5 GHz 4x4 internal antennas
One 10/100/1000 BaseT Ethernet port, RJ-45 connectors (available when configured with wireless WAN)
Power: 2-pin connector
WPS Switch: Push-button actuator

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

WIRELESS

2.4 GHz 802.11 b/g/n
2x2 MIMO, high-power
5 GHz 802.11 a/n/ac
4x4 MU-MIMO, implicit/explicit dynamic beamforming
2.4 GHz and 5 GHz simultaneous
8 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)
802.11k, 802.11v, 802.11r

INTEROPERABILITY

844G, GE, E and 854G

MANAGEMENT INTERFACES

LEDS
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/storage relative humidity: 8 to 95 % non-condensing
Altitude: -200 to 10,000 feet (-61 to 3,048 m) above sea level

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, 802.11p, 802.11Q
Wi-Fi Alliance Certified
802.11ac and 802.11n



POWERING

2-pin connector
Input voltage: 12 VDC (nominal), 10 VDC (min.), 15 VDC (max)
Typical power 11W,
Peak Power 11W
External Power Adapter: 12 VDC, 1.0 A

ORDERING INFORMATION

100-05030..... 804Mesh Dual Wi-Fi -AM Type A Power Adapter
100-05045..... 804Mesh Dual Wi-Fi -EU Type C Power Adapter



1035 N. McDowell Blvd., Petaluma CA 94954
TEL: 877.766.3500 www.calix.com

250-00381, Rev.11