



The GPON Doctor 9k7 (GPD 9k7) is a reliable device designed for detecting, monitoring, and resolving issues related to FTTH XGSPON-based networks. It is highly portable, battery-powered, and built to withstand rugged field conditions.

Datasheet

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# GPON Doctor 9k7 XGSPON analyser

The analysis software of GPD 9k7 interprets the captured data, enabling the user to trace all control frames. Moreover, it can estimate the network topology of the XGS-PON. ONT and OLT state machines, established data channels, exchanged configuration, E/R OMCI diagrams, analysis, and bandwidth graphs for each ONT per T-CONT.

## 1. General

- Fundamental tool for GPON networks optimum deployment
- Events and deviations Diagnosis and Analysis
- Interoperability troubleshooting
- Multi-vendors equipment coexisting in access network
- Analysis of user traffic within the GPON Networks
- Network state and all its active elements (OLT/ONTs)
- Automatic calibration
- Adaptive synchronization

### Automatic behavior

- Capture
- Analysis
- Evaluation
- Reporting

## 2. Operation

### 2.1 Real Time Captures

- Inference of PON topology: ONU IDs, GEM ports
- Real-time detection of activity on GEM ports
- Capture and interpretation (C & I) of PLOAM messages
- C & I of OMCI messages
- C & I of Bandwidth Maps for ONT discovery
- C & I of Bandwidth Maps for bandwidth allocation on operation
- Real time capture mode
- Background capture mode
- Scheduled capture mode
- Messages color scheme
- Visualization and analysis of the capture
- Capture exportable to CBIN6 format
- Capture exportable to XML format
- Powerful filtering system
- Visualization
- Capture analysis

### 2.2 Analysis engine

#### PON characterization

- Topology
- PON parameters

### ONU status

- ID, timing parameters
- Keys negotiated
- Operation status
- Alloc-IDs and GEM ports

### Features

- List of discovered OMCI entities
- Interpretation of their attributes and values
- Generation of accurate E/R diagrams
- TU-T G.988 reference integrated
- Quick access to the entity's definition
- Evaluation of conformity with ITU-T G.984
- Evaluation of conformity with ITU-T G.9807
- Generation of a list of specification violations of ITU-T G.984
- Generation of a list of specification violations of ITU-T G.9807
- Characterization of type and level of violations discovered
- Direct access to the messages of the entities
- Nonconformities presenting
- Exportable analysis in HTML format

## 3. User traffic extraction

- Extraction of user traffic
- Six simultaneous GPON
- Virtual Ethernet interface over USB 3.0
- XGSPON user traffic through virtual Ethernet interface over USB 3.0

### 3.1 Bandwidth monitor

- Bandwidth used per port
- Bandwidth assigned per Alloc-ID
- Bandwidth utilized per ONU
- Real-time graphical visualization
- Exportable to CSV

### 3.2 Link integrity monitor

- Downstream HEC errors in SFC, OC, HLEnd, BWMap and XGEM header
- Upstream HEC errors in Fixed FS Header and XGEM header
- BIP errors
- Real-time graphical visualization
- Exportable to CSV

### 3.3 Automation

- Integrated CLI for remote operation
- Integration into automated certification
- Verification workflows
- Protocol: Telnet
- Configurable port

3.4 **Interfaces**

- USB 3.0
- SFP+ XGSPON ONT SC/UPC TX 1270 nm / RX1577 nm (9.953Gbps)
- SFP+ XGSPON OLT SC/UPC TX 1577 nm / RX1270 nm (9.953Gbps)

4. **Platform Requirements**

- USB 3.0 Interface
- Windows Operating System

**Accessories included**

- Extraction splitter
- Optical modules
- Attenuators 4, 8 and 15 dB
- SC/UPC-SCAPC patch cords

4.1 **Ergonomics**

- Carrying case with accessories 1.5kg

**Dimensions:**

- 210mm x 160mm x 30mm without SFP's
- 230mm x 160mm x 30mm with SFP's

**Weight**

- Appliance weight: <1 kg

