

# PacketMAX<sup>®</sup> 315 Subscriber Unit

## Solution to Suit Any Subscriber Environment

The PacketMAX 315 unit provides an economical solution for small enterprise, home office, and consumers. This affordable Subscriber Unit is compatible with the PacketMAX2000 pico Base Station

### Product Specification



PacketMAX 315 is specifically designed to be used with the PacketMAX 2000 pico Base Station and provides many of the features of the other PacketMAX 100 series products allowing service providers to take full advantage of the growing WiMAX market. The PacketMAX 315 is economically deployed delivering an excellent price and performance with the features required to address the underserved small business, home office, and residential markets. With PacketMAX 315, end users can browse web pages, make voice calls, view streaming video, and download files – simultaneously over the wireless link at multi-megabit speeds.

Aperto offers PacketMAX 315 models operating in the full 5 GHz band using spectrum-efficient TDD scheduling. The PacketMAX 315 is IEEE 802.16-2004 standard compliant.

Aperto offers PacketMAX 315 are cost effective units that make the business case more attractive. The common software features include bridging and VLAN. Many packet classifications are used to support CIR, CBR, and Best Effort (rTPS, nrTPS, UGS, and BE) data streams that allow simultaneous differentiated voice and data services for the consumer.

The PacketMAX 315 consists of an outdoor radio with integrated antenna or optional external antenna for even greater gain. An indoor unit interfaces to a standard Ethernet network switch or personal computer and conveniently accepts AC power. Ethernet cabling carries network signaling and system power between the indoor and outdoor units.

The PacketMAX 315 may be upgraded in the field with a software upgrade to a PacketMAX 320.

### KEY FEATURES

- An economical, cost-effective solution for broadband wireless applications
- Fully compliant with IEEE 802.16d-2004 standard
- Compact, all-in-one form-factor for one-man mount
- Compatibility enables site expansion using higher capacity Aperto Base Stations when needed
- Superior QoS for multi-service support including voice over IP

### Typical Applications

- Economical “wireless DSL” service offering greater bandwidth and lower cost to the end user.
- End-to-end QoS enabled wireless services for enterprise voice and data.
- Underserved and rural areas, campus networks, convention centers, ports, mines, and oil-rigs or wherever reliable voice, video, and data connectivity is required.



## Radio and System Specifications

Compliance	: IEEE 802.16-2004																																																
Duplex Mod PHY	: TDD, OFDM 256 FFT																																																
Frequency	: 3.3 – 3.675 GHz, 5.150-5.875 GHz																																																
Frequency Resolution	: 250 KHz (3 GHz), 5 MHz (5 GHz) steps																																																
Channel Bandwidth	: 3, 3.5 & 7 MHz (3 GHz), 10 MHz (5 GHz) Selectable																																																
Radio Output Power	: +20 dBm max (2 GHz, 3 GHz, 5.8 GHz) +17 (5.2 GHz, 5.6 GHz)																																																
Radio Output Dynamic Range	: 30 dB																																																
Error Coding	: Concatenated Reed-Solomon Convolutional Coding																																																
Modulation	: BPSK, QPSK, 16QAM, 64QAM																																																
Radio Sensitivity	<table><thead><tr><th>Modulation</th><th>3.0 MHz</th><th>3.5 MHz</th><th>5 MHz</th><th>7 MHz</th><th>10 MHz</th></tr></thead><tbody><tr><td>64 QAM 3/4</td><td>-76 dBm</td><td>-78 dBm</td><td>-76 dBm</td><td>-75 dBm</td><td>-72.5 dBm</td></tr><tr><td>64 QAM 2/3</td><td>-79 dBm</td><td>-80 dBm</td><td>-78 dBm</td><td>-77 dBm</td><td>-74.5 dBm</td></tr><tr><td>16 QAM 3/4</td><td>-82 dBm</td><td>-84 dBm</td><td>-83 dBm</td><td>-81 dBm</td><td>-79 dBm</td></tr><tr><td>16 QAM 1/2</td><td>-84 dBm</td><td>-87 dBm</td><td>-86 dBm</td><td>-84 dBm</td><td>-82.5 dBm</td></tr><tr><td>QPSK 3/4</td><td>-85 dBm</td><td>-90 dBm</td><td>-89 dBm</td><td>-87 dBm</td><td>-85.5 dBm</td></tr><tr><td>QPSK 1/2</td><td>-87 dBm</td><td>-91 dBm</td><td>-91 dBm</td><td>-90 dBm</td><td>-88 dBm</td></tr><tr><td>BPSK 1/2</td><td>-89 dBm</td><td>-94 dBm</td><td>-93 dBm</td><td>-91 dBm</td><td>-89.5 dBm</td></tr></tbody></table>	Modulation	3.0 MHz	3.5 MHz	5 MHz	7 MHz	10 MHz	64 QAM 3/4	-76 dBm	-78 dBm	-76 dBm	-75 dBm	-72.5 dBm	64 QAM 2/3	-79 dBm	-80 dBm	-78 dBm	-77 dBm	-74.5 dBm	16 QAM 3/4	-82 dBm	-84 dBm	-83 dBm	-81 dBm	-79 dBm	16 QAM 1/2	-84 dBm	-87 dBm	-86 dBm	-84 dBm	-82.5 dBm	QPSK 3/4	-85 dBm	-90 dBm	-89 dBm	-87 dBm	-85.5 dBm	QPSK 1/2	-87 dBm	-91 dBm	-91 dBm	-90 dBm	-88 dBm	BPSK 1/2	-89 dBm	-94 dBm	-93 dBm	-91 dBm	-89.5 dBm
Modulation	3.0 MHz	3.5 MHz	5 MHz	7 MHz	10 MHz																																												
64 QAM 3/4	-76 dBm	-78 dBm	-76 dBm	-75 dBm	-72.5 dBm																																												
64 QAM 2/3	-79 dBm	-80 dBm	-78 dBm	-77 dBm	-74.5 dBm																																												
16 QAM 3/4	-82 dBm	-84 dBm	-83 dBm	-81 dBm	-79 dBm																																												
16 QAM 1/2	-84 dBm	-87 dBm	-86 dBm	-84 dBm	-82.5 dBm																																												
QPSK 3/4	-85 dBm	-90 dBm	-89 dBm	-87 dBm	-85.5 dBm																																												
QPSK 1/2	-87 dBm	-91 dBm	-91 dBm	-90 dBm	-88 dBm																																												
BPSK 1/2	-89 dBm	-94 dBm	-93 dBm	-91 dBm	-89.5 dBm																																												
Antenna Options	: Integrated 17 Or 20 dBi antenna or Type-N connector																																																
Polarization	: Horizontal or Vertical																																																

## IP Networking Features/Options

Bridging	: IEEE 802.1d
VLANs	: IEEE 802.1P/Q

## Management

LED Display	: Link, Status, Signal Strength, Power
Network Protocol	: TCP/IP
Encryption Protocol	: DES-CBC or AES-CCM
Subscriber Unit Monitoring	: SNMP, Web-based GUI, Telnet, SSH
Subscriber Unit Management	: Web-based GUI
Ethernet Connector	: 10/100 Base-T (water tight RJ-45)

## Mechanical

Outdoor Unit Dimensions (L x H x W)/ Weight <i>Integrated 20 dBi antenna</i>	: 13 x 10.125 x 2.5 in (33 x 25.7 x 6.4 cm) / 2.4 lbs (1.09 kg)
Outdoor Unit Dimensions (L x H x W)/ Weight <i>Type-'N' connector</i>	: 10.375 x 8.625 x 2.5 in (26.4 x 21.9 x 6.4 cm) / 1.79 lbs (0.81 kg)
Outdoor Unit Interfaces	: Single 10/100 base-T (water tight RJ45)
Indoor Unit Dimensions (L x H x W) PoE	: 3.5 X 2.6 x 1.2 in ( 8.9 x 6.6 x 3 cm)
Indoor Unit Interfaces	: Dual RJ-45 LAN ports (PC in; Radio out), power connection port

## Electrical

Input AC Voltage	: 110 - 230 VAC, 50-60 Hz, 0.4A
Max Input Current	: 1.1A @ 18V DC, 20W max

## Environmental

Operating Temperature	: -45 to +55 degrees Celsius
Rating	: IP67
RoHS Compliance	: Yes

## Approvals

Standards and Regulations	: CE/IC, FCC part 15, EMS: EN60950, Radio: EN 302 502, 301 893
---------------------------	--

## Ordering Info

2 GHz (3.5 and 7.0 MHz Channels)	: PM315-2G-N-01 (N-Type), PM315-2G-14-01 (14 dBi internal)
3.3 GHz (3 MHz Channels)	: PM315-33G3F-N-01(N-Type), PM315-33G3F-17-01 (17 dBi internal)
3.5 GHz (3.5, 5 and 7.0 MHz Channels)	: PM315-3G-N-01(N-Type), PM315-3G-17-01 (17 dBi internal), PM315-3G-20-01 (20 dBi internal)
5 GHz (10 MHz Channels)	: PM315-5G-N-01(N-Type), PM315-5G-16-01 (16 dBi internal), PM315-5G-24-01 (24 dBi internal)

TR2069 – Rev 1 E &OE

## About Aperto Networks

Aperto Networks helps leading service providers deliver affordable wireless voice and broadband profitably by building the world's most advanced WiMAX base stations and subscriber units. Aperto fundamentally changes the economics of delivering voice and broadband services through IP-rich, point-to-point and point-to-multipoint networks, allowing carriers to offer a wider variety of services to more customers using less equipment. Its carrier-class WiMAX technology offers industry-leading subscriber density, quality of service, ease of use and reliability. Aperto is a founding board member of the WiMAX Forum as well as a founder and lead contributor to IEEE 802.16 and the ETSI-BRAN standards. Serving more than 400 customers in over 90 countries, Aperto Networks is based in Milpitas, California. For more information on Aperto Networks, go to [www.apertonet.com](http://www.apertonet.com).

Aperto Networks | 598 Gibraltar Drive, Milpitas, CA 95035, USA | Phone: +1.408.719.9977 | Fax: +1.408.719.9970  
Visit our website at: [www.apertonet.com](http://www.apertonet.com) | Sales and Product Inquiries: [sales@apertonet.com](mailto:sales@apertonet.com) | © 2009 Aperto Networks. All rights reserved.  
Specifications subject to change without notice. Not all features are available in the current release. Contact Aperto Sales for details.