

xDSL High-Speed Internet Services for Residential and Business Applications

Subscribers demand a lot from networks. They want access to applications and content all the time no matter where they are, and from a variety of devices. A network solution built with Tellabs Telco Access products provides the scalability, flexibility and reliability for network and service operators to provide seamless high-speed delivery of services and content to subscribers. With Tellabs in the network, all of today's services are supported, along with the ability to integrate into new network architectures for future services.

Tellabs enables high-speed Internet services for residential, business, educational and government applications with a variety of rates, reaches and symmetry to ensure that subscribers' needs are met. ITU standards-based ADSL2+ and VDSL2 offer high bit rates for premium services and the broadest reach, symmetry and coverage available.

ADSL2+: Multiple options for voice and data services

Tellabs ADSL2+ (Asymmetric Digital Subscriber Line) products support ADSL2+ with integrated POTS or standalone ADSL2+ for overlay applications. The products support ITU-T 992.1, 992.2, 992.3 and 992.5 with Annex L (Reach Extended) and Annex M (increased upstream). The ADSL2+ provides bit rates up to 24 Mbps on a single pair and up to 48 Mbps when bonding pairs.

The Tellabs® 1000 Multiservice Access Platform (MSAP) can be deployed in a variety of environments, including locations that best suit the requirements of data services over DSL. A single system can consist of a single terminal in a central office that serves customers directly. Or it can have up to thirty-two subtended remotes with installations in remote cabinets, basements, equipment closets or CEVs.

The Tellabs 1000 MSAP ADSL products offer six-port modules with options to have the six ports be ADSL only or have each of the six ports support ADSL and POTS on a single copper pair using frequency division multiplexing (i.e., POTS occupies lower frequencies, ADSL higher frequencies and a guard band in between), per international standards.

The ADSL product with integrated POTS is the ADSL2+ 6+6B card. The "6+6" indicates that each of the six ports supports ADSL (6) + POTS (6). The ADSL2+ 6+6B card enables network operators to



deploy ADSL with POTS and provide high-speed Internet services in locations using the same amount of space required to service POTS only. With integrated ADSL and POTS in a single product, there is no need to spend additional capital and incur added expense to install new cabinets or adjunct cabinets. All services can be provided in the same space required for voice services.

Subscribers who have alternate sources for voice services may only want Internet service over landlines. This scenario is also supported by the Tellabs 1000 MSAP. With the ADSL2+ 6+0, six ports of ADSL2+ are provided without POTS. When transmitted over a single copper pair, ADSL2+ can provide up to 24 Mbps.

When two-pair bonding is used, the network can provide up to 48 Mbps, which support a household with three to four HD video streams while at the same time providing sufficient capacity to stream music, download files and browse.

Tellabs® 1000 MSAP ADSL2+ also provides attractive capacities for business services. The Tellabs 1000 MSAP ADSL includes the ITU-T Annex M, which provides for extended upstream bandwidth. Instead of the standard 1 Mbps that ADSL supports, Annex M provides up to 3 Mbps in the upstream direction.

All of these capabilities are available on the Tellabs 1000 MSAP and are activated simply by provisioning the mode that best fits the requirements.

