PRODUCT DATASHEET

GE-2p Card

DESCRIPTION

The Calix C7 GE-2p card provides two Gigabit Ethernet interfaces and four 10/100BaseT Ethernet interfaces. Each interface supports Layer 3 switching, Routed Bridge Encapsulation (RBE), PPPoE Relay, and IP multicast mapping to individual video stream VCs. For C7 networks running R6.1 or higher, the card supports Layer 2 VLAN-per-service, VLAN-per-subscriber, and Transparent LAN Service (TLS) traffic.

The Calix C7 GE-2p can be plugged into any of the 20 universal slots within the Calix C7 shelf. Physical access to each Gigabit Ethernet interface is provided through standard small form factor pluggable (SFP) optical transceivers inserted into the faceplate of the card. Physical access to the 10/100BaseT is provided through an adaptor module that plugs into the RJ-21 connectors on the back of the Calix C7.

KEY ATTRIBUTES

STANDARDS-BASED ETHERNET: The Calix C7 supports standards-compliant Ethernet interfaces and Ethernet encapsulation using RFC 2684 Multiprotocol Encapsulation Over AAL5, ensuring compatibility with ATM-based ADSL and ADSL2+ CPE.

VLAN-PER-SERVICE PROVISIONING: The GE-2p card supports traffic separation onto VLANs based on the type of service carried in the traffic, for example, IPTV video traffic carried on a separate VLAN from data and voice traffic. This provisioning model is the easiest to configure and use but does not provide segregation of user's traffic, which is often desired to ensure security and tracking of subscriber activity. In this VLAN provisioning model, the VLANs may have an S-tag added to segregate traffic into smaller groups, providing added security benefit.

VLAN-PER-SUBSCRIBER PROVISIONING: The GE-2p card supports each subscriber (port or customer) being mapped into a unique VLAN. This deployment method is operationally very similar to the traditional ATM model, where a Layer 2 ATM PVC maps each customer (VCI) on a DSLAM's ATM uplink (VPI) for transport back to a broadband RAS for protocol conversion and subscriber management.

TRANSPARENT LAN SERVICE (TLS): The GE-2p card supports symmetrical Ethernet LAN service. TLS services are used to transparently trunk business traffic across a network to another location, typically a remote office or secondary business location. Traffic received from the business may be tagged, untagged, or double-tagged.

ROUTED BRIDGE ENCAPSULATION: The GE-2p card supports standard Routed Bridge Encapsulation (RBE), enabling multiple subscriber sessions to share a single WAN uplink while avoiding broadcast storms and security vulnerabilities that plague Bridge interfaces.

PPPOA-TO-PPPOE RELAY: The GE-2p offers Layer 2 relay support for PPPoA encapsulated subscriber sessions. Individual sessions are tracked and forwarded appropriately to an upstream PPPoE termination device over the Ethernet interfaces, while protecting direct subscriber-to-subscriber communications.

DHCP RELAY WITH OPTION 82: The GE-2p supports a DHCP Relay agent and includes support for location-based identification of subscribers via a standard option 82 tag. This feature enables service providers to retain visibility of the physical port and circuit on which a subscriber is connected, simplifying troubleshooting and reconciling Layer 2 and 3 information.

Calix

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INTERFACE DENSITY: The 14-inch high Calix C7 shelf can be equipped with up to 20 GE-2p cards for a total of 40 Gigabit Ethernet and 80 10/100BaseT interfaces per shelf. Up to five shelves can be deployed in a single node configuration to deliver 200 GE interfaces from a single 7-foot bay.

FIELD-INSTALLABLE TRANSCEIVERS: The GE-2p features flexible physical interface options through support for industry standard, field-installable small form factor pluggable (SFP) optical transceivers. (Calix re-sells short- (SX) and intermediate- (LX) range SFPs for Ethernet applications and 1000BaseT SFPs for metallic applications. Contact your Calix Account Manager for specifications.)

PLUG AND PLAY: New GE-2p cards can be added to the system with ease and minimum user intervention, allowing quick and easy turn up of new services.

SPECIFICATIONS

ORDERING INFORMATION

Calix Part No. 100-00529

PORTS

2 Gigabit Ethernet interfaces per card
4 10/100BaseT interfaces per card
20 cards per shelf
40 GE interfaces per shelf
200 GE interfaces per 7-foot rack (5 shelves)

POWER DISSIPATION

45 Watts per card

PHYSICAL DIMENSIONS

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

OPERATING ENVIRONMENT

Temperature: 0 C to +50 C (32 F to +122 F)
Humidity: 5 to 90% non-condensing
Altitude: to 13,125 feet

STORAGE TEMPERATURE

–40 C to +70 C (–40 F to +158 F)

STATUS INDICATORS

ACTIVE: Green – Card is active and operating properly.
GE1: Green (Solid) On – GE1 port is active, but no traffic has been detected. Flashing – GE1 port link is active and traffic has been detected within the last half second. Off – GE1 port link is inactive.
GE2: Green (Solid) On – GE2 port is active, but no traffic has been detected. Flashing – GE2 port link is active and traffic has been detected within the last half second. Off – GE2 port link is inactive.
FAIL: Red – Indicates card has failed

SAFETY

NTRL-UL 60950-1

EMI/RFI

FCC Part 15 Class A

NEBSLEVEL 3 COMPLIANCE

Telcordia GR-63-CORE, Network Equipment-Building System (NEBS) Requirements
Telcordia GR-1089-CORE, Electromagnetic Compatibility and Electrical Safety

STANDARDS SUPPORT

DHCP Relay w/DHCP Option 82
DSL FORUM TR101 VLAN Per Service
DSL FORUM TR101 VLAN Per Subscriber
Mixed VLAN Models
IEEE802.1ad VLAN stacking (Q-in-Q support)
IEEE802.1p Prioritization
IEEE802.1Q VLAN tagging
IEEE802.1w RSTP
IEEE802.3, Ethernet (CSMA/CD)
IGMP v2 Proxy
RFC1483/2684 Multiprotocol Encapsulation over AAL5 (Bridge)