

SINGLE-PORT GPON OLT · U5 SERIES

U5-1

1-Port GPON OLT · Compact Desktop · 2× GE + 1× SFP(GE)/SFP+(10GE) Uplinks


1×
GPON PORT

1:128
MAX. SPLIT RATIO

1× 10GE
SFP+ UPLINK

29 Gbps
BACKPLANE BANDWIDTH

20 km
MAX. DISTANCE

01 OVERVIEW

The UGRID U5-1 is a compact single-port GPON OLT with built-in PON optics, built for FTTH, SOHO and small business offices. Its PON port supports a 1:128 split ratio and up to 20 km transmission distance, and three uplinks — 2× GE RJ45 and 1× SFP(GE)/SFP+(10GE) — connect it to the upstream switch or router. Static routing, NAT, DMZ and WAN access over DHCP, PPPoE or static IP are built in, and the 1.07 kg metal chassis runs on AC or a 12 V DC adapter, with 4 kV / 1 kV lightning protection on the power supply and device interfaces.

Small FTTH deployments

Single-port GPON access with a 1:128 split ratio and up to 20 km reach.

SOHO & small business

FTTH and FTTD service for home offices and small business offices.

Compact desk or shelf install

210 × 173 × 43.6 mm metal chassis, 1.07 kg, with AC or 12 V DC power.

DEPLOYMENT SCENARIOS

FTTH

FTTD

SOHO

Small office

02 KEY FEATURES

- Built-in PON optics**
 One GPON port with built-in SC/UPC optics: Tx 8 ± 0.5 dBm, Rx sensitivity -32 dBm; 1:128 split, up to 20 km.
- Compact metal chassis**
 1U-high metal chassis, 210 × 173 × 43.6 mm, 1.07 kg; AC (default), 12 V DC adapter, or AC + DC.
- Simple ONT management**
 ONT auto-discovery, link detection and remote software upgrade, with online ONT configuration.
- 10GE SFP+ uplink**
 1× SFP(GE)/SFP+(10GE) and 2× GE RJ45 uplinks; 29 Gbps backplane bandwidth and 21.576 Mpps forwarding.
- Static routing / NAT / DMZ / WAN**
 Static routing, NAT and DMZ; WAN access over DHCP, PPPoE or static IP; dynamic and static ARP.
- 4 kV / 1 kV lightning protection**
 Lightning protection rated 4 kV on the power supply and 1 kV on device interfaces.

03 TYPICAL APPLICATION

The U5-1 serves subscribers over GPON through passive optical splitters (up to 1:128) and uplinks over 10GE SFP+ to an upstream switch or router.

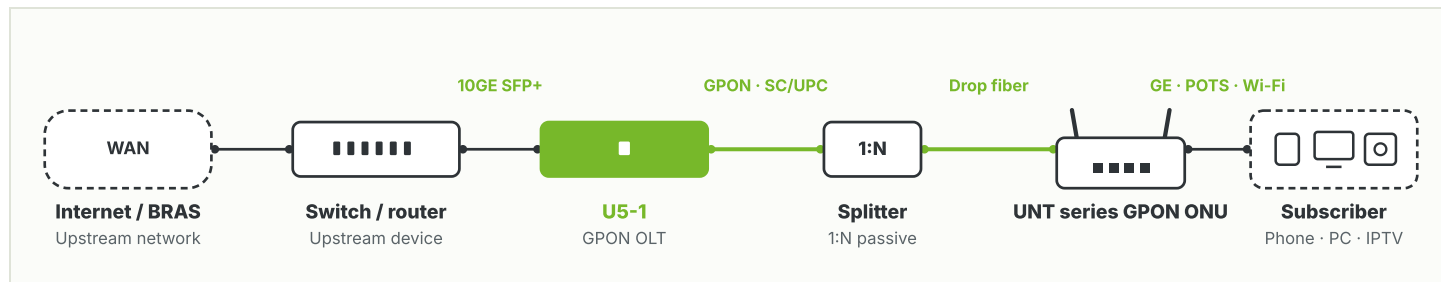


Figure 1 — UGRID end-to-end GPON FTTx architecture (U5-1 highlighted).

04 HARDWARE SPECIFICATIONS

CHASSIS & INTERFACES

Chassis	Compact metal chassis, 1U height
PON ports	1× GPON, built-in optics
Uplink ports	2× GE RJ45 1× SFP(GE)/SFP+ (10GE)
Management ports	1× USB-COM (Type-C) port

PON PORT SPECIFICATION

GPON line rate	Upstream 1.244 Gbps, downstream 2.488 Gbps
Wavelength	TX 1490 nm, RX 1310 nm
Connector / fiber	SC/UPC; 9/125 μm single-mode fiber
Optical power	Tx 8 ± 0.5 dBm, Rx sensitivity -32 dBm
Transmission distance	20 km
Max. split ratio	1:128

Maximum split ratio and transmission distance depend on the optical link budget, splitter insertion loss, fiber attenuation, and overall ODN design.

PERFORMANCE

Backplane bandwidth	29 Gbps
Port forwarding rate	21.576 Mpps
Management modes	Web, Telnet, CLI, SNMP

POWER

AC input	100–240 V; rated 110 V / 220 V
DC input	12 V / 2 A DC power adapter
Power configurations	1× AC (default) · 1× DC · 1× AC + 1× DC
Lightning protection	4 kV power supply; 1 kV device interface

PHYSICAL & ENVIRONMENTAL

Dimensions (L × W × H)	210 × 173 × 43.6 mm
Weight (single power supply)	1.07 kg net
Operating temperature	-20 °C to +60 °C
Storage temperature	-40 °C to +70 °C
Relative humidity	5%–95%, non-condensing

05 SOFTWARE FEATURES

Management

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

GPON

- Compliant with ITU-T G.984.x
- T-CONT DBA
- GEM port traffic management
- Up to 20 km transmission distance
- Data encryption, multicast, port VLAN, user separation
- ONT auto-discovery, link detection and remote software upgrade

Layer 2 Switching

- 8K 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
- Access control lists
- Ethernet flow control
- Port statistics and monitoring

Multicast

- IGMP snooping
- 256 IP multicast groups

DHCP

- DHCP server, DHCP relay, DHCP snooping
- DHCP Option 82
- DHCPv6 server, DHCPv6 relay

Layer 3 Routing

- Dynamic and static ARP
- WAN: DHCP, PPPoE, static
- Static routing, NAT, DMZ
- QoS based on DSCP, MAC, IP, L4 port and protocol
- ACL on source MAC, source / destination IP, L4 port and protocol type

IPv6

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

Security & Reliability

- VLAN division and user separation
- Broadcast-storm resistance
- Power-off alarm for fast fault detection

06 ORDERING INFORMATION

SELECTED CONFIGURATION · MODEL NUMBER KEY

U5

1U pizza-box OLT series

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1

1 GPON port

PART NO.

U5-1

DESCRIPTION

Single-port GPON OLT, 1× GPON (built-in optics), 2× GE RJ45 + 1× SFP(GE)/SFP+(10GE) uplinks, 1U

Power configuration: 1× AC (default), 1× DC or 1× AC + 1× DC — specify when ordering.

Uplink optical modules are ordered separately unless otherwise specified.

07 REVISION HISTORY

REVISION	DATE	DESCRIPTION
R01	2026-10-21	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.