

# AuroraPresto



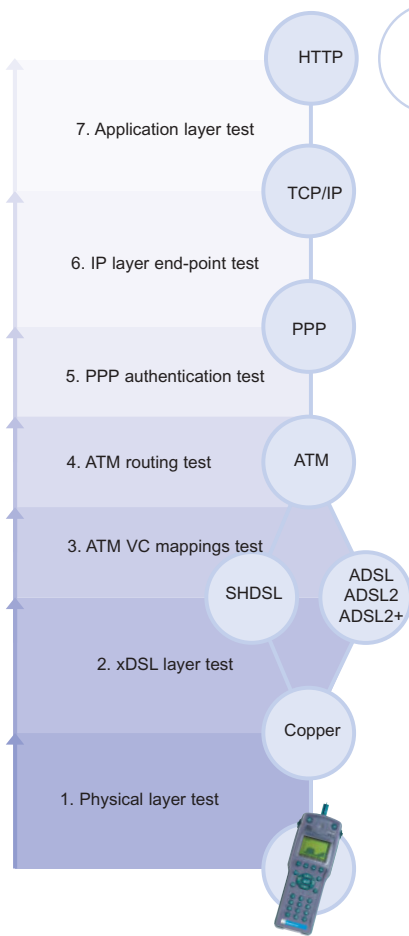
*A Revolution in DSL Testing*



# xDSL

*the complete test tool for DSL technologies*

**Trend**Communications



# xDSL

*a multilayer technology*

The massive customer demand for new services has driven the need to develop Digital Subscriber Line (DSL) technologies to achieve the higher data rates required.

Using existing copper, which shares a bundle with many diverse services, may cause quality-of-service problems to the network operator, service provider and end users.

Aurora Presto has been developed to offer all the functionality needed for the installation, maintenance and troubleshooting of Asymmetrical Digital Subscriber Line (ADSL, ADSL2, ADSL2+) and Symmetrical High Speed Digital Subscriber Line (SHDSL) services, in both laboratory and field environments.



Aurora Presto enables you to test at all layers of the xDSL service



## AuroraPresto

*Multilayer Test Solution for xDSL Roll-Out, Maintenance and Troubleshooting*

With the growth of 'self install', where the customer obtains the DSL modem and a splitter box from an electronics retailer as a move to cut costs, DSL service, installation and commissioning problems are set to grow.

Aurora Presto, the market leader in xDSL testing, quickly and correctly locates and identifies fault conditions on the DSL, ATM, AAL5, PPP, IP and Application layers.



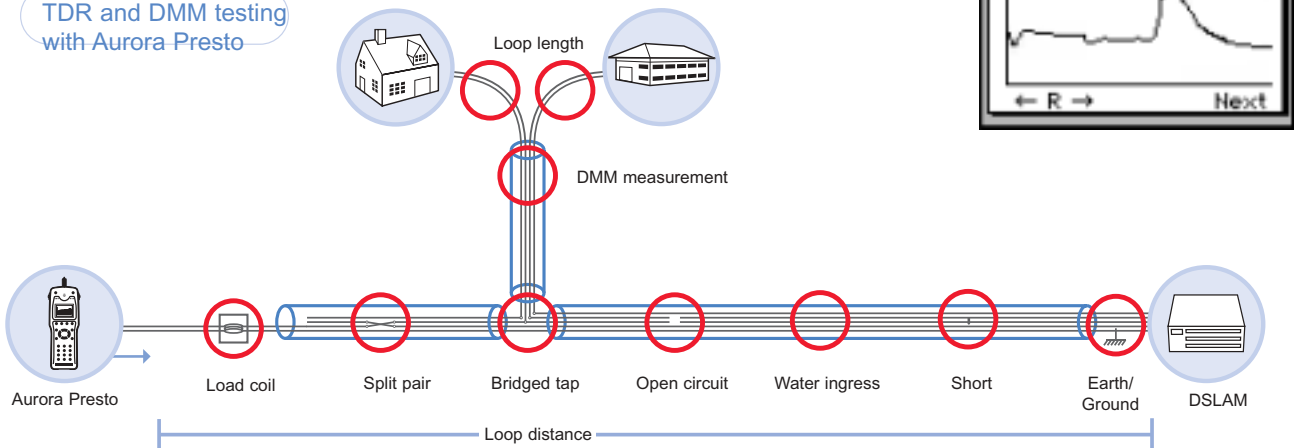
- ADSL over POTS and ADSL over ISDN
- Full ADSL2 and ADSL2+ support!
- SHDSL Annex A and B
- Fully automated One-Button testing mode
- Analogue line testing with TDR and DMM tools
- ATM layer testing (full ATM cell stream handling capability)
- IP layer testing with Bridged and Routed Ping facility
- PPP testing: PPPoE and PPPoA
- Internet download testing

# Physical Layer

*test with TDR and DMM*

DSL technologies are robust and highly suited for use over existing copper. However, degradation of the local loop may lead to physical layer problems that cannot be found using conventional service test measurements.

TDR and DMM testing with Aurora Presto



A typical test scenario would be where a customer's modem is unable to achieve synchronisation on a previously live circuit.

A service engineer would probably use a DMM to confirm that there is the correct voltage on the copper pair, and to test the connection to the DSLAM. Should this test fail, the engineer would typically then find out the type and location of the fault on the pair by using a TDR.

Aurora Presto includes both TDR and DMM functionality for effective fault finding at the physical layer on the local loop.



- TDR (Time Domain Reflectometer)
- DMM (Digital Multimeter) ACV, DCV, Capacitance, Resistance, DC Current
- Detects up to 4 load coils
- Noise analysis test with graphical display

# xDSL Layer

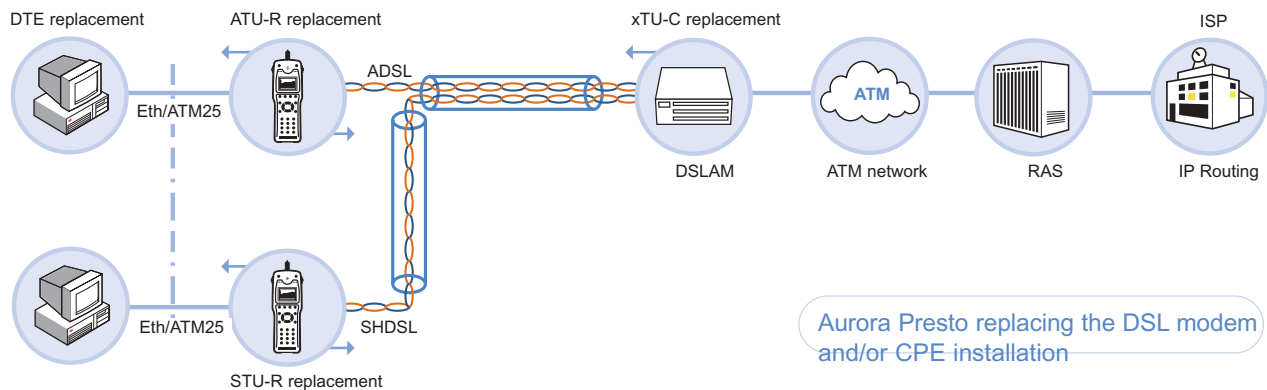
test functions

## ADSL Test

Aurora Presto offers comprehensive statistical reporting of the ADSL link performance, including a full display of the allocation of bits per tone.

The tester supports all major DSLAM and chipset vendors for both ADSL over POTS and ADSL over ISDN band plans. You can easily select any of the three DSL modems or data cards via the graphical user interface.

- ATU-C and ATU-R operation
- Up to 3 modems simultaneously
- Full ADSL Golden Modem Replacement Mode
- Full ADSL Golden Router Replacement Mode



## ADSL2 / ADSL2+ Test

ADSL2 (G.992.3) and ADSL2+ (G.992.5) are the latest standards based on the familiar DMT line code. With downstream data rates of up to 24 Mbps, these technologies have been developed to allow the successful deployment of triple-play (voice, video and data) services over standard twisted copper pair.

The Aurora Presto now offers ATU-R and ATU-C modem emulation mode for ADSL, ADSL2 (including Annex L - READSL) and ADSL2+ technologies. Participation of the Trend ADSL modem solutions in the ETSI plug tests has assured continued market-leading interoperability with the major chipset, CPE, CO and splitter manufacturers.

- STU-C and STU-R operation
- SHDSL tracer with EOC messaging and G.994.1 trace
- Loopback invocation/response
- Sealing current termination
- Full SHDSL Golden Modem Replacement Mode
- Full SHDSL Golden Router Replacement Mode

## SHDSL Test

SHDSL offers flexible broadband provision based on robust standards (G.991.2), with significant reach and performance improvements over its non-standardised predecessor, SDSL.

Aurora Presto includes full STU-R and STU-C modem replacement and offers all the same testing features (ATM, PPP and IP) available on the ADSL line cards.



# ATM Layer

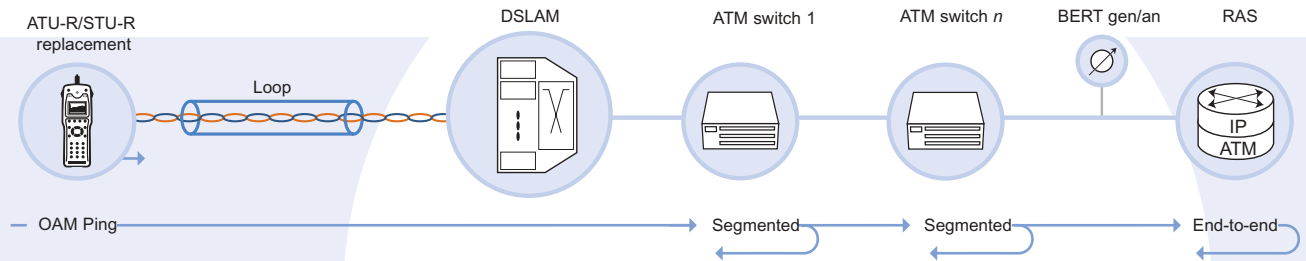
test functions

With ATM providing the main transport technology for ADSL networks, Aurora Presto is several steps ahead of similar testers with its full ATM layer cell stream handling.

Aurora Presto offers actual usable data throughput - a function that is not available with DSL-layer-only testers, nor with testers that implement the marginal ATM functionality available via the DSL chipsets.



Aurora Presto's ATM functionalities are used to verify the ATM connectivity



## F5 OAM Troubleshooting

OAM loopback cells are used to verify the end-to-end connectivity on the ATM layer, and to test if there is a continuous ATM 'pipe' from the modem all the way to the RAS (Remote Access Server).

With Aurora Presto you can be sure that you are not wasting time; running an OAM Ping test takes less than 30 seconds.

If the OAM Ping should give you a 'Fail' result, just use Aurora Presto to carry out further tests using segmented OAM Ping flows until you find the location and nature of the fault.

- ATMF 25.6 interface including BER test capability
- AAL-5 global, mapped VC and unmapped VC statistics and errors
- ATM layer BER test by means of fixed, pseudo-random or user-defined bit sequences
- ATM cell-stream throughput test
- F5 OAM loopback statistics
- F5 OAM support including OAM Ping functionality

## BER Testing

Aurora Presto enables Bit Error Rate Testing (BERT) over DSL by means of user-defined, fixed or pseudo-random (PRBS) patterns, and gives you a full and clear statistical analysis of the BER test. ATMF 25.6 BER testing is available with the optional ATM-25 interface.

# IP/PPP Layer

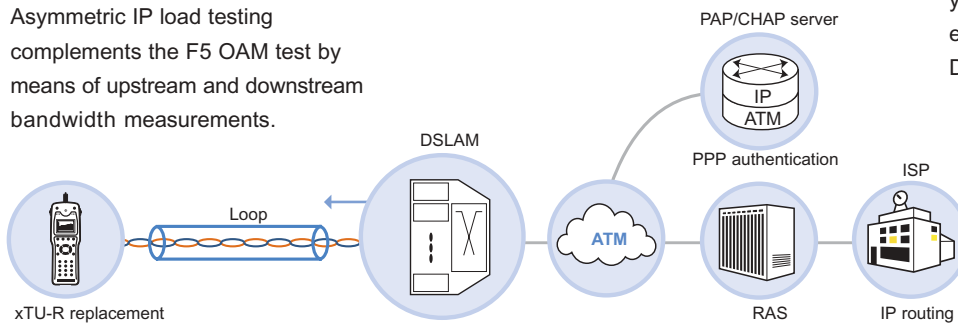
*test functions*

## IP Ping

Aurora Presto includes full IP Ping testing and Trace Route functionalities over the standard 10 BT Ethernet or DSL connection.

Choose the Router Replacement Mode for detailed IP statistics.

Asymmetric IP load testing complements the F5 OAM test by means of upstream and downstream bandwidth measurements.



## PPP Testing

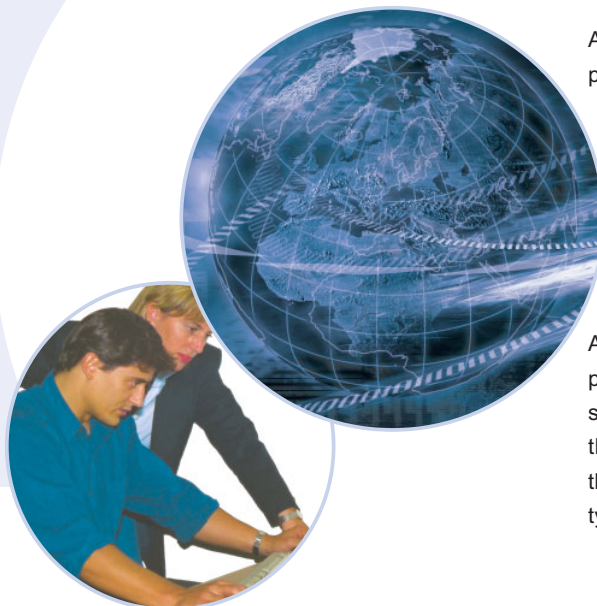
Aurora Presto enables you to log in to the RAS using either PPPoE or PPPoA. The PPP trace function enables you to quickly identify the point of failure. The tester's PPP Server modes make it possible for you to verify the customer premises equipment independently of the DSLAM, core network and ISP.

Multiple IP/PPP test facilities for a complete verification of the upper layers

# Application Layer

*Internet Download Testing (HTTP)*

- Bridged and routed IP Ping via 10BASE-T or DSL connection
- Full router replacement
- DHCP Client and Server
- NAT/PAT address translation
- Trace Route
- PPPoE and PPPoA statistics
- PPP Client and Server modes
- PAP or CHAP authentication
- Internet download delay
- Web server response statistics
- Download time statistics



Aurora Presto uses the HTTP protocol to download the contents of any valid web page, to pinpoint where the delays are occurring.

Download speed depends on a number of factors, such as Network Routing, Traffic Density, Redundancy and Multiplexing.

Aurora Presto downloads the web page repeatedly to average out the statistics. The measurement achieved this way is more representative of the download rates than during a typical Internet session.



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Distributor

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