PRODUCT DATASHEET

844G and 854G GigaCenters | ETSI

DESCRIPTION

The Calix 844G and 854G GigaCenters are next generation residential premises service delivery platforms that extend the access network into the home and acts as a strategic location for control of the gigabit experience. Supporting broadband connectivity within the home and managing subscriber voice, data and video services, this intelligent, high-performance service platform integrates a 2.5 GPON optical interface with switching and routing functions that manage premises network traffic at speeds up to 1 Gbps. 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, a USB port for home networking services, and an option for RF video.

GIGABIT SUBSCRIBER EXPERIENCE: The 844G and 854G GigaCenters are integrated access and gateway solutions that deliver advanced network management and software features to unleash the gigabit experience throughout a subscriber's home. The GigaCenter service delivery platform terminates a GPON fiber optic link at the subscriber's premises and provides carrier class Wi-Fi and Gigabit Ethernet interfaces for customer multi-media devices. The 844G and 854G GigaCenters enable residential subscribers to receive gigabit broadband data, IP video, and SIP based VoIP 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 844G and 854G GigaCenters allow 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. The GigaCenter family also includes the option of RF signaling for broadcast video services over existing Hybrid Fiber Coax (HFC) networks.

Calix engineered the 844G and 854G GigaCenters for optimal whole-home coverage with simultaneous dual-band 2.4GHz and 5GHz operation and dynamic beamforming at 5GHz. For maximum performance, the GigaCenters support 2x2 MIMO spatial diversity at 2.4GHz and 4x4 MU-MIMO at 5GHz. The 844G and 854G GigaCenters support the entire 5GHz band, including DFS channels, and can be provisioned to support 80MHz bandwidth at 5GHz. The GigaCenter solution assures delivery of 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 844G and 854G GigaCenters, Calix has redefined how residential services are installed and activated 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.

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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)
- 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 filtering
- Two voice lines:
  - FXS ports, ETSI
  - Carrier grade SIP VoIP
- 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
- RF video bandwidth to 1 GHz for extended digital programming
- 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)
- Gateway Management:
  - 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
- Power switch
- AC to 12 VDC power adapter available for non-lifeline services.

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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

INTERFACES

Wireless: 2.4GHz 2x2 and 5Hz 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
RF Video: F-connector, 75 Ohms
PON: Single 9/125 μm (single mode) fiber, SC/APC connector, minimum 50 dB return loss
Power: 2-pin connector
Power Switch: Push-button actuator

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)
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
5GHz 802.11 a/g/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)

VIDEO-ANALOG RF OUTPUT

Bandwidth: 54 to 550 MHz
Return loss: 10 dB minimum
Signal strength (with AGC range): 18 ± 2 dBmV
Flatness: ± 1.0 dB
Tilt: 1.0 dB ± 1.0 dB from 54 to 550 MHz

VIDEO-DIGITAL RF OUTPUT

Bandwidth: 550 to 1003 MHz
Return loss: 8 dB minimum
Signal strength (within AGC range): 12 ± 2 dBmV
Flatness: ± 1.5 dB
Tilt: 4.0 dB ± 1.0 dB from 550 to 1003 MHz
Modulation error ratio (MER): 33 dB

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
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
CE Mark
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

2-pin connector
Input voltage: 12 VDC (nominal), 10 VDC (min.), 15 VDC (max)
External Power Adapter: 12 VDC, 2.5 A
Power Switch

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100-04012	844G-2 GigaCenter, 2 POTS, 4 GE, Dual Wi-Fi, 1 USB
100-04014	854G-2 GigaCenter, 2 POTS, 4 GE, Dual Wi-Fi, 1 USB, 1 RF

Calix 844G and 854G Sales Packages with Power Adapter

000-00832	844G-2 GigaCenter -AM Type A Power Adapter
000-00833	844G-2 GigaCenter -EU Type C Power Adapter
000-00834	844G-2 GigaCenter -UK Type G Power Adapter
000-00835	844G-2 GigaCenter -AU/NZ Type I Power Adapter
000-00836	844G-2 GigaCenter -AR Type I Power Adapter
000-00837	854G-2 GigaCenter -AM Type A Power Adapter
000-00838	854G-2 GigaCenter -EU Type C Power Adapter
000-00839	854G-2 GigaCenter -UK Type G Power Adapter
000-00840	854G-2 GigaCenter -AU/NZ Type I Power Adapter
000-00841	854G-2 GigaCenter -AR Type I Power Adapter