OLP-88
TruePON Tester

Next Generation Test Solution for Passive Optical Networks

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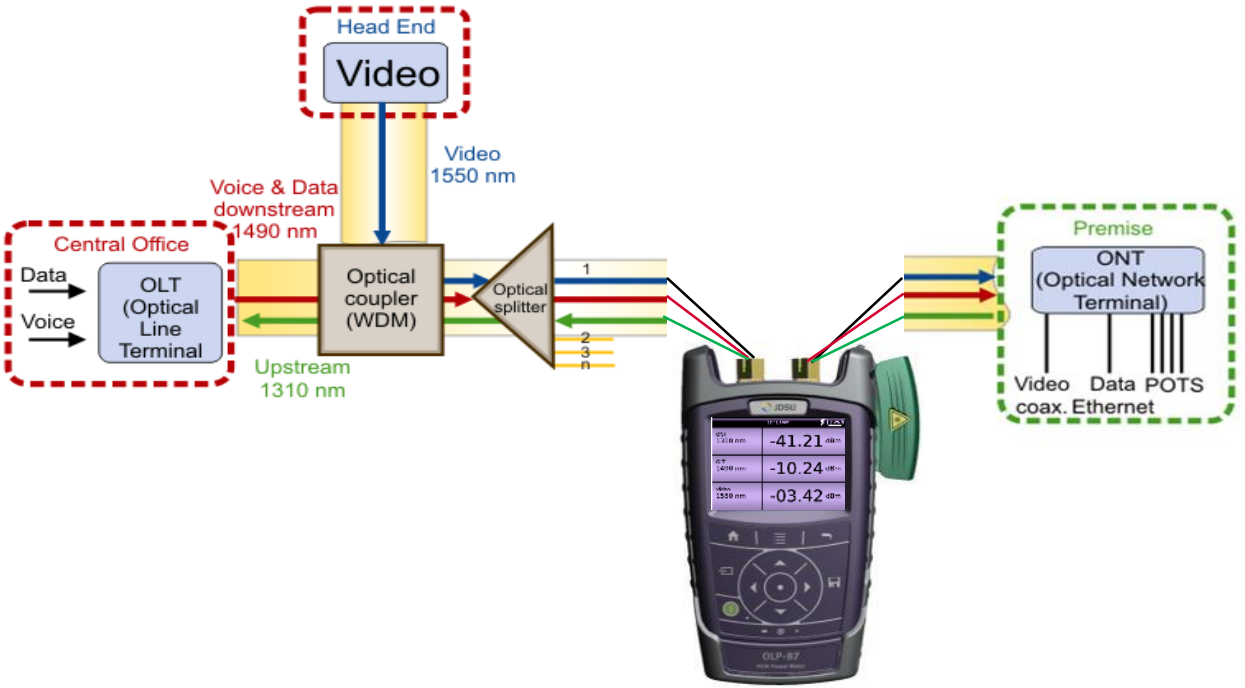
What is a PON Power Meter?



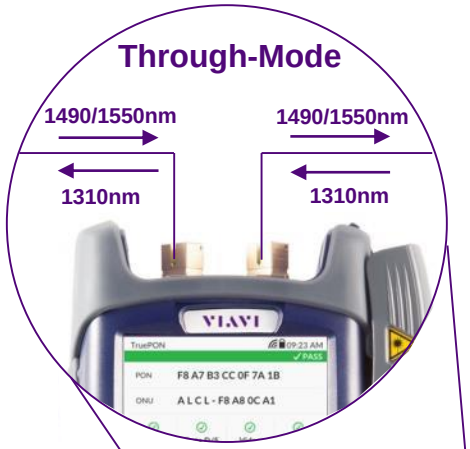
A PON Power Meter is a test instrument for FTTx network service activation and troubleshooting.

It simultaneously measures and displays all PON power levels at 1310nm, 1490nm and 1550nm.

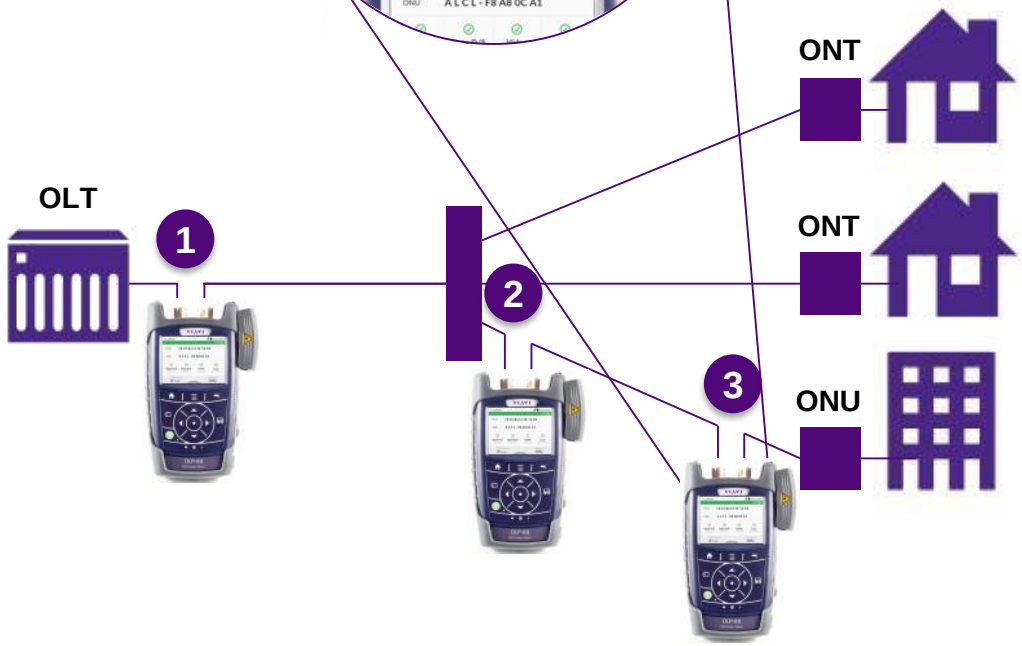
By entering thresholds, it provides pass/fail indication and enables to check if the network and customer ONUs/ONTs meet expected specifications.

PON Power Meter for FTTx Network Service Activation and Troubleshooting

Connect and perform measurement anywhere in your PON network



1. Central Office site (OLT)
2. Splitter cabinet
3. Customer site (ONT/ONU)



Viavi FTTx/PON Power Meter Portfolio

OLP-37 PON/RFOG Power Meter

- Power level measurements of 1490/1550/1610nm downstream signals

OLP-87 PON/ XGPON Power Meter

- Power level measurements of 1490/1550/1578nm downstream & 1270nm/1310nm upstream signals
- Fiber Connector Inspection

OLP-88 TruePON Tester

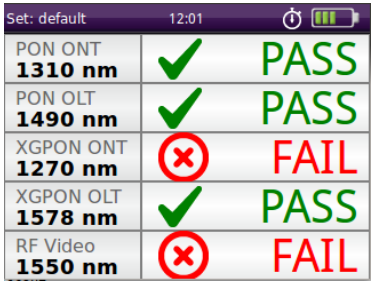
- Power level measurements of 1490/1550nm downstream & 1310nm upstream signals
- ONT/OLT/ONU identification
- Detection of Alien/Rogue-ONU/ONTs
- In-service loss testing
- **Fiber Connector Inspection**

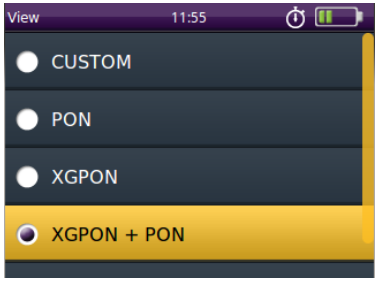
XGPON Solution Functions

- **5 - Lambda Measurement**
  - Downstream: 1490nm (G-PON), 1578nm (XG-PON)
    1550nm (video)
  - Upstream 1310nm (G-PON), 1270nm (XG-PON)

- **3 Predefined PON Settings:**
  - XGPON only: for green field XG-PON installations
  - GPON only: for (legacy) G-PON customers / applications
  - XGPON+GPON: for XG-PON upgrades in existing GPON networks

- **Optional Broadband Power Meter with UPP**
  - Required for standard SM-power meter applications outside the PON wavelength bands





OLP-88 *TruePON* Tester

Bringing PON Testing to the Next Level

The **OLP-88** ***TruePON*** is a new generation of PON tester performing:

- PON power level measurements with auto pass/fail analysis
- Fiber endface inspection with auto pass/fail analysis

The built-in **GPON data analysis** enables

- Verification of ONU/ONT activation process
- Identification of ONU/ONT serial number
- Detection of Rogue ONUs/ONTs and Alien devices

For **GPON** systems carrying **PON-ID,** it performs

- Real time, in-service ODN insertion loss measurements
- Auto setting of pass/fail thresholds based on ODN class
- Identification of OLT-ID

Not ONLY a PON Power Meter – A TRUE PON TESTER!!!

OLT-ID

ONT/ONU Serial Number

1310/1490/1550nm power level measurement with Pass/Fail analysis

ODN Class Detection

ONT/ONU Activation Status

OLT to ONT Fiber link loss

What is PON-ID?

- PON-ID is a frame in the GPON downstream signal carrying PON specific information
- PON-ID is standardized by ITU-T in G.984.3 Amd 3 for GPON applications
- Most GPON systems can be SW-upgraded with PON-ID functionality
- PON-ID message provides:
  - ODN class (B+, C+, …)
  - Transmitted optical level from OLT Enabling in-service insertion loss testing
  - OLT-Identification

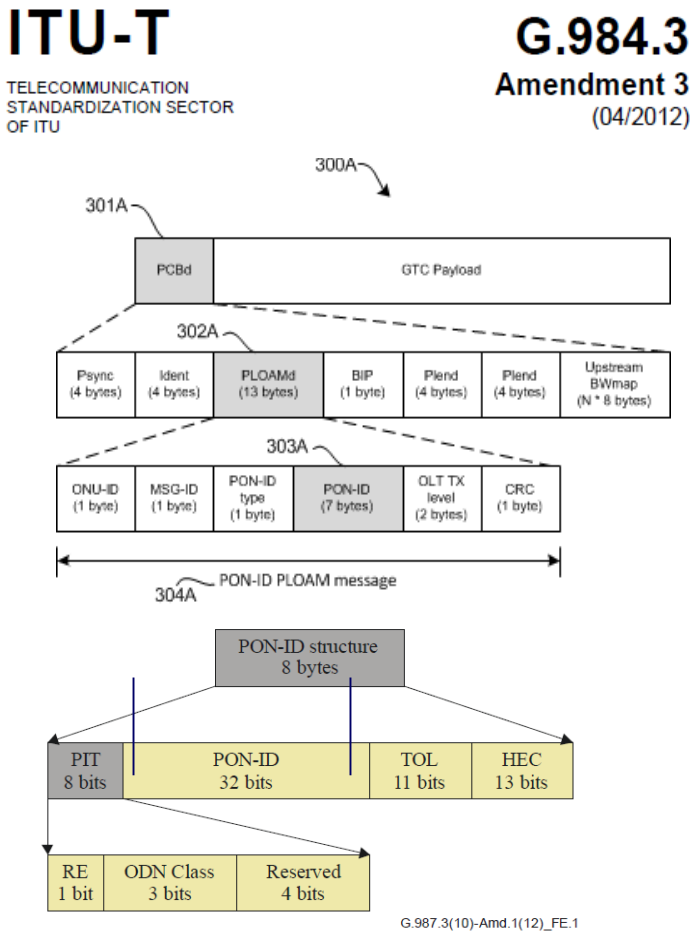


Figure E.1 – PON-ID structure

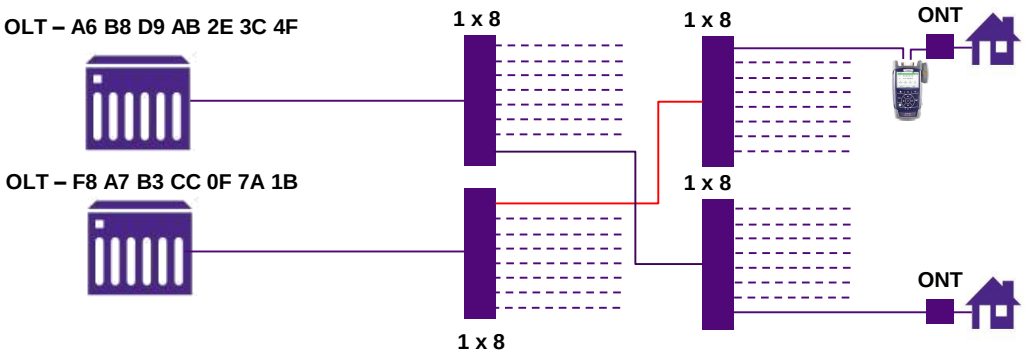
GPON Network Service Activation with OLP-88 *TruePON* Tester

“First-time right” service activation-> Correct Fiber Connection

Challenge: No or incorrect labeling of fiber cables in splitter cabinet can lead to wrong customer/ONT connection. How making sure the ONT is connected to the right OLT?

- ✓ OLP-88 identifies the type of OLT (G-PON or non G-PON) and detects the OLT-ID at any network location
  - Ensures the right fiber cable is connected to the right ONT.
  - Enables handling installation error tickets more easily

PON-ID carries OLT-ID



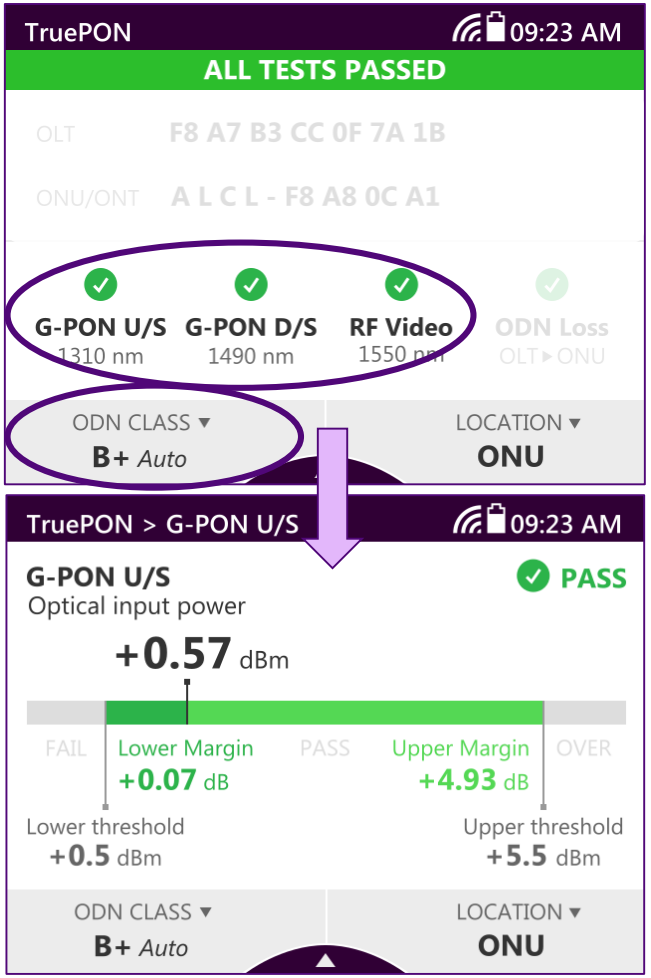
“First-time right” service activation-> Automatic Certification

Challenge: While performing a power-level verification at a customer ONT, how can I certify the service meet the specifications?

OLP-88 performs:

- ✓ Downstream and upstream PON power level measurements (1310/1490nm and 1550nm)
- ✓ Auto setting of pass/fail thresholds in GPON systems with PON-ID

- Certification is fully automatic -> No manual user interaction to select or enter pass/fail thresholds

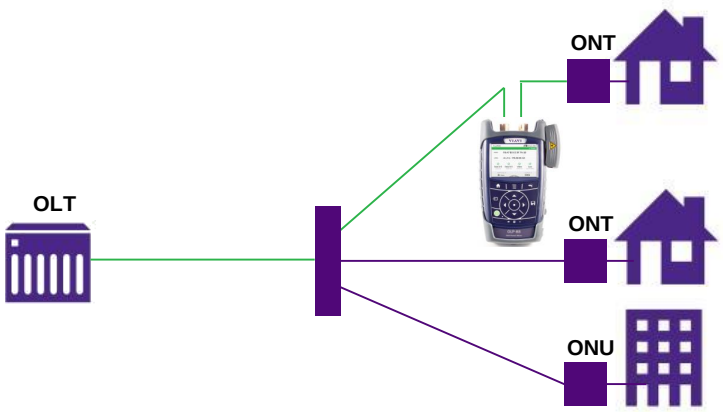


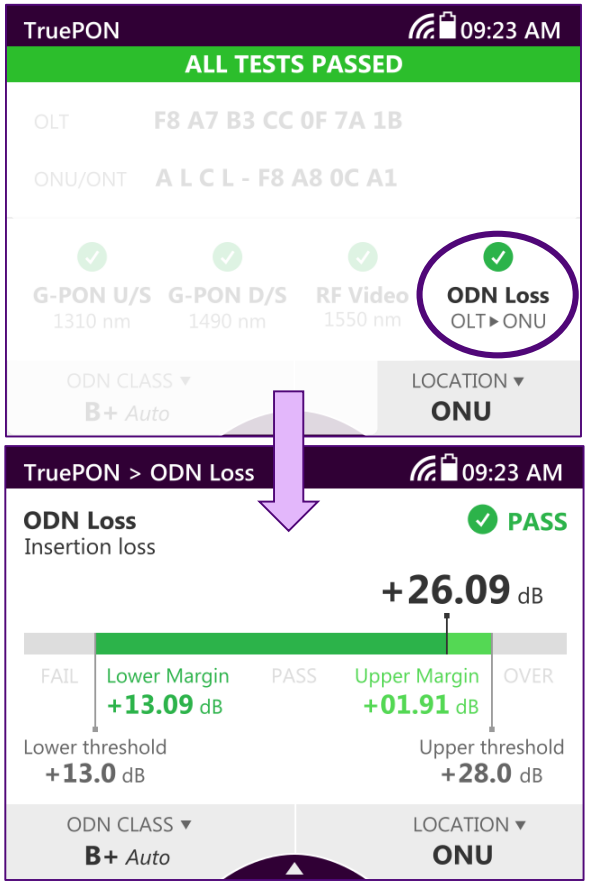
PON-ID carries ODN Class Information

“First-time right” service activation-> Fiber Plant Qualification

Challenge: During the construction phase, the fiber plant is qualified: end-to-end loss testing ensures that the fiber link complies with the loss budget. Is this still the case several years later when new customers subscribe to FTTH services?

- ✓ OLP-88 performs real time in-service end-to-end loss measurement
- Fastest way to qualify the fiber link in an already-running network





PON-ID carries OLT transmit level info

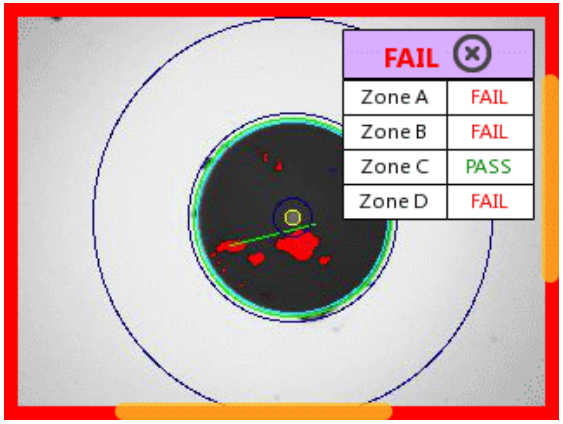
GPON Network Troubleshooting with OLP-88 TruePON Tester

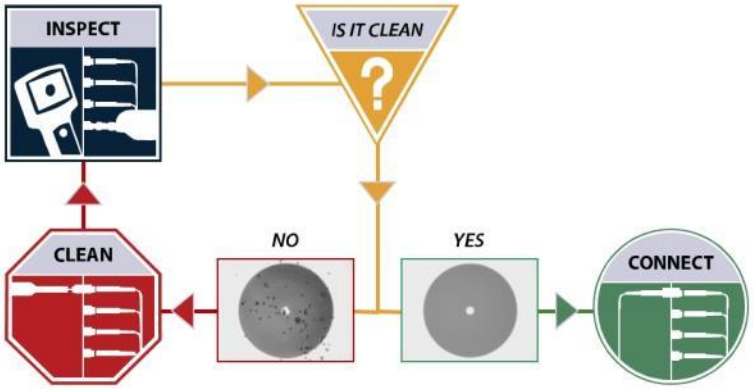
Best Practices -> Prevents service degradation

- **Challenge:** More than 75% of fiber network troubleshooting can be attributed to connector contamination. How to be sure fiber technicians follow best practices?

- ✓ P5000i digital analysis microscope compatible & Patchcord Microscope version
- ✓ Performs auto PASS/FAIL certification of fiber endfaces

- Drives user workflow and behavior to eliminate the issues caused by poor practices.



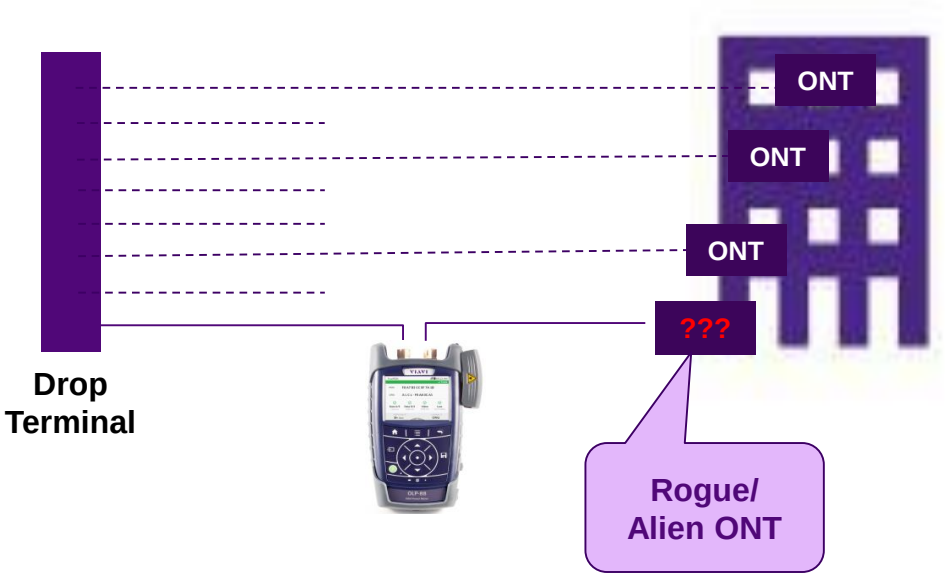


Facilitates service recovery -> Rogue/Alien ONU/ONT detection

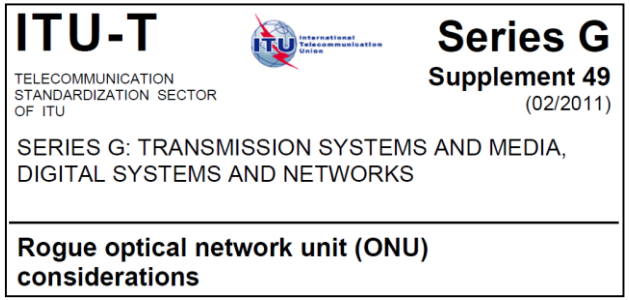
- **Challenge:** How can I easily identify and localize a Rogue ONU (ITU-T G 49) that degrades or disables the service of other customers?

✓ OLP-88 instantaneously detects the presence of a Rogue or Alien ONU/ONT

- Facilitates service recovery by isolating the faulty ONU/ONT and replacing it in time.



✓ Detection of non standard ONUs/ONTs (Rogue or Alien)


ITU-T

TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU

Series G

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SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Rogue optical network unit (ONU) considerations