PARADYNE™

* SPECIAL NOTICE *

HDSL Connection Considerations:

There are several steps that you must take to maximize loop reach of your HDSL product:

- Use only CAT5 Twisted Pair Network Connection cables (as supplied with Paradyne HotWire HDSL products) for HDSL Termination Unit connection and interface patch cabling – untwisted analog cables, of any length anywhere in the loop, substantially contribute to crosstalk and reduced loop reach.
- Ensure the main bundle of the loop is standard twisted-pair voice cable (i.e. CAT3).
- Choose non-adjacent wire pairs within the main bundle whenever possible.
- Use only non-conditioned loops – no load coils, echo suppression, etc.
- Eliminate any non-twisted cable from the loop.
- Always keep TIP and RING in the same twisted cable pair.

* SPECIAL NOTICE (continued) *

Near-End Crosstalk (NEXT)

Any wire pair within a cable carrying a signal radiates energy. Other wire pairs act as antennas and pick up this radiated energy. By twisting wire pairs the radiated energy is reduced thereby reducing the affect of crosstalk.

It is critical that only twisted pair cabling be used for all connections within the HDSL loop. Using non-twisted pair cable anywhere within the loop significantly increases the amount of NEXT, decreasing the Signal-to-Noise Ratio (SNR) and loop reach.

Self-Generated Near-End Crosstalk (Self NEXT)

In Figure 1 the transmit signal of loop B (CP TX Loop B) is coupled onto the receive path of loop A (CP RX Loop A). As a result, the SNR and reach of loop A is reduced.

An SNR of approximately 30 dB is required for reliable, error-free operation per individual loop. A reduction of 6 to 9 dB SNR can occur when several HDSL links are added to the same 25-pair bundle. For example, if loop A by itself has an SNR of 39 dB, adding multiple additional loops to the same bundle might reduce the SNR of loop A to 33 dB.

NOTE: It is recommended that when multiple HDSL loops are added to the same 25-pair bundle, the SNR of each individual loop remain at or above 30 dB.

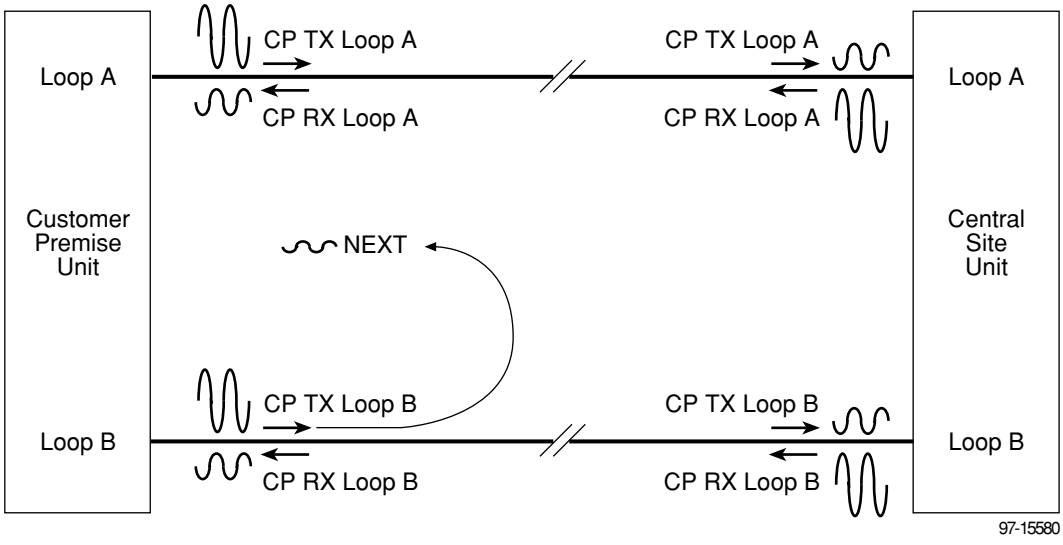

Figure 1. Self-Generated Near-End Cross Talk (Self NEXT)