836GE Residential Services Gateway

DESCRIPTION

The Calix 836GE Residential Services Gateway (RSG) is a next generation service delivery device that supports broadband connections into the home and manages subscriber voice, data and video services. This high-performance services gateway integrates an auto-detect 2.5 GPON or 1 Gbps Active Ethernet (AE) optical WAN interface with switching and routing functions that manage premises network traffic at speeds up to 1 Gbps. Gateway interfaces include: 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, wireless networking with 802.11n Wi-Fi, and a USB port for future home interconnect services.

ADVANCED SERVICES MANAGEMENT: The 836GE Residential Services Gateway uses advanced service management features to rapidly deliver premium services throughout a subscriber's home. The RSG terminates a GPON or a point-to-point AE fiber optic link at the subscriber's location and provides industry-standard interfaces for the customer premises equipment. The 836GE RSG enables subscribers to receive broadband data, IP video, and VOIP or TDM based voice on a single fiber. Inside the subscriber home, the optical signal is converted to the appropriate electrical format for transmission over the residence's in-home network including Wi-Fi. The 836GE RSG is designed to the latest 802.11n standard which supports selectable dual-band 2.4MHz and 5MHz operation, MIMO spatial diversity antenna technology and 40MHz bandwidth support. The internal wireless antennas are optimized for residential coverage and single- or dual-polarity connections. A USB port is also available for networking with other Ethernet appliances.

EASY TO INSTALL, ACTIVATE, AND MAINTAIN: With the 836GE RSG, Calix has redefined how a services gateway is installed and activated at a subscriber's location. Using the RSG's Smart Activate feature and a phone or laptop, a field technician can install and apply the subscriber's services without special equipment or assistance from the central office. Calix also provides innovative software management tools that allow the service provider to configure, activate and upgrade the RSG quickly from a remote location using in-band management or TR-069. Extensive troubleshooting capabilities, remote software downloads, and easy-to-use service-profile menus ensure that services are delivered and maintained without needless truck rolls and hardware upgrades. Employing an 836GE RSG allows service providers to reduce their operational expenses while providing future proof management of the in-home network.

NEW STANDARD FOR PERFORMANCE AND RELIABILITY: The 836GE RSG is a network-managed, intelligent service gateway that features Calix Home Gateway software. This sophisticated software allows the RSG to support multiple high-bandwidth applications such as 1 Gbps high-speed data, HDTV-based IPTV video; routing and bridging features to support Whole-Home DVR, and the transfer/exchange of media from digital storage devices. Home Gateway support includes: administrating Internet traffic, Quality of Service features, parental controls, and port forwarding rules for traffic management of on-line gaming, music, video and children's entertainment.

TRUE CARRIER CLASS SOLUTION: The 836GE RSG offers a variety of power options including: a basic 100-240 VAC, 50-60 Hz to 15 VDC converter, and a carrier grade 120-240 VAC, 50-60 Hz AC to 12 VDC Uninterruptible Power Supply (UPS). The UPS provides battery backup of lifeline voice in the event of local AC power loss; it also monitors battery status, battery charge and battery life, and reports 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 and 3 switching and routing
  - 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, selectable dual-band
  - 802.11n certified, 802.11a/b/g compatible
  - WPA/WPA2
  - WPS push-button
  - WEP 64/128 bit encryption
  - Four SSID support with factory default SSID
  - MAC filtering
- Two voice lines:
  - FXS ports, ANSI and ETSI
  - Carrier grade SIP, H.248, MGCP VoIP
  - TDM GR-303/TR-08 mode II/GR-57 voice services

- Four Gigabit Ethernet (GE) interfaces:
  - Symmetrical 1 Gbps bandwidth for IPTV and data services
  - Multi-rate 10/100/1000 BaseT Ethernet, auto-negotiating
- USB port:
  - Type A configured as a host controller device
- 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 option
- Indoor mounting options:
  - Wall mount
  - Structured Wiring Enclosure (SWE) mount
  - Desktop mount: horizontal or vertical
  - Optional fiber management assembly
- AC to 15 VDC wall transformer available
- Optional carrier-grade lifeline-service power source with in-home battery backup and alarm monitoring

S P E C I F I C A T I O N S
836GE Residential Services Gateway

DIMENSIONS

Height: 6.8 in (17.3 cm)
Width: 6.8 in (17.3 cm)
Depth: 1.5 in (3.8 cm)
 Weight: 14 oz (.4 kg)

PON CHARACTERISTICS

Max. split: 64 GPON
Max. reach: 40 km (25 miles)
Maximum Attenuation:
    GPON Class B+, 28 dB
1490 ± 10 nm optical receiver:
    -27.0 to -8.0 dBm
1310 ± 50 nm optical transmitter:
    0.5 to 5.0 dBm

POINT-TO-POINT (AE) CHARACTERISTICS

Max. reach: 50 km (31 miles)
1490 ± 10 nm optical receiver:
    -27.0 to -8.0 dBm
1310 ± 50 nm optical transmitter:
    -5.5 to 0.0 dBm

INTERFACES

Wireless: 802.11n Wi-Fi
Telephony: RJ-11
Data/IPTV: 10/100/1000 BaseT
    Ethernet ports, RJ-45 connectors
USB: Type A
AE/PON: Single $9/125\,\mu m$ (single
    mode) fiber, SC/APC connector,
    minimum 50 dB return loss
Power: 9-pin DIN jack

TELEPHONY

General: POTS via SIP, H.248,
    MGCP or TDM gateway
Number of lines: 2
RENs per line: 5 maximum
RENs per unit: 10 maximum
CPE—physical connection: RJ-11
    jack (one per line)
Drop length: Maximum 1000 feet
    (305 m)
DS0 Output: 25 mA
Ring Voltage: 56–84 VAC

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

802.11 a/b/g/n
2x2 MIMO antenna
2.4 GHz and 5 GHz, selectable
Multiple SSID
Auto channel select
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 local management
TR-98 Internet gateway device data
    model

ENVIRONMENTAL

Operating temperature: Indoor
    ambient temperature, 0° to 40°C
Operating/storage relative humidity:
    0 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
Telcordia: GR-1089
IEEE: 802.3, 802.3AB, 802.3U,
    802.11np, 802.11nQ

POWER AND ALARMS

9-pin DIN connector with 7-conductor
    power and alarm cable

POWERING

Input voltage: 12 VDC (nominal),
    10 to 16 VDC (input range)
Input current: 900 mA (nominal)
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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836GE RSG (100-03158) .. .. RSG, 2 POTS, 4 Gigabit Ethernet, 1 USB, Wi-Fi

Calix 836GE Residential Services Gateway Power Supplies

PS 15V 9DIN-A (100-02042)….Power Supply 700GE Indoor 100-240 VAC 50/60 Hz to 12 VDC, 9-pin DIN, AM Type A
PS 15V 9DIN-C (100-03238)….Power Supply 700GE Indoor 100-240 VAC 50/60 Hz to 15 VDC, 9-pin DIN, EU/BR Type C
PS 15V 9DIN-G (100-03239)….Power Supply 700GE Indoor 100-240 VAC 50/60 Hz to 15 VDC, 9-pin DIN, UK Type G
PS 15V 9DIN-I (100-03240)…..Power Supply 700GE Indoor 100-240 VAC 50/60 Hz to 15 VDC, 9-pin DIN, AU/NZ Type I

Calix 836GE Residential Services Gateway UPSs and UPS Cords

Indoor UPS 24W B (100-02062) .... Indoor UPS, Wall Mount or Desktop, 12V 7.2AH 24W, Black - AM Type A
Indoor UPS 24W B-C (100-03278)................. Indoor UPS, Wall Mount or Desktop, 12V 7.2AH 24W, Black - EU Type C
Indoor UPS 24W B-G (100-03279) .... Indoor UPS, Wall Mount or Desktop, 12V 7.2AH 24W, Black - UK Type G
Indoor UPS 24W B-I (100-03280) .... Indoor UPS, Wall Mount or Desktop, 12V 7.2AH 24W, Black - AU/NZ Type I

Indoor PWR Cord 4B (100-02063) .... Indoor UPS Power Cord, 7-pin Connector to 9-pin DIN Male, 4' Black
Indoor PWR Cord 10B (100-02064) .... Indoor UPS Power Cord, 7-pin Connector to 9-pin DIN Male, 10' Black
Indoor PWR NT Cord 20B (100-03296) .... Indoor UPS Power Cord, Un-terminated to 9-pin DIN Male, 20' Black

Calix 836GE Residential Services Gateway Fiber Management Assembly

Indoor ONT FMA QTY 20 (100-03448) .... Indoor ONT Fiber Mgmt Assembly - Quantity 20