TraceSpan
communications

Access Network Visibility

Multi-ONU Emulator

Comprehensive OLT Testing Solution
with Built-in PON Analyzer

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**Provides flexible and repeatable test scenarios**

k   Testing of Traditional and Virtualized OLTs

The Multi-ONU Emulator introduces a new revolutionary approach for comprehensive testing of an OLT. It enhances the testing with repeatable test scenarios and functionalities that cannot be tested in any other way, including the OLT's ability to handle various ONU models and configurations, error and defect conditions, alarms and traffic loads. It emulates a full PON with hundreds of ONUs, thus enhancing the test coverage, while significantly simplifying the test setups and providing savings in space, cost and power consumption.

Testing Solution for Virtualized OLTs

A virtualized OLT allows multiple versions and "flavors" of OMCI to run in parallel on the PON to overcome interoperability issues.

The Multi-ONU Emulator addresses the challenge of testing this functionality by allowing each of the emulated ONUs to have its own OMCI configuration file, making it a valuable tool for testing a virtualized OLT.
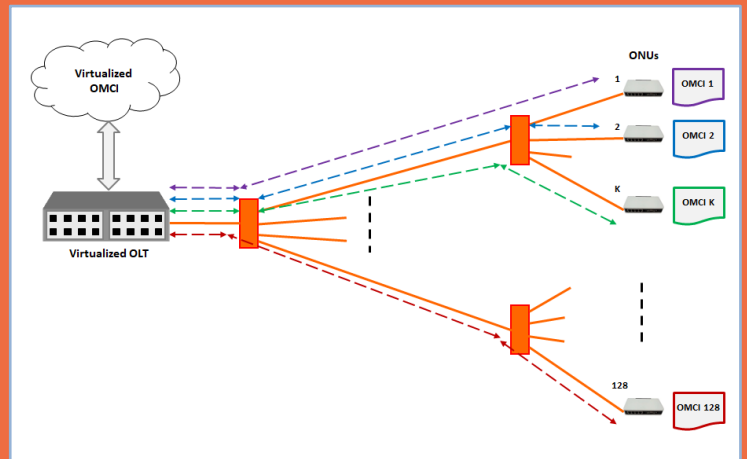

Co-existence with GPON and XGS-PON ONUs

Real ONUs can be connected in parallel with the Multi-ONU Emulator to provide full testing coverage, including end-to-end traffic flow and services at the subscriber side.

When testing a "Combo PON" OLT, both GPON and XGS-PON ONUs may be used.

The Multi-ONU Emulator significantly reduces the number of ONUs that are needed for the testing, thus simplifying the test setup, saving space and reducing power consumption.
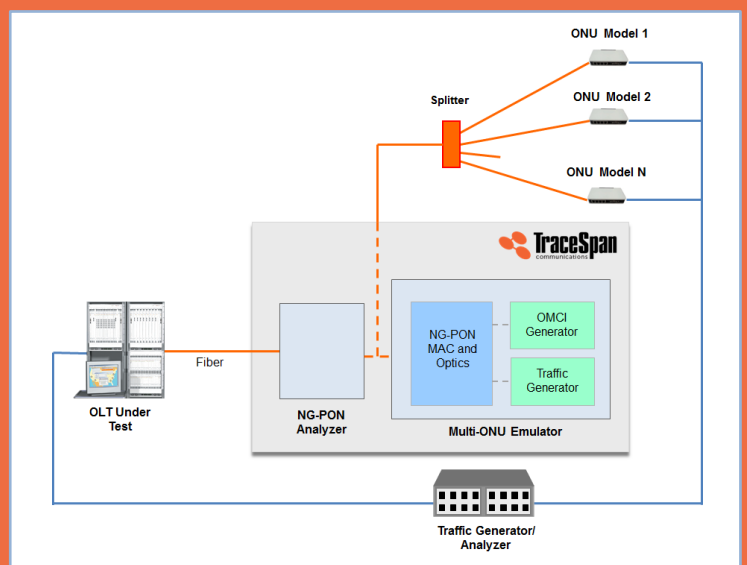

Built-In Multi-Layer PON Analyzer

The built-in multi-layer analyzer presents and analyzes the message exchange between the OLT and the emulated ONUs, analyzes the behavior of the OLT, compares it with the expected one and highlights deviations from the standards.

When real ONUs are connected in parallel, it analyzes the behavior of the OLT and its communication with these ONUs along with the emulated ones.

Scalable and Expandable

The test setup can be expanded for testing a full OLT by using multiple units in parallel, each one connected to an individual PON port and testing it independently of the others.
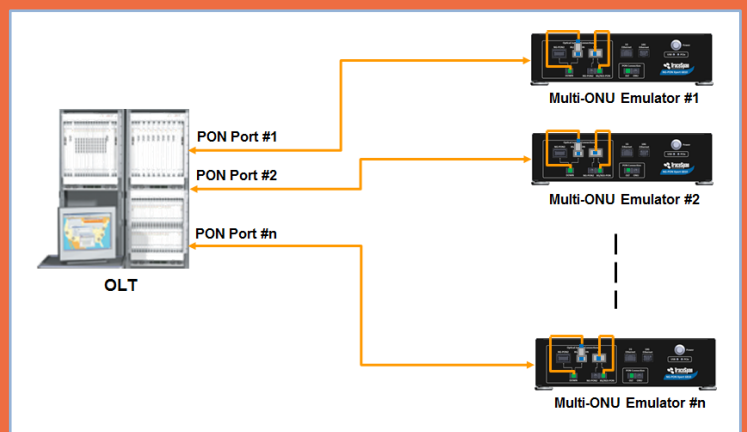
Intuitive User-Friendly Tool

The Multi-ONU Emulator features a user-friendly GUI for defining the test cases, configuring their parameters and running the tests, as well as a rich array of intuitive displays, graphs and tables for evaluating the test results and troubleshooting problems that are found.
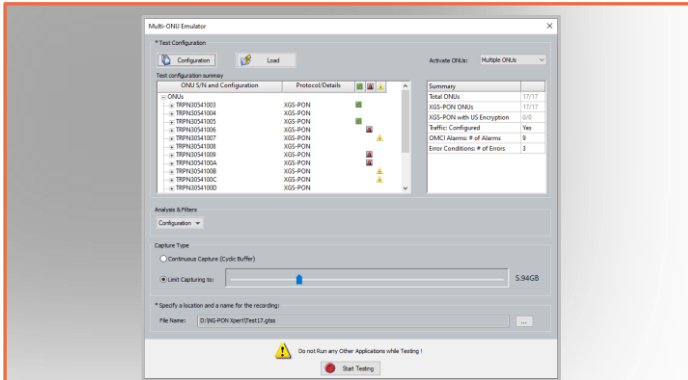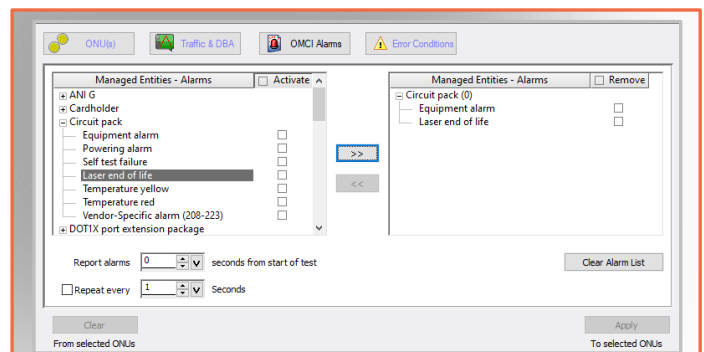

Variety of Test Configurations
Flexible Configuration of the
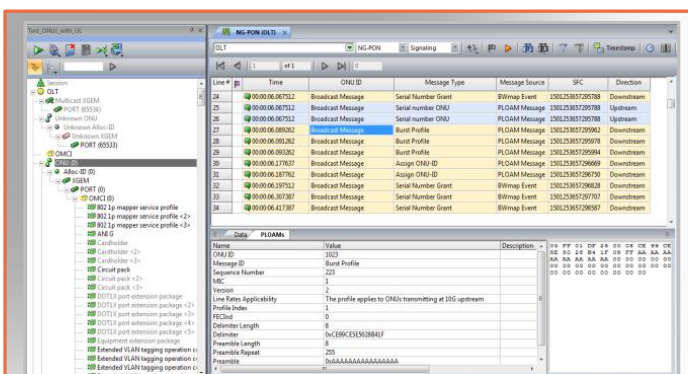ONU Parameters and the OMCI MIB File
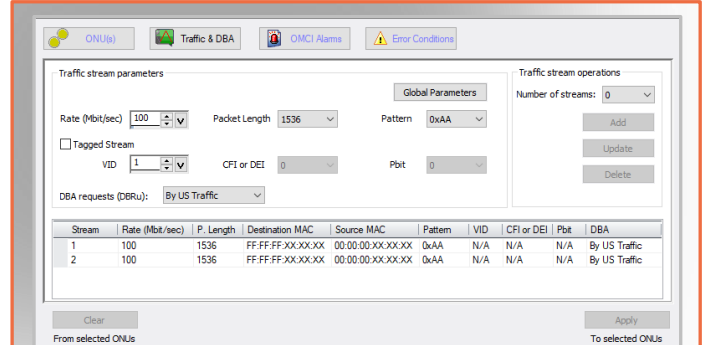
Traffic and DBA Configuration
Define Traffic Streams and
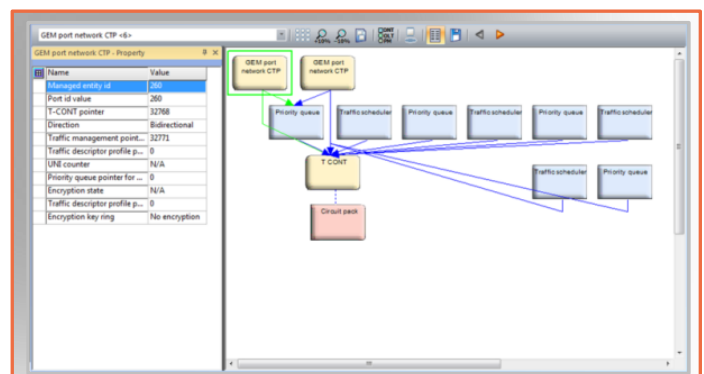DBA Parameters for Traffic Load Tests
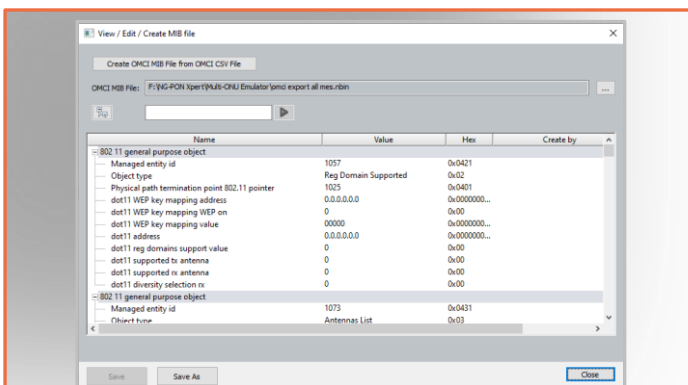
User-Friendly OMCI Editor
Modify OMCI Attribute Values,
Manipulate the OMCI MIB Parameters

OMCI Alarms and Error Conditions
Define OMCI Alarms and Transmission Errors,
including Rogue ONU Emulation

PON Protocol Analysis
Built-in PON Analyzer Presents Message
Details to Analyze the OLT Behavior

OMCI Analysis
Advanced Troubleshooting Tools Present
Message Exchange, MEs and Diagrams

Flexibility and Repeatability of Test Scenarios

The Multi-ONU Emulator provides high level of flexibility in its tests.

It allows the user to configure various ONU parameters and define vendor-specific options to emulate a variety of ONU vendors and models. In addition, it allows the definition of OMCI alarms and error conditions for validating the OLT's ability to handle them correctly. Furthermore, it includes a built-in traffic generation function for traffic management and load tests.

The defined test cases can be saved for future use, ensuring full repeatability in the test scenarios.

Extensive Reporting and Exporting Capabilities

The Multi-ONU Emulator supports the generation of detailed analysis reports in a user-friendly HTML format. Test results and details can also be exported for further analysis in various standard formats, such as XML and CSV.

Test Automation

The Multi-ONU Emulator supports Command Line Interface (CLI), enabling it to run tests automatically and easing its integration in an automated test environment. A user-friendly tool for generation of the CLI commands is provided as part of its software.

The test configuration files can be created and edited with standard XML editing tools to further enhance the automation capabilities.

Specifications

Emulation Capacity	Up to 256 ONUs
Standards Compatibility	ITU-T G.987.1, G.987.2, G.987.3 – XG-PON1 Specifications ITU-T G.9807.1 – XGS-PON Specifications ITU-T G.988 – ONU Management and Control Interface (OMCI)
EMC Standards	FCC 47CFR Part 15, Subpart B, Class A EN 61326-1, Class A
Safety Standards	IEC 61010-1, EN 61010-1

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