

## OP8600 Series GPON



OP8600 series are designed by Optostar for high-density access switching integrated platform which combine multi-service and high-density 10G switching requirement. As the new generation of smart equipments for the telecommunications integrated access network, it could build GPON general platform and have the features of small size, huge capacity, high density and powerful performance, which could supply high quality sustainability solution for Broadband Access, Transmission of Mobile Data Base Station, CPN (Customer Premiss Network ), E-Commerce and so on.

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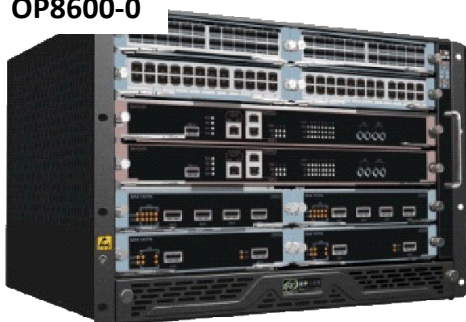
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**OP8600-0**



- 4U compact design, half-size serve slots
- 1+1 master control redundancy,1+1power supply redundancy
- Hot plug fan chassis, intelligent speed and temperature control
- 6slots, 2 main control cards,4 line cards
- Maximum support 32\*GPON
- 1.6Tbps widely backplane capacity and smooth upgrade to 40G/100G
- IPv4/IPv6 and MPLS hardware line speed forwarding
- The whole power consumption less than 350W

**OP8600-0**



- 7U compact design, half-size serve slots
- 1+1 master control redundancy,1+1power supply redundancy
- Hot plug fan chassis, intelligent speed and temperature control
- 10slots, 2 main control cards,8 line cards
- Maximum support 64\*GPON
- 3.2Tbps widely backplane capacity and smooth upgrade to 40G/100G
- IPv4/IPv6 and MPLS hardware line speed forwarding
- The whole power consumption less than 680W

OP8600-1



- 15U compact design, half-size serve slots
- 1+1 master control redundancy,2+2power supply redundancy
- Hot plug fan chassis, intelligent speed and temperature control
- 18slots, 2 main control cards,16 line cards
- Maximum support 128\*GPON
- 6.4Tbps widely backplane capacity and smooth upgrade to 40G/100G
- IPv4/IPv6 and MPLS hardware line speed forwarding
- The whole power consumption less than1200W

**Product Specification:**

Item		OP8600-04	OP8600-08	OP8600-16
Backplane capacity		>1.6Tbps	>3.2Tbps	>6.4Tbps
Switching capacity		960Gbps	1.6Tbps	3.2Tbps
Throughput(IPv4/IP v6)		720Mpps	1440Mpps	2860Mpps
Number of slots		6	10	18
Number of service board slots		4	8	16
Service port	GPON	32*GPON	64*GPON	128*GPON
	SWITCH	96*GE,48*10GE	192*GE,96*10GE	384*GE,192*10GE

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Redundancy design	1+1 power redundancy 1+1 main control redundancy	1+1 power redundancy 1+1 main control redundancy	2+2 power redundancy 1+1 main control redundancy
Power supply	AC : 90 ~ 260V , 50 ~ 60Hz ; DC : -36V ~ -72V ;		
Power consumption	≤300W	≤680W	≤1200W
Outline dimensions (mm) (W*D*H)	442mm×176mm×420mm	442mm×310mm×420mm	442mm×664mm×420mm
Weight (in maximum configuration)	≤15kg	≤25kg	≤45kg
Environmental parameter	Working temperature : 0°C ~ 40°C Storage temperature : -40°C ~ 70°C Relative humidity : 10% ~ 90% , no condensing		

**Business Features:**

Attributes		OP8600 series
PON features	<b>EPON</b>	IEEE 802.3ah EPON China telecom/Unicom GEPON standard 20Km for single fibber Access 64 terminals for single fibber PON Uplink and downlink triple churning encrypted function ONU terminal legitimacy certification, report illegal ONU registration DBA algorithm Standard OAM and extended OAM ONU batch software upgrade, fixed time upgrade, real time upgrade PON transmit and inspect receiving optical power

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	GPON	<p>Satisfy ITU-T standard            TR-101 compliant solution for FTTx OLT applications            High splitter rate, each PON port supports 128*ONU ,512*T-CONT            Maximum transmission distance of 60KM            Support uplink FEC, downlink FEC(Forward Error Correction)            Periodically update AES encryption            ONU identifier authentication :SN/PASSWD/SN+PASSWD            Bandwidth allocation mechanism            4 types of T-CONT bandwidth            Static Bandwidth Allocation            Dynamic Bandwidth Allocation            Fiber link inspection            4 types of TYPE A/B/C/D line protection mechanism            GPON feature parameter            4096 port-IDs per GPON MAC (Downstream and Upstream)            1024 Alloc-IDs per GPON MAC (Upstream)</p>
L2 features	MAC	<p>MAC Black Hole            Port MAC Limit            MAC address limitation based on ONU</p>
	VLAN	<p>4K VLAN entries            Port-based/MAC-based/IP subnet-based VLAN            Port-based QinQ and Selective QinQ (StackVLAN)            VLAN Swap and VLAN Remark and VLAN Translate            GVRP            Based on ONU service flow VLAN add, delete, replace</p>
	Spanning tree protocol	<p>IEEE 802.1D Spanning Tree Protocol (STP)            IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)            IEEE 802.1s Multiple Spanning Tree Protocol instances (MSTP)            ONU remote loop detecting alarm</p>
	Port	<p>Bi-directional bandwidth control            Static link aggregation and LACP(Link Aggregation Control Protocol)            Port mirroring and traffic mirroring</p>
Security features	User security	<p>Anti-ARP-spoofing            Anti-ARP-flooding            IP Source Guard create IP+VLAN+MAC+Port binding            Port Isolation            MAC address binds to port and port MAC address filtration            IEEE 802.1x and AAA/Radius authentication            TACACS+ authentication            dhcp anti-attack flood attack automatic suppression            ONU isolation control</p>

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	Device security	<p>Anti-DOS attack(such as ARP, Synflood, Smurf, ICMP attack), ARP detection, worm and Msblaster worm attack</p> <p>SSHv2 Secure Shell</p> <p>SNMP v3 encrypted management</p> <p>Security IP login through Telnet</p> <p>Hierarchical management and password protection of users</p>
	Network security	<p>User-based MAC and ARP traffic examination</p> <p>Restrict ARP traffic of each user and force-out user with abnormal ARP traffic</p> <p>Dynamic ARP table-based binding</p> <p>Supports IP+VLAN+MAC+Port binding</p> <p>L2 to L7 ACL flow filtration mechanism on the 80 bytes of the head of user-defined packet</p> <p>Port-based broadcast/multicast suppression and auto-shutdown risk port</p> <p>URPF to prevent IP address counterfeit and attack</p> <p>DHCP Option82 and PPPoE+ upload user's physical location</p> <p>Plaintext authentication of OSPF、RIPv2 and BGPv4 packets and MD5 cryptograph authentication</p>
IP routing	IPv4	<p>ARP Proxy</p> <p>DHCP Relay</p> <p>DHCP Server</p> <p>Static route</p> <p>RIPv1/v2</p> <p>OSPFv2</p> <p>BGPv4</p> <p>Strategy route</p> <p>Route policy</p>
	IPv6	<p>ICMPv6</p> <p>ICMPv6 redirection</p> <p>DHCPv6</p> <p>ACLv6</p> <p>OSPFv3</p> <p>RIPng</p> <p>BGP4+</p> <p>Configured Tunnel</p> <p>ISATAP</p> <p>6to4 tunnel</p> <p>IPv6 and IPv4 Tunnels</p>

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Service features	ACL	<p>Standard and extended ACL</p> <p>Time Range ACL</p> <p>Packet filter providing filtering based on source/destination MAC address, source/destination IP address, port, protocol, VLAN, VLAN range, MAC address range, or invalid frame. System supports concurrent identification at most 50 service traffic</p> <p>Support packet filtration of L2~L7 even deep to 80 bytes of IP packet head</p>
	QoS	<p>Rate-limit to packet sending/receiving speed of port or self-defined flow and provide general flow monitor and two-speed tri-color monitor of self-defined flow</p> <p>Priority remark to port or self-defined flow and provide 802.1P, DSCP priority and Remark</p> <p>CAR(Committed Access Rate)、Traffic Shaping and flow statistics</p> <p>Packet mirror and redirection of interface and self-defined flow</p> <p>Super queue scheduler based on port and self-defined flow. Each port/ flow supports 8 priority queues and scheduler of SP, WRR and SP+WRR.</p> <p>Congestion avoid mechanism, including Tail-Drop and WRED</p>
	Multicast	<p>IGMPv1/v2/v3</p> <p>IGMPv1/v2/v3 Snooping</p> <p>IGMP Filter</p> <p>MVR and cross VLAN multicast copy</p> <p>IGMP Fast leave</p> <p>IGMP Proxy</p> <p>PIM-SM/PIM-DM/PIM-SSM</p> <p>PIM-SMv6、PIM-DMv6、PIM-SSMv6</p> <p>MLDv2/MLDv2 Snooping</p>
	MPLS	<p>L3 MPLS VPN</p> <p>L2 VPN: VLL (Martini, Kompella)</p> <p>MCE</p> <p>MPLS OAM</p>
Reliability	Loop protection	<p>EAPS and GERP (recover-time &lt;50ms)</p> <p>Loopback-detection</p>
	Link protection	<p>FlexLink (recover-time &lt;50ms)</p> <p>RSTP/MSTP (recover-time &lt;1s)</p> <p>LACP (recover-time &lt;10ms)</p> <p>BFD</p>

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	Device protection	VRRP host backup Double fault-tolerant backup of host program and configuration files 1+1 main control panel hot backup 1+1 power hot backup Fan redundancy
Maintenance	Network maintenance	Telnet-based statistics RFC3176 sFlow LLDP 802.3ah Ethernet OAM RFC 3164 BSD syslog Protocol Ping and Traceroute
	Device management	Command-line interface ( CLI ) , Console, Telnet and WEB configuration System configuration with SNMPv1/v2/v3 RMON (Remote Monitoring)1/2/3/9 groups of MIB NTP(Network Time Protocol) GN.Link II Server NGBNView network management

**Purchase Information:**

Product name	Product description	
OP8600-04	6slots(4*service slots,2*main control slots,1*hot plug fan disk, no main control boards, no power supply)	
OP8600-08	10slots(8*service slots,2*main control slots,1*hot plug fan disk, no main control boards, no power supply)	
OP01MSUA0	OP8600-04, main control boards, NGEEngine™ I switch routing engine	
OP02MSUA0	OP8600-08, main control boards, NGEEngine™ II switch routing engine	
OP01PWR750A1	OP8600,750W dual power supply module A1	
OP01GP08MA	OP8600,GPON service card,8*GPON SFP,8*1000BaseX SFP	
OP01GS24SA	OP8600, switch routing service card,24*1000BaseX SFP interface	
OP01GT24SA	OP8600, switch routing service card,24*10/100/1000BaseT interface	
OP01SFP+08SA	OP8600, switch routing service card,8*10GE SFP+10GE interface	

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