

# AB-Access™

LMDS (28 GHz)



## HARNESSING THE POTENTIAL OF WIRELESS

AB-Access consists of fixed broadband wireless access equipment for Internet, data, multimedia, video, voice, and other emerging IP and ATM based applications. Combining Time Division Duplexing, patent pending Adaptive Broadband Packet-on-Demand technology and true point-to-multipoint functionality, AB-Access provides a robust, cost-effective alternative to wired alternatives such as DSL and cable modems.

Today, telecommunications operators and Internet Service Providers are using AB-Access to enhance or replace existing networks — wired or wireless — or to develop new networks where wireline broadband access is not available. With integrated equipment, industry standard interfaces and simple provisioning, AB-Access has been designed with the needs of today's and tomorrow's service providers foremost in mind.

## THE AB-ACCESS NETWORK

AB-Access is typically deployed in a cellular pattern to provide complete geographic coverage. Each cell site uses six sectors to offer 360° coverage. Each sector is an integrated antenna-transceiver-modem known as an Access Point. Each Access Point establishes a high-speed channel shared among up to 254 simultaneous active Subscriber Units which provide a standard Ethernet or ATM interface. Cell sites are interconnected by either conventional wired backhaul, or by wireless point-to-point links. Managing the network, Control Servers house subscriber and configuration databases while the AB-Access Element Management System provides a GUI-based interface for configuring subscribers, monitoring network performance and reporting alarms.

## MAXIMIZING BANDWIDTH USE

AB-Access dynamically allocates resources, serving only those subscribers with data to transmit or receive. Data throughput is maximized and, as a result, revenues are maximized as well.

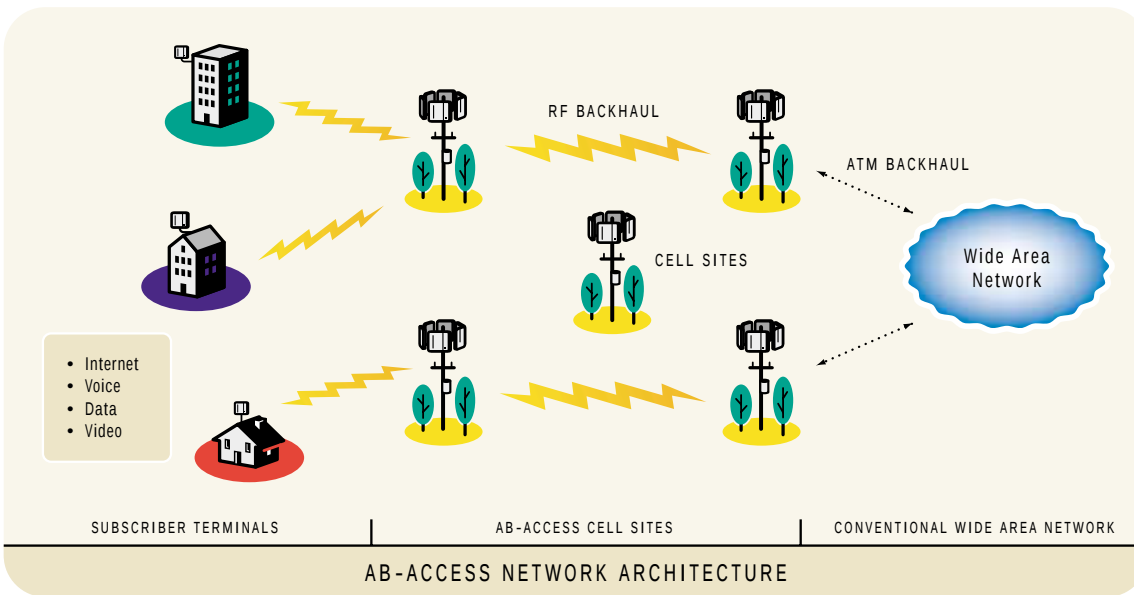
**Packet-on-Demand.** Beyond bandwidth-on-demand, AB-Access allocates bandwidth to users at the granularity of a single cell or packet. This avoids wasted bandwidth and greatly increases network efficiency. At the same time, by setting variable priorities according to user class and traffic type, support for mission-critical applications and differentiated service pricing is assured.

**Time Division Duplexing.** AB-Access employs Time Division Duplexing (TDD). TDD uses one shared channel for upstream and downstream traffic. Because upstream vs. downstream bandwidth is not fixed, all network bandwidth can be used to support any mix of network traffic — majority upstream, majority downstream or anywhere in between. Compared with wireline and legacy wireless systems, TDD provides a much more efficient network solution by:

- eliminating the need to reengineer the entire network as traffic patterns change.
- simultaneously supporting symmetric and asymmetric patterns without wasting spectrum.
- eliminating the need for a "guard band" between up and downstream RF channels.



ADAPTIVE BROADBAND™



#### ADVANCED SUBSCRIBER MANAGEMENT

**Immediate Provisioning.** New subscribers can be brought on-line immediately, with a single integrated unit which minimizes costs and enables fast and easy installation.

**Flexible Tariffing.** Subscribers can be billed in a variety of ways, not just by on-air time, but by amount of bandwidth used, minimum throughput provided, or other appropriate measure.

#### MULTI-FREQUENCY SUPPORT

AB-Access is available in MMDS, 3.5 GHz, U-NII (5.8 GHz) and LMDS frequencies. With all products managed from a single network management platform, AB-Access allows carriers to effectively deploy multiple frequencies within a single market. The chief benefit is greater spectrum availability and higher cell capacities. Likewise, the use of license-free U-NII networks allows otherwise licensed operators to provide service where licenses are not yet available.

#### SPECIFICATION SUMMARY

|                           |                  |                                                             |
|---------------------------|------------------|-------------------------------------------------------------|
| Dimensions                | Subscriber Unit: | 10"x10"x8"                                                  |
|                           | Access Point:    | 10"x10"x8"                                                  |
| Weight                    | Subscriber Unit: | 14 lbs                                                      |
|                           | Access Point:    | 14 lbs                                                      |
| Operating Frequency Range |                  | 27.55 GHz-27.75 GHz and                                     |
|                           |                  | 28.125 GHz-28.225 GHz                                       |
| Speed                     |                  | 25 Mbps depending on range and propagation environment      |
| Range                     |                  | Up to 3 miles (4.8 km) depending on propagation environment |
| Protocol                  |                  | RFC 1577 (CLIP)                                             |
|                           |                  | RFC 1483 (Multi Protocol Encapsulated over ATM)             |
|                           |                  | PPPoA                                                       |

|                             |                                                                                                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cell site                   | Support for either ATM or Ethernet based backhauls (wide range of 3rd party alternatives available)                                                              |
| Interfaces:                 | Subscriber Units and Access Point support RJ45 socket offering ATM25 (U-NII Signaling) or Ethernet (10BaseT) QPSK                                                |
| Modulation                  | Fast turnaround MAC-Layer ARQ for virtually error-free communication                                                                                             |
| Error Control               | Up to 254 simultaneously active Subscriber Units allowed per sector (overlapping sectors allowed); Each Subscriber Unit may support an unlimited number of users |
| Subscriber Units per Sector |                                                                                                                                                                  |

#### ENVIRONMENTAL CHARACTERISTICS

|                    |                                                |
|--------------------|------------------------------------------------|
| Temperature Range: | -20 to +50 degrees Celsius ambient temperature |
| Humidity:          | Up to 100% at 45 degrees Celsius               |
| Wind Loading:      | 50 m/second                                    |

#### CELL SITE COMPONENTS

- One or more Access Points, each with an integrated 60° by 7° beam width patch antenna. Six Access Points provide 360° geographic coverage
- ATM or Ethernet switching multiplexing and demultiplexing traffic from the Access Points
- 6-port Access Panel and optional redundant power supply and UPS

#### SUBSCRIBER UNIT COMPONENTS

- Environmentally sealed roof-top transceiver with integrated patch antenna
- Internal junction box with RJ45 socket and integrated 110V or 220V AC power supply
- Web-based installation and configuration application

#### NETWORK MANAGEMENT

- Single central application with GUI, communicating with the cell sites, Control Server and Subscriber Units over IP
- Linux-based Control Server to manage the Access Points from one or several cell sites



ADAPTIVE BROADBAND™

1143 Borregas Avenue, Sunnyvale, California 94089 USA  
TEL (408) 743-3400 FAX: (408) 743-3449

Westbrook Centre, Milton Road, Cambridge CB4 1YQ UK  
TEL +44(0)1223713713 FAX: +44(0)1223713714  
WEB SITE: [www.adaptivebroadband.com](http://www.adaptivebroadband.com)

Adaptive Broadband products are manufactured under a quality system certified to ISO 9001. Adaptive Broadband reserves the right to make changes to specifications of products described in this data sheet at any time without notice and without obligation to notify any person of such changes.

© 2000 Adaptive Broadband Corp. (Part N° DS-LMDS) V1.2 9/00