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ISCOM5508-GP GPON OLT

The ISCOM5508-GP from Raisecom, is a compact Optical Line Terminal (OLT). It's easy for installation, deployment and extension based on the modularized system architecture.

With powerful GPON access capabilities, carrier-grade reliability, it supports strong security (such as ACL and anti-DOS attacks) and selective QinQ, and provides good management, maintenance, and monitoring functions.

The ISCOM5508-GP, with rich features and flexible networking schemes, meets low-density and long-distance fiber access requirements. Through the NNM NView system, it provides a complete solution of comprehensive access and uniform network management for access layer.

ISCOM5508-GP

Highlights >>

High integrity and flexible networking

- Be of 1U high, single MCU, 2 GPON sub-cards, 1 WDFA (EDFA+WDM) sub-card, adopt modular design for easy installation and component replacement, and support Layer 2 line speed forwarding.
- Provide 8 GPON interfaces, and support 1024 ONUs and up to 10 GE uplink optical interfaces.
- Provide 1 CATV (1550nm) input, and 4 ways EDFA output, combine CATV with PON by WDM module inside.
- Accessing broadband, voice, IPTV, etc. services to meet various accessing applications of carriers, broadcast, radio, and television network, and customer premise network.
- Cascading OLTs in a link network to be downstream devices in the remote areas, able to meet rural long-distance-broadband access scenario requirements and save Trunk fiber resources.

Carrier-grade reliability

- Support 1+1 power supply protection and hot swapping of all cards.
- Support class B PON protection, and Carrier grade switching
- Support private Ethernet ring network and a switching time of 50ms.

Rich features

- Support VLAN, including selective QinQ, VLAN mapping and aggregation.
- Support complete QoS, including dynamic assignment of bandwidth, priority control, multiple traffic classification modes, multiple queue scheduling modes, etc. to meet different QoS requirements for VoIP, video, and Internet access services.
- Complete ACL, including L2, L3, L4, and customized ACLs.
- Support static multicast, IGMP Snooping, Proxy, MVR, and controllable multicast.
- Support static route.
- Support STP/MSTP, link aggregation, DHCP, interface isolation, etc.
- Support IPv6.

Green energy-saving design

- Overall power consumption of MCU and service cards is less than 70w .
- Adopt intelligent fan which can adjust rotational speed according to temperature, thus prolonging fan life, lowering noise, and saving energy
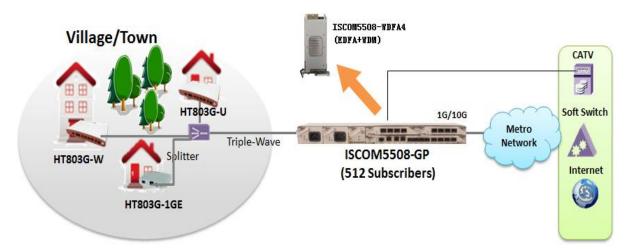

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Application >>

Figure.1   GPON comprehensive access solution

FTTH Access

- Optimized solution for serving up to 512 Customers

- Compact Size (1U for Mini OLT & EDFA & WDM Totally) space saving

- A pay-as-you-grow scalable OLT that will enable fast deployment and future growth (by adding additional slots)

- Carrier Class Network management solution, reduce Capex with "Zero Touch" provisioning towards the ONT and TR069 option enables auto configuration of ONT from ACS Server.

Key Features >>

Hardware features>

Number of slots	3	Number of MCUs	1
Number of GPON service cards	Up to 2 (including MCU). Each card supports 4 GPON interfaces.	Number of uplink cards	Up to 3. The MCU provides 2 GE electrical interfaces, 2 GE optical interfaces, and two 10GE optical interfaces. The rest 2 cards support 4 GE optical interfaces respectively.
Number of fans	1	Number of power supplies	2
Number of EDFA Service card	Max 1 card, provide 1 CATV input, 4 GPON input, 4 Triple wavelength (1550nm, 1310nm and 1490nm) output interface.		
GPON optical interface	- Compliant standard: ITU-T 984.2 CLASS B+/C+ - Working wavelength: 1490 nm; uplink rate: 1.25Gbit/s; downlink rate: 2.5Gbit/s - Transmission distance: 20/60 km; supporting DDM, complying with RoHS		

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EDFA interface	• Input wavelength: 1545–1565 nm
	• Input optical power: -10 to 10 dBm
	• Output optical power per interface: 19 to 20.5 dBm
GE electrical interface	• Support IEEE 802.3 10/100/1000BASE-TX.
	• Transmission rate: 10/100/1000M auto-negotiation
GE optical interface	• Support IEEE 802.3 1000BASE-LX/SX/CX
	• Transmission rate: 1000 Mbit/s
10GE optical interface	• Support IEEE 802.3ae-2002
	• Transmission rate: 10Gbit/s
In-band management interface	Support in-band management. Without specific interface, you can choose any service interface to work as the local Ethernet management interface.
Out-of-band management interface	• Transmission rate: 10/100M auto-negotiation; interface type: RJ45
	• Working mode: full/half duplex, auto-negotiation
Console interface	Physical interface: RJ45; level: RS232; Baud rate: 9600 Baud
Power supply (DC)	-48 VDC power module; voltage range: -36 to -72 VDC
Power supply (AC)	110/220 VAC power module; voltage range: 100–240 VAC (50/60 Hz)
Lightning protection level	• AC power: 6 kV in differential mode and 6 kV in common mode
	• DC power: 1 kV in differential mode and 2 kV in common mode

System Performance>

Switching capacity	96Gbit/s	Backplane bandwidth	40Gbit/s
Capacity of the MAC address table	32K	PON line rate	Uplink: 1.25 Gbit/s; downlink: 2.5 Gbit/s
Maximum transmission distance	20 km	Maximum optical splitting ratio	1:128
Maximum number of PON interfaces	8	Maximum number of ONUs	1024
MTBF	> 10 years	T-CONT&GEM per Port	T-CONT: 512 GEM Port: 4096
Reliability	• Support 1+1 hot backup of power supplies and hot swapping of all cards.		
	• Support B/C/D-class PON protection (inter-card), able to meet carrier-grade switching time.		
	• Support private Ethernet ring protection with 50ms switching time		

Software features>

Interface	• Support port mirroring in both the ingress and egress directions.	Transparent transmission	• BPDU transparent transmission.
	• Support point-to-multipoint mirroring.		• LACP transparent transmission.
			• LLDP transparent transmission.
			• STP transparent transmission.

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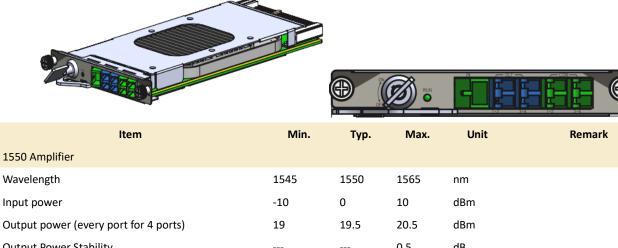|			
VLAN and QinQ	4K VLANs. - Basic QinQ, able to add SVLAN based on MAC address, CVLAN, IP address, and protocol type. - Selective QinQ: 8K rules based on CVLAN and 1K rules based on ACL. - VLAN mapping: 8K 1:1 or N:1 VLAN mapping rules based on CVLAN and 1K 1:1 VLAN mapping rules based on ACL.	**Multicast**	- Static multicast. - IGMP Snooping (v1/v2). - MVR (inter-VLAN copy) and MVR Proxy. - Controllable multicast. 1K multicast entries.
ACL	- ACL based on MAC address, IP address, and customized ACL. Support ACL MAP. 2K ACL rules.	**Link aggregation**	- Up to 32 link aggregation groups. Support 8GE by each group. 6 load balancing modes based on MAC address, IP address, etc.
Route	Support static route and up to 128 pieces.	**Security**	IP Source Guard, dynamic ARP inspection, anti-DoS attack, and storm control.
QoS	- Interface-based queue scheduling. Each interface supports 8 priority queues. - SP, WRR, DRR, and SP+WRR queue scheduling modes. - Trust CoS and DSCP priority. Support flexible mapping from CoS to queue and DSCP to queue. - CoS (802.1p) priority remark. - Configuring CoS or DSCP priority for packets that matching ACL rules. - Modifying 802.1p CoS, DSCP, and IP Precedence based on flow. - Packet filtering, redirection, traffic mirroring, traffic statistics, traffic monitoring, interface queue scheduling, and VLAN modification policies based on traffic rule.		
DBA/SLA	Support DBA/SLA.		
DHCP	DHCP Proxy and DHCP Snooping.		
IPv6	IPv6 interface management, ACL, multicast, DHCP.		
OLT Management	- Console/Telnet/NMS/SNMP/SSHv2 management modes. - RMON1, 2, 3, and 9. - Bridge MIB (RFC1493). - System log.		
EDFA management	- Querying basic information about EDFA - Configuring the output power per interface on the CATV module - Configuring the alarm threshold of the CATV module - Obtaining the alarm status of the CATV module - Reporting the CATV module status alarm		

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EDFA & WDM Specification>

Figure.2 ISCOM5508-WDFA4 Pictures

Item	Min.	Typ.	Max.	Unit	Remark
1550 Amplifier					
Wavelength	1545	1550	1565	nm	
Input power	-10	0	10	dBm	
Output power (every port for 4 ports)	19	19.5	20.5	dBm	
Output Power Stability	---	---	0.5	dB	
Output Power Uniformity		1		dB	
NF @Pin=0dBm (1550nm)	---	---	5.5	dB	
Pump leakage @ Input/output port	---	---	-30	dBm	
PMD(Polarization Mode Dispersion)			0.5	Ps/nm	
PDG(Polarization Dependent Gain)			0.4	dB	
RL(Optical Return Loss)	50			dB	
Directivity(PON↔CATV)	50			dB	
Output power adjustable	6 dB				
1310/1490/1550 WDM					
Pass band Wavelength Range(λ_P)	1545		1565	nm	Downstream
Reflection band wavelength range1(λ_{R1})	1260		1360	nm	Upstream
Reflection band wavelength range2(λ_{R2})	1480		1500	nm	Downstream
Insertion loss P↔C@ λ_P			0.8	dB	
Insertion loss R↔C@ $\lambda_{R1,2}$			0.8	dB	
Isolation P↔C@ λ_R	40			dB	
Isolation R↔C@ $\lambda_{P1,2}$	15			dB	
Directivity(P↔R)	50			dB	
Temperature Dependent Loss			0.1	dB	
Polarization Dependent Loss			0.1	dB	
Optical Return Loss	50			dB	
PMD			0.05	Ps	
Power tolerance	27			dBm	

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Specifications >>

Dimensions	440mm(L) × 266mm(W) × 44.5mm(H)
Overall Power Consumption	70 W
Full-configuration Weight	5.9 kg
Environment	• Operating temperature: 0–45°C • Operating humidity: 10%–90% RH (non-condensing)

Compliances >>

Standards & protocols	IEEE802.3ad Link Aggregation
	IEEE802.1p
	IEEE802.1Q VLAN
	IEEE802.1ad QinQ
	IEEE802.1D Spanning Tree Protocol
	IEE802.1w RSTP
	IEEE802.1s MSTP
	IEEE802.3ah OAM
	IGMP v1/v2
	SNMPv1/v2c/v3
	CE compliance
	UL compliance
	EMC Class B
	RoHS compliance

Ordering Information >>

ISCOM5508-GP-AC/D	GPON OLT SYSTEM Including: ISCOM5508-GP Chassis *1 + ISCOM5508-GPSC *1 + RPA1101-SI-220S12 *2 + FANS306 *1 (4* GPON SFP ports, 2* GE(RJ45), 2* GE(SFP), 2* 10GE(SFP+), 2* AC Power, 1* Fan, without SFP modules) Optional: Slot 2&3 are vacant, GP4A workalbe in slot 3 and GE4B workable in slot 3&4, 8 GPON in Max
ISCOM5508-GP-DC/D	GPON OLT SYSTEM Including: ISCOM5508-GP Chassis *1 + ISCOM5508-GPSC *1 + RPD1101-48S12 *2 + FANS306 *1 (4* GPON SFP ports, 2* GE(RJ45), 2* GE(SFP), 2* 10GE(SFP+), 2* DC Power, 1* Fan, without SFP modules) Optional: Slot 2&3 are vacant, GP4A workable in slot 3 and GE4B workable in slot 3&4; 8 GPON in Max
ISCOM5508-GP-AC_DC	GPON OLT SYSTEM Including: ISCOM5508-GP Chassis *1 + ISCOM5508-GPSC *1 + RPA1101-SI-220S12 *1 + RPD1101-48S12 *1 + FANS306 *1 (4* GPON SFP ports, 2* GE(RJ45), 2* GE(SFP), 2* 10GE(SFP+), 1* DC Power and 1* AC Power, 1* Fan, without SFP modules) Optional: Slot 2&3 are vacant, GP4A workable in slot 3 and GE4B workable in slot 3&4; 8 GPON in Max

ISCOM5508-WDFA4	4 ports EDFA+WDM board, 1 * CATV Input (1550nm, SC/APC), 4 * GPON Input (1310nm, 1490nm, LC/PC), 4 * Triple-wave Output (LC/APC), slot 2 or 3.
ISCOM5508-GP4A	GPON line card, 4 *GPON SFP ports, slot 3. (without SFP modules)
ISCOM5508-GE4B	GE Card, 4* GE SFP ports, slot 2&3. (without SFP modules)
ISCOM5508-GPSC	MCU, 2* GE (RJ45), 2*GE (SFP), 2*10GE (SFP+), and 4* GPON SFP ports, 1* Console interface for local management and 1 SNMP out-of-band management interface, slot 1. For spare parts ordering. (without SFP modules)
RPA1101-SI-220S12	110V/220V AC power module, for spare parts ordering.
RPD1101-48S12	DC -48V Power module, for spare parts ordering.
FANS306	Intelligent fan (only for ISCOM 5508-GP), for spare parts ordering.