

Calix E7-20 Ethernet Service Access Platform



DESCRIPTION

The Calix E7-20 Ethernet Service Access Platform is a revolutionary access concentrator designed for high density, high bandwidth fiber deployments. With a 2TB backplane, it is ready for the new technologies and bandwidth needs of tomorrow while cost effectively serving the needs of today.

Along with the E7-2 and the E7-2 Modular Chassis, service providers now have the ability to meet all of their deployment capacity needs with one E7 family of Ethernet Service Access Platforms.

KEY ATTRIBUTES

CHASSIS CAPACITY: The Calix E7-20 Ethernet Service Access Platform (ESAP) chassis supports up to 100Gbps bandwidth capacity from each of the 20 line card slots to each E7-20 centralized Switch Control Processor (SCP). This capability ensures the chassis is ready for the bandwidth needs of today's GE and 2.5G PON services, tomorrow's 10GE and 10G PON services, as well as access technologies of the future.

SUBSCRIBER CAPACITY: The E7-20 ESAP has 20 universal line card slots. Utilizing the available E7-20 GPON-4x card the chassis supports up to 5,120 GPON subscribers. Future line card capabilities enable the chassis to support as many as 20,480 subscribers.

With the E7-20 GE-24x card the chassis supports 24 Point-to-Point Optical Ethernet (Active Ethernet) subscribers per slot – a capacity that will also increase in the future.

CARRIER GRADE CHASSIS: The E7-20 ESAP is a carrier grade chassis enabling full redundancy for both network and equipment connections. The heart of the E7-20 is the SCP, providing the common control, centralized switching capacity, and network uplink/transport connections for the system.

INTEGRATED FIBER MANAGEMENT: The E7-20 chassis design supports an optional fiber management system that mounts onto the top heat exhaust air ramp. With a fiber management comb per card, the E7-20 allows operators to easily install and remove additional cards without having to remove fibers from any card in operation. An optional fiber management guard easily snaps onto the front of the chassis to protect the fibers from being caught while service provider personnel move through the central office.

SYSTEM POWER: The E7-20's has a sectionalized power management system that allows operators to independently cable and fuse the three sections of the chassis as cards and services are installed.

HIGH VALUE SERVICES: The E7-20 delivers scalable residential IPTV, high-speed internet (HSI), and voice services through Calix ONTs and other remote Ethernet access devices. In addition the E7-20 supports high value business class services allowing operators to use a common access network to deliver higher revenue generating opportunities.

INDUSTRY STANDARDS COMPLIANCE: The E7-20 meets all applicable industry compliance standards, including NEBS Level 3, UL and FCC.

SPECIFICATIONS

Calix E7-20 Ethernet Service Access Platform

MINIMUM SOFTWARE RELEASE

Calix E7 Release 2.0

SLOTS

20 universal card slots
2 SCP slots
1 FTA slot

BACKPLANE

2TB Capacity
100Gbps to each slot from each SCP

MANAGEMENT INTERFACES

2 Ethernet 10/100 (RJ-45 connector on back of E7-20)
1 Ethernet 10/100 (RJ-45 connector on E7-20 Fan Tray)
1 RS-232 (RJ-11 connector on Calix E7 Fan Tray)

DIMENSIONS (W X H X D)

17.35 x 22.63 x 12.43 inches
44.07 x 57.48 x 31.57 cm
Fiber comb adds 3.17in (8.05cm) depth
Rack height is 13 RU

WEIGHT

37 lb (16.78 kg) E7-20 shelf
45 lb (20.41 kg) shelf with Fan Tray

POWER DISSIPATION

Maximum Power 3085 watts

POWER FEEDS

Integrated power management on Calix E7 line cards
Three redundant -48/60 VDC battery feeds (A and B)
Input Range: -42.5VDC to -72VDC

OPERATING ENVIRONMENT

Temperature: -5 to +55° C
Humidity: 10 to 95% (non-condensing)
Operating altitude: 10,000 ft (3,049 m)

STORAGE ENVIRONMENT

Temperature: -40°C to +85 ° C
Humidity: 5 to 95% (non-condensing)

ALARM I/O INTERFACES

Wire wrap pin access on E7-20 back
User definable alarm inputs: 7, outputs: 4

AIR FILTER

Field Replaceable from front of chassis (no tools required)

SHELF ALARM INDICATOR

Critical (CR) - RED
Major (MJ) - RED
Minor (MN) - AMBER
Alarm Cut-Off (ACO) button

COMPLIANCE

UL-60950, Standard for Safety, Issue 1, April 1, 2003
UL 60950-21 (± 190 Vdc remote/line power safety)
NEBS Level 3 compliance (GR-63-CORE, GR-1089-CORE, GR-3028)
FCC Part 15 Class A

SYNCHRONIZATION

Synchronization is enabled by the E7 line cards as required with internal and/or external reference timing

TIMING I/O INTERFACES

4-wire wire wrap pins on the back of the Calix E7
T1/E1 BITS clock (sink)

FIBER INTERFACES

All optical ports use pluggable optics (SFP, XFP, SFP+)
LC or SC connectors on modules

FAN TRAY ASSEMBLY

POWER SPECIFICATIONS

Typical CO Environment
Power: 30 Watts
Heat dissipation: 8 Watts
Maximum Cooling Capacity
Power: 200 Watts
Heat dissipation: 55 Watts

FANS

8 fans housed in fan tray
Resilient design maintains system cooling with individual fan failures

MAINTENANCE

Field-replaceable air filter (not used in RT locations)
Hot-swappable fan tray assembly



ORDERING INFORMATION

CALIX E7-20 ETHERNET SERVICE ACCESS PLATFORM

000-00529.....	E7-20 System Package (Shelf, Fan Tray, Fiber Management System, Installation Kit)
100-00572.....	Calix Circuit Breaker Panel (90 Amp total, 3x 30 Amp positions with A/B protection)

CALIX E7-20 LINE CARDS

100-02092.....	E7-20 SCP-10GE Switch Control Processor (4xGE SFP, 1x10GE XFP, 1x10GE SFP+)
100-02093.....	E7-20 GE-24x card (24xGE CSFP in 12 module sockets)
100-02094.....	E7-20 GPON-4x card (4xGPON OIM)
100-01790.....	E7 Line Card Blank (single slot)

The E7-20 Line Card Blank is used in both the E7-2 and E7-20 systems and must be placed in every empty line card and SCP slot during normal operations to maintain proper airflow through the system.

CALIX E7-20 SYSTEM RECOMMENDED SPARE COMPONENTS

100-02089.....	E7-20 Shelf
100-02090.....	E7-20 Fan Tray Assembly (FTA)
100-02091.....	E7-20 Air Filter

CALIX PLUGGABLE TRANSCEIVER MODULES

The E7-20 supports pluggable modules for all service and network interfaces. Refer to the Calix Optical Transceiver Modules Datasheet (#250-00191) for a complete list of modules and specifications.

CSFP Option 2	1GE optical dual-port Compact Small Form-factor Pluggable (CSFP) Option 2 modules
SFP	1GE and 2.5GE optical and copper Small Form-factor Pluggable (SFP) modules
SFP+	10GE optical Enhanced Small Form-factor Pluggable (SFP+) modules
Direct Attach.....	Multi-rate copper Small Form-factor Pluggable (SFP/SFP+) cables
XFP	10GE optical Small Form-factor Pluggable (XFP) modules
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)

Notes:

- For GPON OIM, 10GE XFP, 10GE SFP+ pluggable transceivers, Direct Attach cables, and all transceivers used in CSFP Option 2 sockets, only products purchased from Calix are supported.
- SFP modules may also be used in CSFP Option 2 sockets, and in SFP+ sockets at 1GE rate.
- Copper Direct Attach cables can operate in SFP, CSFP Option 2, and SFP+ sockets at 1GE, 2.5GE, and 10GE data rates as supported by the card type.

