



PacketMAX 5000 Base Station

Carrier Class WiMAX Base Station

Built for performance, reliability and scale, Aperto's PacketMAX 5000 is the world's first carrier-class base station certified by the WiMAX Forum.



PacketMAX 5000

KEY FEATURES

- WiMAX™ Forum Certified
- Highest capacity; highest density WiMAX base station
- Modular design supporting pay-as-you-grow business model
- Seamless co-location with mini and micro base stations for expanded network coverage
- Comprehensive system redundancy for carrier-class resilience
- Upgradeable to IEEE 802.16e based mobility

PacketMAX 5000

With PacketMAX™ 5000, Aperto Networks delivers the industry's highest density, highest capacity, and highest performing base station. Designed for modular growth and service evolution, the PacketMAX 5000 sets a new standard for carrier-class WiMAX base stations.

PacketMAX 5000 holds the distinction of being the industry's first carrier-class WiMAX base station certified by the WiMAX Forum. It operates in licensed and license-exempt bands under virtually all wireless conditions, giving providers a versatile platform for maximizing WiMAX revenue opportunities.

PacketMAX 5000 hardware is based on the ATCA open standard, incorporating the latest advances in reliability, availability, and serviceability for carrier-class, high-speed telecommunications. Designed to accommodate up to 12 wireless sectors, the PacketMAX 5000 system requires just 5U of rack space—making it the highest density base station currently available. This versatile, space-saving solution allows operators to offer a broad range of voice, data, and multimedia services, while driving down the operational and capital outlays required to scale the network.

The PacketMAX 5000 modular design accommodates a large number of deployment options. With 1:1 or 1:N redundant wireless sectors, the PacketMAX 5000 can support: 12-sector base station, redundant 6-sector base stations, redundant four sector and other configurations within a single chassis.

The PacketMAX 5000 meets stringent operator deployment needs, while bridging gaps from pre-WiMAX to fixed WiMAX, indoor consumer WiMAX, and fully mobile WiMAX.

Typical Applications:

- Last mile, carrier deployments supporting small initial roll outs, growing to support thousands of subscribers in a single 5U platform
- Converged fixed-mobile service offering including multi-user, multi-application, and multi-service simultaneously
- Scalable VoIP service with per-subscriber QoS and dynamic link adjustment
- Wireless applications desired by indoor consumers of WiMAX including DSL bypass and WiFi extensions
- Fixed WiMAX service evolving to support mobile subscribers
- Bandwidth hungry video and data applications requiring low latency and predictable performance



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Wireless to the MAX

PacketMAX 5000 System Specifications

Radio and System Specifications

Compliance	: WiMAX Forum Certified™, IEEE 802.16-2004 (3.5T1, 3.5T2), ETSI HyperMAN
Duplexing Mode, PHY	: TDD, OFDM 256 FFT
Frequency	: 2.5 - 2.7 GHz, 3.3 - 3.4 GHz, 3.4 - 3.6 GHz, 5.725 - 5.925 GHz Future: 3.6 - 3.8 GHz; 4.9 GHz, 5.150 - 5.359 GHz, 5.425 - 5.725 GHz
Channel Bandwidth	: 1.75 MHz, 3.5 MHz, 6 MHz; 7.0 MHz;
Step Size	: 125 KHz
Radio Output Power	: 17 dBm, 20 dBm, 30 dBm options
Receiver Sensitivity	: -100 dBm
Modulation	: BPSK, QPSK, 16QAM, 64QAM
Forward Error Correction	: Convolution coding 1/2, 2/3, 3/4
Automatic Frequency Selection	: Yes
Dynamic Frequency Selection	: Yes

IP Networking Features/Options

IP Version	: IPV4 (RFC 791)
Bridging Mode	: IEEE 802.3d
Routing	: RIP V2, OSPF
VLANs	: IEEE 802.1 P/Q

Security/Encryption

Authentication	: X.509 based authentication
Encryption	: 3DES, AES CCM 128, 1024

Multi-Service/Multi-User Support

Traffic Classifier	: MAC DA/SA, 802.1 P/Q, IP SA/DA, IP Prot, IP TOS, TCP/UDP Port
Scheduling/QoS	: UGS, RTPS, NRTPS, BE, CIR, MIR
Max # Sectors	: 12 non-redundant; 6 with 1:1 redundancy
Active Connected Subscriber Units	: up to 6144 (512 per sector)
Bi-directional Service Flows	: up to 8192 per sector

Carrier Grade Features

Chassis	: 5U Advanced TCA; 19" telco rack mountable
Modularity	: Individually deployable wireless sector cards, fan unit, main system controller
Redundancy	: Wireless sectors: 1:1; 1:N, M:N (future) IP interfaces: 1:1 (future) Power Distribution: 1:1

Physical Interfaces

RF sectors, IF Port	: up to 12 (f-type)
Backhaul	: 1 x 100 BT, 1 x 1000 BT (RJ45)
Management	: 10/100 BT; RS-232 (RJ45)
Shelf management	: 10 BT (RJ45); RS-232
External clock, Synchronization	: 10 MHz/1 PPS GPS 2 x BNC
Antenna Port	: Type-N
IF Port	: Type-F

Management

Remote Management and Monitoring	: WaveCenter EMS (SNMP)
Remote Management Access	: Telnet, SNMP
Local Management and Monitoring	: CLI
Provisioning	: Centralized using WaveCenter EMS (SNMP)
SNMP	: MIB II (RFC 1213), WiMAX MIB, Aperto Enterprise MIB; SNMP V2 IEEE 802.16f MIB

Mechanical

Indoor Unit Dimensions (l*h*w)/weight	: 38.8*22.0*43.4 (cm)/46.0 lbs (20.9 Kg) (4 sector, 1 MSC, 1 Fan Unit, DC)
Outdoor Unit (l*h*w)	: 4.8*61*30.5 (cm)
IDU-ODU Distance	: 250 m

Electrical

Input DC Voltage	: DC 40-60V
Input AC Voltage	: 100 VAC - 240 VAC
Max Power Consumption	: 100 W (single sector config)

Environmental

Weather Protection	Indoor : na	Outdoor : IP65/NEMA-4
Operating Temperature (Outdoor Unit)	: 0-40°	: -35 - 65°
Humidity (Outdoor Unit)	: 0-90%, non-condensing	: 0-100%, non-condensing
RoHS Compliance	: yes	: yes

About Aperto Networks:

Aperto Networks, a founding board member of the WiMAX Forum, develops the world's most advanced, carrier-class WiMAX base stations and subscriber units. They enable carriers to profitably offer broadband services through IP-rich point-to-point and point-to-multipoint wireless networks that are easy to deploy and provide unsurpassed subscriber density, QoS, and reliability. For more information, visit www.apertonet.com.