Installation and configuration guide

Panoramic Power – Basic Bridge

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About Panoramic Power

The Panoramic Power System monitors electrical energy consumption at the individual circuit level and detects excess usage, allowing organizations to identify and reduce energy and maintenance expenses.

The Panoramic Power System consists of wireless, self-powered sensors engineered to allow for rapid, non-invasive installation, with almost no disturbance to operations. Sensors are easily attached to circuit breakers by just snapping them on to the outgoing electrical cable. They monitor the flow of electricity through the magnetic field it creates and also use it as power source. The sensors do not require any maintenance.

Sensors report the power consumption to the bridge, which, in turn, transfers the information to PowerRadar, the solution's cloud–based analytics platform. A single bridge can collect data from up to 250 sensors and multiple bridges can be used in a single site to increase coverage.

Two models of bridge are available:

- Basic Bridge (PAN-2-H-US/EU)
- Advanced Cellular Bridge (PAN-2-H-3G-US/EU), featuring a SIM card slot.

The table below lists the key features of each bridge.

Key Features	Basic Bridge	Advanced Cellular Bridge
Plug and Play Installation	✓	✓
Flexible Mounting Options	✓	✓
Wi-Fi / Ethernet connectivity	✓	✓
Cellular (3G GSM) connectivity	Via external USB dongle	Via SIM card slot
Store capability in case of network loss	X	✓
Field-upgradable firmware	X	✓
Initial configuration	Via the Bridge Configuration Tool (Windows application)	Via built-in web interface

This guide explains how to install and configure the Basic Cellular Bridge. For information on the Advanced Cellular Bridge, see the Installation and Configuration Guide for Panoramic Power® Advanced Cellular Bridge, Version 2.0.

Unpacking the Hardware

The package includes the following items:

- 1 bridge
- 1 Wi-Fi antenna
- 1 RF antenna
- 1 5V DC inverter
- 1 Velcro patch for mounting

Mounting the Bridge

The bridge should be positioned at a distance of:

- Up to 2 meters from the electrical panel, if the panel is covered with a metallic cover
- Up to 5 meters if the panel is not covered.

You can fix it on a flat surface using four screw holes on the back panel.

Connecting the Bridge to the Power Source

The bridge should be constantly connected to a power source. Plug the 5V DC inverter to the power connector on the front panel of the bridge (the rightmost connector), and plug the connector to the power source.

Connecting the Bridge to the Internet

The bridge channels to the server the consumption data sent by the sensors. Depending on your network configuration, you can connect the bridge to the Internet using one of the modes explained in this section.

The bridge work mode can be configured using the Bridge Configuration Tool.

The following explains how to connect the bridge to the Internet in different work modes:

- **LAN:** Connect one end of the Ethernet cable to the bridge's Ethernet connector (third from right) and connect the other end to your network.
- **Wi-Fi:** If you intend to work in Wi-Fi mode, make sure that the Wi-Fi antenna is secured to its connector at the back of the device.
- **Cellular modem:** If you intend to work with a cellular modem, connect the modem dongle to the bridge's USB-A (leftmost) connector.

Configuring the Bridge

The bridge is configured using the Bridge Configuration Tool.

This section assumes familiarity with networking procedures.

Installing and Activating the Configuration Tool

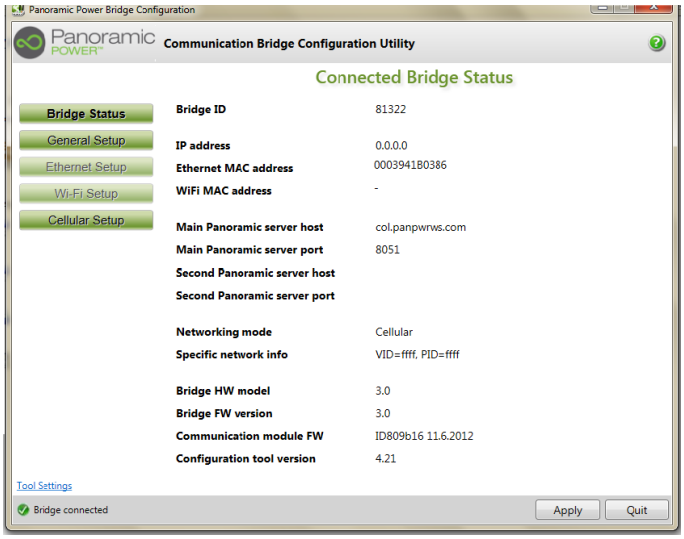
Download the tool from the URL delivered to you and decompress the files.

In order to configure the bridge:

1. Connect the bridge to a computer where the Bridge Configuration Tool is installed using the Ethernet cable.
2. Pull out the power supply, switch the bridge to configuration mode by pushing the switch located between the USB and Ethernet socket, and connect the power supply to the bridge.

   The Rx LED should light up in red.
3. On the computer, access the folder where the configuration software is installed and double-click the BridgeConfigUtility.exe file.

   The configuration screen opens. The tool detects the bridge automatically and displays its current configuration. The "bridge connected" sign appears on the lower-left corner of the screen.

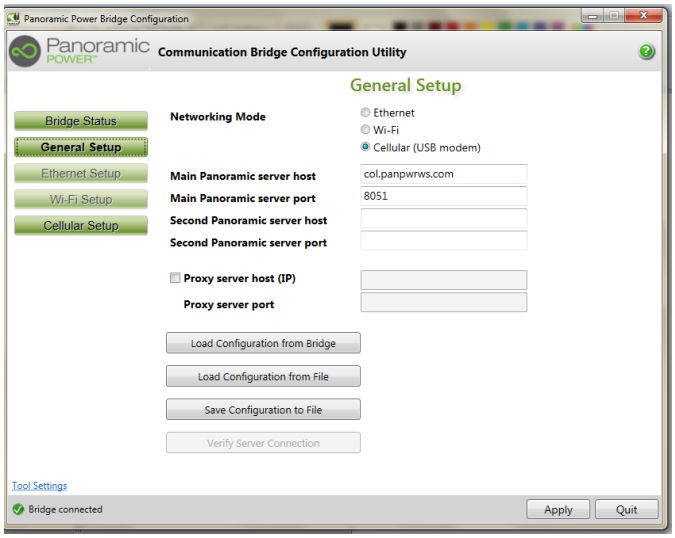


Note

After changing configuration details in any of the windows, click the **Apply** button or click **Quit** to cancel your changes.

Selecting the Communication Mode

Click **General Setup**.



In the upper section, select the communication mode you want to use: Ethernet, Wi-Fi or Cell**.**

Specifying the Proxy Details

If the bridge is connected through a proxy server:

1. Click **General Settings**.
2. Check the **Proxy server host (IP)** box, and enter the IP address.
3. In **Proxy server port**, specify the proxy's communication port with the bridge.

Changing the Server Address

The bridge passes the information received from the sensors to the server. To achieve this, the bridge must know the server address.

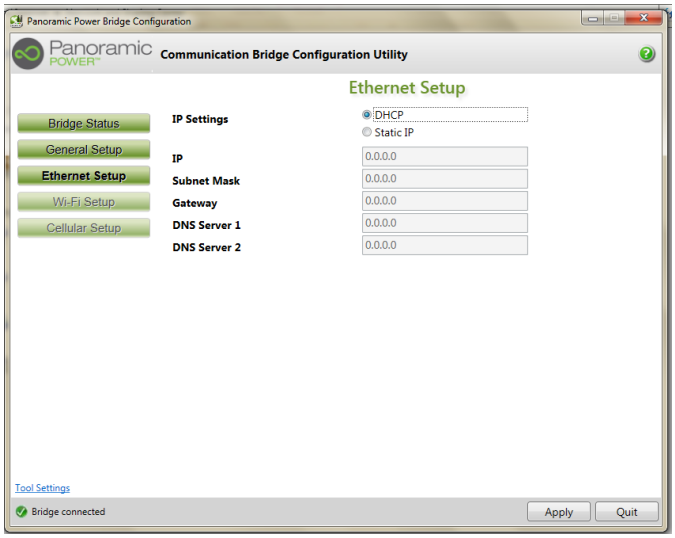
To access the server address, click the **General Setup** button on the left.

The screens displays the server host name and its communication port with the bridge. DO NOT change these details unless instructed by Panoramic Power Support.

Configuring the Bridge for Ethernet

If the bridge is physically connected to the wired LAN, you need to assign it an IP address in order for the bridge to communicate with the server.

In **General Setting** select **Ethernet** and then click the **Ethernet Setup** button.



Depending on the method you want to use to define the bridge's IP address, select **DHCP** or **Static IP**.

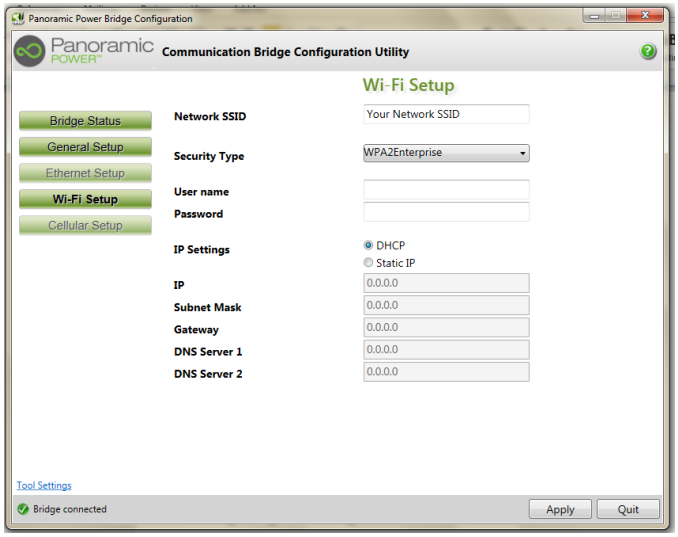
For DHCP you do not need to enter further details (the bridge acquires the IP address automatically).

If you prefer to use a specific IP address (you selected **Static IP**) in **IP** enter the IP address and in the other fields specify the other network parameters.

Configuring the Bridge for Wi-Fi

If the bridge communicates with the server over Wi-Fi, you need to tell the which Wi-Fi network to use. Your organization may have just one such network or multiple networks.

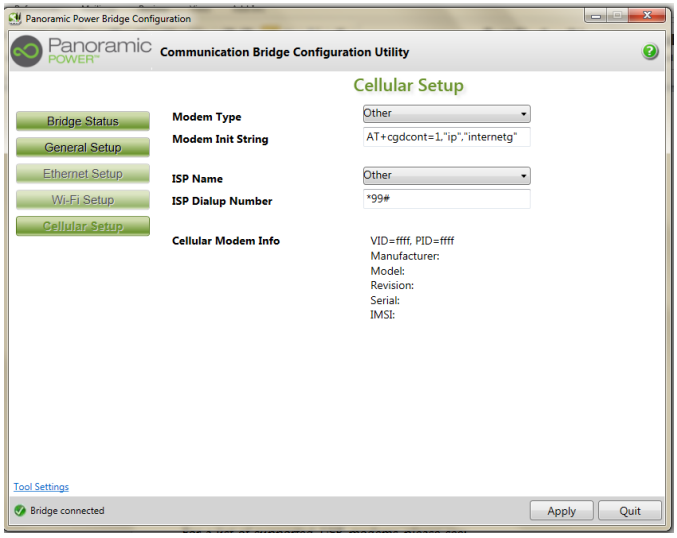
In **General Setting** select **Wi-Fi** and then click the **Wi-Fi Setup** button.



Fill the other parameters according to the configuration of your Wi-Fi network.

Configuring the Bridge for Cellular Connection

If the bridge is to communicate with the server over the cellular network, make sure that the cellular dongle is attached to the bridge. Then in **General Setup** select **Cellular** and then click the **Cellular Setup** button.



Enter the connection specifications delivered to you by your cellurlar telephony operator.

For a list of supported USB modems please see:

http://www.connectone.com/wp-content/uploads/2012/06/3G-USB-LIST.pdf

Verifying the Connection

After entering the configuration parameters, follow this procedure to make sure that the entries are correct and that the bridge is connected to PanoramicPower server.

1. Disconnect the bridge from your PC.
2. Connect your PC to the network for which the bridge is configured –Ethernet, Wi-Fi or Cellular.
3. Configure your PC's network settings with the same settings as the bridge's, that is, same SSID and password for Wi-Fi, same IP address for Ethernet and same modem for Cellular.
4. Under **General Setup**, click the **Verify Server Connection** button to check the connection.

Finalizing the Configuration

After entering the desired configuration parameters, click **Apply**. Then, disconnect the bridge from the PC and restart the bridge by pulling out the power cable and plugging it in again.

Viewing the Configuration Details

Click the **Bridge Status** button in the navigation pane on the left to display the details of the current configuration. After you change the configuration, the new details appear here.

Saving and Loading Configurations

Once you configure a bridge, you can save its configuration. To do so, click the **Save Configuration File** button and perform the regular file saving operation.

You can use this file to configure other bridges that have the same configuration features (or to load onto the same bridge if its configuration got corrupted). Connect the bridge to the PC, click the **Load Configuration from File** button and select the file.

Bridge LEDS

The LEDs at the top of the bridge indicate the following:

LED on top panel	Light
Power (right)	Solid green when the bridge is connected to the power source.
Wi-Fi	Blinking green when Wi-Fi network is available. Solid green when working with Wi-Fi network and after connection has been established.
Rx (left)	Yellow, blinking, when receiving transmissions from the sensor. Blinking red when there is a communication problem Solid Red when configuring the bridge.

LED in front panel	Light
Right LED	Solid orange when the bridge connected to the PC or network.
Left LED	Solid green Ethernet connection established with the PC or network.

Troubleshooting

If you encounter a problem, first try the following solutions:

Problem	Solution
The Rx light is not blinking yellow	Try moving the bridge closer to the panel. If problem persists, open the panel and make sure that the sensors are visible or try moving them to the front of the panel.
The system is not receiving transmissions	Make sure the bridge is not set to configuration mode (Rx light is not red). If using Wi-Fi, make sure that the Wi-Fi light is green. If you are using Ethernet, make sure that the Wi-Fi light is off and that the LAN port shows a steady green light and a blinking orange light.

Bridge Specification

Part Number	PAN-2-RE RE = region (EU / US)

Support

More support can be obtained at support@panpwr.com.