

## Passive Optical Network

### ▶ OLT ONU Series ◀

- Compact 1U OLT supports up to 8 GE PON ports & power redundant
- Full compliance to IEEE 802.3ah specification & OAM function
- Advantage traffic management for Classification, Policing, Marking, Scheduling, Shaping, and Buffer Management
- Hardware and/or software based Dynamic Bandwidth Allocation (DBA)
- Advanced L2 features & QoS support
- IGMP multicast snooping (v1 & v2)
- Support GUI management interface for easy operation and maintenance
- 128 bits AES decryption for downstream data
- Security management including 802.1x / Radius authentication



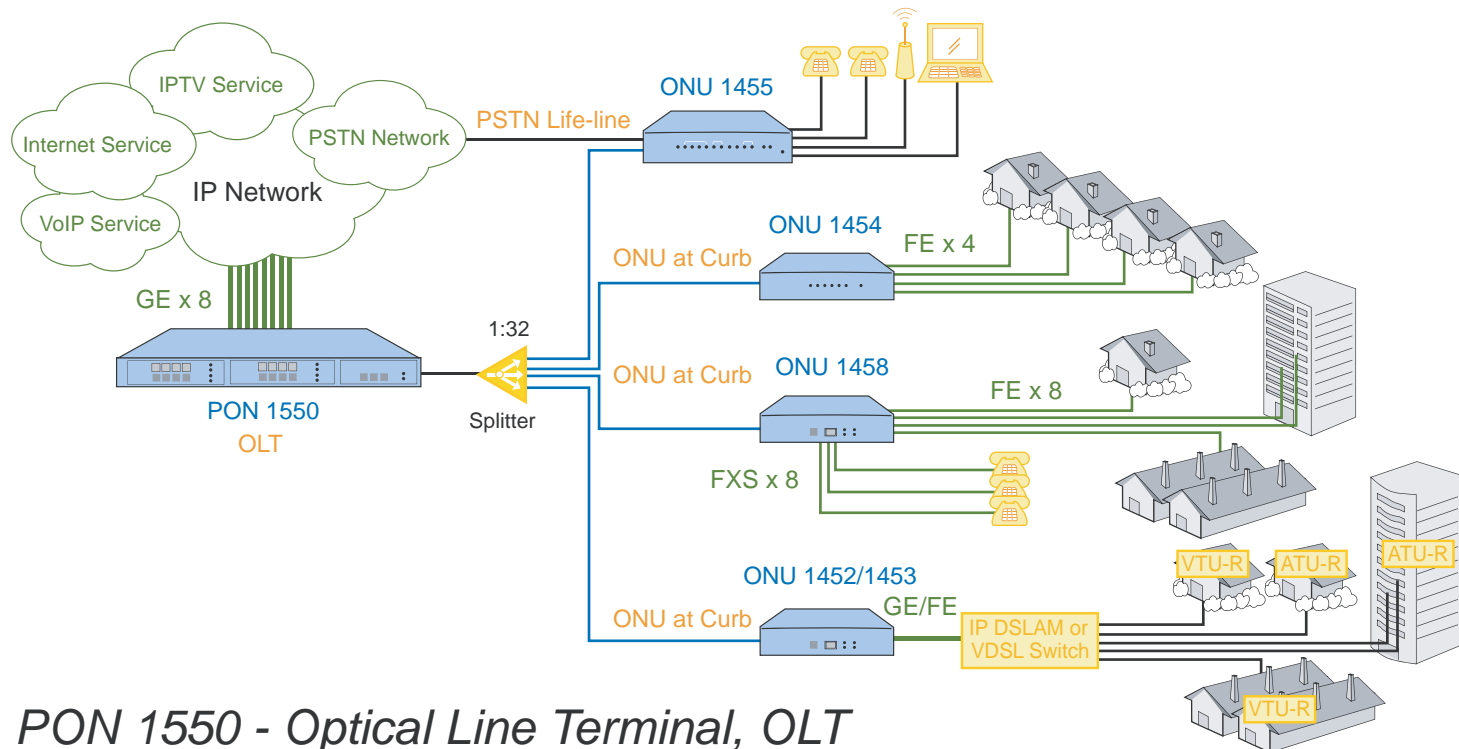
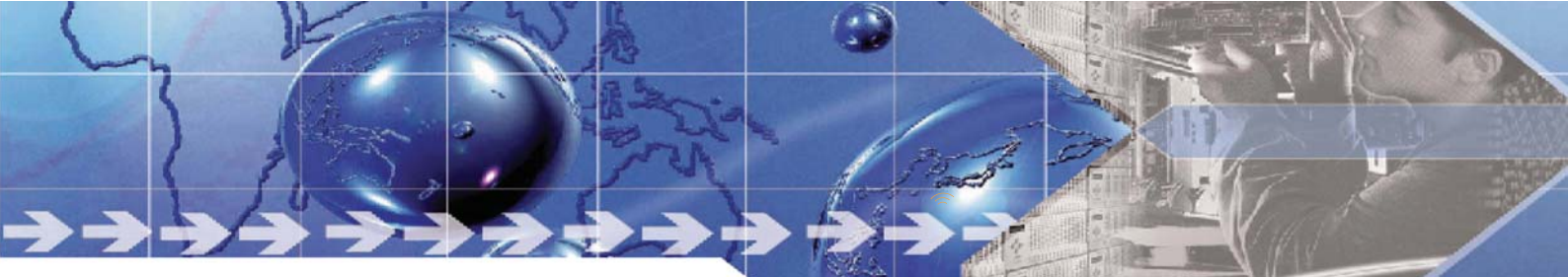
### Description

Thank to the increasing popularity of Video-on-Demand (VoD), VoIP and increased IPTV deployment worldwide, the eagerness for bandwidth drives the continuous growth in user bandwidth demands. The ultimate goal of fiber reaching all the way to customer premises to perform FTTH, FTTB, FTTP and FTTC solution is Passive Optical Network technology. Gigabit Ethernet Passive Optical Network (GEAPON) access technology defined by IEEE 802.3ah will certainly sustain to provide with up to 1 Gbps data rate to residential and business customers.

ATRIE's PON 1550, the Optical Line Terminal (OLT) provides cost-effective solution with maximum 8 PON links in the compact size box. Together with ATRIE's ONU (Optical Network Unit) series, each PON link can deliver 1 Gbps shared bandwidth to up to 32 ONUs within 10/20Km radius range. Altogether GEAPON Series is able to serve maximum 256 subscribers. Modularized design with hot-swappable function is more scalable and lower entry level for operator to provide triple play services to customer.

With inborn superiority on PON 1550, uplink Gigabit Ethernet port of each PON link can be delivered either individually and transparently, or combined and aggregated the traffic with advanced L2 switching functionality in each PON module. To guarantee and ensure the performance of data payload, the dynamic bandwidth allocation (DBA) and advanced QOS by Service Level Agreement (SLA) are accurately controlled and configured via system.

ATRIE GEAPON series product with the simple, scalable, and capable characteristics are able to deliver bundled voice, data and video services to an end-user over a single network, and appear to be the best candidate and choice for your next generation access network.



## PON 1550 - Optical Line Terminal, OLT

### System Feature

Architecture:

- 1 pluggable MPU control card (hot swappable)
- 2 pluggable OLT line card (hot swappable)
- 2 power modules for redundancy

OLT PON Port:

- Single SMF fiber
- Max. reach up to 20 Km
- Tx: 1490nm Rx: 1310nm
- Max. 4 ports per OLT line card, Max. 8 ports per OLT box

Uplink Port:

- 1000 Base-T Ethernet, RJ-45 Interface
- Max. 4 ports per OLT line card, Max. 8 ports per OLT box

Max. Capacity:

- Max. 32 ONUs per PON port, whole system support 256 ONUs

Management Port:

- 1 x console, 2 x management port

Power Module:

- AC + DC or DC + DC for redundancy
- AC: 90 ~ 240V DC: -36 ~ 72V

### System Register and Configuration

- ONU registration & deregistration
- Enable/disable/reset OLT or ONU
- ONU authentication/re-authentication
- ONU MAC authentication
- Support Radius & IEEE 802.1x encryption

### System Management & Maintenance

- Full complies with IEEE 802.3ah OAM standard
- TELNET management
- WEB management
- SNMP v1/v2 support
- Firmware upgrade through TFTP
- System and port statistic
- Support PING function
- Loopback test support per each ONU
- RMON counter

### Ethernet L2 Function

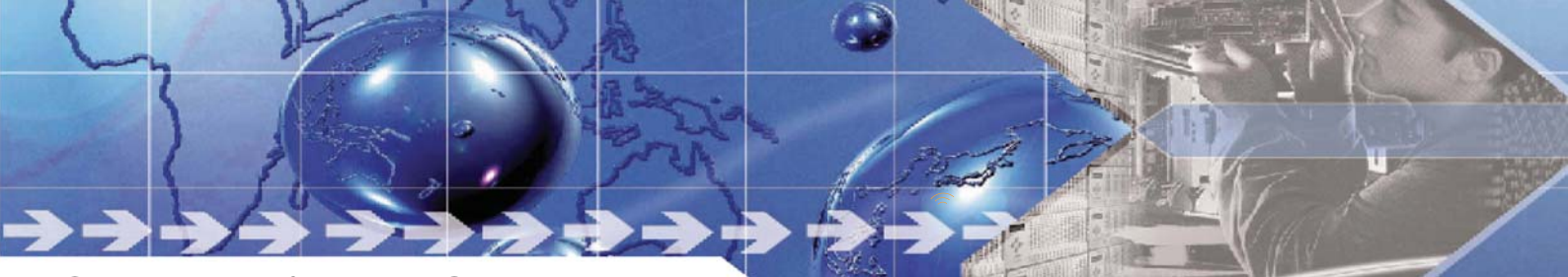
- Forwarding database management
- IEEE 802.1Q tag-based VLAN (500 entries)
- ACL support VLAN, IP SA/DA, IP Protocol-ID, MAC DA, L4 SRC/DST port
- 8K MAC table
- IGMP snooping v1/v2
- 512 multicast group address

### Traffic & QoS Management

- QoS support : IEEE 802.1p & DSCP
- Traffic classification with priority class (8 priority queues)
- Hardware and/or software based Dynamic Bandwidth Allocation (DBA)
- CIR and PIR per ONU

### Dimension & Environment

- 437mm(W) x 320mm(D) x 44mm(H)
- Temperature: 0°C ~ 50°C
- Storage: -25°C ~ 70°C
- Relative Humidity: Up to 95% (non-condensing)



## ONU 1458/14524 Series 8/24 FE + 8/24 FXS Solution

### Data Port & Performance

- 8/24 x 10/100 Ethernet interface
- 8/24 x FXS interface
- 8K MAC table
- 1M packet buffer

### Ethernet L2 Function

- IGMP snooping v1/v2 & fast leave support
- IEEE 802.1Q tag-based & port-based VLAN
- 4K PVID support
- Q-in-Q VLAN support
- Port VLAN attribute management
- 802.1x port & MAC authentication
- IEEE 802.1D spanning tree protocol support
- Multicast group filtering table
- Classification support
- Port isolation support
- UNI port ingress policy

### QoS Management

- IEEE 802.1p & DSCP
- Support WRR & SPQ
- Broadcast storm control
- Rate limitation per port

### Voice Function

- SIP / MGCP / MEGACO
- Codec: G.711a/u, G.723.1, G.726, G.729
- Silence suppression & detection
- CNG & VAD
- Echo cancellation
- Advanced Calling Features: Call hold /Waiting /Forwarding /Transfer...etc.
- Advanced digitmap & manipulation dialing
- DTMF support in-band & out-band relay (RFC-2833)
- CPLD: DTMF & Bellcore & ETSI & calling name
- T.30 & T.38 FAX
- Message waiting indicator
- Hot-line & warm-line
- Proxy server register by IAD or by each FXS
- NAT pass through & UPnP & STUN support

### System Management

- WEB-based management
- TELNET
- Firmware upgrade through TFTP
- RMON counter
- Port mirroring
- VoIP parameters auto provisioning through TFTP/HTTP
- SNMP v1/v2

### Dimension & Environment

- ONU 14524v: 437mm(W) x 320mm(D) x 44mm(H)
- ONU 1458v: 245mm(W) x 200mm(D) x 60mm(H)
- Temperature: 0°C ~ 50°C
- Storage: -25°C ~ 70°C
- Relative Humidity: Up to 95% (non-condensing)
- Power:
  - ONU 14524v: AC: 90~240V DC: 36~72V
  - ONU 1458v: External power adapter, 12VDC

## ONU 1455 Series 4 FE + 2 FXS + 1 PSTN (Optional RF or WiFi interface)

### Dataport

- 4 x 10/100 Ethernet interface
- 2 x FXS + 1 x PSTN
- IEEE 802.11b/g (ONU 1455w)

### RF port (ONU 1455c)

- Support 1550nm wavelength downstream for CATV Service
- CATV receiver with high performance analog PD and low noise RF amplifier at 47~870MHz
- 75 female RF output port

### Ethernet L2 Function

- Static IP, PPPoE, DHCP Client, PPTP support
- Bridge & Router mode
- NAT, virtual server, DMZ
- DNS & DDNS
- Firewall: Port / IP / MAC/ URL filtering
- DoS protection
- IEEE 802.1Q tag-based & port-based VLAN
- IGMP snooping v1/v2

### QoS Management

- ToS & DSCP
- 2 Priority queues
- WAN bandwidth control (data)
- Rate limitation for each LAN port

### Voice Function:

- SIP / MGCP
- Codec: G.711a/u, G.723.1, G.726, G.729
- Silence suppression & detection
- CNG & VAD
- Echo cancellation
- Advanced calling features: Call hold /Waiting /Forwarding /Transfer...etc.
- Advanced digitmap & manipulation dialing
- DTMF support in-band & out-band relay (RFC-2833) & SIP INFO
- CPLD: DTMF & Bellcore & ETSI & Calling name
- T.30 & T.38 FAX
- Message waiting indicator
- Hot-line & warm-line
- Proxy server register by IAD or by each FXS
- Phone book management
- NAT pass through & UPnP & STUN support

### System Management:

- WEB-based management
- Firmware upgrade through TFTP
- TELNET
- VoIP parameters auto provisioning (optional)
- IVR
- SNMP v1/v2
- PING test

### Dimension & Environment

- 200mm(W) x 150mm(D) x 39mm (H)
- Temperature: 0°C ~ 50°C
- Storage: -25°C ~ 70°C
- Relative Humidity: Up to 95% (non-condensing)
- Power: External power adapter, 12VDC





## ONU 1452/1453 Pure Ethernet Solution ONU

### Data Port

- 1 x 10/100/1000 Ethernet interface (ONU 1452)
- 1 x 10/100 Ethernet interface (ONU 1453)

### System Architecture

- Full complies IEEE 802.3ah
- 1 Gbps for downstream per PON link
- Support DBA
- Support IGMP snooping (v1/v2)
- OAM loopback function
- Support 16 VLAN table
- Support 64 MAC address
- Support 802.1p & ToS
- Support WRR & SPQ
- Provide dying gasp function
- Support AES decryption

### System Management

- Managing via OLT
- Support SNMP v1/v2
- Firmware upgrade through TFTP
- Off-line configuration

### Dimension & Environment

- 200mm(W) x 150mm(D) x 39mm(H)
- Temperature: 0°C ~ 50°C
- Storage: -25°C ~ 70°C
- Relative Humidity: Up to 95% (non-condensing)
- Power: External power adapter, 12VDC

## ONU 1454 4 FE L2 Switch Solution

### Data Port & Performance

- 4 x 10/100 Ethernet interface
- 1K MAC entries
- 512K packet buffer
- Switch forwarding rate 148800pps

### Ethernet L2 Function

- IGMP snooping v1/v2
- IEEE 802.1Q tag-based & port-based VLAN
- Port VLAN attribute management
- 64 PVID support
- VLAN membership configuration
- Multicast group filtering table
- Support classification (802.1p, ToS/DSCP, DA/SA, VLAN ID, L4 port)
- UNI port ingress policing
- FDB operation

### QoS Management

- IEEE 802.1p & DSCP
- Support WRR & SPQ
- 4 hardware priority queues per UNI port
- Broadcast storm control
- Rate limitation per port (ingress)

### System Management

- WEB-based management
- TELNET CLI
- Firmware upgrade through TFTP
- SNMP v1/v2
- RMON counter

### Dimension & Environment

- 200mm(W) x 150mm(D) x 39mm9(H)
- Temperature: 0°C ~ 50°C
- Storage: -25°C ~ 70°C
- Relative Humidity: Up to 95% (non-condensing)
- Power: External power adapter, 12VDC



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