



# ES4710BD

## Chassis Core Routing Switch



### Product Overview

The Edge-Core ES4710BD is a high performance, 10-slot, Layer 3 chassis switch. It can work in single or redundant management module mode. Slot configuration can be any combination of network interface modules and 1 or 2 management modules. Furthermore, management modules also include network interfaces so total pc density and slot usage is increased.

With redundant power supply, fans, and management modules, the Edge-Core ES4710BD ensures continuous operation and is a fully redundant system. Moreover, all parts are hot swappable. They can be added or exchanged without interrupting the whole system.

The ES4710BD is ideal for the core layer of campuses, enterprise networks and the aggregation layer of IP metropolitan networks..

### Key Features and Benefits

#### Performance and Scalability

The ES4710BD supports up to 16 10G ports or 192 Gigabit ports, providing flexibility and high port density.

10G modules support 1 or 2 ports for downlink to L3 Gigabit distribution layer switches or L2 Gigabit switches, aggregating them to the core layer, and preventing port bottlenecks in Gigabit switches. Furthermore, the optional 10Gigabit Ethernet XFP transceivers can be chosen for different distance fiber uplinks.

Backup Master ensures the availability of a master controller for network control at any time.

Every module is hot swappable, ensuring continued operation of the system while adding or removing a module.

Firmware & configuration are automatically upgraded from master to slave units for management simplicity.

\*Intensive protocol support is included for MPLS, MPLS-VPN, MPLS-TE and IPv6 policy routing ensuring future investment protection.

#### Continuous Availability

IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence.

IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links.

IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balancing and fault tolerance for uplink connections.

IGMP snooping prevents flooding of IP multicast traffic, and limits bandwidth intensive video traffic to only the subscribers.

#### L3 Features

The ES4710BD delivers high-performance hardware based IP routing.

RIP and OSPF provide dynamic routing by exchanging routing information with other Layer 3 switches or routers.

DVMRP, PIM-DM Multicast Routing Protocols send IP multicast traffic from one subnet to another.

VRRP prevents your system from failing by dynamically backing up multiple L3 switches for routing.

#### Comprehensive QoS

8 egress queues per port enable differentiated management of up to 8 traffic types.

Traffic is prioritized according to 802.1p, DSCP, IP precedence and TCP/UDP port number, giving optimal performance to real-time applications such as voice and video.

Bidirectional rate-limiting, per port or traffic class, preserves network bandwidth and allows full control of network resources.

#### Enhanced Security

IEEE 802.1X port- and MAC-based access control ensures all users are authorized before being granted access to the network.

Access Control Lists (ACLs) can be used to restrict access to sensitive network resources by denying packets based on L2/L3/L4 headers.

RADIUS and TACACS+ authentication protect data communication and ensure data privacy.

#### Simple Management

Industry standard Command Line Interface (CLI) via console port or Telnet can be used for switch management.

Embedded user friendly web interface helps users quickly and simply configure switches.

Backup and restore Firmware and configuration files via TFTP, FTP and xmodem.

# ES4710BD Product Specifications



## Features

### Physical Ports

10 open slots  
1 AC power supply and 2 additional open slot for optional power supply  
Max. number of 10 Gigabit ports: 16  
Max. number of Gigabit ports: 192

### Performance

Backplane Capacity: 320Gbps  
Forwarding Rate: 238Mpps  
Mac Address Table Size: 16K

### L2 Features

Auto-negotiation for port speed and duplex mode  
Flow Control:  
■ Provides IEEE 802.3x for full duplex mode  
■ Back-Pressure flow control for half duplex mode  
Spanning Tree Protocol:  
■ IEEE 802.1D Spanning Tree Protocol (STP)  
■ IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)  
■ IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)  
VLANs:  
■ Supports 4K IEEE 802.1Q VLANs  
■ Port-based VLANs  
■ Private VLAN  
■ GVRP  
■ IEEE802.1v Protocol VLAN\*  
■ QinQ\*  
■ Voice VLAN\*  
■ MAC-based VLAN\*  
■ Auto VLAN assignment\*  
Link Aggregation:  
■ Static Trunk  
■ IEEE 802.3ad Link Aggregation Control Protocol  
■ Load Balancing for both Unicast and Multicast  
■ Number of port trunks : 6 per module  
■ Number of ports per trunk: 2~8 ports  
■ BPDU source guard\*  
IGMP Snooping:  
■ IGMP Snooping  
■ IGMP v1/v2/v3  
■ IGMP Query

### L3 Features

IPv4/IPv6 static routing  
ARP  
Multi-netting  
Super-netting (CIDR)  
BGP4+  
RIPv1/v2, RIPng  
OSPF v2/v3  
DVMRP, PIM-DM · PIM-SM  
Multicast Listener Discovery (RFC2710)  
VRRP  
DHCP/BootP relay, DHCP server

### QoS Features

Priority Queues: 8 hardware queues per-port  
Traffic classification based on IEEE 802.1p CoS, IP Precedence, DSCP, TCP/UDP port number  
Supports Marking and Re-marking  
Supports WRR and Strict scheduling  
Bandwidth Control:  
■ Egress rate limiting, Ingress rate limiting

### Security

Supports IEEE 802.1x port-based and MAC-based access control  
RADIUS authentication  
TACACS+ authentication\*  
Access Control List  
SSH (v1.5/v2.0)

### Management

Switch Management:  
■ CLI via console port or Telnet  
■ WEB management  
■ SNMP v1, v2c, v3  
Firmware & Configuration:  
■ Dual firmware images  
■ Firmware upgrade via TFTP server  
■ Multiple configuration files  
■ Configuration file upload/download via TFTP and FTP server and XMODEM  
Support Port Mirroring  
Supports RMON (groups 1, 2, 3 and 9)  
Supports BOOTP, DHCP for IP address assignment  
Supports SNMP  
Event/Error Log/Syslog

### Mechanical

Dimensions (H x W x D): 797 x 436 x 478 mm (19RU)  
AC Power Input:  
■ 90 ~ 264VAC, 50 ~ 60Hz  
■ Built-in Universal Power Supplies  
■ Power Output for single power Supply: 300W (max)

### Safety

CSA/NRTL (UL60950, CSA 22.2.No 60950-00)  
TUV/GS (EN60950)  
CB

### Electromagnetic Compatibility

CE Mark  
FCC Class A  
VCCI Class A

### Environmental Specifications

Temperature:  
■ IEC 68-2-14  
■ 0°C to 40°C (Standard Operating)  
■ -40°C to 70°C (Non-Operating)  
Humidity: 10% to 90% (Non-condensing)

### Warranty

1 year

\* Future upgradeable

## Ordering Information

### Optional Accessories

EM4710BD-AC  
EM4710BD-AGENT  
EM4700BD-12GT-RJ45  
EM4700BD-12GX-SFP  
EM4700BD-8GC16GX  
EM4700BD-8GC16GX2XG

EM4700BD-4XFP\*  
EM4700BD-48GT-RJ45\*

### Product Description

-220V AC Power Supply  
-Management module  
-12 10/100/1000Base-Tx ports module (RJ-45 interface)  
-12 1000Base-X ports module (SFP interface)  
-8 Comb G ports(RJ-45/SFP) with 16 1000Base-X ports (SFP interface)  
-8 Comb G ports(RJ-45/SFP) with 16 1000Base-X ports (SFP interface)  
and 2 10G XFP ports  
- 4 10G port (XFP interface)  
-48 10/100/1000Base-Tx ports module (RJ-45 interface)