# GPONDOCTOR
# OLT-e

GPONDOCTOR
FTTH analysis & monitoring tools

## FTTH-GPON OLT Emulator

## DESCRIPTION

GPONDoctor OLT-e is an FTTH GPON OLT emulator, behaves like a normal OLT and as such is the termination point of the PON. It is connected to the ODN (Optical Distribution Network). The ONTs are connected to the other end of the ODN. A simple case can be an ODN consisting is just an optical fiber with the OLT emulator in one side and an ONU/ONT on the other side.

GPONDoctor OLT-e is mainly oriented for **ONT/ONU conformance and network interoperability tests,** being a perfect tool for lab application engineers engaged in GPON pretideployment phase as well as for GPON network elements vendors.

**ONUs manufacturing/auditing.** GPONDoctor OLT-e is the perfect tool to test ONUs during the production chain, as well as for auditing the ONUs replaced within customers' premises.

As **OLT emulator,** it is completely flexible, allowing to configure as many different provisioning models as desired. OMCI messages can be sent individually or grouping several of them in scripts.

## FEATURES

### Flexibility

Fully configurable OLT, allowing the reception and report of events, messages and alarms linked to the responses to each of the OMCI messages sent to the ONTs.

It not only acts as OMCI master, but it also supports the generation of PLOAM messages to perform different tests at GTC level (Enable and configure GEM OMCC port, password authentication tests, etc.).

### OLT Emulation

Emulates OLT functionality, allowing to build specific provisioning models and configure OMCI entities individually and sequentially. It supports the injection of real traffic up to 10Gbp/s at its "V" interface.

### Powerful

- 802.1ad, 802.1Q and 802.1p compliant to support different VLAN scenarios from BBF TR-156.
- Provides complete control of all PON parameters.
- Implements DBA Algorithm, supporting all modes.
- Allows FEC coding in both directions.
- 128-bit AES encryption.
- IGMP snooping supported.
- Multicast filtering.

### Capture and replay

Captures done by any of the GPON Doctor network testers can be injected in the OLT emulator to replicate a PON behavior.

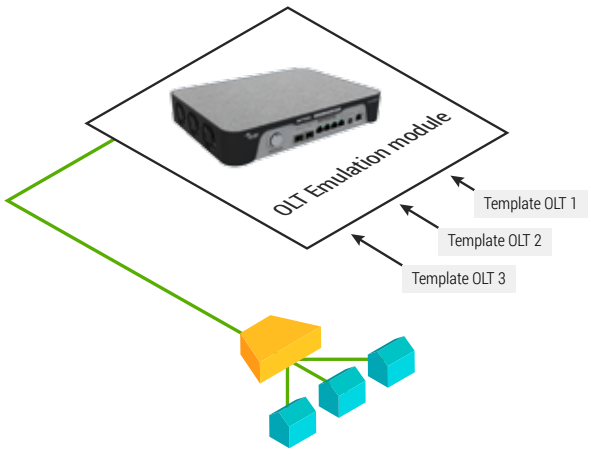
## OLT EMULATION

GPON Doctor OLT-e provides the same functionality as a GPON OLT. **It is completely configurable and, by using different templates, any commercial OLTs behaviour can be emulated.**

Highlights of the OLT emulation module:

- **Reception and report of events,** messages and alarms linked to the responses to each of the OMCI messages sent to the ONT.
- OMCI master. At OMCI level, the emulator behaviour can be programmed using **scripts** or **one by one. Messages for configuring OMCI entities in each ONT:** Creation, Destruction, Reading, Writtng, Test, etc.
- **Generation of PLOAM message to perform different functions at GTC level:** Enable and Configure the GEM OMCC port, password authentication tests, etc.

GPON Doctor OLT-e supports the reception and transmission of traffic encapsulated in GEM frames, **carrying real Ethernet traffic through a 10Gbp/s or 4x 1Gbps transport interfaces.** Through this port, a traffic generator can be connected. This interface also supports various **configurations for filtering and VLAN tagging both at ONT and OLT levels.**




**Using templates for emulation of different commercial OLT**

# TECHNICAL SPECIFICATIONS

## Application examples

GPON new network deployment, equipment development and certification.

Diagnosis and **Test** of events and deviations for already deployed GPON networks.

Interoperability troubleshooting among different vendors equipment coexisting in a Telco access network.

Evaluation of protocol compliance during the development of GPON ONTs.

Rogue and underperformance ONTs detection.

GPON problems delimiting within an FTTH deployed network.

ONUs test within production chain.

## Technical features

Meets the requirements of ITU-G984.3.

Support for managing entities defined in ITU-T G.988.

OMCI creation of messages using programmable templates.

Individual OMCI messages sending. TCL scripts for multiple OMCI messages and OLT configuration.

OMCI master behavior.

Generation and forwarding of Ethernet traffic encapsulated in GEM fraces.

Reception of asynchronous events and alarms from the ONTs.

PLOAM messages generation to activate and configure a detected ONT.

Simultaneous management and monitoring of multiple ONTs.

Error injection and GEM encapsulation manipulation.

Supports 802.1 ad, 802.1Q and 802.1p.

## Interfaces

1x SFP GPON ports. B+ and C+ transceivers available.

1x SFP+ 10G for transport which allows 100% of GPON BW usage.

4x GbE 10/100/1000Base-T RJ45.

1x 10/100 Ethernet management port.

1xUSB console interface.

Power supply (220V/AC) and power button.

## Interfaces

Size: 202 x 278 x 44.45 mm.

Rack-mounting pieces are optional.

Operating temperature: 0 to +50ºC.

Easy to carry form factor.

**GPONDOCTOR**
**OLT-e**



**CONTACT INFORMATION**

**GPONDoctor Scoop**

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