PRODUCT DATASHEET

Calix E7-20 GPON-8x

DESCRIPTION

The Calix E7 GPON-8x line card provides eight ITU G.984-compliant Gigabit Passive Optical Network (GPON) Optical Line Terminal (OLT) interfaces. The E7 GPON-8x line card operates in any of the E7-20 system's 20 universal line card slots, for a system capacity of 160 OLT ports. Each OLT PON can support up to 128 Optical Network Terminations (ONTs) for a total of 1,024 subscribers per card, and 20,480 per E7-20 system.

KEY ATTRIBUTES

GPON: The Calix E7 GPON-8x card provides multiservice capability over IP/Ethernet-based networks. Each GPON-8x provides 8 GPON OLT ports that subtend up to 128 ONTs each, for a card capacity of 1024 GPON ONTs per card, or 20,480 per E7-20 chassis. Subscriber services are aggregated to the central Switch Control Processor (SCP) for network connectivity at rates up to 40Gbps. GPON-8x card features and capabilities include:

- Based on ITU G.984 GPON family of standards
- GPON: 2.488 Gbps downstream, 1.244 Gbps upstream
- GEM (Ethernet) based GPON
- Interoperable with Calix 700 family of ONTs
- Class B+ ODN, +28 dB link budget, up to 1:64 splits
- Extended reach GPON up to 40 km with 1:8 split
- Class C+ ODN (as per G.984.2 Amendment 2), +31 dB link budget, up to 1:128 splits (*)
- Extended reach GPON up to 60 km with 1:8 split (*)

IP SERVICES DELIVERY: The Calix E7 GPON-8x card delivers a full spectrum of IP access services over GPON networks.

- IPTV – broadcast and Video on Demand (VoD)
- MEF compliant business services
- High-Speed Internet (HSI) access
- Voice – Native SIP/VoIP and TDM Gateway support
- T1 services
- CATV: 1550nm RF video overlay; 1610nm RF return

NETWORK RESILIENCY: All Calix E7-20 cards are part of a system that supports a flexible set of standards-based network topology protocols for use in aggregation, ring-based transport, and uplink.

- ITU G.8032 Ethernet Ring Protection Switching (ERPS)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.3ad/802.1AX Link Aggregation
- ITU G.983.5 – Type B Protection and enhanced survivability for GPON OLTs (*)

MOBILE BACKHAUL: With integrated network synchronization, Ethernet OAM, and support for T1 services, the GPON-8x card can be used to transport uncompromised mobile broadband traffic while also supporting triple play residential and MEF certified business services from a single platform. A powerful collection of classification, policing, and scheduling algorithms let operators manage per-subscriber and per-service traffic flows to maintain priority/delay/loss service differentiation within the E7 network.

SCALABLE IPTV SUPPORT: The E7-20 supports industry standard IGMP Proxy to identify and replicate multicast video sent between the set-top box and the video distribution network, providing efficient, scalable, high-quality IPTV distribution on both GPON and Ethernet interfaces.

Note (*): Hardware is feature capable, software support in a future release.

S P E C I F I C A T I O N S

Calix E7-20 GPON-8x

MINIMUM SOFTWARE RELEASE

Calix E7-20 shelf support only
Calix E7 Release 2.1

PORTS

8 GPON OLT ports

PACKET SWITCHING CAPACITY

2000 byte frames over GPON
4,096 VLANs per system
800 IGMP Multicast channels

QUALITY OF SERVICE

Service classification based on port,
    SVLAN-ID, CVLAN-ID, p-bit
Port and flow-based policing to
    64Kbps increments
Congestion avoidance: Tail Drop

WEIGHT

1.92 lbs. (0.87 Kg)

STANDARDS AND RFC SUPPORT

TR101 VLAN Service models
IEEE 802.1p CoS Prioritization
IEEE 802.1 MAC Bridges
IEEE 802.1Q VLAN tagging
IEEE 802.1ad VLAN stacking
    (Q-in-Q) support
RFC 2236 IGMP v2
RFC 3046 DHCP Relay Agent
    Information Option ("Option 82")
RFC 4541 IGMP Proxy
RFC 4553 Structure-Agnostic Time
    Division Multiplexing (TDM) over
    Packet (SAToP)
ITU-T G.984 GPON
Advanced Encryption Standard
    (AES)(*)
Forward Error Correction (FEC) in
    compliance with Extended Reach
    C+ Optics (*)
ONTs per OLT port: 64 (128 ONTs
    supported in hardware *)
ITU-T G.983.5 Type B Protection (*)

SYNCHRONIZATION

External reference timing
Built-in Stratum-3 clock

COMPLIANCE

NEBS Level 3 compliance
    (GR-63-CORE, GR-1089-CORE,
    GR-3028)
UL 60950
FCC Part 15 Class A
CE Mark

POWER AND HEAT DISSIPATION

GPON-8x power consumption: 75 Watts
Heat dissipation: 255.91 BTU/Hour

OPERATING ENVIRONMENT

Temperature: -5 to +55° C
Humidity: 10 to 95% (non-condensing)

STORAGE ENVIRONMENT

Temperature: -40 to +85° C
    (-40° F to +185° F)
Humidity: 5 to 95%

C A L I X 7 0 0 O N T s

The E7 GPON OLT cards support operation with the Calix 700GE and 700GX family of ONTs, including Single Family Unit (SFU), Small Business Unit (SBU), Multi-Dwelling Unit (MDU), and rack-mount models.

O R D E R I N G I N F O R M A T I O N

CALIX E7 LINE CARD

100-03007......................... E7-20 GPON-8x card (8x GPON ports)

CALIX OPTICAL AND COPPER PLUGGABLE MODULES

Calix offers a full suite of pluggable GPON Optical Interface Modules for OLT line cards.
GPON OIM .... 2.5Gbps GPON (Class B+ ODN with minimum 28dB link budget, up to 1:64 splits)
ER-GPON OIM................... 2.5Gbps Extended Reach GPON (up to 40 km with 1:8 split)

Note: For GPON OIM, 10GE XFP, Direct Attach cables, and 10GE SFP+ pluggable transceivers, only modules purchased directly from Calix are supported. The use of GPON OIMs not purchased directly from Calix is not supported and will void all product warranties covering the Calix equipment to which such third-party materials are connected.

Note (*): Hardware is feature capable, software support in a future release.

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