PowerCost Monitor™ WiFi

Troubleshooting

If you do not see your problem listed here, or you are still unable to get your system working properly, more information is available at **http://www.bluelineinnovations.com**. You may also send an email to **support@bluelineinnovations.com** describing the difficulty you are having or call us toll-free at **1-866-607-2583**.

Q ***I can't get my device to connect to my wireless network.***

A The most likely cause is incorrect security parameters configured during device setup (***Section 4***). Ensure that the settings of the PCMWiFi device match the setting of your wireless router. After setting the security type make sure that the Pass Phrase characters exactly match those for your router. To see the letters you type uncheck the "**Hide Characters**" option in the PCMWiFi Configuration Tool.

Q ***I setup my PowerCost Monitor but am not seeing any readings on my PCMWiFi Status page.***

A Ensure that your PowerCost Monitor display unit is working properly and showing energy consumption before attempting to troubleshoot the PCMWiFi device. If your PowerCost Monitor sensor unit is successfully synchronized to the PCMWiFi device then you should see a signal strength value on the Status page. As well, the PCMWiFi Status LED should flash RED approximately every 30 seconds when it receives information from the sensor. Failure to receive data from the sensor can be caused by several things.

First, try to re-synchronize the PCMWiFi device and sensor unit. Start by pressing the SYNC button on the top of the PCMWiFi unit. The Status LED will turn AMBER and the device will listen continuously for transmissions from the sensor. When it receives one the LED will turn GREEN again. If within one or two minutes the Status LED is still AMBER then you may need to force a re-synchronization of the two units. Click "**PCM Settings**" to go to the PCM Settings page. Click "**Connect**" to cause the device to start listening for the sensor unit. If you have a PowerCost Monitor display unit place it in SYNC mode at this time as well. Next, press the RESET button on your sensor unit. Check the PCMWiFi Status LED to ensure it is GREEN and that it flashes RED every 30 seconds or so.

Note: It may take a few minutes for the synchronization to complete and the LED to begin flashing.

If re-synchronization fails it is possible that your PCMWiFi device is either out of range of the sensor or very close to the range limit. Try moving the PCMWiFi device closer to the sensor unit and repeat the steps above to try and re-synchronize your device.

Q ***I have setup my PCMWiFi device but it's not sending any data to Microsoft Hohm.***

A In order to see your home's electricity usage in Microsoft Hohm you need to link your PCMWiFi device to Hohm. Check the PCMWiFi device Status page and verify the Wi-Fi status information. If the Hohm Device Status indicates "**NOT LINKED"** then perform the linking process in ***Section 5 – Setting up your PCMWiFi***. Once successfully linked you will see "**LINKED"** in the Hohm Device Status and the last upload time will indicate how long ago your device sent information to Microsoft Hohm. The time is followed by a 3-digit number. This number should be between 200 and 299. If it is 300 or more your device is experiencing a problem uploading information to the Microsoft Hohm system. Go to **http://bluelineinnovations.com/Products/PCMWiFi** and check out FAQs for a listing of codes and their meanings.

Q ***I created my Windows Live account but I wasn't automatically returned to the Hohm website. Can I access it manually or do I have to start the process again?***

A If you are not automatically redirected to the Hohm web site after creating your Live ID it is best to start the device linking process again. You should automatically be taken to the "**Manage Connection to Microsoft Hohm**" page when you access your PCMWiFi device again using **https://pcmwifi**. If not, simply click on the "**Manage Connection to Microsoft Hohm**" menu item to start the connection process.

Q ***I tried to link up with Hohm several times and failed. What do I do now?***

A It is possible that the Hohm Web site is experiencing a high volume of users. Try again later. If the problem persists contact Blue Line Innovations technical support.

Q ***The last reading from the PowerCost Monitor sensor was 45 seconds ago, not 32. Is this a problem?***

A If your "**Last Reading Time**" is occasionally more than 32 seconds check the Signal Quality on the PCMWiFi Status Page. If it is less than 100% it is likely that your PCMWiFi is on the edge of its range limit. Move it closer to the PowerCost Monitor sensor unit. It is also possible that the batteries in your sensor unit are getting weak and may need to be replaced.

Q ***Can I update the software in my PCMWiFi device while it is connected to my wireless network?***

A No. In order to install an update in your device you must attach it to your computer using a USB cable and use the PCMWiFi configuration tool. When you start the configuration tool it will automatically check for available updates and give you the opportunity to install them.

Q ***I want to set my PCMWiFi device back to the factory defaults. Is that possible?***

A Yes. In order to erase all the settings in your PCMWiFi device follow these steps:

1. Remove the power plug
2. Press and hold the "**SYNC"** button on the top of the device
3. Insert the power plug and continue to hold the "**SYNC"** button for five seconds
4. Release the "**SYNC"** button

Your PCMWiFi device will now reboot with its factory settings. Any software updates will still be in place. However, you will need to reconfigure your device as outlined in ***Section 4***.

Q ***Is the PCMWiFi device secure? Can someone else see how much power I am using?***

A The PCMWiFi device is very secure. First, it can only be accessed by providing a password. Second, it only uses SSL for communications meaning that all data, whether to your browser or to Microsoft Hohm, will be encrypted. If privacy is important to you be sure to change the default password and do not reveal it to others. Also, protect your Windows Live ID the same way you would any other confidential information.

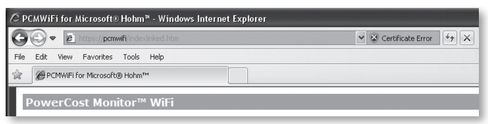
Q ***I want to give my PCMWiFi device to someone else. How do I make sure their readings don't end up in my Microsoft Hohm account?***

A If you give your device to someone else you should go to Microsoft Hohm and log into your account. Next navigate to the device information page and delete your device from Hohm. The next time your device attempts to connect to Microsoft Hohm it will be disconnected and will no longer be able to upload readings to your account.

Q ***How do I install my PCMWiFi certificate?***

A To install the SSL security certificate from your PCMWiFi device follow these steps. **Note: These steps are for Internet Explorer.** See **http://www.bluelineinnovations.com** for information about this process using other browsers.

1. Click the red highlighted "**Certificate Error**" indication at the top of your web browser.



2. Click "**View Certificates**".
3. Click "**Install Certificate**".
4. Click "**Next**", "**Next**" and "**Finish**".
5. Click "**Yes**" to confirm that you wish to install the PCMWiFi certificate then click "**OK**" and "**OK**".

Your browser will no longer display a warning message about connecting securely to your PCMWiFi device.

PowerCost Monitor™ WiFi

Installation & Setup Guide

Welcome

Congratulations on your purchase of the **PowerCost Monitor™ WiFi**, an exciting addition to your PowerCost Monitor that allows you to monitor your electricity usage over time and make informed decisions on how to save electricity and money. This Guide explains how to get your device ready for use. Please follow the instructions in the order shown without skipping any steps.

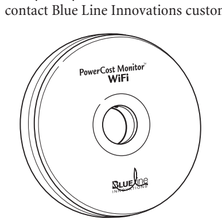
Important Safety Precautions

- Do not immerse either PowerCost Monitor WiFi unit in any liquid.
- Do not drop or cause any sudden impact to the PowerCost Monitor WiFi unit.
- If disposing of the PowerCost Monitor WiFi, do so in accordance with your local waste disposal regulations.
- Read all the instructions carefully before using your PowerCost Monitor WiFi.

Please Note: Throughout this document the PowerCost Monitor WiFi will be referred to as the PCMWiFi.

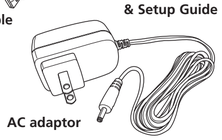
1 Verify the contents of the box

Verify that your box contains all these components. If any item is missing, please contact Blue Line Innovations customer service for assistance.



USB cable

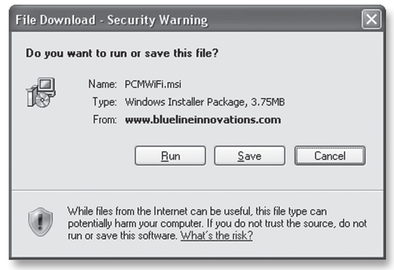
Installation & Setup Guide


AC adaptor

2 Download the software for your PCMWiFi

Your PCMWiFi requires that you install a program on your computer in order to set its wireless parameters. For installation, please follow the steps below.

1. Open your Internet browser and type in: **http://www.bluelineinnovations.com /Products/PCMWiFi**
2. Click the "**DOWNLOAD**" button and complete the registration form.
3. Follow the on-screen instructions for downloading and installing the **PCMWiFi Configuration Tool Software**.
4. Click "**RUN**" to begin installing the software. Follow the prompts to complete the installation. The default responses for each prompt are appropriate for the majority of installations.



Proceed to Section 3.

3 Connect your hardware

1. Plug the **AC adaptor** into the wall and then into the **PCMWiFi device**.
2. Plug the **PCMWiFi device** into your **computer** using the **USB cable** provided. You may or may not receive a "**New Hardware Found**" message from Windows.

   Note: The status LED on your PCMWiFi device will alternate between RED and GREEN while connected to your computer

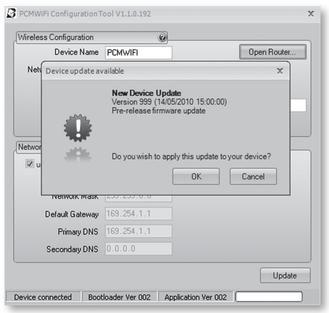
Proceed to Section 4.

4 Configuring Your Device

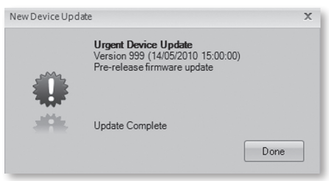
The PCMWiFi configuration tool software allows to you keep your PCMWiFi up-to-date with new software as it becomes available and enables you to configure the wireless parameters. Follow these steps to complete configuring your PCMWiFi device:

I. Updating Your Device

1. Start the PCMWiFi configuration tool software by selecting **START > All Programs > Blue Line Innovations > PCMWiFi**. If an update is available for your PCMWiFi device you will see the following:



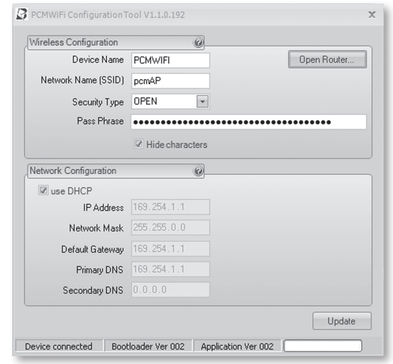
2. If you wish to install the update click "**OK**", otherwise click "**Cancel**". As the update is installed you will be informed of its progress. When the update is complete you will see:



3. Click "**Done**".

II. Wireless Parameters

Next set the Wireless Parameters to match your wireless network. If you are unsure of these parameters set them to match a computer that accesses your network wirelessly or, click "Open Router…" to access your wireless router. The parameters are as follows:



1. **DEVICE NAME —** is the name of your PCMWiFi device. (i.e. PCMWIFI) You will use this name to access your PCMWiFi device with a web browser later in this setup (by typing in **https://pcmwifi**).

   Note: If you change the PCMWiFi device name be sure to use the new name when attempting to access the unit in your web browser.

2. **NETWORK NAME (SSID) —** is the name of your wireless network. To retrieve the network name you need to access the "**Setup**" pages of your router or the wireless setup on your computer. Enter this same information **EXACTLY** as it appears in your router.
3. **SECURITY TYPE —** enter the same type as in your router's configuration.
4. **PASS PHRASE —** is the key or "secret word" that is required to access your network. If your security type is **WEP** then your pass phrase will be a sequence of numbers (0-9 & A-F). If your security type is **WPA/WPA2** then your pass phrase will be a string of characters. Enter the information **EXACTLY** as shown in your router setup.

TURN PAGE OVER TO CONTINUE

4 Configuring Your Device cont'd

III. Network Setup

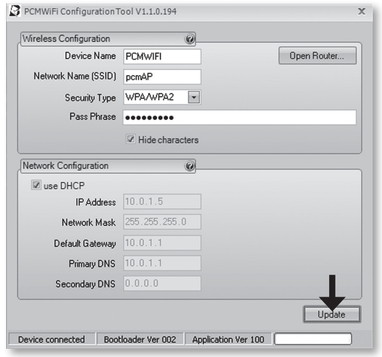
1. If your router is **setup for DHCP** (the most common configuration), check the "**Use DHCP**" box. All other information will be grayed-out and you will not need to complete any more entries.

   You can now proceed to step ***IV. Saving The Setup***
2. If your network **does not use DHCP,** enter the information for the items below.
   a. **IP ADDRESS** — enter a number that is unique to your network (i.e.: no other computers have the same address). **Note: The first three sets of numbers (e.g.: 192.168.0) must be the same as the first three sets of numbers of your router's address.**
   b. **NETWORK MASK** — this needs to be set to the same value as your router.
   c. **DEFAULT GATEWAY** — this should already be set to the correct value. Verify that it matches the address of your wireless router.
   d. **PRIMARY DNS** — this number will be shown on your router's status pages and is assigned by your ISP. If you cannot find it, enter the same address as the address of your wireless router.
   e. **SECONDARY DNS** — this is optional. If you see a second DNS address in your router's setup pages you can enter it here.

IV. Saving the Setup

To save the setup information for your PCMWiFi device, click the "**Update**" button. When you restart the PCMWiFi device it will automatically use this new configuration.

Proceed to Section 5.



5 Setting Up Your PCMWiFi

IMPORTANT: Setup your PowerCost Monitor (sensor and display units) and ensure they are working properly before proceeding with the installation of the PCMWiFi device in its final location.

Follow the steps below to connect your PCMWiFi device to your PowerCost Monitor sensor unit and link to Microsoft Hohm where you can begin monitoring your energy consumption.

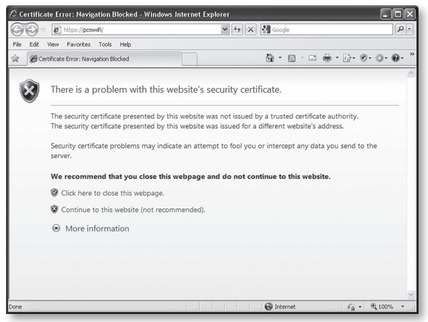
1. Unplug the PCMWiFi device from your computer and move it to its final location. To ensure optimum reception this location should be in close proximity to the utility meter fitted with the PowerCost Monitor sensor. **Note: The PCMWiFi device is an indoor device ONLY.** When you plug in the PCMWiFi device you should see the status light alternate between RED and AMBER while the device is connecting to your network. After it successfully connects the light will turn solid AMBER. If the light continues to alternate between RED and AMBER for more than two minutes either the device is too far from your router or your wireless parameters are set incorrectly.

2. Return to your computer and using your Internet browser, type in **https://pcmwifi**.

   Note: If you changed the device name in the wireless parameters you will need to type in the matching name here.

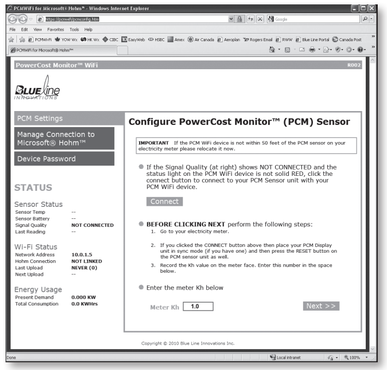
   The first time you connect to your PCMWiFi device you will see a security warning like the one below. It may be different based on the web browser you are using. This is normal. Click "**Continue to this web site**". To prevent this message from appearing in future follow the steps in ***How do I install my PCMWiFi certificate?*** in the ***Troubleshooting Section***.

   Note: When your sensor unit is connected, the status light will turn solid GREEN.

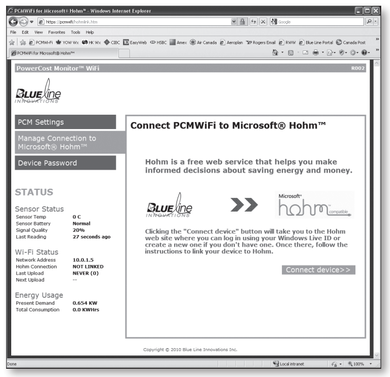


3. You will be prompted to login. The username is **admin** and the default password is **pcmwifi**.

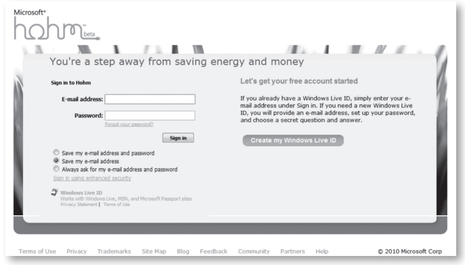
4. After logging in, the screen in the next column will appear. To connect your PCMWiFi device to your sensor unit click the "**Connect**" button and follow the instructions on the screen. It is important to enter the correct **Kh** value from your meter in order to obtain accurate power readings.



5. After you have specified your meter's Kh value click "**Next >>**". The following screen will appear. Click "**Connect device>>**" to start the process of connecting your device to Microsoft Hohm.



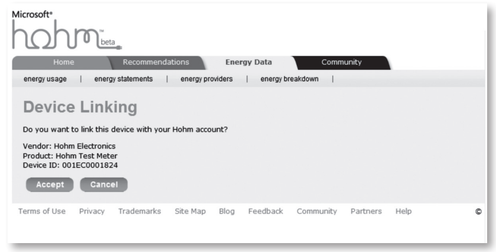
6. If you already have a **Windows Live ID**, then log into your account. If you do not have a Windows Live ID, click "**Create My Windows Live ID**" and follow the instructions.



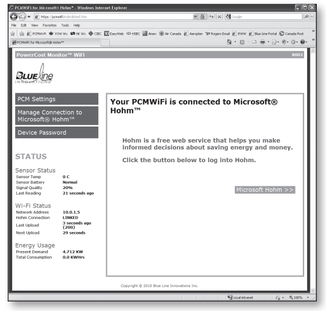
5 Setting Up Your PCMWiFi cont'd

7 Once you have logged into your Windows Live account, acknowledge the security warning (if you get one).

8. Next you will be brought to the **Hohm web site** that will display your **PCMWiFi device ID** information. Click "**Accept**" to continue the linking process.



9. You will be returned automatically to the device's Hohm connections Status page and it will continue with the Hohm registration process. When the process is complete you will be presented with the following page.



If for some reason your device failed to connect to Microsoft Hohm simply click on "**Manage Connection to Microsoft Hohm**" and try again. If the problem persists please consult the ***Troubleshooting Section***.

10. Be sure to change your password by clicking on "**Device Password**". Use this new password to access your PCMWiFi device in the future.

11. **Your installation is now complete!** You can view the complete status information of your PCMWiFi device in the **STATUS** section. You can view your energy consumption information by visiting: **http://www.microsoft-hohm.com**.

PCMWiFi Device Status Information

SENSOR STATUS

TEMPERATURE — displays the outside temperature at the location of the PowerCost Monitor sensor unit. Temperature is updated every few minutes.

BATTERY — will be "normal" or "low". If "low", the batteries in the sensor need replacing. The sensor runs for up to one year on two AA batteries under normal conditions. Cold temperatures can affect battery performance so to avoid any interruption in service, we recommend changing the battery twice a year.

SIGNAL STRENGTH — the values displayed indicate the signal quality received from the sensor unit. Less than 100% indicates the sensor may be out of range or there is RF interference.

Note: When the sensor unit begins to communicate with the PCMWiFi device the signal strength will increase from 0% to 100% over a period of approximately three minutes. This is normal.

LAST READING — the elapsed time, in seconds, since the PCMWiFi device received information from the PowerCost monitor sensor. If this number is more than 32 seconds, please see the ***Troubleshooting Section*** of the guide.

WIFI STATUS

NETWORK ADDRESS — is the IP address of the PCMWiFi device.

HOHM CONNECTION — informs you whether or not your PCMWiFi is linked to Microsoft Hohm. If you have not linked your device please refer to ***Section 5***. If you are having problems linking to Microsoft Hohm please refer to the ***Troubleshooting Section*** for assistance.

LAST UPLOAD TIME — the time elapsed since the PCMWiFi attempted to upload information to Microsoft Hohm. The number in brackets is the upload result code. A code of 200-299 indicates a successful upload. Codes over 300 indicate an error. Such an error could be a result of a slow Internet speed and should clear itself. If, however, an error value persists please refer to the ***Troubleshooting Section*** for more information.

The PCMWiFi device uploads data approximately every 30 seconds under normal conditions. It can vary depending on the Internet connection. A time greater than two minutes indicates an error. If this persists, please refer to the ***Troubleshooting Section***.

NEXT UPLOAD TIME — the time remaining until the next upload attempt. Dashes (----) indicate an upload is in progress.

ENERGY USAGE

PRESENT DEMAND — displays the total energy that is currently being used in your home.

TOTAL CONSUMPTION — displays the energy used since the installation of your PCMWiFi.

STATUS LIGHT BEHAVIOR

STATUS LIGHT	MEANING
Solid RED	PCM sensor unit not connected. Wireless network off.
Alternating RED / AMBER	PCM sensor unit not connected. PCMWiFi connecting to wireless network.
Solid Amber	PCM sensor unit not connected. Wireless network connected.
Flashing GREEN	PCM sensor unit connected. PCMWiFi connecting to wireless network.
SOLID GREEN	PCM sensor unit connected. Wireless network connected.
Single flash RED	Reading received from PCM sensor unit. This should occur approximately every 30 seconds.
Flicker GREEN	Information being uploaded to Microsoft Hohm. This should occur approximately every 30 seconds.

Technical Specifications

System Requirements
- Wi-Fi accessible broadband internet connection with 802.11b support
- PC or laptop with Windows® XP SP3 (or later)
- Blue Line Innovations PowerCost Monitor or Black&Decker® Power Monitor™

Wireless
- 802.11B MAC (802.11B/G and 802.11n Draft 2.0 compatible)
- Up to 2Mbps data rate
- Power Output +10dBm (10mW)

Security
- 40/60-, 128-, 152-bit WEP
- Wi-Fi Protected Access (WPA/WPA2)
- Secure Socket Layer (SSL) upload to Microsoft® Hohm™

Configuration & Management
- PC application to configure Wi-Fi settings and update firmware
- Embedded web application for Microsoft® Hohm™ activation

Physical Dimensions:
- 125mm diameter X 45mm (5" diameter X 1.5")
- 180g (6.7oz) not including AC adapter

Power
- 100v-240v AC
- 6.4W max

FCC INFORMATION
FCC Class B Part 15

This device complies with part 15 of the FCC Rules.
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 communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is 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.

Industry Canada Certification
Operation is subject to the following two conditions:
- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

FCC: W7OZG2100-ZG2101
IC: 8248A-G21ZEROG

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