

**WiN2000™**

System Overview

WiNMAX™ series

WiMAX Subscriber Unit

**Features**

- **Highly efficient triple-play delivery**
- **Easy to install, simple to operate and maintain**
- **Remote management and upgrade**

GENERAL DESCRIPTION

The WiNetworks WiN2000 is a member of the WiNMAX family, a line of WiMAX-based Broadband Wireless Access systems, specially designed for triple-play applications.

WiNMAX systems are designed for robustness and simplicity, offering feature-rich services with low deployment and operation costs, for unmatched operator competitiveness and fast ROI.

WiN2000 is a high-performance outdoor unit that provides complete WiMAX-based broadband wireless access functionality to a range of indoor Multi services Gateways to support diverse services and needs.

The WiN2000 is based on the IEEE 802.16/ETSI HIPERMAN standards, to effectively meet the unique requirements of the wireless Metropolitan Area Network (MAN) environment and to deliver broadband access services to a wide range of customers. Designed specifically for point-to-multipoint broadband wireless access applications, it provides a very efficient use of the wireless spectrum, supporting difficult user environments. The access and bandwidth allocation mechanisms accommodate hundreds of subscriber units per channel, with subscriber units that may support different services to multiple end users.

The system uses OFDM radio technology, which is robust in adverse channel conditions and enables Non-Line-Of-Sight (NLOS) operation, enabling easy installation and improved coverage, while maintaining a high level of spectral efficiency. Modulation and coding are continuously adapted to prevailing link conditions, ensuring an optimal balance between robustness and efficiency.

WiN2000 Highlights:

- **WiMAX compliance** based on IEEE 802.16-2004 and ETSI HiperMAN
- **High capacity**, providing up to 10 Mbps net throughput per subscriber
- **Excellent performance in NLOS conditions** - overcoming multi-path and deep fades, providing extended range and easier installation
- **Adaptive modulation** to optimize throughput and facilitate performance robustness
- **Automatic Transmit Power Control (ATPC)** to allow for optimal network deployment and interference avoidance
- **Numerous applications and Services** - Addressing multiple markets and supporting differentiated multi-services through multiple QoS levels and a variety of classification/prioritization schemes
- **Low cost ownership** through simple installation and demand-based build-out, enabling operators to rapidly penetrate new market segments with minimal CAPEX
- **Coax / ETH compatibility** for simple installation and reuse of existing wiring.

WiN2000 Specifications

Radio and Modem (3.5Ghz version):

Frequency	Rx: 3399.5-3500 MHz Tx: 3499.5-3600 MHz
Frequency Separation	100 MHz
Radio Access Method	TDMA
Operation Mode	FDD Half Duplex
Channel Bandwidth	3.5 MHz, 1.75 MHz
Frequency Resolution	0.125 MHz
Win2001 Integral Antenna	18dBi, 15° AZ x 18° EL, vertical polarization, compliant with EN 302 085, V1.1.1 Range 1
Win2002 Integral Antenna	18dBi, 18° AZ x 15° EL, horizontal polarization, compliant with EN 302 085 V1.1.2 Range 1
Output Power @ antenna port	20dBm +/-1dB maximum ATPC range: 40dB
Modulation	OFDM modulation, 256 FFT points; BPSK, QPSK, QAM16, QAM64
FEC	Convolutional Coding: 1/2, 2/3, 3/4
Sensitivity	QAM64 3/4: -82dBm @ 3.5 MHz, -85dBm @ 1.5 MHz BPSK 1/2: -100dBm @ 3.5 MHz, -103dBm @ 1.5 MHz

Data Communication:

Ethernet Standard Compliance	IEEE 802.3 CSMA/CD
Ethernet Port	10/100 Mbps, Half/Full Duplex with Auto Negotiation
VLAN Support	IEEE 802.1Q
Traffic Classification	- IEEE 802.1p - DiffServ (DSCP)

Configuration and Management:

Local Management	- Telnet - SNMP
Remote Management	SNMP over wireless via the Base Station
SNMP Agent	SNMP ver 1 client: MIB II (RFC 1213), Private WiNMAX MIBs
Authentication	X509v3 digital certificate
Software Upgrade	TFTP via the Base Station
Remote Configuration	By the Base Station

Mechanical, Electrical and Environmental:

Dimensions	31.5 x 11 x 31.5 cm
Weight	3 kg
Power Source	54VDC from the indoor unit over the indoor-outdoor cable
Power Consumption	30 W maximum
Operating Temperature	-40°C to +55°C
Operating Humidity	5%-95% non condensing, Weather protected

Standards Compliance:

EMC	ETSI EN 300 489-1
Safety	EN 60950 (CE) IEC 60 950 US/C (TUV)
Environmental	ETS 300 019: Part 2-1 T 1.2 & part 2-2 T 2.3 Part 2-4 T 4.1E
Radio	ETSI EN 301 021 V.1.5.1 ETSI EN 301 753 V.1.1.1

Coax Compatibility:

Power Supply to external device	13/18 VDC, 0.5A maximum
Frequency Range	950-2250 MHz
Coax Type	RG-6, RG-11, RG-59
Communication	DiSEqC compatible

WiNetworks empowering  Triple-Play

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