

OUTDOOR GPON OLT · U8 SERIES

U8

Outdoor GPON OLT with Integrated EDFA · 8 PON Ports · IP65



8× GPON PORTS	8× 22 dBm EDFA OUTPUTS (MAX.)	2× 10GE SFP+ UPLINKS	IP65 OUTDOOR ENCLOSURE	−40~+70 °C OPERATING TEMP.
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01 OVERVIEW

The UGRID U8 is an outdoor optical node that combines an 8-port GPON OLT, a high-power EDFA optical amplifier and an optical splitter in one IP65-rated metal enclosure. Each of the 8 outputs carries GPON together with the amplified CATV signal, so operators can overlay CATV video on GPON FTTH networks without additional outdoor cabinets — simplifying network design and reducing engineering cost. Natural heat dissipation, dual power redundancy and full remote management suit suburban, rural and campus triple-play (Internet + VoIP + CATV) deployments in floor boxes, corridors and on poles.

CATV overlay on GPON

The integrated 8-way EDFA amplifies the 1550 nm CATV signal and delivers it with GPON on every output.

No extra outdoor cabinets

OLT, EDFA and splitter in one IP65 enclosure simplify network design and reduce engineering cost.

Built for harsh sites

Sealed metal shell with natural heat dissipation, rated for −40 °C to +70 °C operation.

DEPLOYMENT SCENARIOS

Suburban FTTH

Rural FTTH

Campus networks

Triple-play: Internet + VoIP + CATV

CATV overlay on GPON

Floor box · corridor · pole

02 KEY FEATURES

- ✓ **IP65 outdoor enclosure**
Dust- and water-proof metal shell with natural heat dissipation, for floor boxes, corridors and poles.
- ✓ **8-port GPON OLT**
8 GPON SFP ports, 1:128 max. split ratio, up to 1,024 ONTs; Class B+, C, C+, C++ and C+++ PON modules.
- ✓ **Layer 3 routing**
Static routing, RIP, OSPF and BGP, with ARP proxy, RADIUS, TACACS+ and IP source guard.
- ✓ **Integrated 8-way EDFA**
13–22 dBm per output (up to 8 × 22 dBm) for CATV overlay; C/N ≥ 50 dB and pump laser auto-shutdown.
- ✓ **10GE uplinks**
2× 10GE SFP+ and 2× GE SFP uplinks; 104 Gbps backplane bandwidth and 65.472 Mpps forwarding.
- ✓ **Flexible power**
AC 100–240 V with single or dual (redundant) power modules, or 24 V DC input; 45 W power consumption.

03 TYPICAL APPLICATION

Data and VoIP arrive over the 10GE SFP+ uplinks and the 1550 nm CATV signal from the headend's optical transmitter; each of the 8 outputs delivers both to passive splitters (up to 1:128 per PON port).

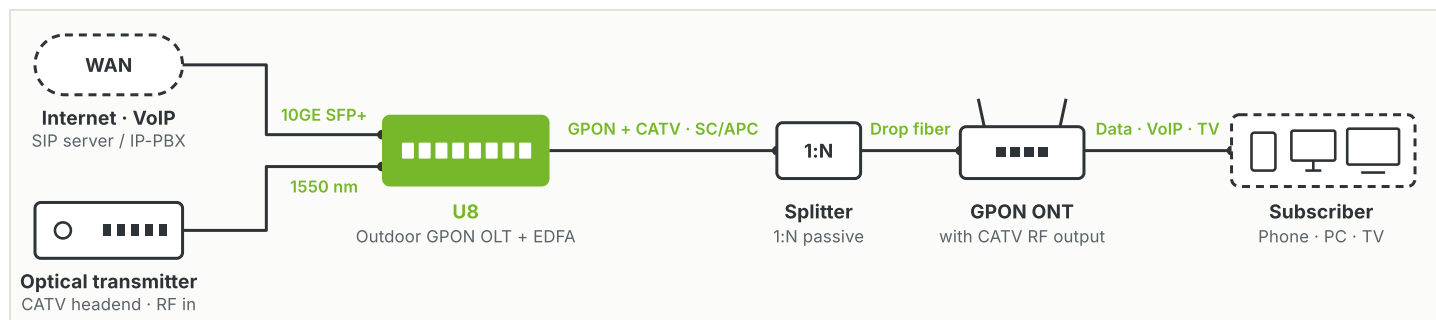


Figure 1 — Triple-play from one node: GPON data and VoIP plus 1550 nm CATV overlay on the same fiber (U8 highlighted).

04 BLOCK DIAGRAM

The EDFA amplifies the 1550 nm CATV input, splits it eight ways and combines each branch with a GPON port in a WDM.

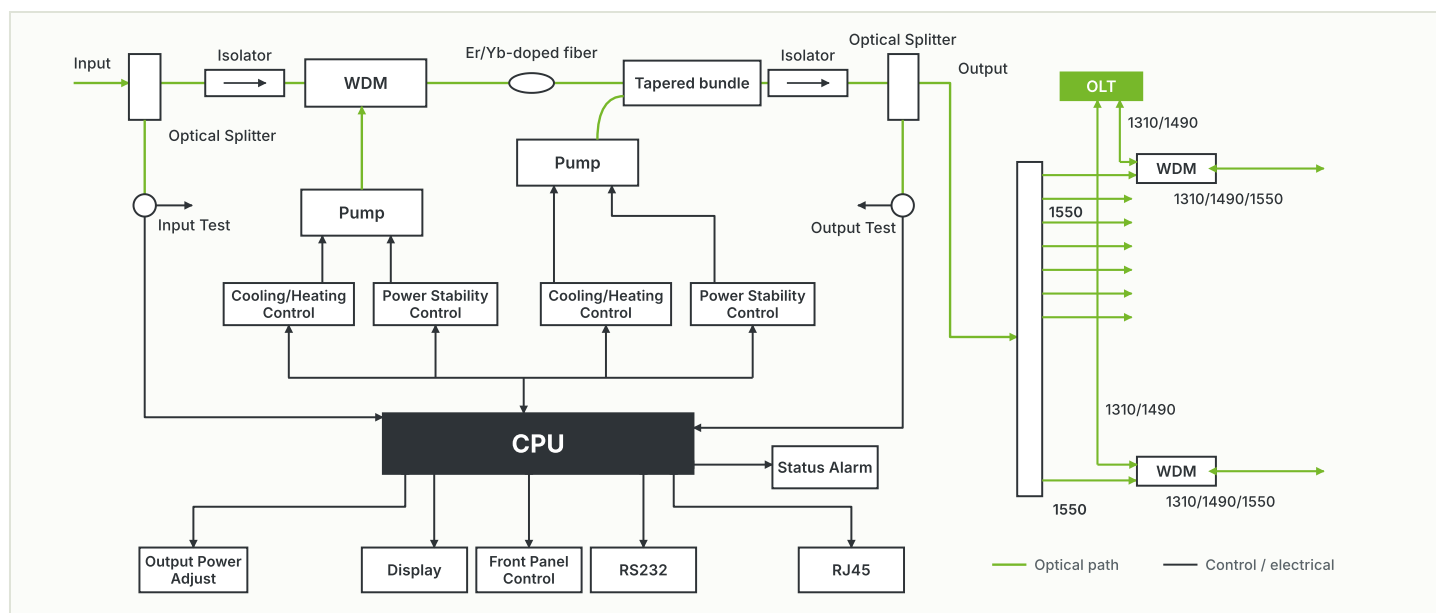


Figure 2 — U8 EDFA and optical path block diagram.

05 HARDWARE SPECIFICATIONS

CHASSIS & INTERFACES

Enclosure	Outdoor metal shell box; natural heat dissipation, no fans
Ingress protection	IP65, dust- and water-proof
Deployment	Floor boxes, corridors and poles
PON ports	8× GPON (SFP slots)
Optical outputs	8× combined GPON + CATV; SC/APC or SC/UPC (specify when ordering)
CATV input	1× optical input from CATV optical transmitter
Uplink ports	2× 10GE SFP+; 2× GE SFP
Management ports	1× 10/100/1000BASE-T out-of-band, 1× console (RJ45)

GPON PORT SPECIFICATION

05 HARDWARE SPECIFICATIONS (CONTINUED)

Standard	ITU-T G.984.x
GPON line rate	Upstream 1.244 Gbps, downstream 2.488 Gbps
Wavelength	TX 1490 nm, RX 1310 nm
Connector / fiber	SC/UPC (PON SFP); 9/125 μm single-mode fiber
Transmission distance	20 km
Max. split ratio	1:128 (up to 1,024 ONTs)
Supported PON module class	B+, C, C+, C++, C+++

EDFA OPTICAL AMPLIFIER

Working wavelength	1535–1565 nm
Input optical power	–3 to +10 dBm (ACC mode); –6 to +10 dBm (APC mode)
Output optical power	13–22 dBm per output (specify when ordering)
Output power stability	≤ ±0.25 dB
Noise figure	≤ 5.0 dB (at +3 dBm input)
Return loss (input / output)	≥ 45 dB
Pump light leakage (input / output)	≤ –30 dBm
C/CTB	≥ 63 dB
C/CSO	≥ 62 dB
C/N	≥ 50 dB
Protection	Pump laser auto-shutdown
Compliance	CATV optical transmission standards

C/CTB, C/CSO and C/N measured at 3 dBm EDFA input over an optical link comprising optical transmitter and receiver.

PERFORMANCE

Backplane bandwidth	104 Gbps
Port forwarding rate	65.472 Mpps
Management modes	CLI (console / Telnet / SSH), Web, SNMP

POWER

AC input	100–240 V, 50/60 Hz; rated 110 V / 220 V
DC input	24 V (alternative to AC input)
Power configurations	1× AC · 2× AC (redundant) · 24 V DC
Power consumption	45 W
Surge protection	Supported

PHYSICAL & ENVIRONMENTAL

Dimensions (L × W × H)	450 × 384 × 180 mm
Weight (gross)	20.5 kg (dual power supply); 18.3 kg (single power supply)
Operating temperature	–40 °C to +70 °C
Storage temperature	–40 °C to +85 °C
Relative humidity	5%–95%, non-condensing

06 SOFTWARE FEATURES

Management

- SNMP, Telnet, CLI, Web, SSH
- Port status monitoring and configuration
- Online ONT configuration and management
- User management
- Alarm management

GPON

- Compliant with ITU-T G.984.x
- OMCI
- T-CONT DBA
- GEM port traffic shaping
- ONU auto-authentication
- Up to 20 km transmission distance

DHCP

- DHCP server, DHCP relay, DHCP snooping
- DHCP Option 82

Layer 2 Switching

- 32K MAC addresses
- 4,096 VLANs; port VLAN
- VLAN tag / untag, VLAN transparent transmission
- VLAN translation and QinQ
- Port-based storm control; port rate limiting
- Port isolation
- IEEE 802.1D STP and 802.1w RSTP
- Static link aggregation and LACP
- QoS based on port, VID, ToS and MAC address
- Access control lists
- IEEE 802.3x flow control
- Port statistics and monitoring

Multicast

- IGMP snooping
- IGMP proxy
- 1,024 IP multicast groups

Layer 3 Routing

- ARP proxy
- 2,048 hardware host routes, 2,048 hardware subnet routes
- 1,024 hardware host routes
- 512 hardware subnet routes
- Static routing
- RIP, OSPF, BGP

IPv6

- NDP
- IPv6 ping, IPv6 Telnet, IPv6 routing
- ACL on source / destination IPv6 address, L4 port and protocol type
- MLD v1/v2 snooping

Security & Reliability

- RADIUS and TACACS+
- IP source guard
- VLAN division and user separation
- Broadcast-storm resistance; port isolation
- Flexible packet filtering by ACL and SNMP
- Power-off alarm for fast link fault detection
- System breakdown-prevention design

07 ORDERING INFORMATION

SELECTED CONFIGURATION · MODEL NUMBER KEY

U8

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A2

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US

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SA

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P22

Outdoor GPON OLT + EDFA

2× AC power supply

US plug (Type A/B)

SC/APC outputs

22 dBm EDFA output

POWER SUPPLY

- 0** 24 V DC input only
- A1** 1× AC power supply
- A2** 2× AC power supply

POWER CORD

- AU** Australia (Type I)
- CN** China (Type A / I)
- EU** Europe (Type C)
- JP** Japan (Type A)
- UK** United Kingdom (Type G)
- US** United States (Type A/B)

OPTICAL CONNECTOR

- SA** SC/APC
- SU** SC/UPC

EDFA OUTPUT POWER

- 0** None
- P13–P22** 13–22 dBm, in 1 dB steps

PART NO.

DESCRIPTION

U8-A2-US-SA-P22

Outdoor GPON OLT with integrated 8-way EDFA (22 dBm per output), 8× GPON (SFP), 2× 10GE SFP+ + 2× GE SFP uplinks, 2× AC power supply, US power cord, SC/APC outputs

GPON SFP modules (C++ / C+++), 1G SFP and 10G SFP+ modules are ordered separately.

08 REVISION HISTORY

REVISION	DATE	DESCRIPTION
R01	2026-10-22	Initial release.

Specifications are subject to change without notice. Actual performance may vary with network configuration and environment. © 2026 UGRID Network Inc. All rights reserved.