

OLTG-4 Card



DESCRIPTION

The Calix GPON Optical Line Termination (OLTG-4) card provides four ITU G.984-compliant Gigabit Passive Optical Network (GPON) interfaces. Each PON interface supports up to 64 Optical Network Terminations (ONTs).

The OLTG-4 card can be plugged into any of the 20 universal slots within a Calix C7 shelf in a central office terminal. Along with the integrated Voice Gateway Processor (VGP), standards-compliant ONTs, passive Optical Distribution Network (ODN) elements, and overlay video network, it completes the Calix C7 GPON FTTP solution.

CALIX C7 GPON SOLUTION

The Calix C7 GPON FTTP offering is a standards-based solution with a full range of voice, data, and video services. It supports fiber-only and mixed fiber and copper topologies, and provides a smooth migration path from copper to fiber drops. The C7 simultaneously supports both GPON and BPON within the same shelf and provides seamless migration to GPON for existing C7 BPON customers. Its features and capabilities include:

- Based on ITU G.984 family of standards
- Supports the full family of Calix 700-Series ONTs, including SFU, SBU, and MDU models
- 2.488 Gbps downstream, 1.244 Gbps upstream rates over PON
- Class B+ ODN with minimum 28 dB link budget, up to 1:64 splits
- Supports 1550 nm video overlay
- GEM (Ethernet) and ATM formats over PON
- Hardened system for central office (CO) and remote terminal (RT) applications
- Integrated transport capability for remote terminal applications

FULL SPECTRUM OF SERVICES: The Calix C7 FTTP offering provides a full spectrum of services, including voice, data over Ethernet to all ONTs, as well as Hi-Cap DS1, switched video services such as broadcast video and VOD, and CATV-like video using an overlay network. The OLTG-4 supports the following services:

- Voice:
 - SIP/VoIP
 - H.248/VoIP
 - GR-303, GR-57, and TR-08 Mode II
- DS1 Hi-Cap: asynchronous clear channel
- Data/Internet access: configurable up to 100 Mbps (100Base-T) and Gigabit Ethernet
- IPTV: multicast and unicast, SD, HDTV, MPEG-2, and MPEG-4
- CATV video: RF overlay within standard 5-870 MHz band

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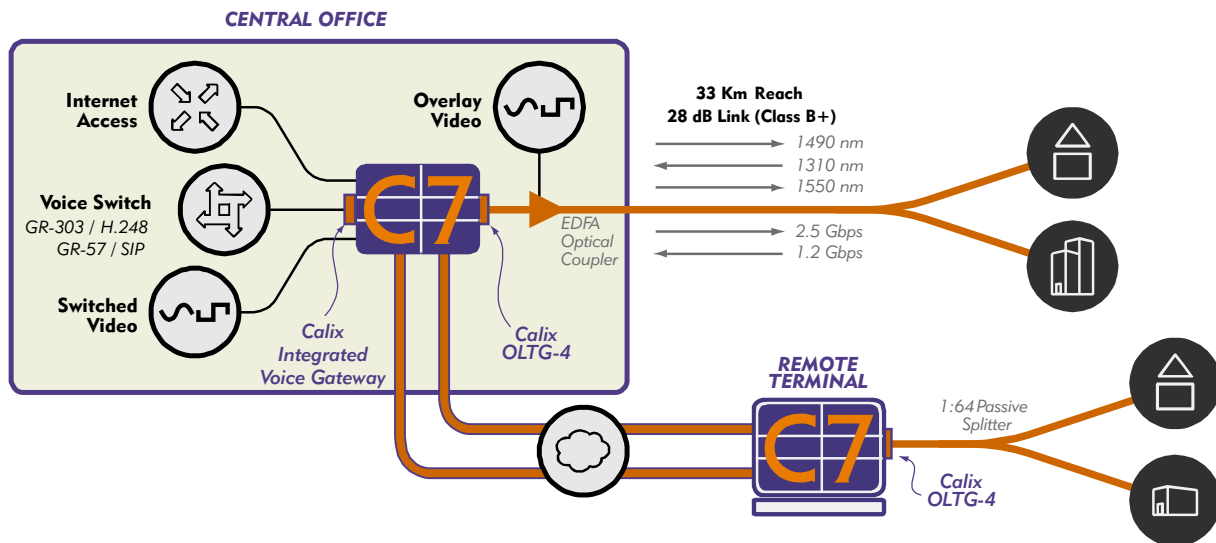
MIGRATION FROM BPON TO GPON: Migration from BPON to GPON: The C7 system supports both GPON and BPON within the same shelf. The 700-Series ONTs operate in both GPON and BPON mode. This capability allows for seamless migration from BPON to GPON. The ONTs automatically detect the change on the PON and reconfigure to GPON.

MIXED FIBER AND COPPER CONFIGURATIONS: Each Calix C7 shelf can support a mix of copper (POTS) and fiber drop (FTTP) configurations and provide a common set of high-speed digital services such as Internet access and switched video services over copper and fiber drops. This provides for uniformity of service over copper- and fiber-served areas, and for smooth transition from copper to fiber.

UNMATCHED DENSITY: Each OLTG-4 card supports 4 PON interfaces with 1:64 optical splits (256 ONTs). A single 8 RU Calix C7 shelf supports 20 OLTG-4 cards (80 PONs, 5120 ONTs). A 7-foot rack supports 5 Calix C7 shelves, for a maximum of 100 OLTG-4 cards (400 PONs, 25,600 ONTs). The density equates to 10 PONs per RU and 640 ONTs per RU of central office rack space.

FLEXIBLE NETWORK UPLINKS: The Calix GPON solution provides complete flexibility for connectivity to the central office network by supporting a full range of network uplinks that includes: Gigabit Ethernet, 100Base-T, DS1, IMA, DS3, OC-3, OC-12, and OC-48. In addition, the Calix FTTP solution provides integrated SONET transport functionality with APS and ring protection.

FAMILY OF OPTICAL NETWORK TERMINALS (ONTS): Calix offers a complete family of ITU G.984 and FSAN standard-complaint ONTs. The Calix 700-Series ONTs include Single Family Unit (SFU), Small Business Unit (SBU), and Multi-Dwelling Unit (MDU) models.



SPECIFICATIONS

OLTG-4 Card

PORTS

4 GPON ports per OLTG-4 card
Pluggable optical interface modules

CONNECTORS

SC-UPC

PON WAVE LENGTHS

1490 nm digital downstream
1310 nm digital upstream
1550 nm video overlay downstream

PON RATES

2.488 Gbps digital downstream
1.244 Gbps digital upstream

DENSITY

4 PONs per card
80 PONs per shelf
400 PONs per 7-foot rack
10 PONs (640 ONTs) per RU

PON FORMATS

GEM: Internet data, IPTV, VoIP/SIP
ATM: AAL-2 voice (GR-303, GR-57,
GR-08 Mode 2, H.248), DS1 CES

PHYSICAL DIMENSIONS

Size: 9.3 inches (height) x 0.7 inches
(width) x 9.0 inches (depth)

POWER DISSIPATION

45 Watts nominal

OPTICAL DISTRIBUTION

NETWORK (ODN)

Class B+: 28 dB minimum link margin
33-Km nominal reach (over 20 Km requires Extended-Reach GPON Optical Interface Modules)
Up to 1:64 splits
Single fiber
Downstream:
OLT transmit level of +1.5 to +5 dBm
ONT minimum sensitivity of -27 dBm
Upstream:
OLT minimum sensitivity of -28 dBm
ONT transmit level of +0.5 to +5 dBm

OPERATING ENVIRONMENT

Temperature: -40° C to +65° C
(-40° F to +149° F)
Humidity: 5 to 90% non-condensing
Altitude: to 13,125 feet
Storage Temperature: -40° C to +70° C (-40° F to +158° F)

SAFETY

NTRL-UL 1950

EMI/RFI

FCC Part 15 Class A

STANDARDS SUPPORT

ITU G.984.1, Gigabit-Capable Passive Optical Networks (GPON): General Characteristics
ITU G.984.2, Gigabit-Capable Passive Optical Networks (GPON): Physical Media Dependent (PMD) Layer Specification, with Amendment 1
ITU G.984.3, Gigabit-Capable Passive Optical Networks (GPON): Transmission Convergence Layer Specification G.984.3
ITU G.984.4, Gigabit-Capable Passive Optical Networks (GPON): ONT Management and Control Interface Specification, with Amendment 1

SUPPORTED OPTICAL NETWORK TERMINALS (ONTS)

Single Family Unit (SFU)
Small-Business Unit (SBU)
Multi-Dwelling Unit (MDU)

ORDERING INFORMATION

CALIX OLTG-4 OPTICAL LINE TERMINAL CARD

100-00658..... Optical Line Termination, GPON, 4 ports

CALIX GPON OPTICAL INTERFACE MODULES

100-01782..... GPON Optical Interface Module, 2.4/1.2 G class B+, C-Temp (CO), C- & E-Series
100-01783..... GPON Optical Interface Module, 2.4/1.2 G class B+, I-Temp (RT), C- & E-Series
100-01784..... Extended Reach GPON Optical Interface Module, 2.4/1.2 G class B+, C-Temp (CO), C- & E-Series
100-01836..... Extended Reach GPON Optical Interface Module, 2.4/1.2 G class B+, I-Temp (RT), C- & E-Series

