

Product Specification

A-GEAR P1208-4S-O

Outside Optical Network Unit



1. Introduction

Abiding by IEEE802.3ah, A-GEAR P1208-4S-O meets relevant requirements of GEAPON OLT regulated in Technical Requirements of YD/T1475-2006—EPON and China Telecom EPON Technical Requirements—CTC2.0/2.1. Meanwhile, it complies with relevant rules that are regulated in main communication standards of the electric power industry, Ethernet-Based Positive Optical Network (EPON) System (Application Draft), and in the industrial-level requirements of the electric power industry. The network standard adopted by A-GEAR P1208-4S is TCP/IP, open, widely applied, transparent and unified, so A-GEAR P1208-4S can be widely used for the construction of EPON transmission network of the intelligent grid.

2. Main Strengths

- **Powerful and flexible network construction mode:** P1208-4S-O adopts the highly reliable topology—hand-in-hand protection shift, the “1+1” protection function of the grid communication link and the less-than-50ms protection shift, so the communication system of the grid can be reliably run. Moreover, other topologies, such as tree, hand-in-hand link and ring, can be applied according to different actual network structures.
- **EPON transmission network:** The optical fiber is used as the transmission media and there is no source in the whole transmission, so it runs stably and reliably. The bidirectional high-bandwidth services can be realized on a single fiber with a downlink/uplink rate of 1.25Gbps. The EPON network supports the multi-level prismatic bus topology which is suitable to the structure of the power lines of the distribution network.
- **QoS guarantee for multi-services:** The QoS mechanism, based on ITU-T Y.1291, is supported, including priority labeling, queue schedule, flow shaping, congestion limit

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and cache management. Different users and services have different delays, jitters, guaranteed bandwidths and maximum bandwidths, and the DBA mechanism is supported so that the uplink bandwidth of each ONU can be distributed and limited.

- **Advanced system architecture:** Its modularized design supports multiple customization requirements; the power supply from two power sources is reliable and secure; according to customers' requirements, DC12V, DC24V, DC48V or AC220V can be provided.
- **Various Ethernet functions:** Multiple technologies are supported, such as VLAN isolation, port protection, MAC binding, IP binding, port limit, queue and flow control, so the combination of multiple services can be developed without technical bottleneck and upgraded smoothly.
- **Unified and versatile network management system:** The network management system is service oriented and it provides the unified network transmission and networking protocol, address management, domain management, security management, user access management and so on. It has rich OAM functions such as configuration, alarm, performance monitoring, trouble isolation and security management. At the same time, it supports the CLI/GUI management, which is easy to use.
- **Industrial-level design suitable to the electric power industry:** ONU has two PON uplinks and provides interfaces for services like GEAPON, FE and RS232/485. It is suitable to different harsh environments for it can run in the temperature from -40°C to 85°C, and it can prevent thunderbolt and powerful electromagnetic interference for it complies with the requirements of GB/T17626 electromagnetic compatibility 4-level standard and CE regulations.

3. Technical Parameters

Attributes	P1208-4S-0
Fixed interfaces	2 GEAPON interfaces 4 FE interfaces 4 RS232/485 serial interfaces 1 console port Water-proof cable egress
PON interface	A 1.25Gbps transmission rate with downlink and uplink symmetry Network coverage diameter: 20 kilometers Type of the optical interface: SC/PC Optical physical condition: 1000 BASE-PX20 Optical reception sensitivity: -30dBm Security: MAC authentication mechanism Supporting optical power check such as DDMI

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Attributes	P1208-4S-0
Serial interface	Type of the serial interface: supporting RS232, RS485 in full-duplex or half-duplex mode Maximum port rate: 9600~38400bps Type of the session: supporting TCP server, TCP Client and UDP Supporting the transparent transmission of multiple electric power communication regulations such as IEC60870-5-101/104, EC61850, CDT and DNP.
Alarm port	Supporting the output of two relays and a current load of 1 A@24 VDC
L2 functions	Port-based IEEE 802.1Q VLAN Supporting VLAN stacking and VLAN transfer Supporting STP Supporting port mirror Supporting flow control on the UNI port Supporting IGMP snooping
QoS	Backpressure flow control (half duplex) IEEE 802.3x flow control (full duplex) Head Of Line (HOL) prevention mechanism IEEE p802.1p, CoS Supporting the Mark/Remark priority of 802.1P/DSCP WR, SP and FIFO Rate control Supporting parameters about service flow classification such as MAC DA, MAC SA, VLAN ID, User Priority IEEE802.1D and Ethernet type Supporting optional parameters about service flow classification such as destination IP, source IP, IP type (TCP, UDP, ICMP, IGMP, etc), IP DSCP, destination L4 protocol port, source L4 protocol port and so on
Security	Supporting the capacity limit of the access device and MAC filtration Supporting the secure isolation between UNI interfaces Supporting data flow filtration based on port ID, IP, source/destination MAC and VLANID of the application-layer protocols Supporting the limitation of broadcast/multicast/unknown unicast packets Preventing DOS/ARP/ICMP attacks Supporting the loopback detection on the UNI interface
Reliability	Supporting automatic "1+1" protection shift and recovery of the PON port MTBF: 250000 hours

Attributes	P1208-4S-0
Management configuration	<p>Various management modes such as CLI, Web, SNMP, TELNET and cluster</p> <p>RMONv1, group 1, group 2, group 3 and group 9</p> <p>SSHv1/v2</p> <p>Upgrading the software and the bootrom through TFTP and FTP</p> <p>Local or the server's syslog logs</p> <p>Command prompt in English or in Chinese</p> <p>Network testing tools such as ping and traceroute</p> <p>Debug output</p>
Mechanic Features	<p>Installation: Wall-hanging mode</p> <p>Chassis' size (W*H*D): 260mm(W) x 220 (D) x 85 mm(H)</p> <p>Protection level IP67</p> <p>Non-fan cooling design for the rib-shaped aluminum chassis</p> <p>Weight: 2.5kg</p>
Power Source	<p>Supporting the input of two power sources</p> <p>Supporting power supply such as DC12V, DC24V, DC48V and AC220V</p> <p>2 3-pin power input holes; power overload protection; reverse power connection protection</p> <p>Rated power consumption: < 10W</p>
Environmental indexes	<p>Working temperature: -40°C ~ 85°C</p> <p>Storage temperature: -40°C ~ 85°C</p> <p>Relative humidity: 5% ~ 95% no condensation</p>

4. Order Information

Model	Number of PON interfaces	Number of FE interfaces	Number of RS232/485 interfaces	Type of power source	Industrial level
P1208-4S-V-O	2	4	4	DC12~60V	Yes
P1208-4S-HV-O	2	4	4	AC220V	Yes
P1204-V-O	2	4	-	DC12~60V	Yes
P1204-HV-O	2	4	-	AC220V	Yes
P1008-4S-V-O	1	4	4	DC12~60V	Yes
P1008-4S-HV-O	1	4	4	AC220V	Yes
P1004-V-O	1	4	-	DC12~60V	Yes
P1004-HV-O	1	4	-	AC220V	Yes