



ADSL Layer Testing

Quantifying the effects of noise on the ADSL line—Aurora Presto and ALT2000



Application Note ANPADSL-4

xDSL



TESTING NOISE IMMUNITY ON THE ADSL LINK

Transfer of data at high speeds is key to the acceptance of ADSL technology by the customer.

The available frequency range (bandwidth) and the signal-to-noise ratio (SNR) limit the maximum data rate of an ADSL modem. If a greater bandwidth or a higher signal-to-noise ratio is available, more bits may be transferred per second. Since the ADSL bandwidth is fixed, signal-to-noise ratio becomes a key consideration in the capability of the ADSL link to maintain high bit rates. Measurement of noise immunity gives an indication of the tolerance of the ADSL link to withstand levels of increasing noise on the line. Testing with Aurora Presto and ALT2000 means:

- Available noise margin can be quickly determined
- Confidence in the operation of the customer equipment can be provided prior to service turn-up
- Suitability for ADSL services can be assessed
- Independent Maximum through-put tests can be made

The Trend Aurora Presto ADSL service tester can be set to terminate the ADSL link as the ATU-R or the ATU-C. The ALT2000 is used to simulate increasing levels of white noise on the ADSL line. A typical test configuration using Aurora Presto as an ATU-R is shown in figure 1 and uses the Trend test equipment as follows:

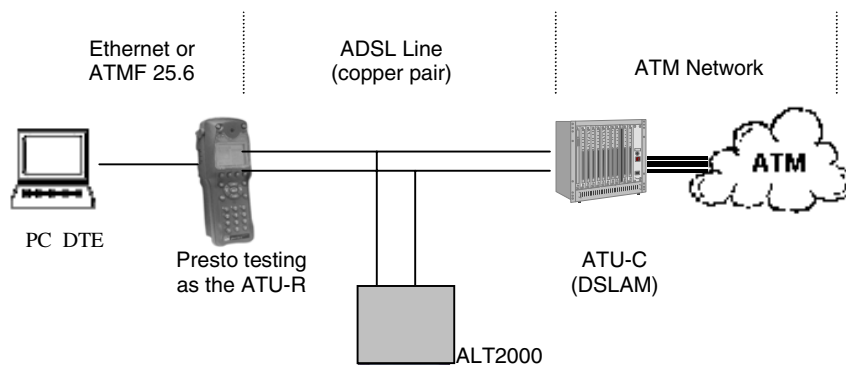


Figure 1

Testing the complete subscriber system using the Trend Aurora Presto and ALT2000

- ADSL line termination by Aurora Presto in ATU-R mode.
- White noise generation by ALT2000 in Noise Immunity mode.
- Display of physical layer alarms by Aurora Presto
- Display of available noise margin by ALT2000