

# Product Specification

## A-GEAR S8500

### Large-Capacity Core 10G Routing Switch



Proudly presented by A-GEAR Tech Co., Ltd, A-GEAR S8500 series switch is a new-generation large-capacity and hi-performance core routing switch series with L2/L3/L4 wire-speed switching capability. The backplane capacity is up to 3.2 Tbps, and forwarding rate is 952 Mpps (max). A-GEAR S8503/8506/8510 has a modular design and bases on multi-processor distributed process system and Crossbar switching structure. It's a super powerful core switch.

#### 1. Application

- Backbone layer and aggregation layer of Carrier IP LAN, campus network, E-government net and large-sized business network

#### 2. Features

##### 2.1. Telecom-level Reliability

- 1:1 redundant backup used in Key modules (like MSU, Power)
- Hitless Protection System (HPS) guarantees the reliability of S8503\8506\8510.
- And VRRP, STP, LACP, etc strength the reliability.

##### 2.2. Advanced structure

- Modularized design and distributing mode
- Base on multi-processor distributed process system and Crossbar switching structure.

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### 2.3. Powerful value-added business

- L2/L3/L4 wire-speed switching capability
- QoS^ MPLS л NAT broadband control > multicast
- Traffic classification and multicast based on hardware and rate limitation, advanced QoS.

### 2.4. Large-capacity and hi-performance

- Congestion-less switching fabric up to 3.2Tpbs, routing forwarding rate up to 952Mpps
- Support 512k L3 routing, 512k L2 MAC and 4096 VLAN, 8k control policy.
- High port density and wire-speed routing and switching
- Rich interface types. 10GE, GE, FE, etc.

### 2.5. Tight Security

- Support ACL, IPSec, MPLS VPN
- Support different superior queues based on port and restriction of ex- and in-bandwidth based on flow, URPF, DDOS anti-attack, SSH2.0, 802.1x, VLAN and MAC, port NO., IP bonding
- Anti-virus system.

### 2.6. IPv6

- IPv4 and IPv6, tunnel based on handwork/automatic configuration and 6to4 tunnel
- Basic transition technique form IPv4 to IPv6.
- Static IPv6 routing, and dynamic routing protocols, BGP4/BGP4+ RIPng OSPFv3

### 2.7. MPLS VPN

- L2 MPLS VPN supports Martini (VPWS) and VPLS
- L3 MPLS VPN, with RFC2547bis, has high compatibility

### 2.8. Network management

- RFC 1213 SNMP, management based on Telnet (CLI command) or SNMP (graphical interfaces)
- Web management realized via Broad Director platform.

## 3. Specifications

	S8503	S8506	S8510
Slot	1 MSU + 2 Access modules	2 MSU + 4 Access modules	2 MSU + 8 Access modules
Backplane Capacity	1.2T	2.4T	3.2T

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	S8503	S8506	S8510
Switch Fabric	UltraEngige I 96Gbps	UltraEngige I 96Gbps	UltraEngige II 192Gbps
	UltraEngige II 192Gbps	UltraEngige II 192Gbps	UltraEngige III 384Gbps
	UltraEngige III 384Gbps	UltraEngige III 384Gbps	UltraEngige IV 768Gbps
Forwarding Rate	238Mpps	476 Mpps	952 Mpps
Max No. of 10000M ports	16	32	64
Max No. of 1000M ports	96	192	384
Max No. of 100M ports	96	192	384
CPU	RISC CPU (RISC 800MHz)		
Flash	16MB		
SDRAM	512MB (up to 1GB)		
MAC Address Table Size	512K		
Jumbo frame	16383		
VLAN Table Size	4K		
IP Routing Table Size	512K		
Spanning Tree	802.1D (STPX 802.1w (RSTPX 802.1s(MSTP)		
Routing Protocol	RIPv1/2^ OSPF BGP		
MPLS	Support		
IPv6	Support		
Multicast Protocol	IGMP^ DVMRP, PIM-SM PIM-DM		
QoS	8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.		
ACL	Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time ranger ACL		
MAC Control	Support port/MAC binding MAC ACL		
VLAN	Port-based VLAN, 802.1Q, support GVRP, PVLAN, VLAN Stacking (QinQ)		
Flow Control	HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x		
ARP	Support		
DHCP	Support Clients Relay Server		
Port Aggregation	Support 802.3ad, loading balance		
Customer Access	Support 802.1x		

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	S8503	S8506	S8510
AAA	Support RADIUS		
Port Mirroring	Support		
Broadcast Control	Support		
Security	Support MSU redundancy, hot swapped, VRRP		
IEEE Standard	IEEE 802.1D, IEEE 802.3, IEEE 802.3u, IEEE802.3ad, IEEE 802.3x, IEEE 802.3z. IEEE802.1Q, IEEE 802.1P, IEEE 802.1w, IEEE 802.1x		
Console Interface	CLL WEB		
Console Port	RS-232		
Telnet	Support		
SNMP	v1/v2/v3		
SysLog	Support		
RMON	1, 2, 3,9		
MIB	Support		
Humidity	10%~90% ( no condensing)		
Temperature	0°C~40°C		
Power Supply	AC 200-240VAC, 50/60 Hz DC -48V		
Power Redundancy	1+1 redundancy, support hot swapped		
Dimensions (LxW x H) (mm)	436 x 450 x 380	436 x 450 x 680	436 x 450 x 797
Power Consumption	700W	1000W	1000W

#### 4. Support Protocols

Standard Protocols	802.3,10BaseT, 802.3u 100BaseTX, 100BaseFX 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3adLink Aggregation 802.1p/q VLAN Tagging 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication 802.3 Ethernet Like MIB, Ethernet Interface MIB SNMP v1, v2c and V3 , SNMP MIB II
OSPF	RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5), RFC2328 OSPF v2, RFC 1680 OSPF v2 MIB, RFC 1997 Communities Attributes, RFC 2368 TCP MD5, RFC 2370 OSPF Opaque LSA Option
RIP	RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements
IP Multicast	RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 2362 PIM-SM, DVMRP v3-07, RFC 2336 IGMP v2

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<b>Routing Protocols</b>	RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 1027 Proxy ARP, RFC 684 TELNET, RFC 1591 DNS (client), RFC 1812 General Routing, RFC 1541 and 1542 DHCP, RFC 2131 BootP/DHCP Helper, RFC 2338 VRRP
<b>Other Protocols</b>	RFC1354 IP Forwarding MIB, RFC 1757 RMON Groups 1,2,3,9, RFC 2068 HTTP, RFC 2030 SNMP, RFC 2138 RADIUS

**5 Order Information**

<b>A-GEAR S8510</b>	
<b>LS8510-Chassis</b>	A-GEAR S8510 core routing switch chassis (10 slots, including 2 MSU slots and 8 network module slots, dual AC/DC power supply)
<b>LS85-PWR-AC-1000</b>	220V AC power supply for S8510
<b>LS85-PWR-DC</b>	-48 V DC power supply
<b>A-GEAR S8506</b>	
<b>LS8506-Chassis</b>	A-GEAR S8506 core routing switch chassis (6 slots, including 2 MSU slots and 4 network module slots, dual AC/DC power supply)
<b>LS85-PWR-AC-600</b>	220V AC power supply for S8506
<b>LS85-PWR-DC</b>	-48 V DC power supply
<b>A-GEAR S8503</b>	
<b>LS8503-Chassis</b>	A-GEAR S8503 core routing switch chassis (3 slots, including 1 MSU slot and 2 network module slots, dual AC/DC power supply)
<b>LS85-PWR-AC-600</b>	220V AC power supply for S8503
<b>LS85-PWR-DC</b>	-48 V DC power supply
<b>S8500 modules</b>	
<b>MSU</b>	
<b>LS85-MSU-I</b>	Main Switching Unit —UltraEngine I
<b>LS85-MSU-II</b>	Main Switching Unit —UltraEngine II
<b>LS85-MSU-III</b>	Main Switching Unit —UltraEngine III
<b>LS85-MSU-IV</b>	Main Switching Unit —UltraEngine IV
<b>Business modules</b>	
<b>LS85-48FE-TX</b>	48-port 10/100M TX Module
<b>LS85-24FESFP-4GE</b>	24-port 100M SFP + 4-port 1000M SFP/TX Module
<b>LS85-12GE-Combo</b>	12-port 1000M SFP/TX Module
<b>LS85-24GE-SFP</b>	20-port 1000M SFP + 4-port 1000M SFP/TX Module
<b>LS85-24GE-TX</b>	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Module
<b>LS85-48GE-TX</b>	48-port 10/100/1000M TX Module

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<b>LS85-1TE-XFP</b>	1-port 10 Gigabit XFP Module
<b>LS85-2TE-XFP</b>	2-port 10 Gigabit XFP Module
<b>LS85-4TE-XFP</b>	4-port 10 Gigabit XFP Module
<b>LS85-8TE-XFP</b>	8-port 10 Gigabit XFP Module
<b>LS85-24FE-SFPE</b>	Enhanced 24-port 100M FX Module (Support MCE and QinQ)
<b>LS85-12GE-TX/SFPE</b>	Enhanced 12-port Gigabit TX-SFP Combo Module, support MCE & QinQ
<b>LS85-24GE-SFPE</b>	Enhanced 20-port 1000M SFP + 4-port Gigabit SFP/TX Module, support MCE & QinQ
<b>LS85-24GE-TXE</b>	Enhanced 20-port 10/100/1000M TX + 4-port Gigabit SFP/TX Module, support MCE & QinQ
<b>LS85-48GE-TXE</b>	Enhanced 24-port Gigabit TX Module, support MCE & QinQ
<b>LS85-1TE-XFPE</b>	Enhanced 1-port 10 Gigabit XFP Module, support MCE & QinQ
<b>LS85-2TE-XFPE</b>	Enhanced 2-port 10 Gigabit XFP Module, support MCE & QinQ
<b>LS85-12GE-TX/SFPE-MPLS</b>	Enhanced 12-port Gigabit TX-SFP Combo Module, support MPLS
<b>LS85-1TE-XFP-MPLS</b>	Enhanced 1-port 10 Gigabit XFP Module, support MPLS
<b>LS85-MFNP-12GE-TX/SFP</b>	12-port 1000M SFP/TX Multi-functional business Module
<b>2G PCMCIA CARD</b>	2G CF card and memory card adaptor

The functions and corresponding parameters may change in light of the upgrade of software, modular, etc. The right of final interpretation belongs to A-GEAR. For more information, please contact us.