802.16 Wireless Networking Solutions

V. 2.1

Key Features

PHY Characteristics:

- Implements the WirelessMAN OFDM portion of the IEEE 802.16-2004 Specification; Software upgradeable to 802.16e.
- Additional low data rate mode for discovery phase.
- Additional PSK modulation modes.
- Reprogrammable as needed for application specific requirements.
- Doppler correction for ground-to-air and air-to-air operation (>2000 MPH).
- Supports GPS Reference for enhanced timing performance.

MAC Characteristics:

- Implements the Point to Multi-point portion of the IEEE 802.16-2004 Specification; Software upgradeable to 802.16e.
- Hard-MAC/Soft-MAC split moves MAC code into host domain.
- Interfaces directly to public domain network stack.
- Reprogrammable as needed for application specific requirements.
- SCA Compatible architecture.

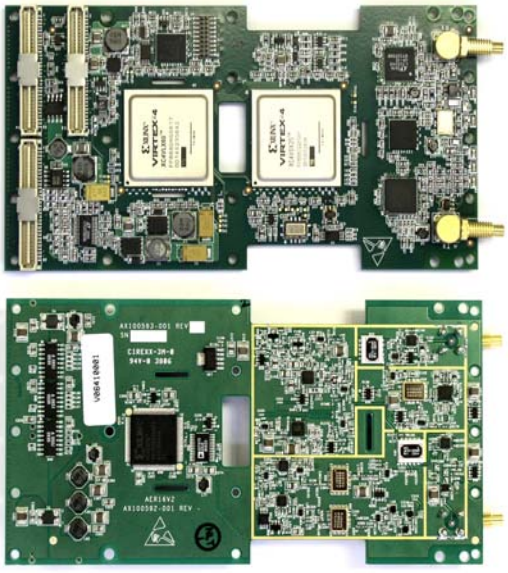
Applications:

VoIP, Data, Video, including:

- **Air Relay** - Over-the-hill communications link for VOIP voice, data, video, and imagery.
- **Campus Wireless Network** - High speed secure building-to-building IP networking.
- **UAV Data Link** - High speed secure data link form UAV to ground collection station.
- **Long Distance Direct Distribution** Direct distribution of imagery and information to soldiers on the move. Low speed backhaul to carry health and position information.

Aeronix has developed an 802.16 solution primarily targeted at military and homeland security applications. This modem combines state-of-the-art Super-heterodyne radio technology and SDR architecture to implement a truly flexible and programmable solution for long-range IP wireless networking.

The Aeronix 802.16 modem, when combined with high performance directional antenna technology, can deliver in excess of 65 Mb data rates up to 75 miles on airborne, shipborne, or land-based platforms.



802.16 Module Radio

Radio Features	
Operating Frequency	5.725 – 5.825 GHz [UNI II] 4.5 – 4.8 GHz (1494 Auth) SW Selectable
Number of Channels	4, 9
Channel Bandwidth	17 MHz
Modulated Data Definition Profile (MAN-OFDM)	
6.0 Mbps	OFDM BPSK
15 Mbps	OFDM QPSK
30.0 Mbps	OFDM QAM16
65.5 Mbps	OFDM QAM64
2.0 Mbps	OFDM BPSK[1]
22.5 Mbps	OFDM 8PSK[2]
30.0 Mbps	OFDM 16PSK[2]
Note: Additional Modes for: [1] Initial Lockup [2] Rotor-Craft	

AER16 Specifications	
Maximum Throughput	65+ Mbps
Access Demand	Dynamic partitioning of uplink/downlink capacity
TRANSEC	AES 256
Standard	Roadmap to 802.16e with planned software upgrade Profile: 802.16 2004 Spec WirelessMAN_OFDM
Channel Spacing	20 MHz Reprogrammable
Rate Adaptation	Automatic
Form Factor	Standard: CCPMC Optional: Customer-specific
Configuration	Point to Multipoint Roadmap to mesh configuration with planned software upgrade
Range	Range 4 km to 18 km using omni antenna and 5W PA (depending on foliage, rain and multi-path conditions)
Traffic	IP, Ethernet

www.aeronix.com

AERONIX

1775 West Hibiscus Boulevard ■ Suite 200 ■ Melbourne Florida 32901 ■ Tel.(321) 984-1671 ■ Fax.(321) 984-0366