R&D and Lab Analyzer for ADSL

ADSL Protocol Analyzer

DSL Xpert™

ADSL2+ multi-layer analyzer

TraceSpan™ Communications First non-intrusive analyzer for ADSL2+ /ADSL2 /ADSL

Product Overview

The DSL Xpert™ multi-layer analyzer (patent pending) breaks new ground as the only non-intrusive performance analysis solution for ADSL2+, ADSL2 and ADSL products. DSL Xpert™ is a modular tool designed for R&D and laboratory engineers engaged in the deployment of ADSL2+, ADSL2 and ADSL standard-compliant solutions. Cutting significant time from ADSL development, deployment, debugging and interoperability verification, DSL Xpert™ accelerates time to market and return on investment.

The innovative DSL Xpert™ analyzer verifies the interoperability of ADSL products offered by different vendors, and compares the performance of any combination of CO and CPE modems. DSL Xpert™ is a powerful tool for ADSL service providers (Telcos and CLECs), current and next-generation ADSL equipment (e.g. DSLAM, DLC, modem, router/gateway) manufacturers, and technology and chipset developers.

Leveraging patent-pending non-intrusive technology, DSL Xpert™ does not affect data transfer between the transceivers, thereby giving a complete and accurate analysis of ADSL product performance and interoperability. With its unique multi-layer probing capability, DSL Xpert™ focuses on the physical layer, and provides comprehensive analysis of data in any form - from analog samples to bits and messages. In addition, the system extracts the Upper Layers cells and packets and provides data, signaling and warnings of incompatibility with the various protocols from ATM through IP. DSL Xpert™ simultaneously presents downstream and upstream data and the connection between the two. A user-friendly software-based solution controlled by a PC, DSL Xpert™ has a feature-rich GUI that presents multi-layer information in convenient displays.

DSL Xpert is a proven test tool that has been used worldwide for testing numerous modems, which were successfully analyzed by chipset vendors, modem makers and telephone companies.

DSL Xpert Advantages

- Testing of ADSL, ADSL2 and ADSL2+
- Comprehensive Performance Analysis
- Independent Testing tool – no ADSL chipset
- Non-Intrusive Monitoring
- Multi-Layer Probing

- User-Friendly PC-Controlled GUI
- Command Line for Automatic Testing (CLI)
- Accelerates Time to Market
- Decision Making Tool for Managers
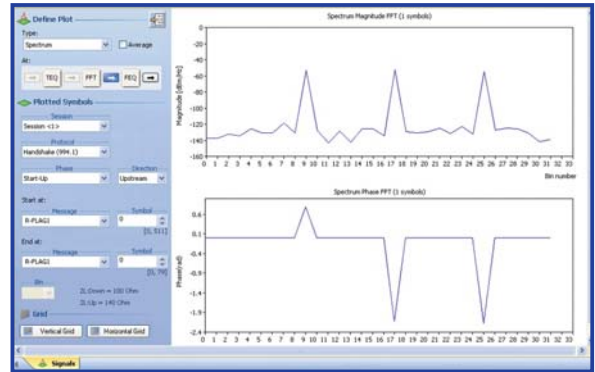- Quick Return on Investment

Flexible Configuration Options
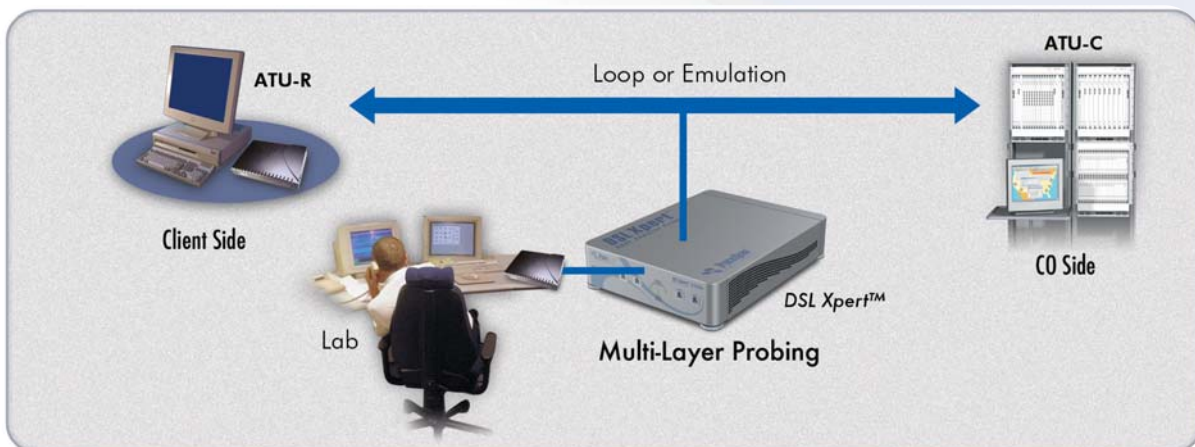
DSL Xpert™ is easily configured at any physical location between the CO and subscriber premises
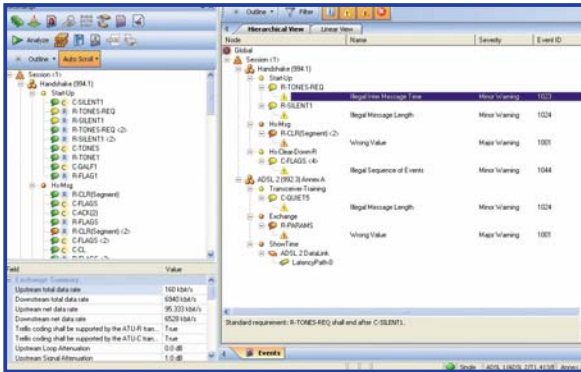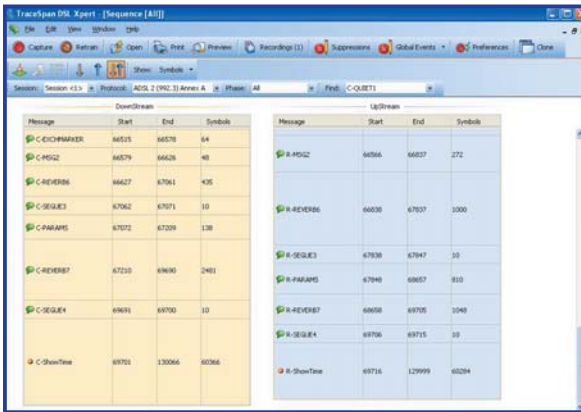
Event View
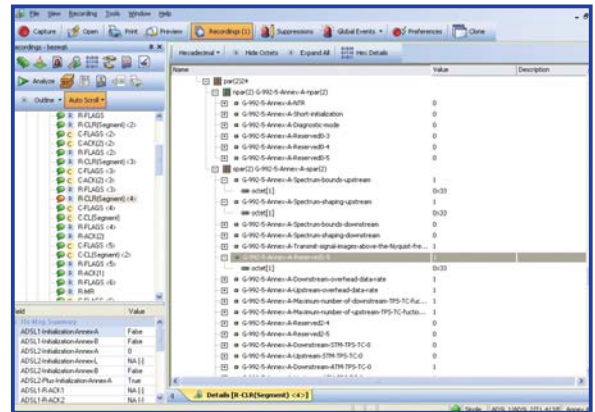Warnings, Errors and Incompatibility issues

Signal View
Signal, Spectrum and Constellation Map
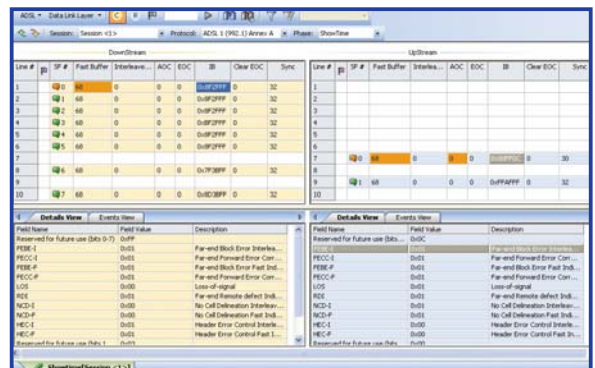

Sequence View
Bi-directional Time-line

Details View
Message content details

Channel Analysis
Bits & Gain map, PSD, QLN and SNR

Showtime View
Data link layer, IB, AOC, EOC, Latency Path

Upper Layers Analysis

The Upper Layers Analysis displays and verifies data carried in the layers above the ADSL layer. The Upper Layers GUI displays the entire protocol stack from which the user can select the desired protocol. It also allows exporting of the IP packets in TcpDump (pcap) format, for further analysis using other IP analyzers.

The analyzer's supported protocols are ATM, AAL5, LLC, SNAP, RFC2684, 802.3, PPP, PPPoE, IPv4, UDP, ILMI and DHCP with numerous encapsulation protocols included.

The TraceSpan DSL Xpert is the only test system on the market that allows the user to drill down through both the Upper Layers and the Physical Layers in order to trace the origin of a specific problem in the ADSL link.
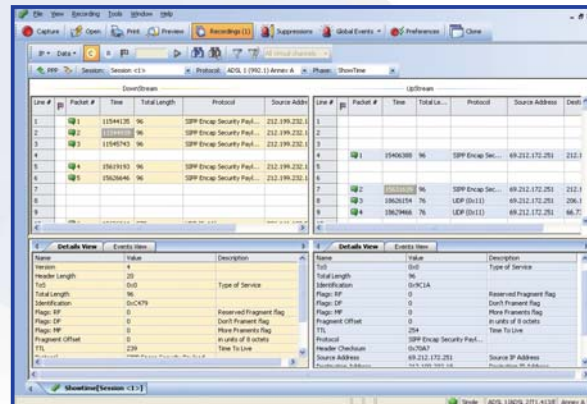
Continuous Real Time Analysis (CRTA)

Some events in the ADSL link may occur long time after the DSLAM and CPE modem have initiated and established their connection. Examples of such events are:

- Reset of the ADSL layer
- Disconnection of the IP layer
- A message (with certain parameters) repeated multiple times in a specific protocol
- Crossing a threshold of a specific parameter, like rate of an ATM channel
- External trigger using the DSL Xpert system's Command Line Interface

The CRTA module helps R&D and test engineers to track and solve such events by enabling real-time activity monitoring and statistics of very long sessions without a capture time limit.

The captured data and analysis are saved to a cyclic file. The user defines the file's size (in seconds), which becomes the captured "time-window" duration. The user also defines the trigger for stopping the capture. When the specified pre-defined event occurs and the capturing stops, the user may explore the recording and view the analysis with the usual DSL Xpert views for the events that occurred during the predefined time-window. The user can also define that the capture will continue for a specific length of time after the event occurred. In addition to the Showtime captured data just before the event, the Real Time Analysis provides the parameters associated with the initialization sequences for any Showtime phase that occurs in the time window.

Modular Design

The DSL Xpert modular design allows users to tailor the system features and capabilities to their specific needs.

DSL Xpert 2208A	Analyzer for ADSL over POTS - Supports ADSL, ADSL2 and ADSL2+ ITU and ANSI standards
DSL Xpert 2208B	Analyzer for ADSL over ISDN - Supports ADSL, ADSL2 and ADSL2+ ITU and ETSI Standards
Upper Layers Analyzer	Analysis Module for ATM, AAL5, LLC, SNAP, RFC2684, 802.3, PPP, PPPoE, IPv4, UDP, ILMI, DHCP
Real Time Analysis	Module with unlimited analysis duration

Features and Benefits

Features	Benefits
Verification	Provides standard-compliant and performance-compliant verification
ADSL2+ / ADSL2 / ADSL	Offers solutions for current and next-generation products
Simultaneous Data Extraction	Displays simultaneously upstream and downstream data and the link between the DSLAM and CPE modems
Archive	Stores and plays back raw data and measurements in the form of samples and/or detected information
Alerts	Provides warnings regarding incompleteness of measurements or incompatibility within the ADSL Standards
Comprehensive Reporting	Displays range of graphs, tables and reports relating to performance and errors. The Report Wizard allows automatic generation of exportable reports
Automatic Testing	Command Line Interface (CLI) is included, allowing integration into existing automated test environment
Multi-layer Probing (Sniffing)	Tracks and displays events through the Physical and the Upper Layers, including signal, bit-pattern, sequence length, message structure and timing
Independent Testing	Detects and verifies problems without the need to rely on any ADSL chipset
Exporting the Data	Allows users to extract the data to other tools such as Matlab® or exporting the data to Excel© Worksheet
New Software Evaluation	Identifies problems before a new software version is released in the network
New Hardware QA	Checks performance and reliability before deploying new equipment
Real Time Analysis	Allows unlimited duration activity monitoring, analysis and statistics for tracking problems that appear in real time, long after the modems trained

Application for Automatic Testing

Command Line Interface (CLI)
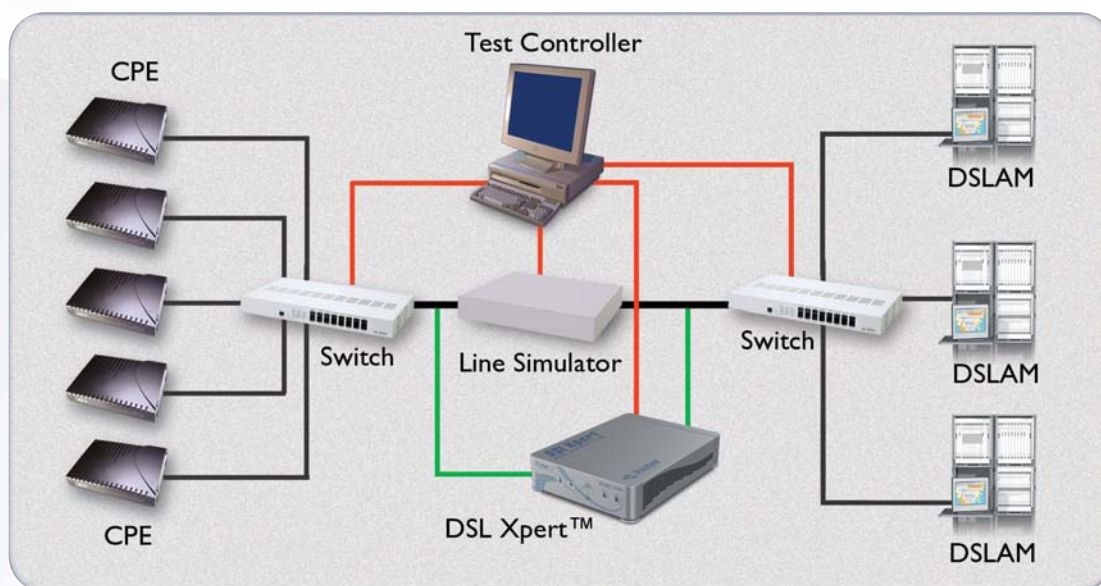
The Test Controller manages the switching of different pairs of DSLAM and CPE modem. It also controls the line simulator performing multiple tests with different loop lengths, and at the same time it commands the DSL Xpert to start and stop capturing each test setup. Once a test sequence is completed and a problem found, the engineer is able to analyze and review the results without the need to recreate the test setup, since the data is saved by the DSL Xpert.

TraceSpan received the Frost & Sullivan 2005 Product Innovation Award for the significance of DSL Xpert as a new product in its industry, its competitive advantage, the innovation with unique and revolutionary technology, the product acceptance in the marketplace, and the value added services provided to customers

Specifications

Standards Compatibility	■ ADSL (ITU 992.1)
	■ ADSL2 (ITU 992.3)
	■ ADSL2 Plus (ITU 992.5)
	■ ANSI (T1.413)
	■ ETSI
	■ Annex A – ADSL over POTS
	■ Annex B – ADSL over ISDN
	■ Annex L – Extended Reach for ADSL2
	■ ATM, AAL5, LLC, SNAP, RFC2684, 802.3, PPP, PPPoE, IPv4, UDP, ILMI, DHCP
Dimensions	■ Height - 70mm (2.8 in.)
	■ Width - 270mm (10.6 in.)
	■ Depth - 360mm (14.2 in.)
	■ Weight - 2 kg (4.4 lb.)
Power Supply	■ External Power Supply
	■ Voltage - 100-240VAC
	■ Frequency – 50/60 Hz
	■ Power - 10W
Safety Standard	■ CE
Certifications	■ FCC part 15
Operating Environment	■ Temperature – 0° - 40° C (32°– 104° F)
	■ Humidity – 10% to 90% non-condensing

The ADSL2+ Multilayer analyzer works seamlessly in these environments

Telcos & CLECs

Equipment Manufacturers

Technology & IC Developers

Contact Information

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