



ISCOM S5600-EI Series Layer 3 Switches

Overview

The ISCOM S5600-EI series switch, independently developed by Raisecom, is a new-generation enhanced Layer 3 GE switch. It provides flexible GE optical and electrical interfaces for access and 10GE uplink interfaces, and even supports 10G optical or electrical interfaces or 40G QSFP+ optical interfaces through extension cards. Based on the industry-leading high-performance hardware architecture and the new ROS software platform of Raisecom, the ISCOM S5600-EI series switch provides better specifications and higher hardware processing capability, and supports ISF, diverse reliability protection, complete security control, and easy operation and maintenance. It can be widely used in multiple application scenarios, such as enterprise park access, aggregation, and data center GE access, and also work as the core of SMEs.

S5600-28C-EI • Twenty-four 10/100/1000Base-T Ethernet interfaces and four 10GE SFP+ interfaces One slot for the extension card • Swappable power supply, supporting dual AC power supplies, dual DC power supplies, single AC power supply, single DC power supply, and hybrid AC+DC power supplies S5600-28C-EI-24F • Twenty-four GE SFP interfaces and four **10GE SFP+** interfaces **-** 1 H. One slot for the extension card • • Swappable power supply, supporting dual AC power supplies, dual DC power supplies, single AC power supply, single DC power supply, and hybrid AC+DC power supplies

Product model and appearance

International Headquarters East-11, Raisecom Building, No.10 Xibeiwang East Road, Haidian District, Beijing. 100094, China

Tel: +86 10 8288 3305 Fax: +86 10 8288 3056 www.raisecom.com U.S.A. Headquarters Address: 3031 N. Rocky Point Drive West Suite 100 Tampa, Florida 33607 USA Tel: 1-888-816-4808 Email: sales@raisecominc.com





S5600-52C-EI	• Forty-eight 10/100/1000Base-T Ethernet		
	interfaces and four 10GE SFP+ interfaces		
anana anana anana anana 'Tu - I	One slot for the extension cardSwappable power supply, supporting dual AC		
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	power supplies, dual DC power supplies,		
	single AC power supply, single DC power		
	supply, and hybrid AC+DC power supplies		
S5600-52C-EI-48F	• Forty-eight GE SFP interfaces and four 10GE		
	SFP+ interfaces		
	• One slot for the extension card		
	• Swappable power supply, supporting dual AC		
	power supplies, dual DC power supplies,		
	single AC power supply, single DC power		
	supply, and hybrid AC+DC power supplies		
S5600-28X-EI	• Twenty-four 10/100/1000Base-T Ethernet		
44000 - 3.0	interfaces, four 10GE SFP+ interfaces, and		
	two QSFP+ optical interfaces		
	• AC/DC power supply, supporting RPS		
S5600-52X-EI	• Forty-eight 10/100/1000Base-T electrical		
	interfaces, four 10GE SFP+ interfaces, and		
	two QSFP+ optical interfaces		
	• AC power supply, supporting RPS		
S5600-28X-EI-16F8G	• Twenty-four 10/100/1000Base-T Ethernet		
	interfaces(including 8 Combo interfaces), four		
	10GE SFP+ interfaces, and two QSFP+		
	optical interfaces		
	• AC/DC power supply, supporting RPS		

Features

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High performance and rich interface expansion capabilities

The ISCOM S5600-EI series switch provides rich interface portfolio, including 24/48 GE electrical or optical interfaces and 4 permanent 10GE optical interfaces, which is of great price-performance ratio. The ISCOM S5600-EI series switch provides various interface-extension cards, including 8-interface 10GE/GE optical extension card, 2-interface 10GE optical/electrical interface card, and 2-interface 40GE extension card, thus featuring high-density and high-performance interface expansion capabilities and meeting requirements for aggregation on a large network, deployment in a small- and medium-sized network, and configurations for hybrid optical/electrical interface networking.

In addition, the ISCOM S5600-EI series switch supports ISF, which virtualizes multiple devices into a system, thus expanding interfaces in multiples and meeting requirements for high performance and high interface density of the core system in the high-performance enterprise park.

Diverse reliability protection

The ISCOM S5600-EI series switch supports ISF, which can virtualize up to 9 switches logically into one switch. ISF not only simplifies configurations and management, but also enhances device-level reliability and even enhances link-level reliability through inter-device link aggregation.

The ISCOM S5600-EI series switch supports swappable dual power supplies which implement 1+1 backup. It even supports hybrid AC+DC power supplies, which can be configured flexibly as required. It also supports swappable dual fans, which can automatically adjust the rotational speed by temperature and enhances device reliability.

In addition to traditional STP/RSTP/MSTP spanning tree protocols, the ISCOM S5600-EI series switch also supports the latest Ethernet Ring Protection Switching (ERPS) standard defined in ITU-T G.8032, which is applied to various ring network topologies, such as single ring, tangent ring, and intersecting ring, and can provide sub-50ms protection switching to implement carrier-grade reliability.

The ISCOM S5600-EI series switch supports interface backup dual-homed protection, manual and static LACP, G.8031 end-to-end linear protection, and VRRP, thus implementing link backup in networking with different networks and greatly improving reliability of devices at the access side.

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The ISCOM S5600-EI series switch supports multiple CFM modes, complete Ethernet OAM (IEEE802.3ah, IEEE802.1ag*, and ITU Y.1731*), and BFD.

Complete security control strategies

The ISCOM S5600-EI series switch directly discards invalid packets that do not match the binding entry by establishing and maintaining the DHCP snooping binding table. By using the DHCP Snooping trusted interface, the ISCOM S5600-EI series switch supports can also guarantee the legality of the DHCP server.

The ISCOM S5600-EI series switch supports dynamic ARP inspection, which can check user legality and ARP packet validity. Through ARP rate limiting, it can prevent excessive ARP packets from attacking the CPU.

The ISCOM S5600-EI series switch supports multiple access control technologies, such as ACL, Dot1x, RADIUS, and TACACS+, and user authentication technologies, thus flexibly meeting requirements for multiple authentication modes on the network.

Rich QoS strategies

The ISCOM S5600-EI series switch supports filtering L2–L4 packets. It supports traffic classification based on source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port ID, protocol type, and VLAN. Based on these traffic classification modes, it supports multiple actions, including discarding, remaking, redirection, mirroring, statistics, and CAR. It supports flexible queue scheduling algorithms and SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes. It also supports dual-rate three-color Committed Access Rate (CAR) with smallest granularity and supports rate limiting in the ingress and egress directions of the interface.

Easy OAM

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The ISCOM S5600-EI series switch provides rich management interfaces, such as the Console interface, mini-USB interface, out-of-band management interface, and supports SNMPv1/v2c/v3. It supports the Raisecom NMS NView NNM system and multiple management modes, such as CLI, Web, and Telnet, thus making maintenance easy. By supporting SSHv2.0 encryption mode, it provides safer management. It also supports

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RMON and traffic statistics on interfaces, thus facilitating network optimization and reconstruction.

The ISCOM S5600-EI series switch supports IPv4/IPv6 stack and complete IPv6 management and authentication, thus applicable to management in the IPv6 network management environment.

The ISCOM S5600-EI series switch supports local port mirroring, RSPAN remote mirroring, and traffic mirroring. It also supports multiple monitor ports and supports using a LAG interface as the monitor port, thus facilitating extraction and analysis of network traffic and taking measures accordingly.

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Technical specifications

Model	S5600-28C- EI	S5600-28C- EI-24F	S5600-52C -EI	S5600-52C -EI-48F	S5600-28X-EI	S5600-28X- EI-16F8G	S5600-52X- EI
Interface	Twenty-four 10/100/100 0Base-T electrical interfaces and four 10GE SFP+ optical interfaces	Twenty-four 100/1000Bas e-X SFP interfaces and four 10GE SFP+ optical interfaces	Forty-eight 10/100/100 0Base-T electrical interfaces and four 10GE SFP+ optical interfaces	Forty-eight GE SFP interfaces and four 10GE SFP+ optical interfaces	Base-T electrical interfaces, four 10GE SFP+ optical interfaces, and two 40G QSFP+ optical interfaces	interfaces,	10/100/100 0 Base-T electrical interfaces, four 10GE SFP+ optical
Extension slot	 Provide one extension slot for extending services: 2-interface 40GE QSFP+ interface card 8-interface 10GE SFP+ interface card 8-interface GE SFP interface card 8-interface GE RJ45 interface card 1 RJ45 Console interface 			N/A			
Management interface	 I mini-USB interface (these two interface cannot concurrent work. The mini-USB interface 1 out-of-band management interface 			prevails)			
Switching capacity	128 Gbit/s		176 Gbit/s		288 Gbit/s	288 Gbit/s	336 Gbit/s
Packet forwarding rate	95 Mpps		131 Mpps		216Mpps	216Mpps	252Mpps

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Dimensions (mm) (Width × Depth × Height)	444 × 420 × 44.4		
MAC address table	 Support 64K MAC addresses. Support automatic learning and aging of MAC addresses and support static MAC address. Support static, dynamic, and blackhole MAC address entries. Support MAC address limit based on interface or VLAN. Support managing MAC address flapping. 		
VLAN Jumbo Frame	 Support 4K VLANs. Support MAC/protocol/IP subnet/interface-based VLAN. Support basic QinQ and selective QinQ. Support 1:1 and N:1 VLAN mapping. Support private VLAN. Support voice VLAN Support GVRP. 		
ISF	 Support ISF which virtualizes multiple devices into one device. Support linear topology or ring topology. Support local and long-distance ISF based on service interface and support ISF based on two 40 Gbit/s interfaces. Support BFD MAD which prevents split ISFs from affecting the network after ISF split. 		
Reliability	 Support manual aggregation and static LACP. Support STP/RSTP/MSTP/MRSTP. Support BFD for static route. Support BFD for VRRP. Support VRRP. Support ERPS (G.8032). Support ELPS (G.8031)*. Support interface backup. Support loop detection. Support Ethernet OAM IEEE 802.3ah, IEEE 802.1ag*, and ITU-Y.1731*. 		
IP routing	Support static route, RIPv1/v2, RIPng*, OSPFv2, OSPFv3*, ECMP, and routing policy.		





	• Support IPv6 Ping, IPv6 Tracert, IPv6 Telnet, and IPv6 FTP/TFTP/SFTP.
IPv6	• Support IPv6 SNMP and IPv6 network management in the Raisecom NView NNM system.
	• Support IPv6 RADIUS, IPv6 TACACS+, IPv6 NTP and SNTP.
	• Support IPv6 ACL.
	• Support ND.
	• Support ND Snooping
	• Support IPv6 Source Guard.
	• Support MLDv1/v2 Snooping.
	• Support IGMPv1/v2/v3 Snooping and fast leave.
	• Support interface/user-based immediate leave.
	• Support static multicast group.
M-14*	• Support IGMP MVR.
Multicast	• Support IGMPv1/v2/v3, MLD, and PIM-SM.
	• Support IGMP filter.
	• Support IGMP VLAN copy.
	• Support IGMP Proxy.
	• Support DHCP Client and DHCPv6 Client.
	• Support DHCP Snooping.
DHCP	• Support DHCP Relay.
	• Support DHCP Server and Option 43.
	• Support DHCP Snooping Option 61/82 and DHCP Relay Option 82.
Mirroring	• Support traffic mirroring.
wiirfornig	• Support local and remote port mirroring.
	• Support rate limiting in the ingress direction and egress direction of the interface.
QoS/ACL	• Each interface supports 8 queues.
	• Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes.
	• Support packet redirection.
	• Support 802.1p and DSCP priority remarking for packets.
	• Support interface-based traffic monitoring and dual-rate three-color CAR.
	• Support L2–L4 packet filtering based on source MAC address, destination MAC address, source IP
	address, destination IP address, TCP/UDP source/destination port ID, protocol, and VLAN.

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	• Support hierarchical user management and password protection.	
	• Support 801.x authentication based on interface and MAC address, and support the limit on the maximum	
	number of users per interface.	
	• Support CPU protection and anti-ARP attack.	
	• Support a combination binding of IP address, MAC address, interface, and VLAN.	
	• Support the blackhole MAC address.	
	• Support AAA, RADIUS, and TACACS+ authentication.	
G	• Support interface isolation.	
Security	• Support port security MAC.	
	• Support SSHv2.0.	
	• Support SFTP.	
	• Support HTTPS.	
	• Support DHCP Snooping and DHCP server which prevents against spoofing.	
	• Support uRPF which prevents IP source address spoofing.	
	• Support dynamic ARP inspection which prevents man-in-the-middle attack and ARP DOS attack.	
	• Support BPDU guard and root guard.	
	• Support ISF.	
	 Support management through the Console interface and out-of-band interface. 	
	 Support SNMPv1/v2c/v3 and various management modes, such as CLI, Web, Telnet, and SSHv2.0. 	
	 Support the Raisecom NView NNM system. 	
	• Support RMON.	
	• Support LLDP.	
	 Support Syslog and hierarchical alarm reporting. 	
	 Support Ping and Tracert. 	
Management	 Support Dying Gasp alarm. 	
and	• Support NTP and SNTP.	
maintenance	 Support virtual cable test. 	
	 Support interface loopback. 	
	• Support interface loop detection.	
	• Support optical module DDM.	
	• Support link-state tracking.	
	 Support DLDP unidirectional link detection. 	
	 Support the power supply alarm, fan alarm, and temperature alarm. 	
	 Support due journe supply datain, fait datain, and competation datain Support dual systems. 	
Lightning protection	Interface lightning protection capability: 6 KV	
Innut 14	• AC power: 220 VAC, with voltage range of 100–240 VAC and frequency of 50–60 Hz	
Input voltage	• DC power: -48 VDC, with voltage range of -36 to -72 VDC	

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	S5600-28C-EI: 39 W for single power supply; 43 W for dual power supplies	
	S5600-52C-EI: 51 W for single power supply; 56 W for dual power supplies	
	S5600-28C-EI-24F: 59 W for single power supply; 63 W for dual power supplies	
	S5600-52C-EI-48F: 86 W for single power supply; 90 W for dual power supplies	
Maximum	S5600-28X-EI: 45 W	
power	S5600-52X-EI: 55 W	
consumption	S5600-28X-EI-16F8G: 70 W	
	2-interface 40GE QSFP+ interface card: 14 W	
	8-interface 10GE optical interface card: 16.6 W	
	8-interface GE SFP interface card: 8 W	
	8-interface GE electrical interface card: 5.3 W	
	Operating temperature: 0-45 °C (for the \$5600-28C-EI, \$5600-52C-EI, \$5600-28C-EI-24F,	
Environment	S5600-52C-EI-48F)	
requirements	Operating temperature: 0-45 °C (for the S5600-28X-EI, S5600-52X-EI, and S5600-28X-EI-16F8G)	
	Relative humidity: 5%–90% (non-condensing)	

(Note: features marked with "*" are in planning)

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Networking application

Enterprise park aggregation

The ISCOM S5600-EI series switch, as an aggregation device in the enterprise park, is connected downstream to

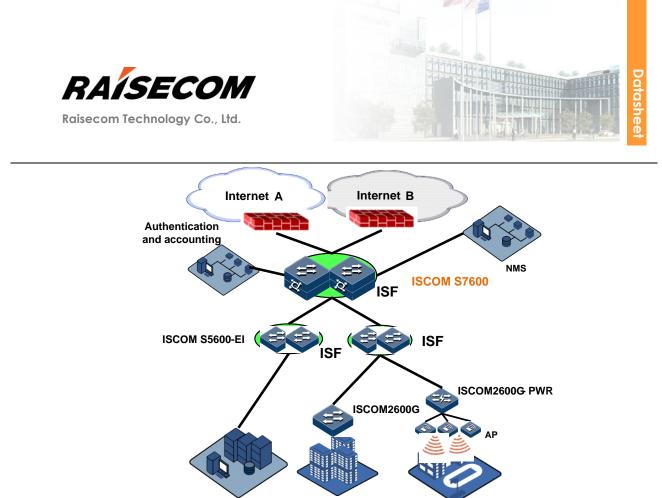
access switches through GE interfaces and upstream to the core switch of each area through the 10GE interface.

Networking with ISF and link aggregation, it can fully enhance network reliability.

The ISCOM S5600-EI series switch also supports IPv6, so it can save the customer's investment without being replaced by an IPv6-supportive device if the network will be upgraded to an IPv6 network.

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Servers and intranet resources Wired area

SME core

The ISCOM S5600-EI series switch can be used by SMEs (including the Internet bar). It can be connected downstream to access switches (we recommend the ISCOM2600G series switch as a GE switch and the ISCOM2100 series switch as a FE switch) through the GE interface and upstream to an export firewall or enterprise gateway. It can also access 1000 Mbit/s service data from servers, thus flexibly adapting to various network environments, protecting the user network, and providing better experience in using the network.

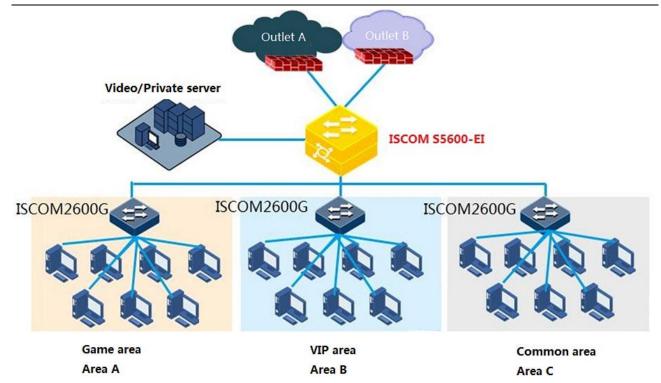
Wireless area

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Ordering information

Model	Description
ISCOM S5600-28C-EI	Twenty-four 10/100/1000Base-T Ethernet interfaces, four 10GE SFP+ optical interfaces (compatible with GE SFP modules), one extension card, two power supply slots, dual AC power supplies, dual DC power supplies, single AC power supply, single DC power supply, and hybrid AC+DC power supplies
ISCOM S5600-28C-EI-24F	Twenty-four GE SFP interfaces, four 10GE SFP+ optical interfaces (compatible with GE SFP modules), one extension card, two power supply slots, dual AC power supplies, dual DC power supplies, single AC power supply, single DC power supply, and hybrid AC+DC power supplies
ISCOM S5600-52C-EI	Forty-eight 10/100/1000Base-T Ethernet interfaces, four 10GE SFP+ optical interfaces (compatible with GE SFP modules), one extension card, two power supply slots, dual AC power supplies, dual DC power supplies, single AC power supply, single DC power supply, and hybrid AC+DC power supplies

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Model	Description
ISCOM	Forty-eight GE SFP interfaces, four 10GE SFP+ optical interfaces (compatible
S5600-52C-EI-48F	with GE SFP modules), one extension card, two power supply slots, dual AC
	power supplies, dual DC power supplies, single AC power supply, single DC
	power supply, and hybrid AC+DC power supplies
ISCOM S5600-28X-EI	Twenty-four 10/100/1000Base-T Ethernet interfaces, four 10GE SFP+ interfaces
	(compatible with 1000 Mbit/s SFP interfaces), 2 QSFP+ optical interfaces, AC/DC
	power supply, RPS interface
ISCOM S5600-52X-EI	Forty-eight 10/100/1000Base-T electrical interfaces, four 10GE SFP+ interfaces
	(compatible with 1000 Mbit/s SFP interfaces), 2 QSFP+ optical interfaces, AC
	power supply, RPS interface
ISCOM	Twenty-four 100/1000Base-X optical interfaces (including 8 Combo interfaces),
S5600-28X-EI-16F8G	four SFP+ optical interfaces (compatible with 1000 Mbit/s SFP interfaces), 2
	QSFP+ interfaces, AC/DC power supply, RPS interface
Extension cards and	optional parts
ESW-SUB-2Q	2-interface 40GE QSFP+ interface card
ESW-SUB-8XF	8-interface 10GE optical interface card
ESW-SUB-8GF	8-interface GE SFP interface card
ESW-SUB-8G	8-interface GE electrical interface card
FAN308	S5600-EI fan
RPA1153-U220S12	150-W swappable AC power supply
RPD1153-48S12	150-W swappable DC power supply

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