

Wireless Broadband Router

Read This First

The PCWA-AR800 consists of:

- Broadband Router Unit** PCWA-R1
- Wireless LAN Access Point** PCWA-A820

In this document, we refer to the **Broadband Router Unit as the Router Unit** and to the **Wireless LAN Access Point as the Wireless Unit**.

The PCWA-AR800 can be used at frequency settings of **2.4 GHz and 5 GHz**. Change this setting as necessary. (By default, the PCWA-AR800 is set to 2.4 GHz.)

VAIO CarrierGate PCWA-AR800

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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Owner's Record

The model and serial numbers are located on the back or bottom of the product. Record the serial number in the space provided below. Refer to them whenever you call your Sony dealer regarding this product.

Model No. PCWA-R1 Model No. PCWA-A820
Serial No. _____ Serial No. _____

CAUTION

You are cautioned that any changes or modifications not expressly approved in this document could void your authority to operate this equipment.

This device contains the Transmitter Module
FCC ID: H8NRT410W

Exposure to Radio Frequency Radiation

The radiated output power of the Wireless Broadband Router is far below the FCC radio frequency exposure limits.

Nevertheless, the Wireless Broadband Router shall be used in such a manner that the potential for human contact during normal operation is minimized.

FCC Radio-Frequency Exposure Statement

This equipment complies with FCC radiation exposure limits, set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (7.9 in.) between the radiator and your body. This transmitter must not be co-located or operated in conjunction with any other antennas or transmitters.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

– Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this document could void your authority to operate this equipment.

If you have questions about this product, call the Sony Customer Information Center at 1-877-760-7669; or write to the Sony Customer Information Center at 12451 Gateway Boulevard, Fort Myers, FL 33913. The number below is for FCC-related matters only. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Declaration of Conformity

Trade Name: Sony
Model No: PCWA-R1
Responsible Party: Sony Electronics Inc.
Address: 680 Kinderkamack Road, Oradell, NJ 07649 USA

Telephone: 201-930-6972

This phone number is for FCC-related matters only. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Trade Name: Sony
Model No: PCWA-A820
Responsible Party: Sony Electronics Inc.
Address: 680 Kinderkamack Road, Oradell, NJ 07649 USA

Telephone: 201-930-6972

This phone number is for FCC-related matters only. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

The shielded interface cable recommended in this document must be used with the equipment to comply with the limits for a digital device pursuant to Subpart B of Part 15 of the FCC Rules and Canadian ICES-003.

Le câble d'interface blindé recommandé dans ce document doit être utilisé avec les appareils pour être conforme aux limitations des appareils numériques telles que spécifiées dans la norme NMB-003 du Canada.

NOTE:

The power outlet should be installed near the equipment and should be easily accessible.

Safety Information

WARNING

- Opening the unit, for whatever reason, could lead to damage that is not covered by the warranty.
- Do not touch the device or accessories during thunderstorms. Electrical shock could result.
- This equipment is made for use in the USA and Canada only.
- Do not use this equipment on hospital premises. Doing so may cause medical devices to malfunction.
- Do not use this equipment in an aircraft. Doing so could cause the aircraft's equipment to malfunction.
- While using the Wireless Broadband Router, do not cover it or turn it on its side. Do not cover the Wireless Broadband Router with objects such as magazines or newspapers or use it in confined, enclosed places, such as the spaces between walls and furniture. Furthermore, do not turn the Wireless Broadband Router on its side while using it. Either situation could cause heat to build up inside the Wireless Broadband Router, leading to overheating and possible fire.
- Exercise care when installing the Ethernet cable, Wireless Unit cable, AC adapter, and power cord. Personal injury or damage to the Wireless Broadband Router could result from people tripping over these. Protect wiring by installing it in places where people do not walk.
- Do not swing the Router Unit, Wireless Unit, or AC adapter. Injury could result if they strike a person or fragile material, such as glass.
- Keep the Wireless Broadband Router out of the reach of children. Unforeseen injury could result from swallowing loose parts, etc.
- Place the Wireless Broadband Router on a stable surface. Do not place the Wireless Broadband Router on wobbly or tilted surfaces.
- When hanging the units, make sure that the wall is strong enough to support the Wireless Unit and Router Unit. They may fall if the wall is not strong enough, leading to unforeseen accidents. Further, be careful not to drop the units or the tools used to install them. Doing so could result in unforeseen accidents.
- Avoid locations that are directly exposed to sunlight or heat. Internal overheating could result in fire or damage to the unit.
- Make sure that the connectors are properly connected.
 - Do not insert any metallic objects inside the connectors. Short-circuiting the pins could cause fire or damage to the unit.
 - Be careful to insert connectors squarely. Crooked insertion could cause pins to short-circuit, leading to fire or damage.
- Use only the supplied AC adapter with your Sony Wireless Broadband Router. To disconnect your Wireless Broadband Router from the power supply, unplug the AC adapter.
- ISDN and telephone lines cannot be connected to the WAN or LAN connectors of the Router Unit. If these connectors are connected to the network or telephone lines mentioned below, high electric current to the connectors may cause damage, overheating, or fire. Connecting to home or business-use telephone lines is strictly prohibited.
 - Telephone lines
 - PBX (private branch exchange)
 - Home or business-use telephone lines
 - Lines other than those mentioned above

Wireless LAN security

Making security settings for the wireless LAN is extremely important. Sony assumes no responsibility for any security problems that may arise from the use of the wireless LAN.

For customers in Canada

- This class B digital apparatus complies with Canadian ICES-003.
- Operation is subject to the following two conditions; (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.
- The term "IC" before the equipment certification number only signifies that Industry Canada technical specifications were met.
- The installer of this radio equipment must ensure that the antenna is located or pointed in such away that it does not emit an RF field in excess of Health Canada limits for general population. Refer to Safety Code 6, which can be obtained from the Health Canada Web site at <http://www.hc-sc.gc.ca/rbc>.
- This equipment is made for indoor use only.

Pour les utilisateurs au Canada

- Ces appareils numériques de la classe B sont conformes à la norme NMB-003 du Canada.
- L'utilisation de ces appareils est autorisée seulement aux conditions suivantes : (1) ils ne doivent pas produire de brouillage et (2) l'utilisateur des appareils doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement des appareils.
- Pour empêcher que ces appareils causent du brouillage au services faisant l'objet de licences, ils doivent être utilisés à l'intérieur et devraient être placés loin des fenêtres afin de fournir un écran de blindage maximal. Si les appareils (ou leurs antennes d'émission) sont installés à l'extérieur, ils doivent faire l'objet de licences.
- Le terme « IC » devant le numéro d'homologation signifie simplement que les normes d'Industrie Canada ont été respectées.
- L'installateur de ces appareils radio doit s'assurer que l'antenne soit située ou pointée de manière à ce qu'elle n'émette pas de champs de radiofréquences électromagnétiques supérieurs aux limites spécifiées par Santé Canada pour le grand public. Consultez le code de sécurité 6, disponible sur le site Web de Santé Canada à l'adresse suivante : <http://www.hc-sc.gc.ca/rpb>.
- Ce dispositif est conçu pour un usage intérieur seulement.

Getting Help

This section describes how to get help and support from Sony, as well as troubleshooting tips for your Wireless Broadband Router.

About Sony's Support Options

Sony provides several support options for your Wireless Broadband Router.

Documentation and Help

Read This First (this document) contains important information that you should read before using the Wireless Broadband Router.

Quick Start Guide explains how to install the Wireless Broadband Router.

Troubleshooting Guide provides solutions to the most common problems users encounter with their Wireless Broadband Router.

Wireless Broadband Router Setup Page Help explains how to configure the Wireless Broadband Router.

The Sony Wireless Broadband Router support Web site <http://www.sony.com/wirelesslansupport> provides the latest information on wireless LAN products.

The Sony e-mail support service answers your questions by e-mail. Just send your question in an e-mail message and a customer service representative will reply. To send a question to Sony e-mail support, fill out the e-mail form at <http://www.ita.sel.sony.com/support/pcemail.html>.

The Sony fax-back service answers to frequently asked questions. You can use this automated service to request a list of available topics, and then select the topics that you want to receive. To contact the Sony fax-back service, call **1-877-760-7669**.

The Sony Customer Information Services Center offers information about your Wireless Broadband Router, Wireless LAN PC Card, and other Sony products that work with your computer. To contact the Sony Customer Information Services Center, call **1-877-760-7669**. **Open 24 hours/day, 7 days/week**.

Introduction

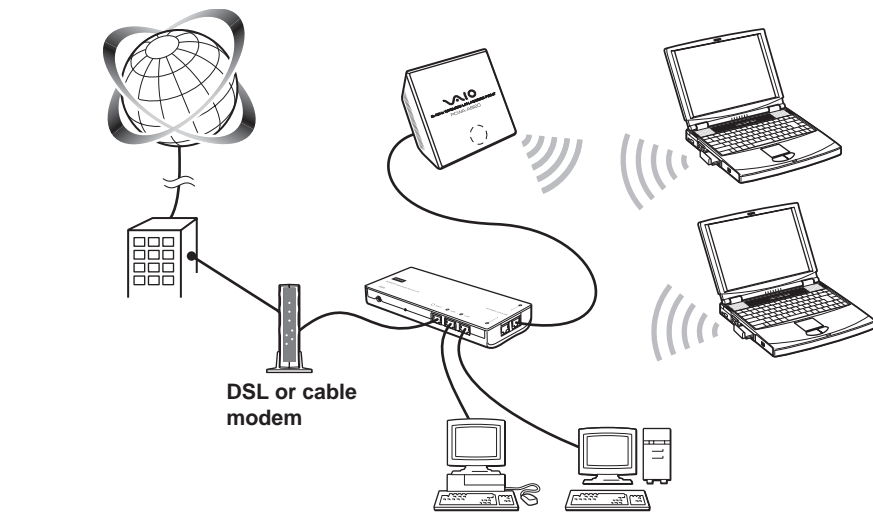
The PCWA-AR800 is a Wireless Broadband Router that complies to the IEEE 802.11a, IEEE 802.11b, and IEEE 802.11g standards as a wireless LAN access point. It has the following features.

Wireless Internet access from various locations in your home

Using this product as a base station, you can build a network environment from computers with wireless LAN PC cards (installed or built in), and devices with Access Points installed. When this product is connected to a DSL or cable modem, it provides wireless Internet access for computers on the LAN.

Connect devices equipped with Ethernet connectors

The Router Unit has a LAN connector for Ethernet devices such as desktop computers, to provide Internet access. The IP addresses of connected devices are automatically assigned by the Router Unit, so there is no need to set the IP address of each device manually.



Documentation and Help

This product is supplied with the following documents and Help.

Read This First (this document)

Quick Start Guide

Describes the required preparations and settings initially necessary to connect to the Internet.

Troubleshooting Guide

Provides solutions to common problems.

Setup Page Online Help

This is Help for the pages used to set up this product. Refer to it for details about setup page operations and setting items of this product.

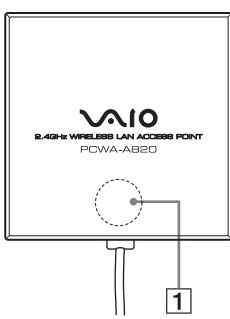
To display the setup page online Help

Display the setup page of the Router Unit or Access Point, and click **Help** or **?**. Refer to procedure 4 in the Quick Start Guide for details about how to display the setup page.

Names of Parts and Functions

Wireless Unit (PCWA-A820)

Front



1 STATUS indicator

Indicates the status of the Wireless Unit.

- Booting: Quickly flashes white
- Normal: Slowly flashes white
- During firmware update: flashes red

2 Reset switch

Returns Wireless Unit settings to their factory defaults.

See "Resetting to factory default settings" overleaf or Help for details.

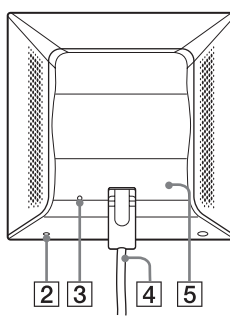
3 LINK/ACT indicator

Lights when the Wireless Unit cable is connected to the Wireless Unit/LAN connectors **12** on the Router Unit and a link is established, and flashes while sending and receiving.

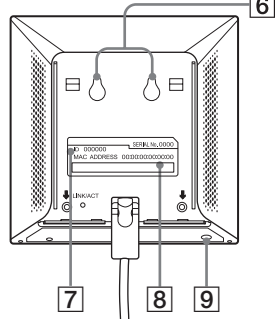
4 Wireless Unit cable

Connects to the Wireless Unit/LAN connectors **12** on the Router Unit.

Rear



(With rear cover removed)



5 Rear cover

Remove this cover if you want to hang the Wireless Unit to a wall and to verify the MAC address and network name (SSID). See "Hanging the units" overleaf for details about removing the rear cover.

6 Wall mounting holes

Use these holes to hang the Wireless Unit to a wall. See "Hanging the units" overleaf for details.

7 ID

The six-character hexadecimal unique product ID is printed here. This ID is used as the default network name (SSID) of the Wireless Unit.

8 MAC address

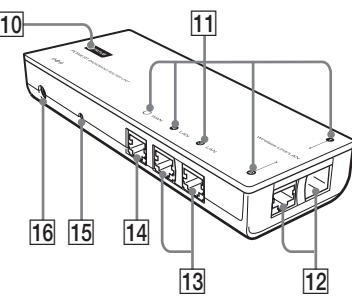
The Wireless Unit MAC Address is printed here.

9 Quick Setup switch

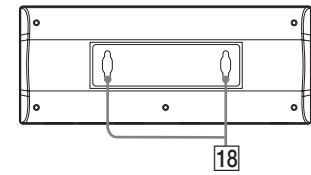
Use this switch to set up the Wireless LAN Converter PCWA-DE80 or PCWA-DE30. Refer to the Quick Start Guide of the Wireless LAN Converter or Help for details.

Router Unit (PCWA-R1)

Front



Bottom



10 STATUS indicator

Indicates the status of the Router Unit.

- Booting: Flashes white
- During normal operation: Lights white
- During firmware update: Flashes red

11 LINK/ACT indicators

Light when a link is established at the Wireless Unit/LAN connectors **12**, LAN connectors **13** or WAN connector **14**, and flash when sending and receiving data.

12 Wireless Unit/LAN connectors

Connect to the Access Point or to a device such as a computer with an Ethernet connector.

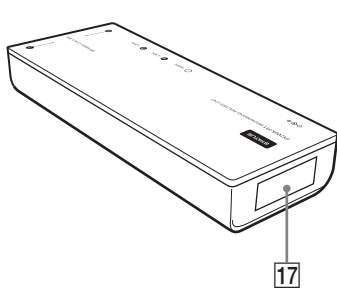
13 LAN connectors

Connect via an Ethernet cable to a device such as a computer with an Ethernet connector.

Hint

Use a straight-through or cross-over Ethernet cable.

(Opposite side view)



14 WAN connector

Connects via an Ethernet cable to a communication device such as a cable or DSL modem.

Hint

Use a straight-through or cross-over Ethernet cable.

15 Reset switch

Returns Router Unit settings to their factory defaults. See "Resetting to factory default settings" overleaf or Help for details.

16 DC IN connector

Connects to the AC adapter.

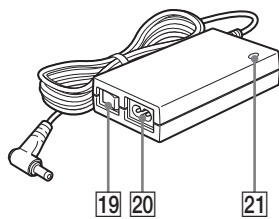
17 MAC address

The Router Unit's WAN port MAC address is printed here.

18 Wall mounting holes

Use these holes to hang the Router Unit to a wall. See "Hanging the units" overleaf for details.

AC adapter



19 Power switch

Press to turn the device on (I) or off (O).

20 100-240 V AC jack

Connect the supplied power cord.

21 LED

Lights when the AC adapter is on.

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<http://www.sony.net/>

Factory Default Settings

Factory default settings

Access Point

The factory default settings of the Access Point are:

Item	Default setting
Network Name (SSID)	The six characters printed on the label under the rear cover of the Wireless Unit.
Broadcast Network Name (SSID)	Yes
Frequency (Channel)	2.4 GHz
IEEE 802.11 Mode	11g, 11b (High multicast rate)
Super A/G	Disable
Turbo Mode	Disable
Access Control	Accept all
Security	Disable
Connection Method	Obtain an IP address automatically (DHCP)
Speed	Auto-Detect
Quick Setup Switch	Enable
Status Indicator	On

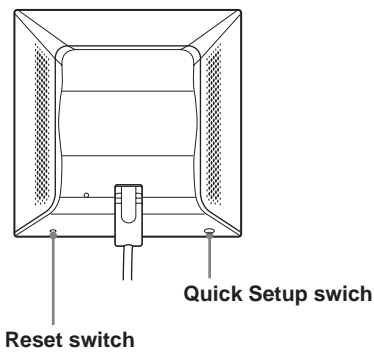
Router Unit

Item	Default setting
■ WAN settings	
Connection Method	Obtain an IP address automatically
Speed	Auto-Detect
■ LAN settings	
IP Address	192.168.11.1
Subnet Mask	255.255.255.0
DHCP Server IP Address No.	16 (100-115)

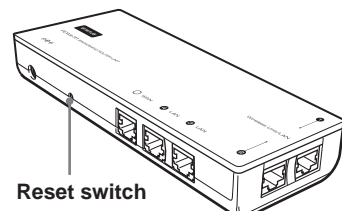
Resetting to factory default settings

Use the following procedure to reset the Access Point or Router Unit to their factory defaults. The procedure is the same for both units and either can be reset independently.

• Wireless Unit



• Router Unit



1 Turn on the unit(s).

2 To reset the Access Point, press and hold the Reset switch on the bottom of the Wireless Unit for at least a second with a paper clip. To reset the Router Unit, press and hold the Reset switch on the side of the Router Unit for at least a second with a paper clip.

Note

Be careful not to press the Quick Setup switch by mistake when you reset the Wireless Unit.

3 When the Status indicator flashes, release the Reset switch. The Wireless Unit or Router Unit restarts automatically with all settings returned to their factory defaults.

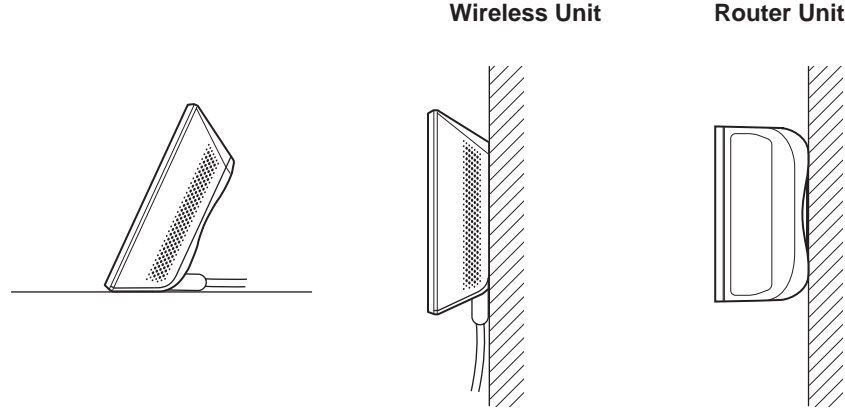
Installation Precautions

Refer to the separate Quick Start Guide for information about connecting the Wireless Unit, Router Unit and AC adapter, and how to turn them on.

Installation

Select a secure location for the Wireless Unit or Router Unit where it cannot drop or fall over. Route the cable to the Wireless Unit to suit the installation location.

Installation examples

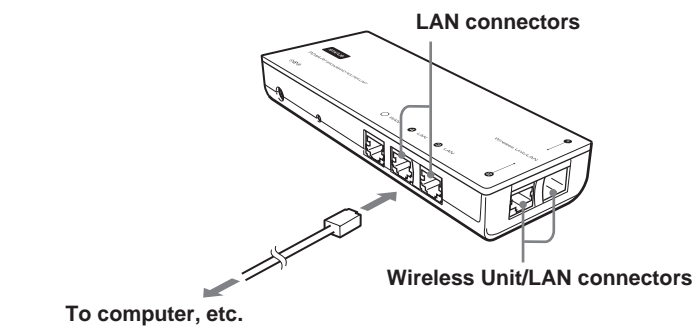


Notes

- Do not install at an insecure location.
- Do not install at a location where the Wireless Unit or Router Unit could fall as a result of shock or vibration, such as on the edge of a shelf.
- Do not install at a location where the Wireless Unit, Router Unit or cables could be accidentally bumped by a person or other objects.

Connecting a computer with a LAN cable

To connect a device such as a desktop computer or hub, connect a LAN cable to a LAN connector of the Router Unit.



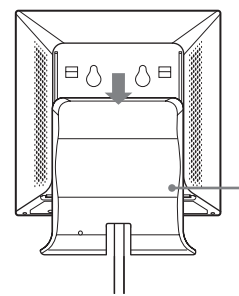
Hints

- Use a straight-through or cross-over Ethernet cable.
- Connect the Wireless Unit to a Wireless Unit/LAN connector of the Router Unit.
- Make the following TCP/IP settings on the computer to be connected:
 - IP Address setting: Select "Obtain an IP address automatically"
 - DNS Configuration: With the Windows Me operating system, select "Disable DNS". With the Windows 2000 and Windows XP operating systems, select "Obtain DNS server address automatically".

Hanging the units

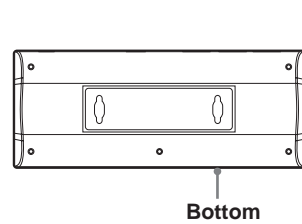
1 Locate the wall mounting holes.

• On the Wireless Unit



To hang the Wireless Unit to a wall, remove the rear cover by sliding it in the direction of the arrow.

• On the Router Unit



Bottom

Note

Take care not to injure your fingers when removing and replacing the rear cover of the Wireless Unit.

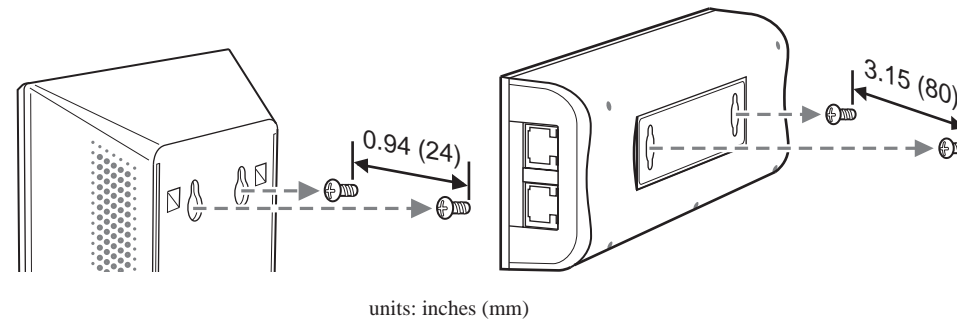
Hint

To replace the rear cover of the Wireless Unit, align the rails on the rear of the Wireless Unit with the grooves in the rear cover, and slide it upwards.

2 Using screws or nails, hang the unit to a wall.

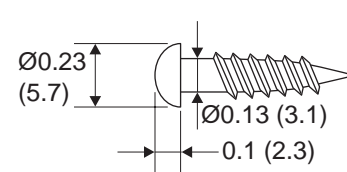
• Wireless Unit

• Router Unit

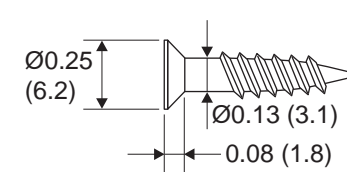


■ Recommended screws

• Roundhead screws



• Flathead screws



Notes

- Always use two screws or nails and make sure that the units are secure on the wall.
- Select a location that will hold the weight of the units when hanging them to a wall. If the location cannot hold the weight of the units, they may fall and cause accidents.
- When hanging the units to walls made of plasterboard or other brittle material, make sure that the material is strong enough to support the units' weight and use special screw fasteners or other fixtures designed for use with that material. If the units are hung with ordinary screws, they may fall.
- When hanging the units to a wall, be careful not to drop the units or the tools used for doing the work. Dropping the units or tools could result in unforeseen accidents.

Precautions

AC adapter

Use only the supplied AC adapter and power cord. Other AC adapters may damage the Wireless Broadband Router.

Safety

Do not drop the Wireless Broadband Router. Careful handling helps to prevent damage.

Installation

Do not place the Wireless Broadband Router where it is exposed to the following conditions:

- Unstable surfaces
- High humidity or poor ventilation
- Excessive dust
- Direct sunlight or extreme heat
- Closed cars
- Magnetic fields (near magnets, speakers, or televisions)
- Frequent vibration
- Locations where the transmission of radio waves may be obstructed by metal plates or concrete walls

Operation

Exposure to rapid changes in temperature or very damp environments can cause condensation on internal parts. This may prevent the Wireless Broadband Router from operating properly. If this should happen, unplug the AC adapter from the power outlet and allow the Wireless Broadband Router to dry for two to three hours.

Cleaning

Clean the casing with a soft cloth lightly moistened with water or a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzene. This may damage the finish of the casing.

Emergencies

In case of an emergency, stop the wireless functions by unplugging the power cord.

Specifications

Router Unit (PCWA-R1)

Power
AC100 - 240 V, 50/60 Hz
(The power cord plug is for use with AC 120 V.)

Power consumption
Approx. 5 W

Interfaces
100BASE-TX/10BASE-T
(automatic MDI/MDI-X detection)
LAN connector × 4
WAN connector × 1
(One of the LAN connectors is used by the Access Point)

Protocol support
TCP/IP

Main features
VPN Pass Through
DMZ Hosting
UPnP
IP Forwarding
Stateful Packet Inspection (SPI)

Operating temperature
41°F to 95°F (5°C to 35°C)
(temperature gradient less than 18°F (10°C)/hour)

Operating humidity
20% to 80% (non condensing), provided that humidity is less than 65% at 95°F (35°C)
(hygrometer reading at less than 84°F (29°C))

Storage temperature
-4°F to 140°F (-20°C to 60°C)
(temperature gradient less than 18°F (10°C)/hour)

Storage humidity
10% to 90% (non condensing), provided that humidity is less than 20% at 140°F (60°C)
(hygrometer reading at less than 95°F (35°C)).

Dimensions
Approx. 7.9 × 2.8 × 1.3 in. (W × H × D)
(approx. 200 × 69 × 32 mm)

Mass
Approx. 12 oz. (approx. 340 g)

Access Point (PCWA-A820)

Power
DC 12 V
(Supplied by the PCWA-R1)

Power consumption
Approx. 5 W

Recommended number of connected clients
16 or less

Protocol support
TCP/IP

Standards
IEEE 802.11a
IEEE 802.11b
IEEE 802.11g

Radio frequency
IEEE 802.11a emits at 5,150 to 5,350 MHz
IEEE 802.11b/g emit at 2,400 to 2,483.5 MHz
(ISM band)

Maximum connection distance
Line of sight approx. 328 feet (100 m)
(The maximum connection distance depends on the environment.)

Security
WEP (64 bits/128 bits)
AES
TKIP
WPA-PSK
WPA
IEEE 802.11X

Modulation methods
DS-SS
OFDM

Miscellaneous feature
Access Control (MAC address filtering)

Operating temperature
41°F to 95°F (5°C to 35°C)
(temperature gradient less than 18°F (10°C)/hour)

Operating humidity
20% to 80% (non condensing), provided that humidity is less than 65% at 95°F (35°C)
(hygrometer reading at less than 84°F (29°C))

Storage temperature
-4°F to 140°F (-20°C to 60°C)
(temperature gradient less than 18°F (10°C)/hour)

Storage humidity
10% to 90% (non condensing), provided that humidity is less than 20% at 140°F (60°C)
(hygrometer reading at less than 95°F (35°C)).

Dimensions
Approx. 3.9 × 3.9 × 1.3 in. (W × H × D)
(approx. 98 × 98 × 33 mm)

Mass
Approx. 9.9 oz. (approx. 280 g)
(including connection cable)

Design and specifications are subject to change without notice.