

Wireless Product Family

The PePWave Wireless Product Family consists of indoor and outdoor devices and accessories for connecting with Citywide Wi-Fi, as well as a remote management suite for the deployment, reporting, and administration of PePWave wireless devices.

Surf Series

User-friendly Wi-Fi Modems

- ▶ Integrated Home Wi-Fi Access Point
- ▶ Extends Citywide Wi-Fi signals to indoor and other hard-to-access areas
- ▶ Connects devices without native Wi-Fi capabilities with Citywide Wi-Fi
- ▶ Indoor and outdoor models

PolePoint Series

High-power Wi-Fi Radio Basestations

- ▶ Provides customers with Access Points to Citywide Wi-Fi
- ▶ Indoor and outdoor models

LongBeam Series

Long-range Wi-Fi Backhaul Bridges

- ▶ Extends Citywide Wi-Fi coverage to remote or suburban communities
- ▶ All-weather design for outdoor use

PePWave Central Management System

Management Suite for PePWave Devices

- ▶ Device inventory and firmware repository management
- ▶ Remote deployment and reporting

Accessories

- ▶ PoE Power Injector
- ▶ High-gain Omni Antenna

PeP[®] wave

Technical Product Specifications

w w w . p e p w a v e . c o m



PePWave Surf Indoor Series

The user-friendly and standards-based PePWave Surf Indoor Series of Wi-Fi modems extend Citywide Wi-Fi to indoor areas.

To help find the best location with the strongest signals, built-in signal bars that display the signal strength in real-time come standard with all PePWave Surf models.

Integrated Home Wi-Fi Access Point, on Surf AP E200, 200, and 400, relays the Citywide Wi-Fi signal to an indoor local area network via 802.11b/g Wi-Fi in addition to standard Ethernet.

Functionality and Compatibility

Model	· Surf E200 and 200; Surf AP E200, 200, and 400
Wireless Protocol	· 802.11 b/g
Security	· 802.1x, 64/128-bit WEP, WPA, WPA2, 802.11i

Hardware Specification

Model	· Surf E200	· Surf AP E200	· Surf 200	· Surf AP 200	· Surf AP 400
Country / Region	· Europe		· US and International		
Integrated Home Wi-Fi Access Point	· No	· Yes	· No	· Yes	· Yes
LAN Interface	· Fast Ethernet	· Fast Ethernet · 802.11 b/g	· Fast Ethernet	· Fast Ethernet · 802.11 b/g	· Fast Ethernet · 802.11 b/g
WAN Interface	· 802.11 b/g	· 802.11 b/g	· 802.11 b/g	· 802.11 b/g	· 802.11 b/g
Transmit Power	· 100mW · 16dBm ±1.5 @ 1 to 11Mbps · 15dBm ±1.5 @ 6 to 36Mbps · 15dBm ±1.5 @ 48Mbps · 15dBm ±1.5 @ 54Mbps		· 200mW · 23dBm ±1.5 @ 1 to 11Mbps · 23dBm ±1.5 @ 6 to 36Mbps · 21dBm ±1.5 @ 48Mbps · 20dBm ±1.5 @ 54Mbps		· 400mW · 26dBm ±1 @ 1 to 24Mbps · 24dBm ±1 @ 36Mbps · 22dBm ±1 @ 48Mbps · 21dBm ±1 @ 54Mbps
Receive Sensitivity	· -95dBm @ 1Mbps · -95dBm @ 2Mbps · -91dBm @ 5.5Mbps · -88dBm @ 6Mbps · -88dBm @ 9Mbps · -90dBm @ 11Mbps · -88dBm @ 12Mbps · -87dBm @ 18Mbps · -83dBm @ 24Mbps · -81dBm @ 36Mbps · -76dBm @ 48Mbps · -72dBm @ 54Mbps		· -95dBm @ 1Mbps · -95dBm @ 2Mbps · -91dBm @ 5.5Mbps · -88dBm @ 6Mbps · -88dBm @ 9Mbps · -90dBm @ 11Mbps · -88dBm @ 12Mbps · -87dBm @ 18Mbps · -83dBm @ 24Mbps · -81dBm @ 36Mbps · -76dBm @ 48Mbps · -72dBm @ 54Mbps		· -97dBm @ 1Mbps · -96dBm @ 2Mbps · -95dBm @ 5.5Mbps · -94dBm @ 6Mbps · -93dBm @ 9Mbps · -92dBm @ 11Mbps · -91dBm @ 12Mbps · -90dBm @ 18Mbps · -86dBm @ 24Mbps · -83dBm @ 36Mbps · -77dBm @ 48Mbps · -74dBm @ 54Mbps
Power Input	· AC Adapter: AC Input 100 to 240V, DC Output 5V · Unit: DC Input 5V				
Power Consumption	· 4.5W (Nominal)		· 4.5W (Nominal)		· 5W (Nominal)
Antenna	· 5dBi Antenna with RP-TNC Female Connector (Extensible)				
Certifications	· CE, RoHS			· FCC, RoHS	

Form Factor and Miscellaneous

Model	· Surf E200 and 200; Surf AP E200, 200, and 400
Dimensions (W x H x D)	· 132.7 x 118.1 x 38.6 mm / 5.2 x 4.6 x 1.5 in
Weight	· 240g / 0.5 lb
Operating Temperature	· 0 to 55°C / 32 to 131°F
Humidity	· 15 to 95%
Warranty	· One-year Limited Warranty

PePWave PolePoint Indoor Series

The PePWave PolePoint Indoor Series comprises of the PolePoint 200 and 400 Models and caters to Service Providers' requirements for versatile, secure, and powerful Wi-Fi Basestations.

The PolePoint Indoor Series provides the functionality and power capabilities to serve as Citywide Wi-Fi Access Points or as high-power Access Points for large hotspots where the power of typical consumer-grade devices simply does not suffice.



Functionality and Compatibility

Model	• PolePoint 200 and 400
Wireless Protocol	• 802.11 b/g
Security	• 802.1x, 64/128-bit WEP, WPA, WPA2, 802.11i

Hardware Specification

Model	• PolePoint 200	• PolePoint 400
WAN Interface	• 1 Fast Ethernet Port	
LAN Interface	• 802.11 b/g	
Transmit Power	• 200mW	• 400mW
	• 23dBm ±1.5 @ 1 to 11Mbps	• 26dBm ±1 @ 1 to 24Mbps
Receive Sensitivity	• 23dBm ±1.5 @ 6 to 36Mbps	• 24dBm ±1 @ 36Mbps
	• 21dBm ±1.5 @ 48Mbps	• 22dBm ±1 @ 48Mbps
	• 20dBm ±1.5 @ 54Mbps	• 21dBm ±1 @ 54Mbps
	• -95dBm @ 1Mbps	• -97dBm @ 1Mbps
	• -95dBm @ 2Mbps	• -96dBm @ 2Mbps
	• -91dBm @ 5.5Mbps	• -95dBm @ 5.5Mbps
	• -88dBm @ 6Mbps	• -94dBm @ 6Mbps
	• -88dBm @ 9Mbps	• -93dBm @ 9Mbps
	• -90dBm @ 11Mbps	• -92dBm @ 11Mbps
	• -88dBm @ 12Mbps	• -91dBm @ 12Mbps
Power Input	• -87dBm @ 18Mbps	• -90dBm @ 18Mbps
	• -83dBm @ 24Mbps	• -86dBm @ 24Mbps
	• -81dBm @ 36Mbps	• -83dBm @ 36Mbps
	• -76dBm @ 48Mbps	• -77dBm @ 48Mbps
	• -72dBm @ 54Mbps	• -74dBm @ 54Mbps
	• AC Adapter: AC Input 100 to 240V, DC Output 5V	
	• Unit: DC Input 5V	
	• 5W (Max.)	• 7W (Max.)
Antenna	• 5dBi Antenna with RP-TNC Female Connector (Extensible)	
Certifications	• FCC	

Form Factor and Miscellaneous

Model	• PolePoint 200 and 400
Dimensions (W x H x D)	• 132.7 x 118.1 x 38.6 mm / 5.2 x 4.6 x 1.5 in
Weight	• 240g / 0.5 lb
Operating Temperature	• 0 to 55°C / 32 to 131°F
Humidity	• 15 to 95%
Warranty	• One-year Limited Warranty



PePWave Surf AP and PolePoint Outdoor

The PePWave Surf AP and PolePoint Outdoor Series, with the Models Surf AP 200-X, Surf AP 400-X, and PolePoint 400-X, provide the additional benefit of all-weather toughness along with the user-friendliness, versatility, and power of their indoor counterparts.

Each model in the Outdoor Series is housed in a waterproof die-cast aluminum enclosure rated at NEMA 6 (IP 67), and the operating temperature ranges from -40 to 70°C (-40 to 158°F).

Functionality and Compatibility

Model	<ul style="list-style-type: none"> Surf AP 200-X and 400-X PolePoint 400-X
Wireless Protocol	<ul style="list-style-type: none"> 802.11 b/g
Security	<ul style="list-style-type: none"> 802.1x, 64/128-bit WEP, WPA, WPA2, 802.11i

Hardware Specification

Model	Surf AP 200-X	Surf AP 400-X	PolePoint 400-X
LAN Interface	<ul style="list-style-type: none"> 1 Fast Ethernet Port 		<ul style="list-style-type: none"> 802.11 b/g (Wireless)
WAN Interface	<ul style="list-style-type: none"> 802.11 b/g (Wireless) 		<ul style="list-style-type: none"> 1 Fast Ethernet Port
Transmit Power	<ul style="list-style-type: none"> 200mW 23dBm ±1.5@1 to 11Mbps 23dBm ±1.5@6 to 36Mbps 21dBm ±1.5@48Mbps 20dBm ±1.5@54Mbps 	<ul style="list-style-type: none"> 400mW 26dBm ±1@1to 24Mbps 24dBm ±1@36Mbps 22dBm ±1@48Mbps 21dBm ±1@54Mbps 	<ul style="list-style-type: none"> 400mW 26dBm ±1.5@1 to 24Mbps 24dBm ±1.5@36Mbps 22dBm ±1.5@48Mbps 21dBm ±1.5@54Mbps
Receive Sensitivity	<ul style="list-style-type: none"> -95dBm@1Mbps -95dBm@2Mbps -91dBm@5.5Mbps -88dBm@6Mbps -88dBm@9Mbps -90dBm@11Mbps -88dBm@12Mbps -87dBm@18Mbps -83dBm@24Mbps -81dBm@36Mbps -76dBm@48Mbps -72dBm@54Mbps 	<ul style="list-style-type: none"> -97dBm@1Mbps -96dBm@2Mbps -95dBm@5.5Mbps -94dBm@6Mbps -93dBm@9Mbps -92dBm@11Mbps -91dBm@12Mbps -90dBm@18Mbps -86dBm@24Mbps -83dBm@36Mbps -77dBm@48Mbps -74dBm@54Mbps 	<ul style="list-style-type: none"> -97dBm@1Mbps -96dBm@2Mbps -95dBm@5.5Mbps -94dBm@6Mbps -93dBm@9Mbps -92dBm@11Mbps -91dBm@12Mbps -90dBm@18Mbps -86dBm@24Mbps -83dBm@36Mbps -77dBm@48Mbps -74dBm@54Mbps
Power Input	<ul style="list-style-type: none"> Power over Ethernet 802.3af 		
Power Consumption	<ul style="list-style-type: none"> 5W (Max.) 	<ul style="list-style-type: none"> 7W (Max.) 	<ul style="list-style-type: none"> 7W (Max.)
Antenna Connections	<ul style="list-style-type: none"> 1 N-type Female Connector 		<ul style="list-style-type: none"> 2 N-type Female Conn. for Antenna Diversity
Certifications	<ul style="list-style-type: none"> FCC 		

Form Factor and Miscellaneous

Model	<ul style="list-style-type: none"> Surf 200-X and 400-X PolePoint 400-X
Dimensions (L x W x H)	<ul style="list-style-type: none"> 273 x 188 x 65 mm / 10.7 x 7.4 x 2.6 in
Weight	<ul style="list-style-type: none"> 1.7kg / 3.8 lb
Operating Environment	<ul style="list-style-type: none"> -40 to 70°C / -40 to 158°F
Warranty	<ul style="list-style-type: none"> One-year Limited Warranty

PePWave LongBeam Series

The PePWave LongBeam Series of carrier-grade outdoor point-to-point and point-to-multipoint backhaul bridges consists of the BR-100A-XB and BR-100A-X Models, with a maximum range of 28km (17 miles) and data rate of 108Mbps in Turbo Mode.

The LongBeam Series also features a robust weatherproof design with an operating temperature range from -33 to 55°C (-28 to 131°F), and is equipped with a built-in lightning protector.



Functionality and Compatibility

Model	• BR-100A-XB and BR-100A-X
Security	• 64/128/152-bit WEP
Management	• Web-based Remote GUI
Software Upgrade	• Web-based FTP

Hardware Specification

Model	• BR-100A-XB	• BR-100A-X
Wired Interface	• 10/100Mbps Ethernet Port	
Operating Bands	• 5.15 to 5.35GHz • 5.725 to 5.85GHz	
Operating Channels	• 9 Non-overlapping Channels	
Transmit Power	• +20dBm @ 6-18 Mbps • +18dBm @ 24-36 Mbps • +16dBm @ 48-54 Mbps	
Receive Sensitivity	• -88dBm @ 6 Mbps • -87dBm @ 12 Mbps • -84dBm @ 18 Mbps • -81dBm @ 24 Mbps • -76dBm @ 36 Mbps • -72dBm @ 48 Mbps • -68dBm @ 54 Mbps	
Antenna	• Built-in 17 dBi Flat Panel Antenna	• No Built-in Antenna • Available Antenna Options: 23dBi Flat Panel Antenna 13dBi Sector Antenna 16dBi Sector Antenna
Power Input	• Power over Ethernet 802.3af (48V DC)	
Power Consumption	• 18W (Max.)	
Certifications	• FCC, CE	

Form Factor and Miscellaneous

Model	• BR-100A-XB and BR-100A-X
Dimensions (W x H x D)	• 198 x 198 x 63 mm / 7.8 x 7.8 x 2.5 in
Weight	• 2.0kg / 4.4 lb
Operating Temperature	• Ambient: -33 to 55°C / -28 to 131°F • Case: -33 to 70°C / -28 to 158°F
Storage Temperature	• -40 to 80°C / -40 to 176°F
Humidity	• 0 to 95%, Non-condensing
Altitude	• 15,000 feet
Lightning Protection	• Built-In Lightning Protector
Warranty	• One-year Limited Warranty



PePWave Central Management System

PePWave Central Management System (PCMS), through the capability to remotely and efficiently configure, maintain, and monitor PePWave network devices, reduces the amount of time, resources, and effort required for these tasks.

PCMS enables centralized management of an inventory of PePWave devices and a repository of device firmware, configuration and security profiles. With the flexibility and scalability of PCMS, the remote deployment of the firmware and profiles from the repository is quick and simple, regardless of the number or locations of the PePWave devices in the Citywide Wi-Fi network.

Via a functionality-rich reporting suite, PCMS also helps understand how customers utilize the PePWave devices on the network, so that Service Providers can proactively seek and address potential issues before they impact up-time, and plan with confidence future enhancements and expansion.

PCMS Components

Web Interface	<ul style="list-style-type: none"> Web-based management interface for the functionality of PCMS: Inventory and Repository, Remote Deployment, and Remote Reporting.
PCMS Server	<ul style="list-style-type: none"> Maintains an inventory of PePWave devices and a central repository of firmware, configuration and security profiles. The repository is the source from which firmware and profiles are deployed to devices.
Managed Devices	<ul style="list-style-type: none"> The Devices that PCMS manages. These devices may be part of the Service Provider's network, or they may reside on the customers' premises (as is typically the case with PePWave Surf).

PCMS System Requirements

Web Interface	<ul style="list-style-type: none"> Internet Explorer 6.0 Mozilla Firefox 1.1 or above
PCMS Server	<ul style="list-style-type: none"> x86 Linux Server (Red Hat Enterprise Linux 4) 2GHz Pentium 4 Processor, 1GB RAM 1GB HD Free Space for installation, 10GB for reporting MySQL 3.23.58 or above Apache 2.0.46 or above PHP 4.3.2 or above with MySQL support
Managed Devices	<ul style="list-style-type: none"> Supported PePWave Devices: PePWave Surf Series

PoE Power Injector

The IEEE 802.3af Standard-compliant PePWave PE-4850 Power over Ethernet (PoE) Power Injector provides in-line power to devices, such as WLAN APs and IP phones, that comply with IEEE 802.3af. With a built-in universal AC-switching power supply, and an auto-sensing algorithm that automatically detects PoE terminals, the PE-4850 is convenient and easy to use.



PoE Injector Specifications

Model	<ul style="list-style-type: none"> PE-4850
Standard Compliance	<ul style="list-style-type: none"> IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3af Power over Ethernet
Network Media	<ul style="list-style-type: none"> 10BASE-T Ethernet: Cat. 3, 4, 5 Unshielded Twisted Pair (UTP) Cable 100BASE-TX Fast Ethernet: Cat. 3, 4, 5 Unshielded Twisted Pair (UTP) Cable
Protocol	<ul style="list-style-type: none"> CSMA / CD
Topology	<ul style="list-style-type: none"> Star
Number of Ports	<ul style="list-style-type: none"> One LAN-in Port (Data only) One LAN-out Port (Data and Power)
Power Input	<ul style="list-style-type: none"> AC Input Voltage: 90 to 264V AC Frequency: 47 to 63Hz AC Input Current: 2A at 100V, 1A at 240V
Power over LAN Output	<ul style="list-style-type: none"> Pin Assignment and Polarity: (+) 4/5, (-) 7/8 Output Voltage: 48V DC Aggregate Power: 50W
Diagnostic LEDs	<ul style="list-style-type: none"> AC Power (Green) Power Active (Red) Over-current Protection (Red Flashing)
Dimensions (W x H x D)	<ul style="list-style-type: none"> 138 x 104.4 x 38 mm / 5.43 x 4.11 x 1.49 in
Weight	<ul style="list-style-type: none"> 630g / 1.39 lb
Temperature	<ul style="list-style-type: none"> Operating: 0 to 40°C / 32 to 104°F Storage: -25 to 80°C / -13 to 176°F
Humidity	<ul style="list-style-type: none"> Operating: 10% to 90% RH Storage: 5% to 95% RH
Safety	<ul style="list-style-type: none"> UL 1950, CSA A22.2 No. 950, EN60950, CB, CE



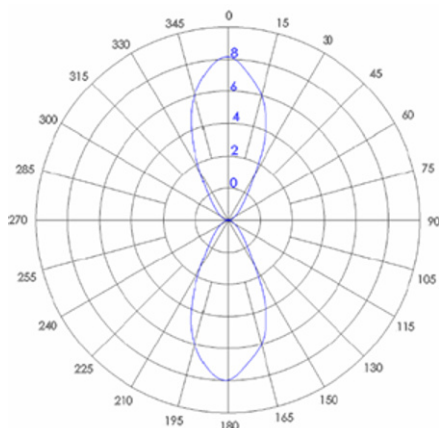
Dual AN-2408X Antennae mounted on a PePWave PolePoint Outdoor Unit

Fiberglass Omni Antenna

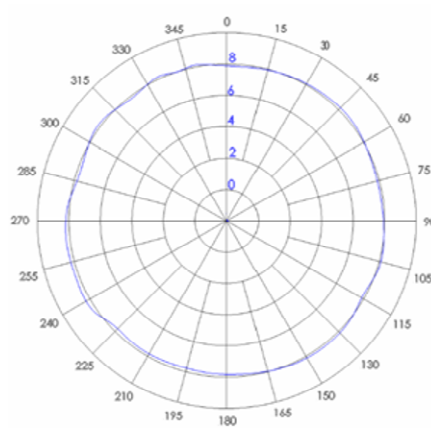
The 8dBi PePWave AN-2408X Omni-directional outdoor antenna improves both signal strength and quality. The AN-2408X is designed specifically for PePWave Surf Outdoor and PePWave PolePoint Outdoor, but will also connect with any 802.11b/g wireless device through the N-male connector on the antenna.

Specifications

Model	· AN-2408X
Frequency Range	· 2.4 to 2.5GHz
Gain	· 8dBi
VSWR	· ≤ 1.5
Nominal Impedance	· 50 Ω
Maximum Power	· 50W
Connector	· N-Male
Length	· 505mm / 20in
Weight	· 180g / 0.396 lb



PePWave AN-2408X E Pattern



PePWave AN-2408X H Pattern

About PePWave

Through a diverse offering of wireless broadband Internet products and solutions, PePWave connects people, households, and businesses with on-line information, services and entertainment.

PePWave continues to innovate and shape the marketplace from its headquarters in Hong Kong, office in North America, as well as in cooperation with distributors, system integrators, original design manufacturer (ODM) and strategic alliance partners worldwide.

To find out more about how you and your business can benefit from our products and solutions, please visit our website.

www.pepwave.com

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