

# Calix E7-20 Switch Control Processor 2 (SCP2-10GE)

## DESCRIPTION

The Calix E7-20 Switch Control Processor 2 (SCP2-10GE) is the core of the EXA Powered E7-20 Ethernet Service Access Platform (ESAP). Each SCP2-10GE provides 1000Gbps (1 Terabit) of switching capacity – 40Gbps to each of the 20 line cards slots with 2 of those slots supporting 100G plus sixteen 10GE network ports across the two SCP cards. The SCP provides all common control functions and management interfaces for the E7-20 as well as the centralized switching to all line card slots. Along with the E7 family of optical access line cards, the SCP2-10GE enables service providers to deliver high capacity / high bandwidth differentiated services to residential and business subscribers



## KEY ATTRIBUTES

**SWITCHING CAPACITY:** The Calix E7-20 SCP provides One Terabit switching capacity, with 40Gbps of capacity to each line card slot and two of the line card slots supporting 100G in an equipment-protected configuration.

**UPLINK EXPANSION:** The E7-20 supports dual SCPs for redundancy and enables up to sixteen 10GE uplinks across the two SCP cards. The system however supports the ability to easily expand the number of uplinks available with the use of additional uplink expansion cards.

**LINE CARD SUPPORT:** The E7-20 ESAP chassis and SCPs are designed to support a large variety of technologies and line card types. Supported E7-20 cards include the GPON-8x, GPON-16x and GE-24x cards.

**UPLINK PORTS:** Each SCP2-10GE has eight 10GE ports using SFP+ optical modules which brings cost effective short reach 10GE capability to service providers.

**MANAGEMENT:** The SCP2-10GE enables management of the E7-20 via the Calix Management system (CMS). In addition, SCP2-10GE supports an embedded web GUI, Command Line Interface (CLI), and SNMPv2/v3 for flexible management options of a single system.

Each SCP2-10GE includes a face plate RJ-45 port for local craft access to the system, in addition to the rear chassis connectors for out-of-band management access.

**DEPLOYABLE STANDARDS:** The SCP2-10GE is the core of the EXA Powered E7-20 system and delivers all network connections to the system. The E7-20 utilizes the latest generation of deployable standards for aggregation, ring based transport and uplink applications. SCP2-10GE network resiliency is provided by:

- ITU G.8032v2 Ethernet Ring Protection
- 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.984.1 – Type B Protection and enhanced survivability for GPON OLTs

## SPECIFICATIONS

# Calix E7-20 Switch Control Processor 2 (SCP2-10GE)

### MINIMUM SYSTEM REQUIREMENTS

Calix E7-20 shelf with SCP2-10GE supporting Calix E7 Release 3.0 or later

### SLOT COMPATIBILITY

Compatible with E7-20 Slots A & B

### DIMENSIONS (W x H x D)

14 x .78 x 10.1 inches  
(35.6 x 2 x 25.7 cm)

### UPLINK PORTS

8x 10GE SFP+ ports (Supports Calix 10GE SFP+ modules)  
160Gbps uplink ports

### SWITCHING CAPACITY

1000Gbps total switching  
40Gbps per line card slot  
128K MAC addresses  
9K MTU  
4094 VLANs  
4096 IGMP multicast channels

### STANDARDS AND RFC SUPPORT

TR101 VLAN Service models IEEE  
802.1ag Connectivity Fault Management (G.8032 support) IEEE  
802.1D Rapid Spanning Tree  
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 3376 IGMP v3  
RFC 3046 DHCP Relay Agent Information Option ("Option 82")  
RFC 4541 IGMP Proxy

### QUALITY OF SERVICE

Service classification based on port, SVLAN-ID, CVLAN-ID, p-bit  
Port and flow-based policing to 1Mbps increments  
8 egress CoS queues per port  
Strict priority scheduling  
WRR scheduling with minimum bandwidth guarantees  
Congestion avoidance: Tail Drop

### POWER SPECIFICATIONS

Max power with optics: 82 Watts  
Heat dissipation: 210 BTU/Hour

### WEIGHT

2.75lbs (1.25kg)

### OPERATING ENVIRONMENT

Temperature: -5 to +55° C  
(23° to +131° F)  
Humidity: 10 to 95%  
(non-condensing)

### STORAGE ENVIRONMENT

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

### COMPLIANCE

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

## ORDERING INFORMATION

### CALIX E7-20 LINE CARDS

100-03856..... E7-20 SCP2-10GE Switch Control Processor (8x10GE SFP+)

### CALIX PLUGGABLE TRANSCEIVER MODULES

The SCP2-10GE supports pluggable modules for all network interfaces. Refer to the Calix Optical Transceiver Modules Datasheet (#250-00191) for a complete list of modules and specifications.

SFP ..... 1GE 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+) cables

#### Notes:

- Only SFP and SFP+ pluggable transceiver modules, and Direct Attach cables, purchased from Calix are supported. The use of 1GE SFP or 10GE SFP+ pluggable transceivers and Direct Attach cables 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.

