Carrier-level
Core Switches

S8500E SERIES



40GE Campus
Network Core Switches

Advanced Hardware
Architecture and
Industry-leading Port
Density

99.999%Carrier-level
Reliability

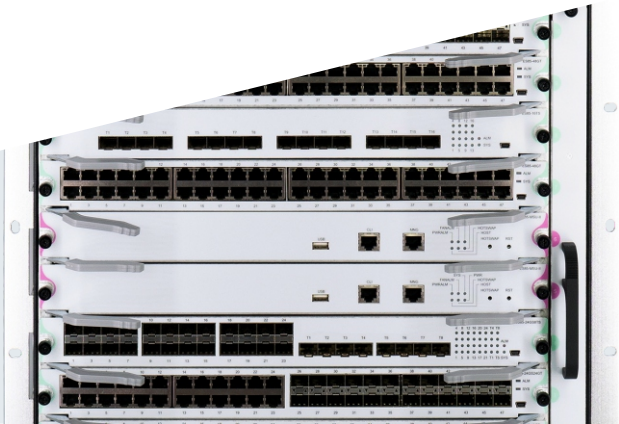
Varied Service
Characteristics
Versatile IPv6 Solution
Complete Security
Mechanism

Product Overview

BDCOM S8500E Series, a new generation T-bit carrier-level core switch oriented for carrier's IP MANs and campus networks. Developed on the leading architecture of distributive multi-stage switching matrix and BDROS software platform BDCOM with its own independent intellectual property rights, S8500E Series provides high-performance L2/L3/L4 wire speed switching capacity by integrating services such as IPv6, network security, flow analysis, virtualization, with high reliable techniques including continuous forwarding, graceful restarting and loop network protection, the work efficiency of S8500E Series and its maximum running time are guaranteed.

S8500E Series supports the "GreenTouch" architecture and "Smart@CHIP", significantly reducing equipment energy consumption, effectively cutting down operation and maintenance costs, and providing a perfect solution for the green and sustainable development of the network.

BDCOM S8500E Series consists of three models: S8503E, S8506E and S8510E, which can meet the port density and performance requirements of different network scales.



Product Characteristics

Advanced Hardware Architecture Design & Leading Processing Capacity

With the leading architecture of distributive multi-stage switching matrix, the ASIC switch chip and the multi-core processor, S8500E Series meets the carrier-level core equipment requirements of high performance, high capacity, high density and expansion.

S8500E Series supports high-intensity 40GE service boards and realizes the wire-speed switching of 3 layers without blocking.

Carrier-level High Reliability

S8500E Series adopts HPS (Hitless Protection System). The key components of S8500E Series such as the main control unit, power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without manual intervention.

S8500E Series supports redundancy protection mechanism such as STP/RSTP/MSTP protocol, VRRP protocol, ring network protection, dual uplink active/standby link protection and LACP link aggregation.

S8500E Series supports ISSU (In-Service Software Upgrade) and GR (Graceful Restart) for OSPF/BGP, guaranteeing the user data non-stop forwarding when the system is upgrading.

S8500E Series supports BFD and realizes fault detection and service recovery in seconds through linking with layer-2 or layer-3 protocol.

High Reliability (99.999%): MTTR of S8500E Series is 50ms, meeting the requirement of the carrier-level service.

Innovative VSS Technique

S8500E Series supports BVSS (BDCOM Virtual Switch System), which can virtualize multiple physical devices into one in logic. The virtualized system is superior to the independent physical device in performance, reliability, flexibility and management.

Doubled Performance: The virtualized system makes the best use of each link in the device and avoids the blocking of STP to the link.

High-reliability: Based on the advanced distributed processing technique and the efficient function of cross-physical device link aggregation, S8500E Series provides with non-stop layer-3 routing forwarding and avoids single points of failure.

Flexibility: With the function of S8500E virtual cluster service cards, the distance of virtual cluster system can expand to 80KM, breaking the geographic restriction of traditional cluster technique.

Easy Management: The whole virtual system realizes single IP unified management and simplifies the management of network device and network topology.

Comprehensive IPv6 Solutions

S8500E Series comprehensively supports IPv6 Neighbor Discovery, ICMPv6, Path MTU Discovery and DHCPv6.

S8500E Series supports IPv6-based Ping, Traceroute, Telnet, SSH, ACL, meeting the need of IPv6 network equipment management and service control.

S8500E Series supports IPv6 multicast characteristics including MLD, MLD Snooping and IPv6 layer-3 routing protocols including IPv6 static routing, RIPng, OSPFv3 and BGP4+.

Product Characteristics

Comprehensive Service

S8500E Series supports complete layer-2 and layer-3 multicast routing protocol and meets the access requirement of IPTV, multi-terminal high-definition video monitoring and high-definition video meeting.

S8500E Series supports complete layer-3 routing protocol and a super-large routing table capacity, which make super-large data center network, campus network, enterprise network and industry private networks available.

Comprehensive Security Mechanisms

S8500E Series adopts advanced hardware architecture design, realizing the hierarchical scheduling and protection of the packet. It provides multiple security measures to defend against DOS or TCP attacks; and supports command line authority control based on user levels.

Comprehensive Security Certification: S8500E Series complies with IEEE 802.1x, Radius, BDTacacs+.

Enhanced Service Security Mechanism: S8500E Series supports the plain text or MD5 authentication of relevant routing protocol; uRRF; DPI (Deep Packet Inspection) and (Deep Packet Filtration); DPI for control packets and data packets.

Innovative Green Environmental Design

S8500E Series supports the "GreenTouch" architecture. Its power consumption is no more than 1000W.

Smart Power Management System: S8500E Series adopts advanced power system architecture design which can realize the function of efficient power switching, private power monitoring, soft start, real-time monitoring, intelligent adjustment and energy-saving.

Smart Fan Management System: S8500E Series is designed with the intelligent fan and supports switching between front-back mode and back-front mode and fan automatic speed regulation.

S8500E Series supports Efficient Ethernet and complies with International standard IEEE 802.3az.

S8500E SERIES

Note:
The standard configuration
does not include the power supply



Model lists



S8503E

Carrier-level Core Switch

1 fan module,
3 power slots,
exclude the power supply,
1 MCU slot,
1 MCU/business slot,
1 business slot



S8506E

Carrier-level Core Switch

1 fan module,
3 power slots,
exclude the power supply,
2 MCU slots,
4 business slots

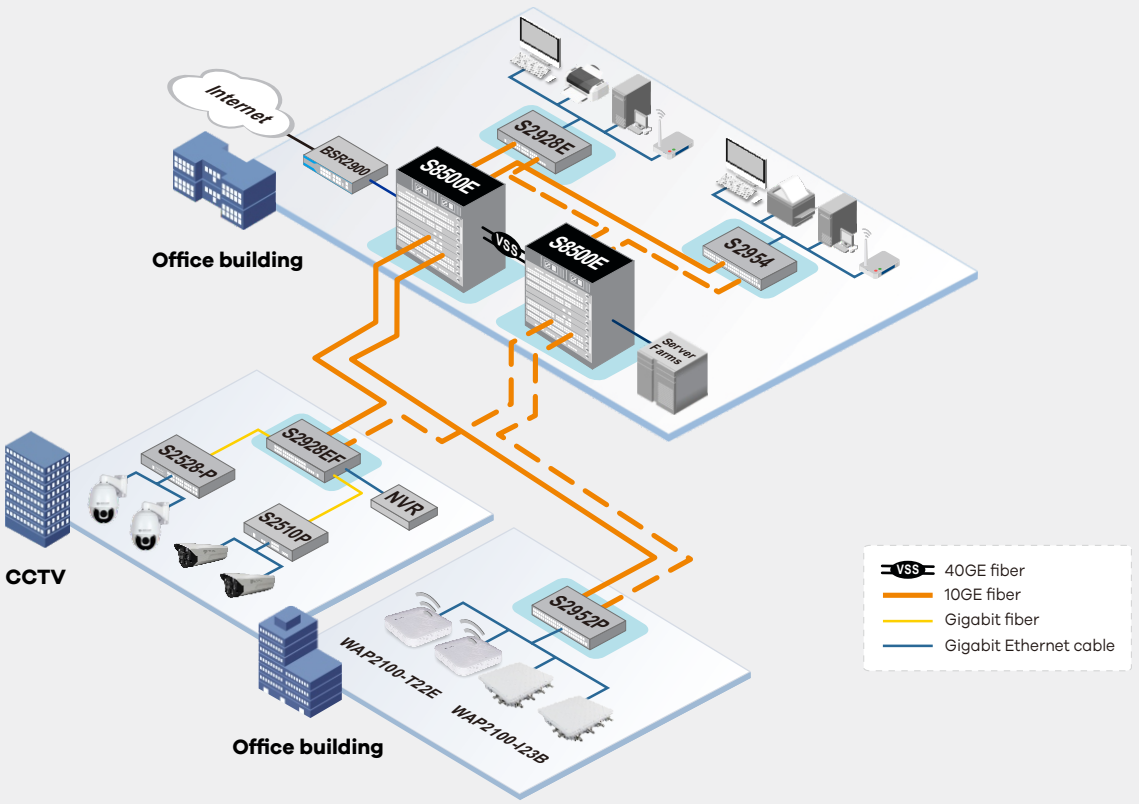


S8510E

Carrier-level Core Switch

1 fan module,
3 power slots,
exclude the power supply,
2 MCU slots,
8 business slots

Application Diagram



Specifications

Items	S8503E	S8506E	S8510E
Interface			
Switching capacity	736Gbps/1.47Tbps	1.28/2.56Tbps	2.56/5.12Tbps
Forwarding rate	552/1104 Mpps	810/1920 Mpps	1920/3840 Mpps
Total Number of slots	3	6	10
MCU slots	1+1	2	2
Business slots	3	4	8
Performance/Storage			
Energy saving	IEEE 802.3az green Efficient Ethernet	IEEE 802.3az green Efficient Ethernet	IEEE 802.3az green Efficient Ethernet
Operating temperature	0℃ ~ 40℃	0℃ ~ 40℃	0℃ ~ 40℃
Operating humidity	10%~90% (non-condensing)	10%~90% (non-condensing)	10%~90% (non-condensing)
Power supply	AC:100V-240V, 50Hz±10% DC: -48V	AC:100V-240V, 50Hz±10% DC: -48V	AC:100V-240V, 50Hz±10% DC: -48V
Power consumption(W)	<350W	<550W	<1300W
Dimensions mm (WxDxH)	482×377×178 4U	482×370×397 9U	482×370×530 12U
Weight KG (empty)	10.5	21	25.5

Features

MAC Switching
- Static configuration and dynamically learning of MAC address
- Check and clear MAC address
- Configuring of MAC address aging time
- Limit on MAC address learning number
- MAC address filtering function
- Black-hole MAC items

VLAN
- 4K VLAN entries
- GVRP
- 1:1 and N:1 VLAN Mapping
- Basic QinQ and selective QinQ
- Private VLAN

Reliability
- Dual Master Control Redundancy
- Power N+M backup
- Master control, service card hot swap and service automatic recovery
- Static/LACP link aggregation and cross service card link aggregation
- Ring network protection including EAPS
- VRRP
- GR for OSPF and BGP
- BFD for OSPF and BGP
- ISSU

STP
- 802.1D (STP), 802.1W (RSTP), 802.1S (MSTP)
- BPDU protection, root protection and ring protection

Multicast
- IGMP v1/v2/v3
- IGMP Snooping
- IGMP Fast Leave
- Multicast group policy and multicast number limit
- MVR
- PIM-SM and PIM-DM

IPv4
- Static routing, RIP v1/v2, OSPF and BGP
- Policy routing
- Load balance through equal-cost routing
- Graceful Restart of OSPF and BGP
- BFD for OSPF and BGP

IPv6
- ICMPv6, DHCPv6, ACLv6, IPv6 Telnet
- IPv6 Neighbor Discovery
- Path MTU Discovery
- MLD and MLD Snooping
- IPv6 static routing, RIPng, OSPFv3 and BGP4+
- Manual tunnel, ISATAP tunnel and 6-to-4 tunnel

Management and Maintenance
- Console, Telnet and SSH
- SNMP v1/v2/v3
- Upload and download of TFTP files
- Remote Network Monitoring (RMON)
- Statistics analysis of sFLOW, Netflow

MPLS VPN
- Multi-VRF

QoS
- Traffic classification of each field of L2/L3/L4 protocol headers
- CAR traffic control
- 802.1P/DSCP priority remark
- Multiple queuing algorithms such as SP, WRR or SP+WRR
- Tail-Drop, WRED
- Traffic supervision and traffic shaping
- Ingress and Egress ACL, and matching L2, L3, L4 and IP quintuples for copying, forwarding and discarding
- Hash algorithms and load balancing

Security features
- Identification and filtering of L2/L3/L4 based ACL
- Defend against DoS or TCP attacks
- Suppression of broadcast, multicast and unknown unicast packet
- Port isolation
- Port security, IP + MAC + port binding
- DHCP Snooping, DHCP Option 82
- IEEE 802.1x authentication
- Radius and BDTacacs+ authentication
- uRPF
- Command line authority control based on user levels

Value-added services
- VSS

Energy saving
- IEEE 802.3az green Efficient Ethernet

Environment
- Operating temperature/humidity: 0°C-40°C ; 10%-90% non-condensing
- Storage temperature/ humidity: -20°C-70°C ; 5%-95% non-condensing

Ordering Information

Item	Picture	Description
S8503E Series Chassis		
S8503E		Integrated Chassis of S8503E switch (1 fan tray, 3 power slots,no standard power supply, 1 MCU slot, 1 MCU/serivce slot and 1 service slot)
S8503E Series Power Supplies		
ES85-PA350		S8503E AC power module 350W
ES85-PD350		S8503E DC power module 350W
S8503E Series MCU Boards		
ES8503-MSU-24GS8TS		Console Board of S8503E Series with 24 gigabit SFP ports and 8 10GE SFP+ ports
ES8503-MSU-24GT8TS		Console Board of S8503E Series with 24 gigabit RJ45 ports and 8 10GE SFP+ ports
S8500E Series Chassis		
S8506E		Integrated Chassis of S8506E switch (1 fan tray, 3 power slots, no standard power supply, 2 MCU slots, 4 service slots)
S8510E		Integrated Chassis of S8510E switch (1 fan tray, 3 power slots, no standard power supply, 2 MCU slots, 8 service slots)
S8500E Series Power Supplies		
ES85-PA550		550W AC power module (Full load of 6 line cards)
ES85-PD550		550W DC power module (Full load of 6 line cards)
S8500E Series MCU Boards		
ES85-MSU-I/II		S8500E type-I/II MCU board
Service Board of S8500E Series		
Gigabit Service Boards		
ES85-24GS24GT		Service board with 24 gigabit SFP ports and 24 gigabit RJ45 ports
ES85-48GT		Service board with 48 gigabit RJ45 ports
ES85-48GS		Service board with 48 gigabit SFP ports
Gigabit and 10GE Hybrid Service Boards		
ES85-24GS8TS		Service board with 24 gigabit SFP ports and 8 10GE SFP+ ports
ES85-24GT8TS		Service board with 24 gigabit RJ45 ports and 8 10GE SFP+ ports
10GE Service Boards		
ES85-16TS		Service board with 16 10GE SFP+ ports
ES85-4QS		Service board with 4 40GE QSFP ports

Ordering Information

Item	Description
Optical modules	
Gigabit Optical Modules	
GSFP-TX-B	GE SFP-to-RJ45 module
GSFP-SX-D	Gigabit SFP multi-mode (500m, 850nm, LC, DDM)
GSFP-LX-10-D	Gigabit SFP single mode (10Km, 1310nm, LC, DDM)
GSFP-LX-20-D	Gigabit SFP single mode (20Km, 1310nm, LC, DDM)
GSFP-LX-40-D	Gigabit SFP single mode (40Km, 1310nm, LC, DDM)
GSFP-ZX-80-D	Gigabit SFP single mode (80Km, 1550nm, LC, DDM)
GSFP-ZX-120-D	Gigabit SFP single mode (120Km, 1550nm, LC, DDM)
GSFP-LX-SM1310-10-BIDI **GSFP-LX-SM1550-10-BIDI**	Gigabit SFP single mode, single-core bidirectional (10Km, TX1310/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (10Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1310-20-BIDI **GSFP-LX-SM1550-20-BIDI**	Gigabit SFP single mode, single-core bidirectional (20Km, TX1310/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (20Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1310-40-BIDI **GSFP-LX-SM1550-40-BIDI-1310**	Gigabit SFP single mode, single-core bidirectional (40Km, TX1310/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (40Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1490-80-BIDI **GSFP-LX-SM1550-80-BIDI**	Gigabit SFP single mode, single-core bidirectional (80Km, TX1490/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (80Km, TX1550/RX1490, LC, DDM)
GSFP-LX-SM1490-120 **GSFP-LX-SM1550-120**	Gigabit SFP single mode, single-core bidirectional (120Km, TX1490/RX1550, LC, DDM) Gigabit SFP single mode, single-core bidirectional (120Km, TX1550/RX1490, LC, DDM)
10GE optical modules	
SFP+SX	10G SFP+ multi-mode (300m, 850nm, LC)
SFP+LX-10	10G SFP+ single mode (10Km, 1310nm, LC, DDM)
SFP+LX-20	10G SFP+ single mode (20Km, 1310nm, LC, DDM)
SFP+LX-40	10G SFP+ single mode (40Km, 1550nm, LC, DDM)
SFP+LX-80	10G SFP+ single mode (80Km, 1550nm, LC, DDM)
SFP+LX-SM-1270-10 **SFP+LX-SM-1330-10**	10GE SFP+ single mode, single-core bidirectional (10Km, TX1270/RX1330, LC, DDM) 10GE SFP+ single mode, single-core bidirectional (10Km, TX1330/RX1270, LC, DDM)
SFP+LX-SM-1270-20 **SFP+LX-SM-1330-20**	10GE SFP+ single mode, single-core bidirectional (20Km, TX1270/RX1330, LC, DDM) 10GE SFP+ single mode, single-core bidirectional (20Km, TX1330/RX1270, LC, DDM)
SFP+LX-SM-1270-40 **SFP+LX-SM-1330-40**	10GE SFP+ single mode, single-core bidirectional (40Km, TX1270/RX1330, LC, DDM) 10GE SFP+ single mode, single-core bidirectional (40Km, TX1330/RX1270, LC, DDM)
40GE optical modules	
QSFP+SR4-100m	40G multi-mode QSFP+ optical module (100m, 850nm, MPO, DDM, supports 1 to 4)
QSFP+LR4-10	40G single-mode QSFP+ optical module (10km, 1310nm, LC, DDM)
QSFP+LR4-20	40G single-mode QSFP+ optical module(20Km, 1310nm, LC, DDM)
QSFP+ER4-40	40G single-mode QSFP+ optical module(40Km, 1310nm, LC, DDM)

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