Sea Ranch Connect®
Calix 844GE GigaCenter • ANSI Data Sheet

PO Box 16
975 Annapolis Rd
Sea Ranch, CA 95497

Description

The Calix 844GE GigaCenter is a next generation residential premises service delivery platform that extends the access network into the home and acts as a strategic location for control of the gigabit experience. This intelligent, high-performance service platform integrates a 2.5 GPON and 1 Gbps Active Ethernet (AE) optical interface with switching and routing functions that manage premises voice, data and video traffic at speeds up to 1 Gbps symmetrically. The GigaCenter service interfaces include: carrier-class wireless networking with 802.11ac Wi-Fi and four Gigabit Ethernet (GE) ports for IPTV video and data services, two integrated voice lines supporting carrier-grade VoIP and network-based TDM voice circuits, and a USB port for home networking services.

GIGABIT SUBSCRIBER EXPERIENCE

The 844GE GigaCenter is an integrated access and gateway solution that delivers advanced network management and software features to unleash the gigabit experience throughout a subscriber's home. The GigaCenter service delivery platform terminates a GPON or a point-to-point AE fiber optic link at the subscriber's premises and provides carrier-class Wi-Fi and Gigabit Ethernet interfaces for customer multi-media devices. The 844GE GigaCenter enables residential subscribers to receive gigabit broadband data, IP video, and VoIP or TDM based voice on a single fiber. Using the latest 802.11ac 5GHz technology incorporating 4x4 multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the 844GE GigaCenter allows service providers to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services. A USB port is available for home networking with other Ethernet appliances.

Calix engineered the 844GE GigaCenter for optimal whole-home coverage with simultaneous dual-band 2.4GHz and 5GHz operation and dynamic beamforming at 5GHz. For maximum performance, the GigaCenter supports high-power 2x2 MIMO spatial diversity at 2.4GHz and 4x4 MU-MIMO at 5GHz. The 844GE GigaCenter supports the entire 5GHz band including DFS channels and can be provisioned to support 80MHz channel bandwidth at 5GHz. The GigaCenter solution delivers HD and UHD 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 844GE GigaCenter, Calix has redefined how to install and activate residential services at a subscriber's premises. Using the Calix Smart Activate feature 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 Compass software portfolio, including Consumer Connect, which allows the service provider to configure, activate and upgrade the GigaCenter 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 services are delivered and maintained without needless truck rolls and hardware upgrades. Employing GigaCenters allows service providers to reduce their operational expenses while effectively delivering the gigabit experience to their subscribers.

TRUE CARRIER-GRADE VOICE SOLUTION

The 844GE GigaCenter delivers a truly agile and responsive service platform with lifeline voice in the event of local AC power loss. A carrier-grade 120-240 VAC, 50-60 Hz AC to 12 VDC Uninterruptible Power Supply (UPS) provides battery backup of voice services compliant to Telcordia GR-909. The 844GE GigaCenter can monitor battery status, battery charge and battery life, and report results through the Calix Management System (CMS).

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Key Attributes

- Standards-based Full Service Access Network (FSAN), ITU-T GPON and IEEE AE compliant
- Supports multiple networking standards including 2.5 Gbps GPON and 1.0 Gbps AE, with auto-detect optics enabling a seamless transition between WAN interfaces
- 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
  - DMZ hosting
  - Parental controls, time of day usage
  - Denial of Service
  - MAC filtering
  - Time/Zone support
  - Universal Plug-and-Play
- Wireless:
  - 2.4GHz and 5GHz, simultaneous dual-band
  - 5GHz 802.11ac certified, 802.11a/g/n compatible
  - 2.4GHz 802.11n certified, 802.11b/g compatible
  - WPA/WPA2
  - WPS push-button
  - WEP 64/128 bit encryption
  - Eight SSIDs per band with factory default SSIDs
  - MAC filteringg
- Two voice lines:
  - FXS ports, ANSI
  - Carrier grade SIP, H.248, MGCP VoIP
  - TDM GR-303/TR-08 Mode II/GR-57, GR-08 (TR-08 Mode I) voice services
- Four Gigabit Ethernet (GE) interfaces:
  - Symmetrical 1 Gbps bandwidth for residential IPTV and data services
  - Multi-rate 10/100/1000 BaseT Ethernet, auto- negotiating
- USB port:
  - USB 2.0 - Type A configured as 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
  - Rate limiting
  - DiffServ
  - Pre-defined QOS on service type
- IPTV, IGMPv2, future support of IGMPv3
  - IGMP Snooping and Proxy
  - IGMP Fast Leaves
- Complete OAM&P support via Calix Management System (CMS)
- GatewayManagement:
  - TR-069
  - Local Home Gateway GUI, access provisionable
  - Remote WAN side GUI access
  - Default username/password
  - Set-up persistence, factory reboot support
- Indoor Mounting:
  - Wall and Structured Wiring Enclosure (SWE) mount with fiber management
  - Desktop mounting stand
- Optional voice lifeline service power source with in- home battery backup and alarm monitoring
- AC to 12 VDC power adapter available for non-lifeline services

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Specifications

DIMENSIONS

Height: 10.6 in (26.9 cm)
Width: 7.9 in (20.0 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

POINT-TO-POINT (AE) CHARACTERISTICS

Max. reach: 50 km (31 miles)
1490 nm optical receiver: –22.0 to –3.0 dBm
1310 nm optical transmitter: –5.5 to 0.0 dBm

INTERFACES

Wireless: 2.4GHz 2x2 and 5GHz 4x4 internal antennas
Telephony: Two RJ-11 connectors
Data/IPTV: Four 10/100/1000 BaseT Ethernet ports, RJ-45 connectors
USB: USB 2.0 Type A
AE/PON: Single 9/125 µm (single mode) fiber, SC/APC connector, minimum 50 dB return loss
Power: 8-pin connector

TELEPHONY

General: SIP, H.248, MGCP or TDM Gateway (GR-303, GR-57, TR-08 Mode I, TR-08 Mode II)
Number of lines: 2
RENs per line: 5 maximum RENs per unit: 10 maximum Drop length: Maximum 500 feet (152.4 m)
DS0 Output: 23.5 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: 802.11nQ VLAN; 802.11np voice, video, data and management priorities; Q-in-Q tagging; Rate limiting

WIRELESS

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

REMOTE MANAGEMENT

OAM&P via Calix Management System (CMS)
TR-069 remote management
TR-064 CPE 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, 802.11np, 802.11nQ
Wi-Fi Alliance Certified 802.11ac and 802.11n

USB-IF Compliance
USB 2.0

POWERING AND ALARMS

8-pin connector with 7-conductor power and alarm cable
Input voltage: 12 VDC (nominal), 10 VDC (min.), 15 VDC (max)
External Power Adapter: 12 VDC, 2.5 A
Residential battery backup source: UPS mounted at subscriber's residence
Battery backup time rated capacity: 8 hours based on Telcordia GR-909 calculation methods using recommended UPS. Contact Calix for recommended UPS

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Ordering Information

CALIX 844GE GIGACENTER

100-04017 ..... 844GE-1 GigaCenter, 2 POTS, 4 GE, Dual Wi-Fi, 1 USB -UPS Power Interface

CALIX 844GE UPS AND UPS CORDS

100-04068 ..... Indoor UPS, 12V 7.2AH 36W, Black - AM Type B Grounded

100-03893 ..... Indoor UPS Power Cord, 7 pin UPS to 8 pin ONT Male, 1M Black

100-03894 ..... Indoor UPS Power Cord, 7 pin UPS to 8 pin ONT Male, 3M Black

100-03895 ..... Indoor UPS Power Cord, Un-terminated to 8 pin ONT Male, 6M Black

CALIX 844GE POWER ADAPTERS

100-04125 ..... Power Adapter CPA5 12V 2.5Amp -AM Type A w/ 8-pin connector

100-04141 ..... Power Adapter CPA5 12V 2.5Amp -EU Type C w/ 8-pin connector

100-04572 ..... Power Adapter CPA5 12V 2.5Amp -UK Type G w/ 8-pin connector

100-04573 ..... Power Adapter CPA5 12V 2.5Amp -AU/NZ Type I w/ 8-pin connector

SALES PACKAGE – CALIX 844GE GIGACENTER WITH POWER ADAPTER

000-00868 ..... 844GE-1 GigaCenter – AM Type A Power Adapter w/ 8-pin connector

000-00869 ..... 844GE-1 GigaCenter – EU Type C Power Adapter w/ 8-pin connector

000-00949 ..... 844GE-1 GigaCenter – UK Type G Power Adapter w/ 8-pin connector

000-00950 ..... 844GE-1 GigaCenter – AU/NZ Type I Power Adapter w/ 8-pin connector