

# Reach-Extended ADSL2 (READSL)

G.992.3 Annex-L AR7 Standards-based Capability

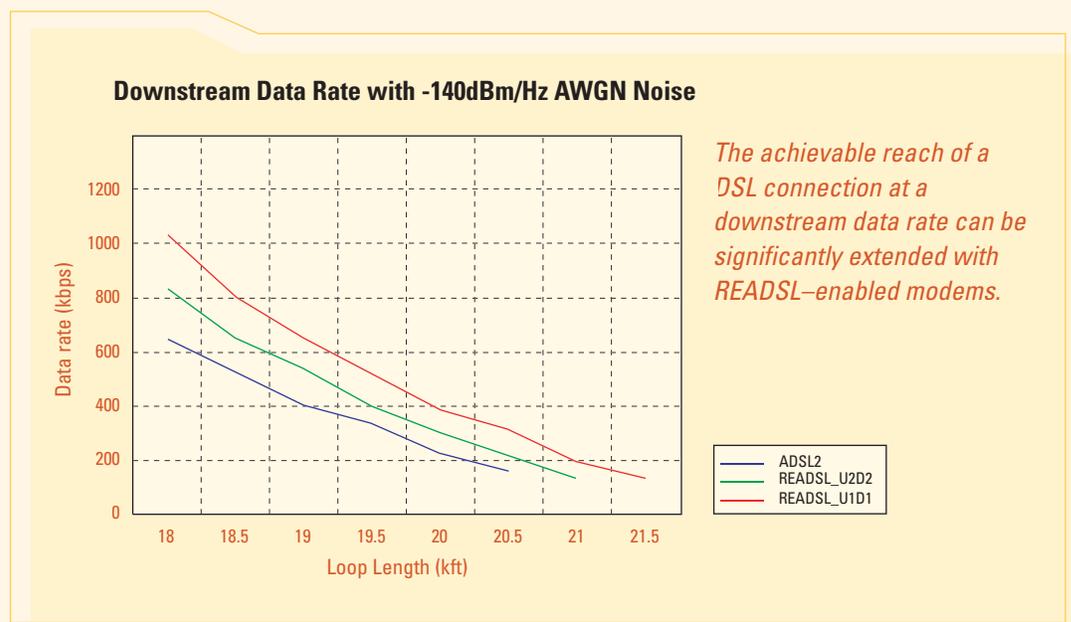


- > Increases coverage reach
- > Boosts data transfer rate

## Overview

In addition to the latest DSL standards and enhanced downstream capabilities, Texas Instruments' AR7 platform supports Reach-Extended ADSL (READSL)—an ADSL2 variant designed to boost the reach and data transfer rate of long-loop multicarrier systems. With READSL, DSL providers are able to extend service to those customers who were previously located beyond the coverage range or in a system's "shadow areas."

READSL improves the range of ADSL over very long twisted pairs by selecting the combination of downstream and upstream power-spectral density (PSD) masks best suited for a DSLAM's loop and noise characteristics. In a long-loop system, higher frequencies deteriorate gradually as they travel across the telephone lines, resulting in drastically reduced downstream data rates. To solve this issue, READSL focuses a higher power density within a constricted downstream and upstream bandwidth (narrowed frequency usage, same total power). The higher power density in the downstream band directly increases the downstream data rate, while the reduced upstream band provides a narrower echo, freeing up more bandwidth for downstream transmission to the AR7 modem.



## Implementation with AR7

Support for the Non-overlapped/Wide and Non-overlapped/Narrow ADSL operation modes is a mandatory part of the READSL standard. However, TI's AR7 also supports the optional Overlapped/Wide and Overlapped/Narrow modes, resulting in additional performance boosts through increased rate and reach. These modes are dynamically determined during the handshake procedure.