APsystems
ALTENERGY POWER

Installation/User Manual

APsystems ECU-3 (V4)
Energy Communication Unit (ECU)

Version 1.0 6/16

APsystems.com

TABLE OF CONTENTS

INTRODUCTION

The APsystems Energy Communication Unit (ECU) is the information gateway for our microinverters. The unit collects module performance data from each individual microinverter and transfers this information to an Internet database in real time, requiring only a single data and power cable. Through the APsystems Energy Monitoring and Analysis software, the ECU gives you precise analysis of each microinverter and module in your solar installation from any web-connected device. The ECU's integrated http webserver offers the simplest and most flexible network integration of any data logger on the market. The user-friendly browser-based interface lets you access your solar array in seconds.

The ECU functions as a gateway and monitors the microinverters that are connected to the PV modules. Therefore, the communication between inverters and ECU does not affect inverter performance, even if the ECU fails to communicate with the inverters. The ECU is NOT a revenue grade metering device. Power production data collected by ECU is for reference only. Check your utility meter for the real power production of the whole system.

Figure 1

INTRODUCTION

Features

- Collects individual module and microinverter statistics
- Communicates in real time
- Requires no additional wiring

The APsystems microinverter is used in utility-interactive grid-tied applications, and is made up of three key elements:

- APsystems microinverter
- APsystems Energy Communication Unit (ECU)
- APsystems Energy Monitor and Analysis (EMA) web-based monitoring and analysis system

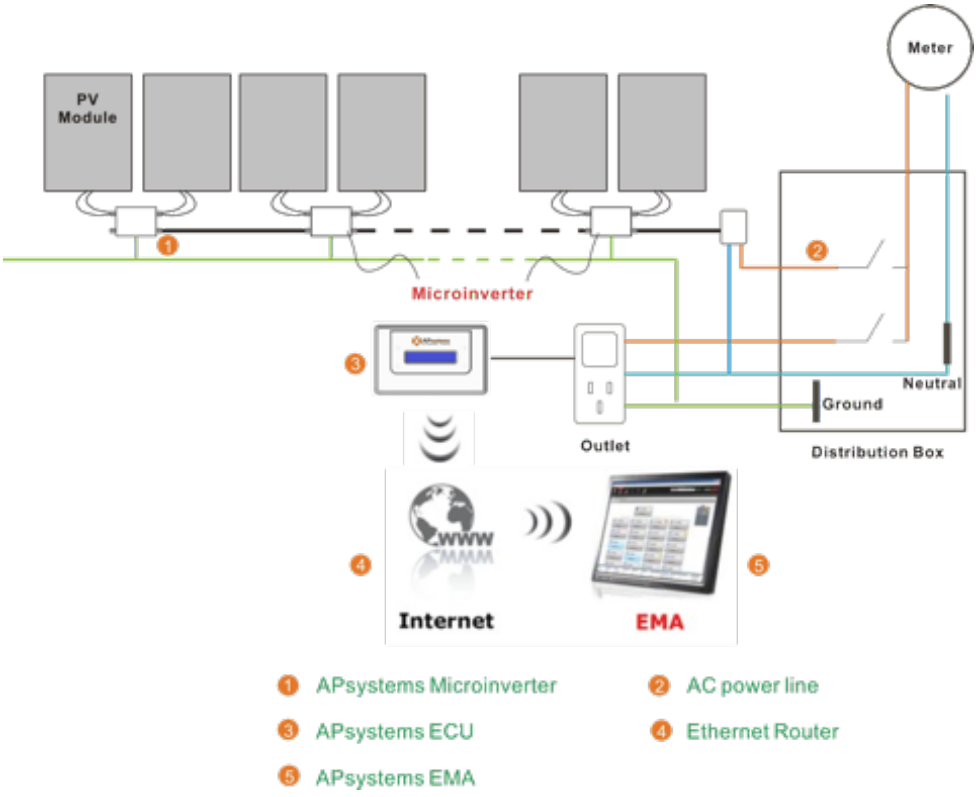

Figure 2

Diagram of a typical residential system

HARDWARE INSTALLATION

PREPARATION

Make sure you have the following things taken care of before attempting to install the ECU:

- A dedicated standard AC electrical outlet (located as close electrically to the array as is possible).
- A broadband Internet connection is available for your use.
- A broadband router with either a CAT5 Ethernet or wireless router is available for your use.
- A laptop with a web browser (to view the APsystems EMA online monitoring application).
- An ECU.

SELECTING AN INSTALLATION LOCATION FOR THE ECU

- A location that is as close electrically to the array as is possible – preferably a dedicated outlet installed directly to the solar system sub-panel or combiner box.
- The ECU is NOT rated for outdoor use, so if installing outdoors near a junction box or breaker panel, make sure that you enclose it in an appropriate weatherproof NEMA electrical box.

Using Electrical Mounting Din Rail

1. Loosen the two (2) M3 mounting screws on the back of the ECU and rotate the two (2) rail hold that the holders are above the ECU.

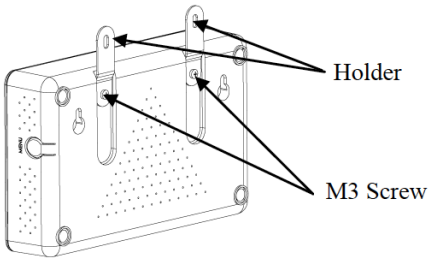

Figure 3

2. Attach the ECU to the mounting rail with machine screws.

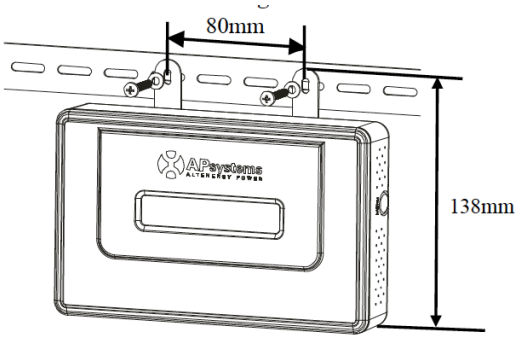

Figure 4

Using Wall Mount

When mounting the ECU to a wall, make sure to select a cool, dry, indoor location.

1. Depending on the wall surface you are mounting the ECU to, use either two (2) #8 drywall screws or wall anchors, installed 130 mm apart. The drywall screws and wall anchors are NOT included in the ECU kit.
2. Align and slide the ECU onto the mounting screws.

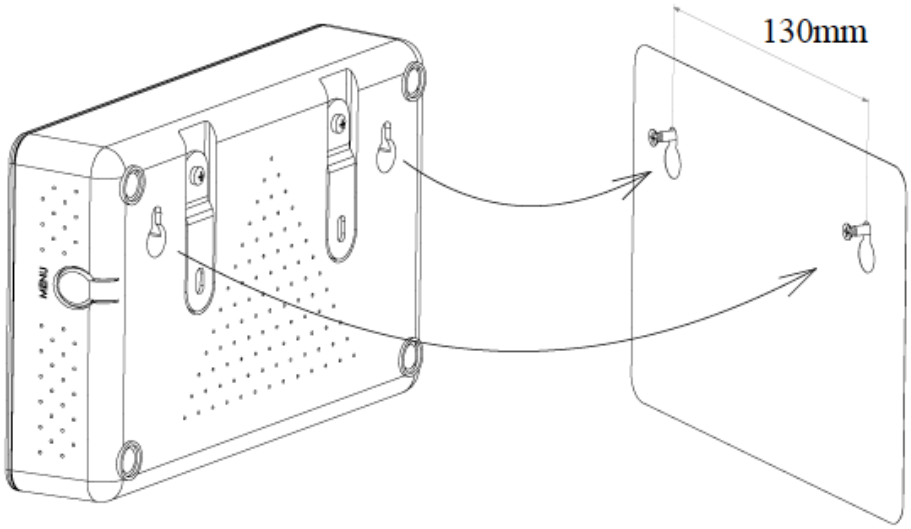

Figure 5

<u>Best Practice:</u> Install and connect the ECU to the Internet (see below instructions) while the rest of the array is being installed. Doing so allows the ECU to automatically update its internal software while the rest of the physical installation is underway. The ECU will then communicate with the inverters when the installation is complete and the array is energized.

Cable Ports

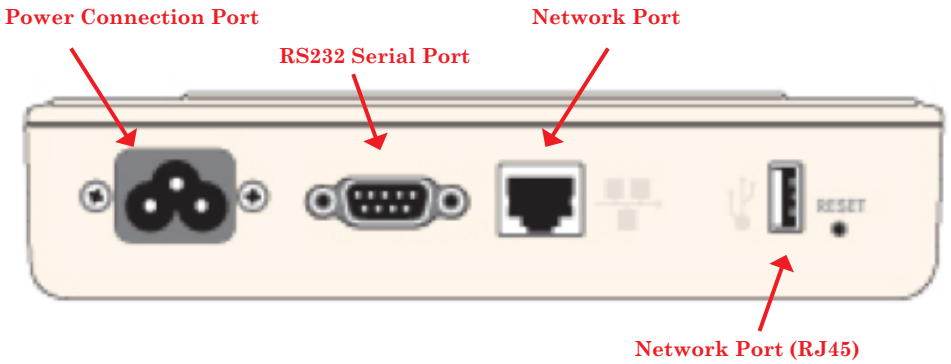

Figure 6

Power Connection Port:
The power connection port is used to both supply the ECU with power, and communicate with the inverters using the Power Line Communications (PLC) protocol.

RS232 Serial Port:
The RS232 serial port can be used to connect the ECU to the Internet using General Packet Radio Service (GPRS). GPRS is a cell technology that is not available in all areas. Check with your cell phone service provider for details regarding availability and service pricing.

Network Port (RJ45):
The network port (RJ45) is used to connect the ECU to your local network via a CAT5 cable. This port can be used to connect directly to the network router, or through a Wi-Fi extender or PLC bridge.

USB Port:
The USB port can be used as a power source (5VDC). It is NOT a two-way communication port, and is therefore incompatible with external Wi-Fi devices such as Wi-Fi dongles or thumb drives.

INITIAL CABLE CONNECTIONS

1. Connect the supplied power cable to the power connection port on the bottom of the ECU.

NOTE: As noted in the previous section, the ECU communicates with the inverters using the Power Line Communications (PLC) protocol through the power connection port.

2. Connect the supplied CAT5 cable to the network port (RJ45) on the bottom of the ECU.

INTERNET CONNECTION

There are two different approaches to connecting the ECU to the Internet:

- Direct CAT5 network connection to a broadband router.
- Wireless connection to a wireless broadband router.

Direct CAT5 Connection

1. Make sure the CAT5 cable is connected to the network port on the bottom of the ECU.
2. Connect the CAT5 cable into a spare port on the broadband router.

Figure 7

Wireless Connection

Using the internal Wi-Fi capabilities of the ECU:

1. Join the Wi-Fi to the site's LAN via the ECU's wireless functionality (see Page 29).

Figure 8

Using a PLC bridge:

NOTE: A PLC bridge uses the power line to communicate and requires both a “send” and “receive” unit.

1. Make sure the CAT5 cable is connected to the network port on the bottom of the ECU.
2. Connect the CAT5 cable into the “send” unit of the PLC bridge.
3. Connect a CAT5 cable from the “receive” unit of the PLC bridge into a spare port on the broadband router (refer to bridge users manual for specific operating instructions).

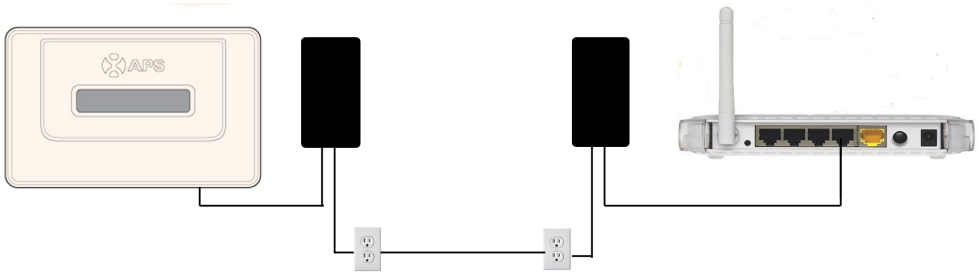

Figure 9

POWER UP ECU

1. Make sure the power cable is correctly connected to the power connection port on the bottom of the ECU.
2. Plug the power cable into a dedicated standard AC electrical outlet.

WARNING: Make sure to use a dedicated outlet for the ECU. Do NOT plug any other devices into the same outlet as the ECU.

WARNING: Do NOT plug the ECU into a power strip, surge protector, or uninterruptable power supply (UPS). The surge suppression and/or filtering on these sorts of devices will substantially diminish PLC performance.

ECU INITIALIZATION SEQUENCE

Once power is supplied to the ECU it automatically steps through a series of initialization screens on its LED display.

NOTE: The ECU operates as a Wi-Fi hub (W) by default.

Figure 10

ECU INITIALIZATION

1. Loading the software firmware.

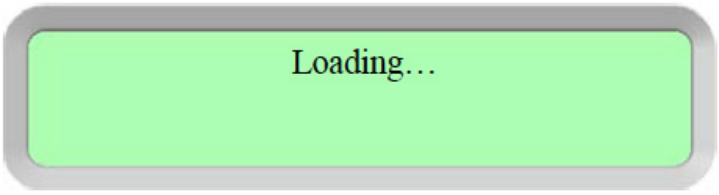

Figure 11

2. "Registering" the active IP Addresses.

The first time the ECU is powered up it is going to display the available Wi-Fi network IP address, as well as the internal LAN IP Address. See **Managing the Network Connection** pg. 27 if you need to access the ECU through the Local Area Network (LAN).

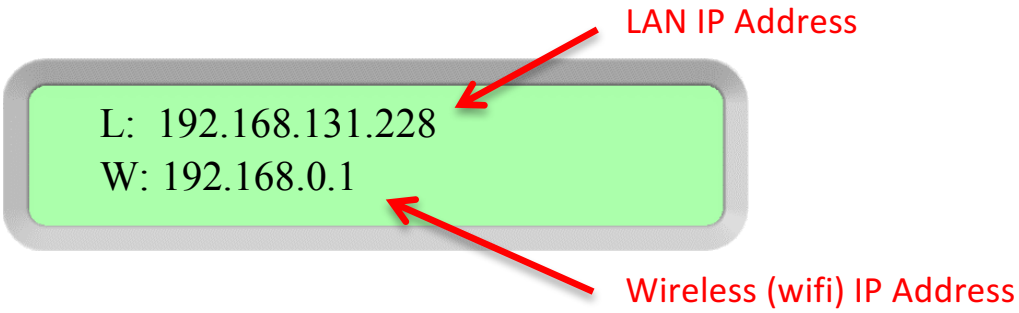

Figure 12

The display alternates (every 5 seconds) between the IP and Inverter Input pages at this point in the process.

ECU INITIALIZATION SEQUENCE

Figure 13

A word about network communication protocols: The ECU needs to have access to the router via an IP address. The ECU will only search for and obtain a DHCP IP address during its powering up sequence.

For example, the LED screen on the front of the ECU displays an IP address such as "192.168.2.101" if the connection to the router is successful (the IP address will vary based on router supplier, so check with the user manual for specifics). If, however, the LED displays "192.168.131.228", the ECU-router connection has not been successful, in which case you'll need to check all of the cabling connections and reboot the ECU by removing the power cable for a few seconds and reconnecting.

NOTE: The complete initialization sequence can take several minutes (up to 15 minutes depending on the complexity of the installation and the overall number of inverters).

1. Operating Interface.
   -- If connected via Wi-Fi --

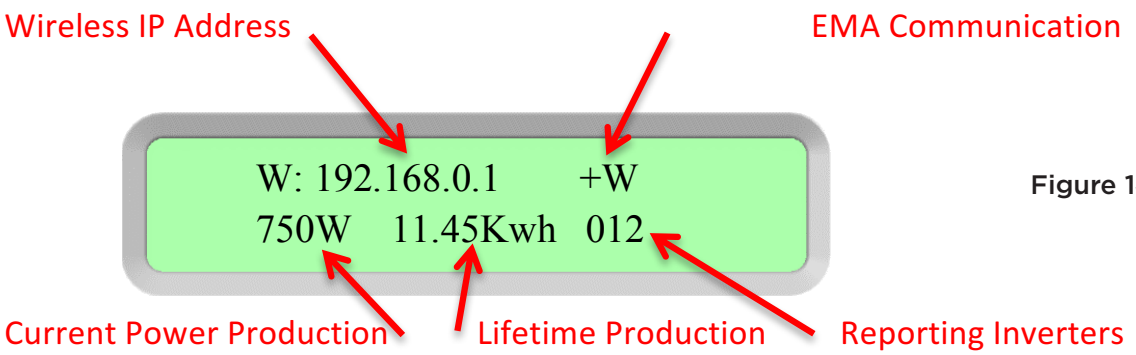

Figure 14

Wireless IP Address: The LED screen on the front of the ECU displays an IP address such as "192.168.0.1" if the connection is successful.

When the ECU connects to the Internet via Wi-Fi, enter the wireless IP address into the computer internet browser to login to the ECU's local network interface.

EMA Communication: A "+Web" indicates that the ECU is communicating with the APsystems EMA via the Internet. "-Web" is an indication that there is a problem and the ECU is not communicating with the APsystems EMA.

Current Power Production: What the solar array is producing currently (in Watts).

Lifetime Production: The lifetime power output of the system (in kWh).

Reporting Inverters: The number of inverters reporting into the ECU. If the number is followed by an "!", then the number of reporting inverters does not match the number of UIDs that have been programmed into the ECU (see Managing Inverter UIDs pg. 22).

– If connected via LAN –

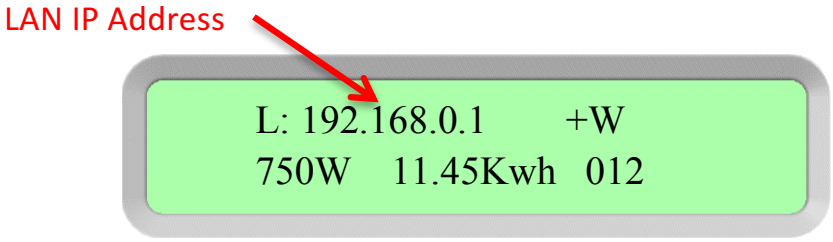

Figure 15

LAN IP Address: The LED screen on the front of the ECU displays an IP address such as "192.168.2.101" if the connection to the router is successful (the IP address will vary based on router supplier, so check with the user manual for specifics). If, however, the LED displays "192.168.131.228", the ECU-router connection has not been successful, in which case you'll need to check all of the cabling connections and reboot the ECU by removing the power cable for a few seconds and reconnecting.

NOTE: The inverter UIDs **MUST BE PROGRAMMED** into the ECU for the ECU to recognize the inverters. The ECU will **NOT** auto-discover the inverters (see Managing Inverter UIDs pg. 22).

USING THE ECU MENU BUTTON

You can access the ECU's menu by pressing and holding the Menu Button on the side of the ECU for 2 seconds.

NOTE: The Menu Button will only cycle through its menu selections once the ECU has been successfully initialized.

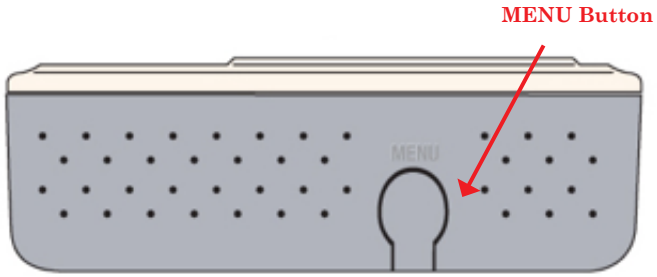

Figure 16

The ECU has the following menu structure (displayed on LED screen):

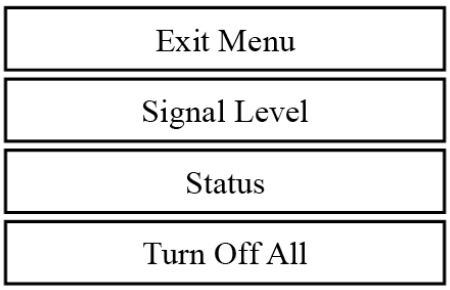

Figure 17

Press and hold the MENU Button, releasing the button to gain access to the functionality of each menu item.

Exit Menu: Returns the ECU to the normal operating screen (see Operating Interface Pg. 11).

Signal Level: The PLC signal strength measured from 1-5, with higher number being stronger signal strength.

The Signal Level Screen.

Figure 18

NOTE: The signal level is not displayed if there is no PLC detected.

Status: Reports both the number of inverters that should be reporting into the ECU (Total), and the number that are actually reporting (Connected).

The Status screen.

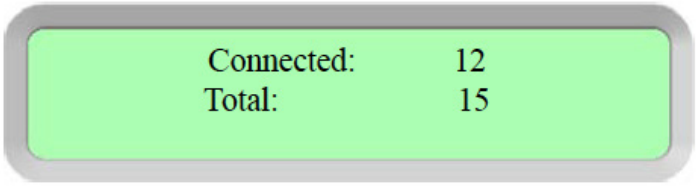

Figure 19

Turn off all: Shuts down the entire system.

The Shutdown screen.

Figure 20

NOTE: Leaving the MENU Button untouched for one (1) minute returns the ECU to the normal operating screen (see Operating Interface Pg. 11).

RESETTING THE ECU TO FACTORY DEFAULTS

Insert a paperclip, or something similar, into the reset access along the bottom of the ECU for three (3) seconds or longer. The ECU will reset to its factory settings.

Figure 21

TROUBLESHOOTING ECU OPERATION

Problem: IP shows "192.168.131.228"
If the IP address displayed on the ECU's LED shows "192.168.131.228", the ECU did not successfully obtain a DHCP IP address from the router.

Solution: Check network connectivity to the router or other DHCP server. Typically this means that the ECU is not communicating with the router. You may need to contact the Internet provider, or refer to the router's documentation for troubleshooting assistance.

Problem: -Web
If the ECU's LED is displaying "-web", the ECU is not communicating with the APsystems monitoring system.

Solution: Reboot the ECU by unplugging the power cord for at lease seven (7) seconds, and plugging it back in. If the LED still indicates "-web", check network connectivity to the router. You may need to contact the Internet provider, or refer to the router's documentation for troubleshooting assistance.

Problem: "!" following Reporting Inverters number
If the reporting inverters number is followed by an "!", then the number of reporting inverters does not match the number of UIDs that have been programmed into the ECU (see Managing Inverter UIDs pg. 22). This may indicate the ECU is having difficulty communicating with the inverters, or that sunlight levels are too low to energize the system.

Solution: Plug the ECU into a different dedicated electrical socket.

LOCAL NETWORK INTERFACE

The ECU can be configured by connecting a computer to the ECU via the Local Area Network (LAN), or by connecting directly to the ECU via its Ethernet port.

CONNECTING TO THE ECU VIA THE LAN

1. Make sure both your computer and the ECU are correctly connected by the LAN.
2. Using a standard web browser on your computer, enter the IP Address that is displayed on your ECU into the URL search field.

The ECU's Home Page is displayed.

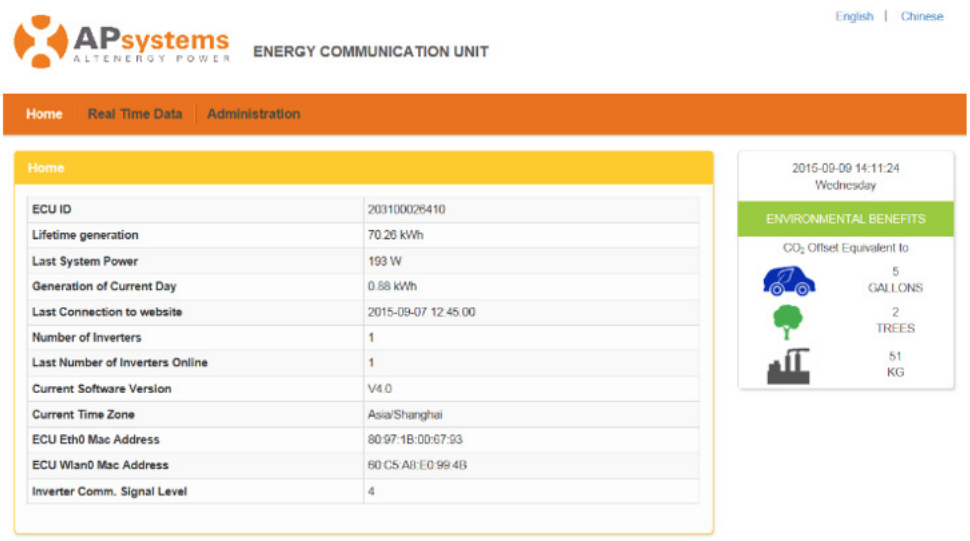

Figure 22

CONNECTING DIRECTLY TO THE ECU

Using a Windows-based PC

1. Connect the computer to the ECU using a CAT5 network cable.
2. Power up the ECU by connecting the power cable.
3. Open the "*Network and Sharing Center*" in the Control Panel on the PC.
4. Select "*Local Area Connection*" for "*Unidentified Network*".
5. Select "*Properties*" when "*Local Area Connection Status*" (LAC) window is displayed.
6. Highlight "*Internet Protocol Version 4 (TCP/IPv4)*" when the "*Local Area Connection Properties*" window is displayed.
7. Select "*Use the Following IP Address*" radial button and the enter IP Address and Subnet Mask as listed below. Do not enter anything in the DNS Server address section.
   IP Address: 192.168.131.228
   Subnet Mask: 255.0.0.0
8. Select "OK" on the IPv4 Properties window.
9. Close the LAC Properties window.
10. Close the LAC Status window.
11. Close the Network and Sharing Center.
12. Using a standard web browser on your computer, enter the IP Address that is displayed on your ECU into the URL search field.

The ECU's Home Page is displayed.

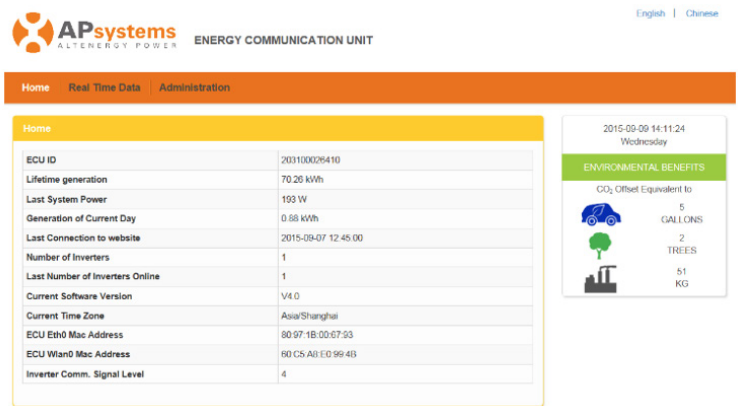

Figure 23

Using an Apple Mac

1. Connect the computer to the ECU using a CAT5 network cable.
2. Power up the ECU by connecting the power cable.
3. Select the Apple icon in the menu bar to access "*System Preferences*".
4. Select "*Network*" in the "*Internet & Wireless*" section of the System Preferences.
5. Select "*Ethernet*" on the left side of the Network window.
6. Select "*Manually*" from the "*Configure IPv4*" drop down menu.
7. Enter the following in the appropriate fields:
   IP Address: 192.168.131.228
   Subnet Mask: 255.0.0.0
8. Leave the "*Router*" field blank.
9. Select "*Apply*".
10. Using a standard web browser on your computer, enter the IP Address that is displayed on your ECU into the URL search field.

The ECU's Home Page is displayed.

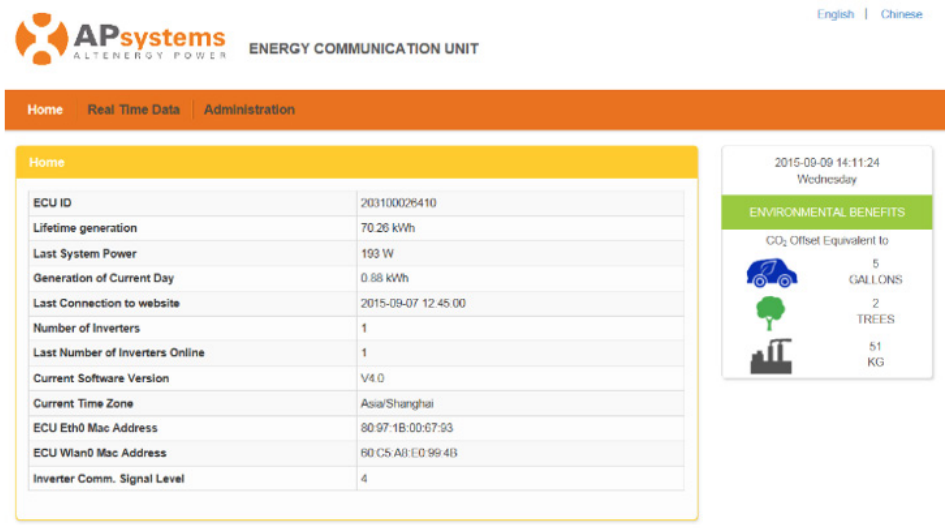

Figure 24

VIEWING THE ECU'S HOME PAGE

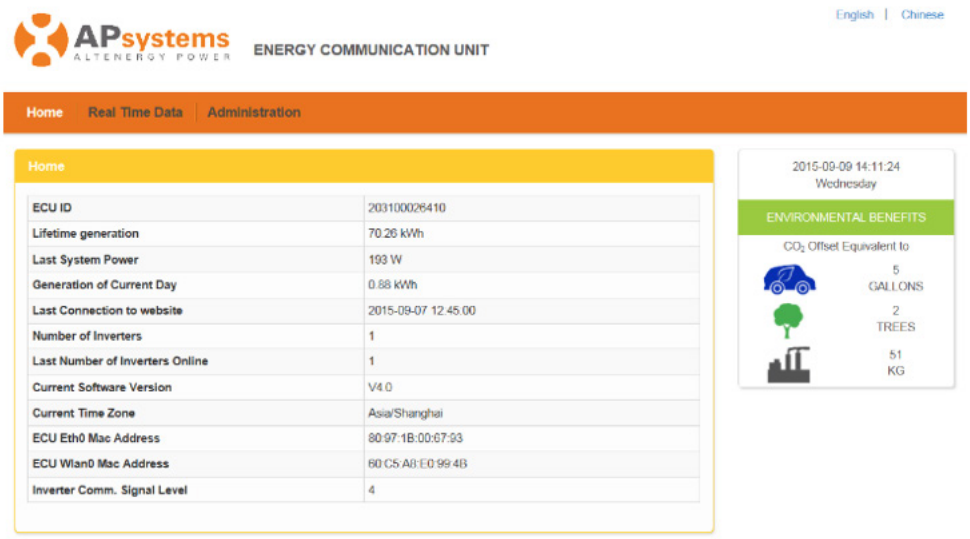

Figure 25

ECU ID: This is a unique number that identifies this specific ECU.

Lifetime Generation: Amount of power this system has generated during its lifetime.

Last System Power: Amount of power the system was generating during its last polling cycle.

Generation of Current Day: Amount of power that has been generated during the most current day.

Last connection to Website: The last time the ECU checked into the central APsystems EMA database.

Number of Inverters: Number of inverters that have programmed into the ECU.

Last Number of Inverters Online: Number of inverters that are checking in with the ECU.

Current Software Version: Version of software firmware.

Current Timezone: Time zone that has been programmed into the ECU.

LOCAL NETWORK INTERFACE

ECU Eth0 Mac Address: The computer “machine address” of the ECU.

ECU Wlan0 Mac Address: The ECU’s internal WLAN address

NOTE: Signal Level will not be displayed if there is no PLC, or if the ECU has a UID less than 203000018226.

MANAGING INVERTER UIDS

The inverter UIDs **MUST BE PROGRAMMED** into the ECU for the ECU to recognize the inverters. The ECU will **NOT** auto-sense the inverters.

Initial Programming of the Inverter UIDs into the ECU

1. Select "*Administration*" at the top of the page.

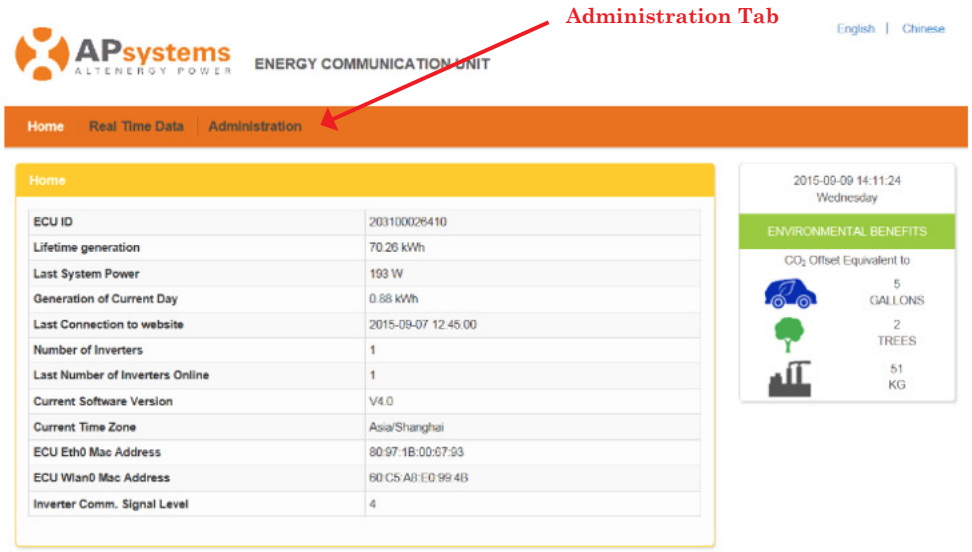

Figure 26

The UID Management page is displayed.

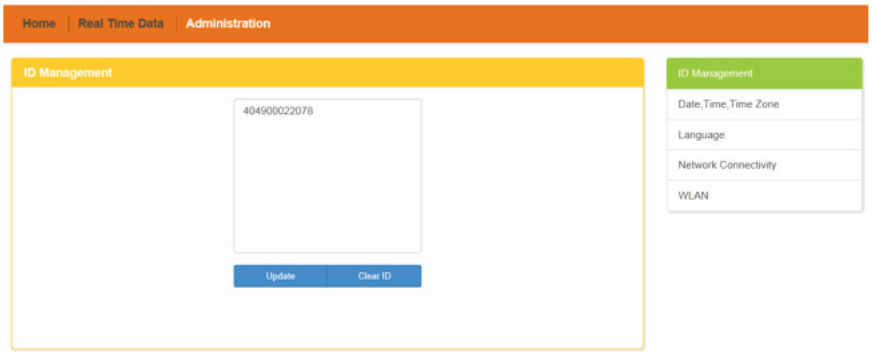

Figure 27

NOTE: The "Enter Inverter ID" window field will be blank if you have not yet entered any of the inverter UIDs.

If Manually Entering the UIDs into the ECU

1. Enter each 12-digit inverter UID, followed by pressing the "*Enter/Return*" key (providing a line break between each entry).
2. Once all the UID have been entered, press "*Update*".

"ID updated successfully" message is displayed.

If Using a Scanning Gun to Enter the UIDs into the ECU

1. Copy the scanned UIDs into the ID Management box.
2. Once all the UID have been copied, press "*Update*".

"ID updated successfully" message is displayed.

Adding Additional Inverter UIDs

1. Select "*Administration*" tab at the top of the page.

The UID Management page with the existing inverter UIDs is displayed.

Figure 28

2. Scroll down to the end of the existing list.
3. Enter the new UID.
4. Press "*Update*".

Deleting an Existing Inverter UID

1. Select "*Administration*" at the top of the page.

The UID Management page with the existing inverter UIDs is displayed.

3. Delete the "*obsolete*" UIDs from the list.
4. Press "*Update*".

NOTE: Pressing "*Clear ID*" **deletes ALL** of the inverter UIDs from the list.

NOTE: Combine the above two (2) steps when swapping out an inverter. Add the new inverter, and Delete the old one. Remember to follow up with the same process on the APsystems EMA because the ECU and EMA need to be in synch with each other.

CHANGING THE DATE, TIME ZONE

It is critical for accurate power production reporting that the ECU is programmed with the correct date, time, and time zone.

1. Select "*Administration*" tab at the top of the page.
2. Select "*Date, Time, Timezone*" tab.

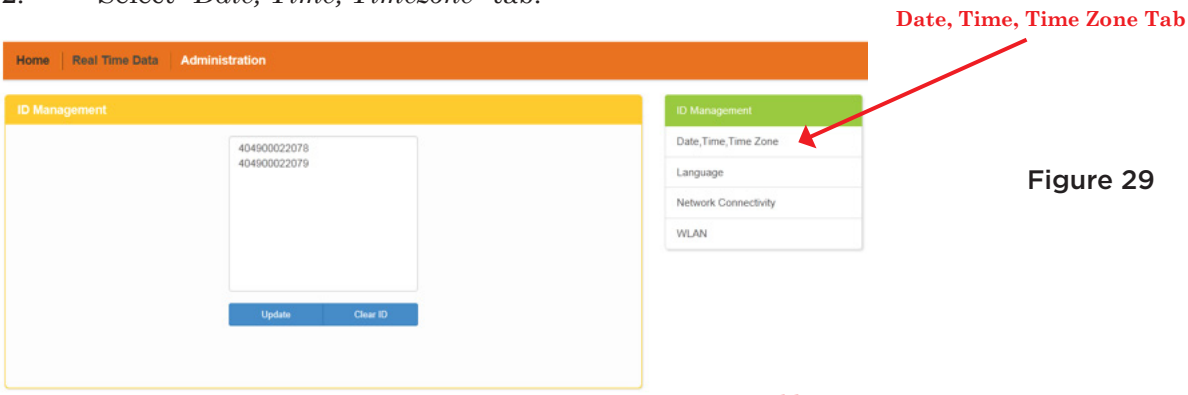

Figure 29

The Date, Time, Time Zone page is displayed.

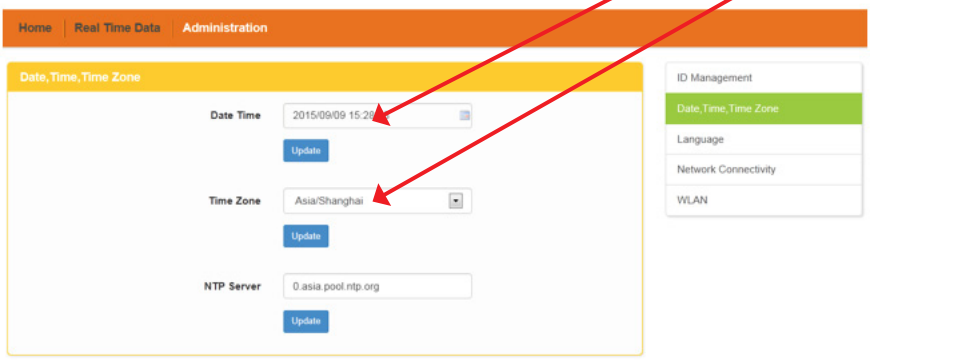

Figure 30

3. Select the "*Date Time*" field.

The Date, Time page is displayed.

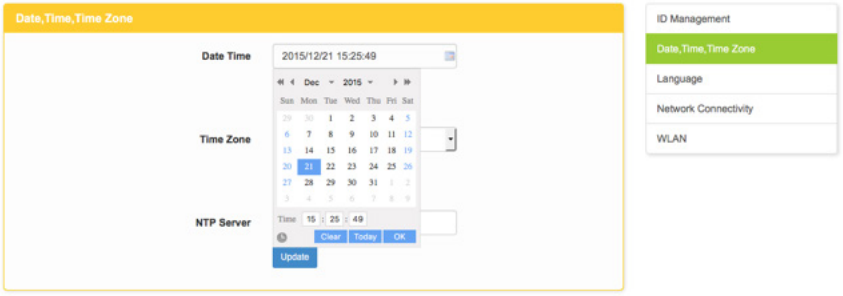

Figure 31

NOTE: Date is displayed in "international date format" – YYYY/MM/DD.

4. Select the correct date on the calendar
5. Enter the correct time.
6. Press "*Update*".
7. Select the correct time zone using the Time Zone pull down field.
8. Press "*Update*".

CHANGING THE ECU LANGUAGE

1. Select "*Administration*" tab at the top of the page.
2. Select the "*Language*" tab.

Figure 32

The Language Management page is displayed.

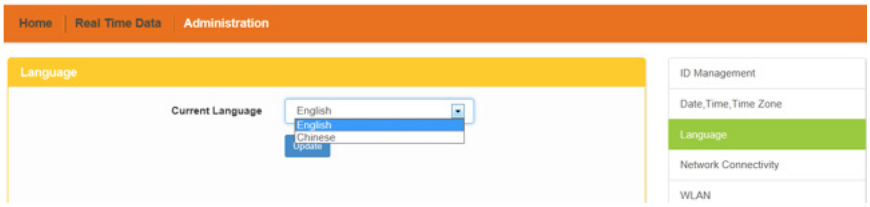

Figure 33

3. Select the ECU's display language using the Language pull down field.
4. Press "Update".

MANAGING THE NETWORK CONNECTION

The default network connection setting for the ECU is "DHCP" which allows the ECU to automatically establish a connection assignment from the router. The ECU can be assigned a static IP Address if the network design requires it.

Assigning a Static IP Address to the ECU

1. Select "*Administration*" tab at the top of the page.
2. Select "*Network Connectivity*" tab.

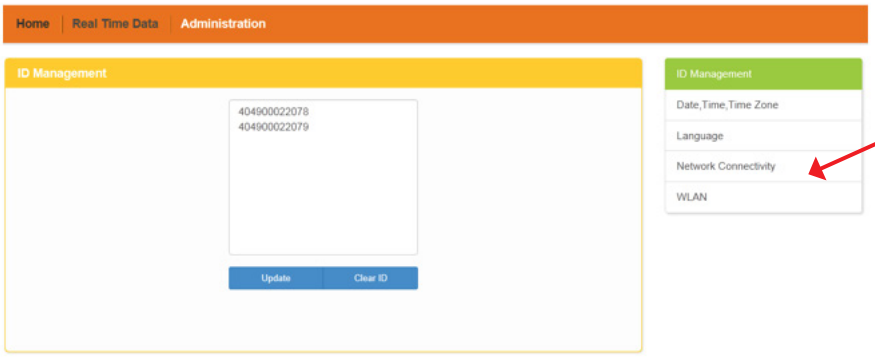

Figure 34

The Network Connectivity page is displayed.

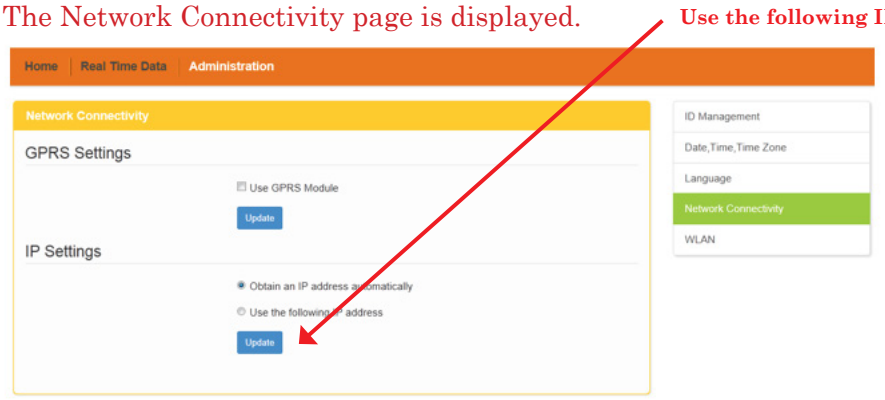

Figure 35

3. Select the "*Use the following IP address*" button.

The Static IP Address page is displayed.

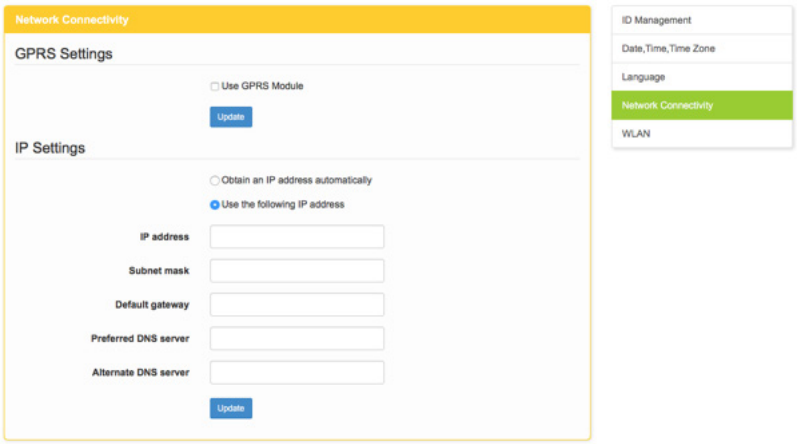

Figure 36

4. Enter the "*IP Address", "Netmask", "Gateway IP", "Primary DNS Server*", and "*Secondary DNS Server*" (Refer to your local network administrator for these settings).
5. Press "*Update*".

MANAGING THE WLAN/WI-FI CONNECTION

The ECU operates in two communication modes: WLAN (L) or as a Wi-Fi hub (W).

When operating in WLAN mode, the ECU connects to the local network router via its Wi-Fi capabilities (eliminating the need for a PLC bridge or Wi-Fi extender between the ECU and network router), allowing you to monitor and manage the ECU through the local network.

When functioning as a Wi-Fi hub, the ECU can directly communicate wirelessly with mobile devices, and/or a PC.

NOTE: The ECU's wireless functionality is used to eliminate the need for PLC bridge and/or Wi-Fi extenders for ongoing monitoring and ECU management, not initial installation. Initial ECU installation requires that you use a Wi-Fi extender, PLC bridge, or direct CAT5 connection to the network router.

To Change the ECU to WLAN Mode

1. Select "*Administration*" tab at the top of the page.
2. Select "*WLAN*" tab.

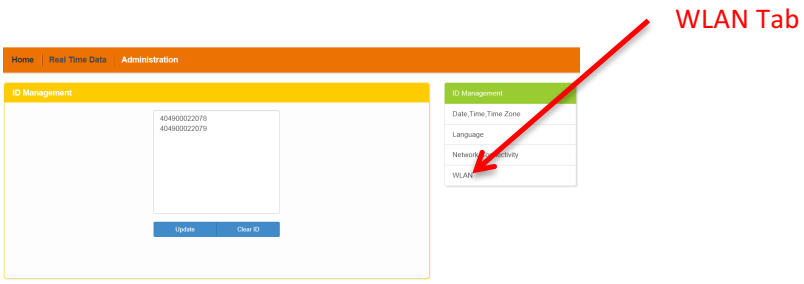

Figure 37

The “Hotspot” page is displayed.

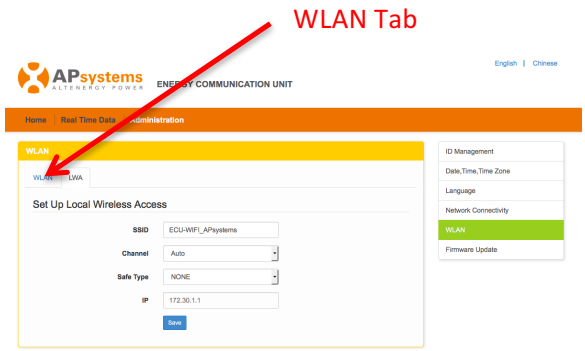

Figure 38

3. Select “*WLAN*” tab.

The available networks page is displayed.

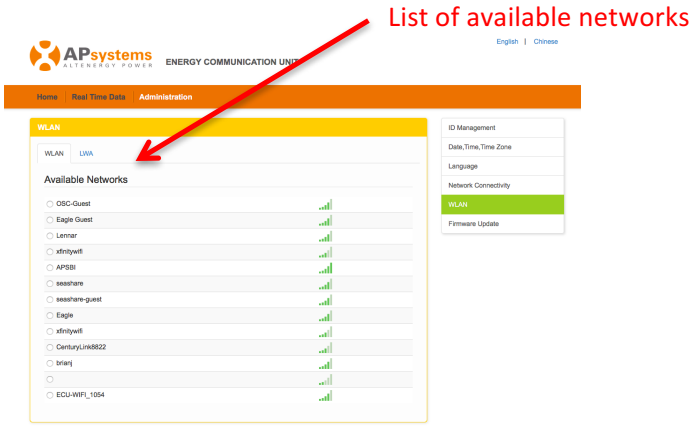

Figure 39

NOTE: If the Available networks page fails to load, enter the router’s IP address that is displayed on the ECU’s display screen into the browser’s URL search field.

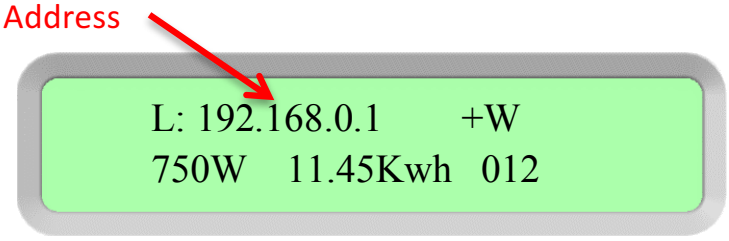

Figure 40

4. Select the network you want to join.

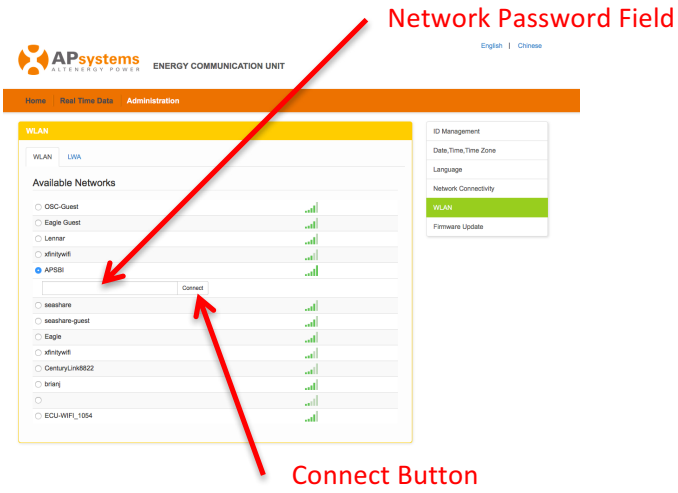

Figure 41

5. Enter the network password.
6. Press the "*Connect*" button.

The WLAN Connection page is displayed.

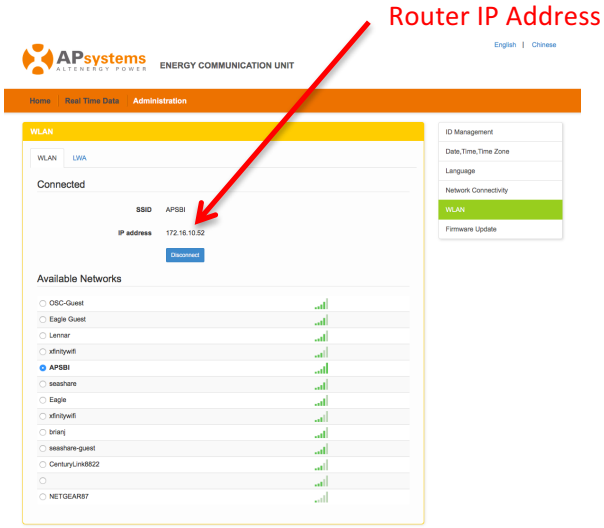

Figure 42

NOTE: To access the ECU with a mobile device or PC, enter the IP address that is displayed on the WLAN Connection page into a browser URL search field.

VIEWING THE REAL TIME DATA

1. Select “Real Time Data” tab at the top of the ECU Home Page.

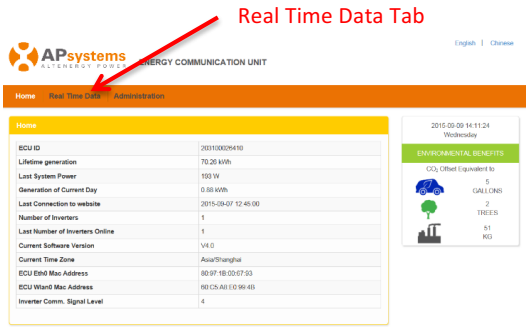

Figure 43

The Real Time Data screen is displayed.

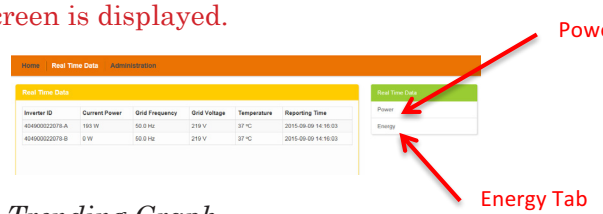

Figure 44

To View System Power Trending Graph

1. Select “Real Time Data” tab at the top of the ECU Home Page.
2. Select the “Power” tab.

The System Power Trend page is displayed.

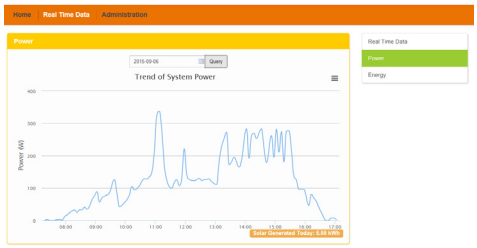

Figure 45

To View Energy Generation Statistics

1. Select “Real Time Data” tab at the top of the ECU Home Page.
2. Select the “Energy” tab.

The Energy Generation page is displayed.

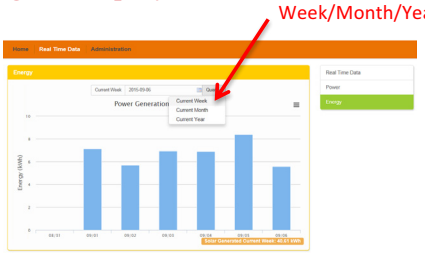

Figure 46

You can select the timeframe you want to review – Week, Month, or Year.

SECURING THE WIRELESS ECU

It is extremely important that you secure the wireless ECU with a password once it is operational. Not doing so leaves the customer's network exposed with the ECU being a possible entry point.

1. Select "*Administration*" tab at the top of the page.

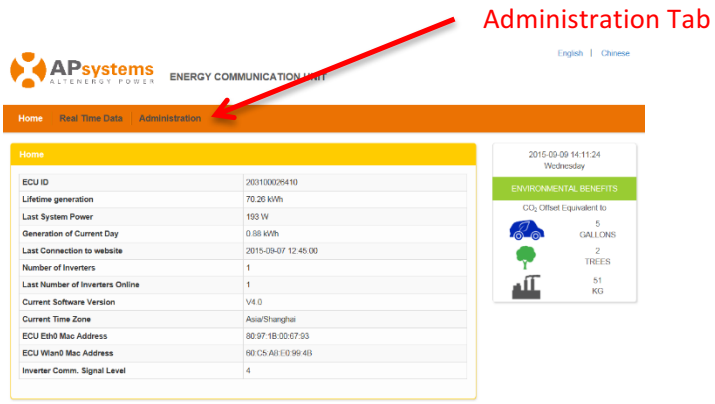

Figure 47

The UID Management page is displayed.

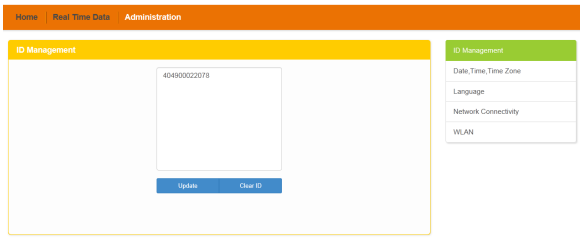

Figure 48

2. Select "*WLAN*" tab.

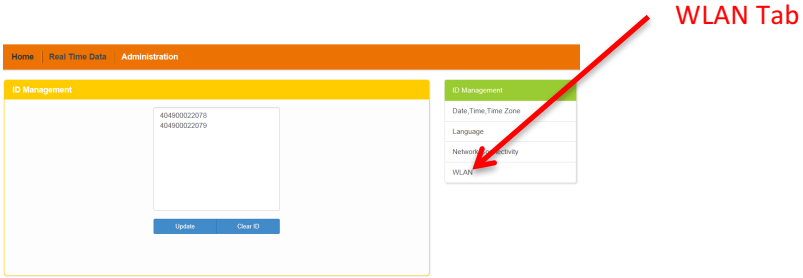

Figure 49

The “Hotspot” page is displayed.

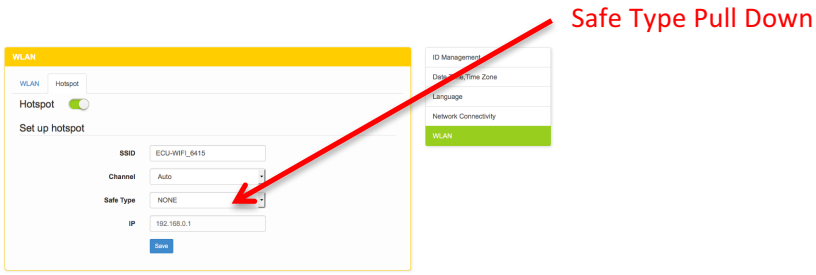

Figure 50

3. Select the “Safe Type” pull down.

The security types (WEP or WPA2-PSK) are displayed along with a “password” field.

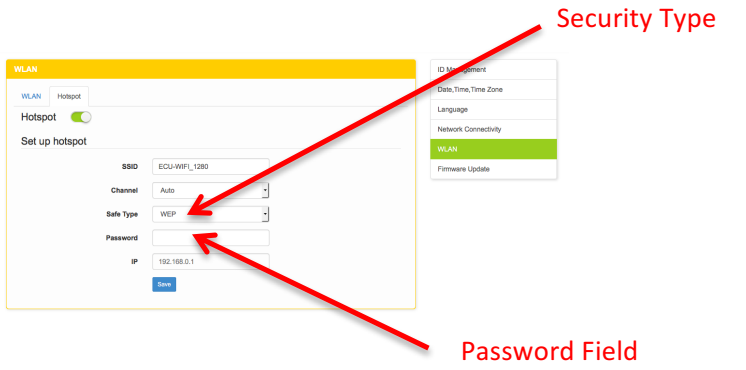

Figure 51

4. Select a security type.
5. Enter a 5 to 13 numeric password.
6. Press “Save” button.

The system will automatically reboot the ECU.

NOTE: Make sure to record the ECU password once it has been set.

REMOTE ECU MANAGEMENT

The ECU has been designed with remote connect functionality. You can access this remote functionality through the APsystems Energy Monitoring & Analysis [EMA] website, using your installer login credentials. Changes made remotely through the EMA do not take affect until the ECU's next reporting cycle.

The ECU must first be installed with verified Power Line Communication [PLC] and Internet connectivity.

The ECU remote functionality allows you to do the following:

1. Set Time Zones
2. Manage Inverter UIDs

There are additional ECU functions available but the instructions are not outlined in this document. If you need to access one of the following features, please contact APsystems Technical Support at 844-666-7034 or support@APsystems.com.

3. Change system parameters
4. Turn the inverters ON and OFF
5. Reset GFDI
6. Reset Power Settings

NOTE: This section of the documentation assumes you have a working knowledge of the APsystems EMA.

1. Log onto your APsystems EMA account.

Your Customer List within the Installer Portal is displayed.

2. Select the customer's ECU you want to manage and click on the pencil icon in the "Change ECU Status" column.

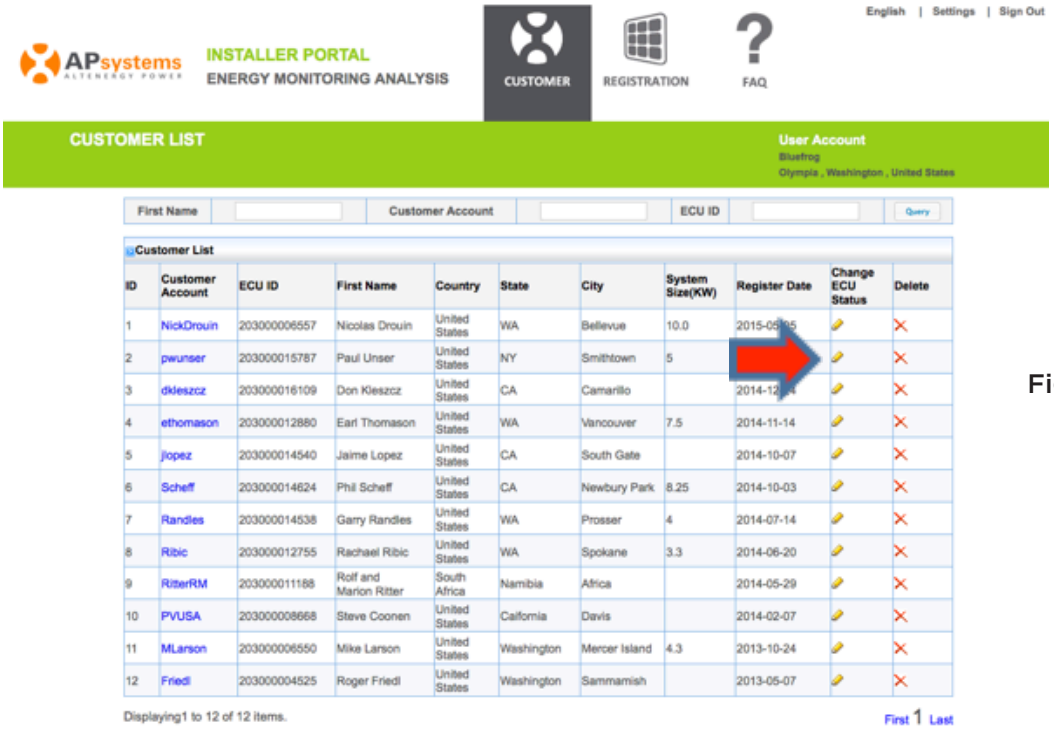

Figure 52

ECU CONFIGURATION

The ECU SETTINGS page is your entry point into managing ECUs remotely.

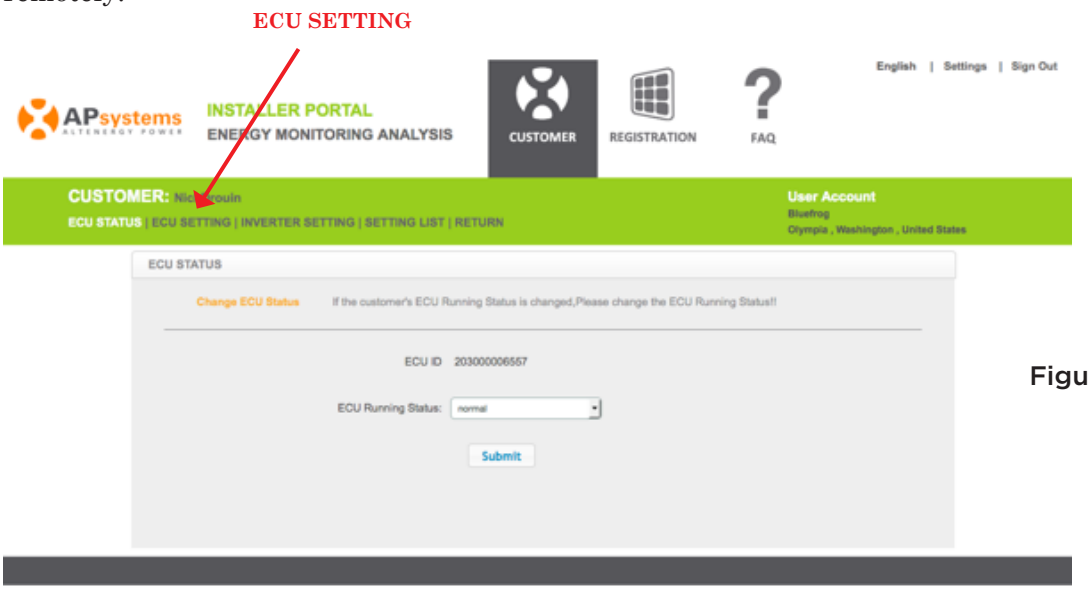

Figure 53

The ECU SETTING tab allows you to:

Set Time Zones

- The ECU time zone can set or adjusted remotely through the ECU Setting tab. If the time zone is not properly set the solar production data will not post properly on the EMA site.

Load Inverter UIDs

- Once the ECU has been installed you can access the ECU remotely to add the inverter UIDs. The ECU will not be able to collect data from the inverters until the inverter UIDs are loaded,.

Update Inverter UID list

- The ECU's programmed list of inverters will need to be updated if one or more inverters are added or swapped for a new unit.

SETTING THE ECU TIME ZONE

1. Select the "*ECU SETTING*" tab.

The ECU Configuration page is displayed.

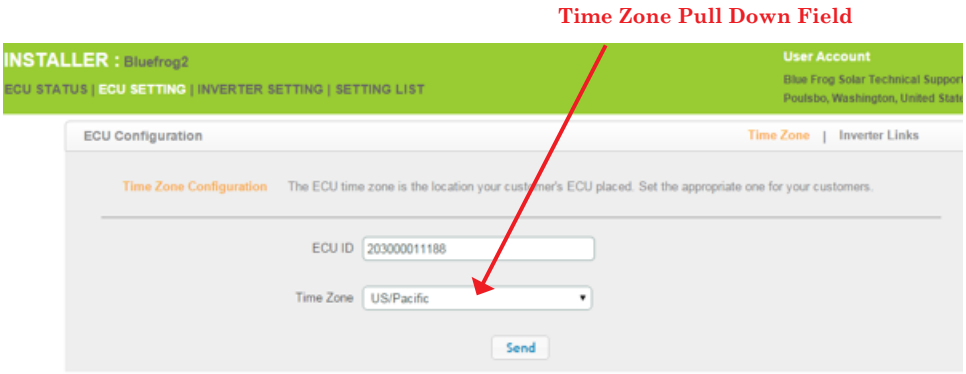

Figure 54

2. Using the "*Time Zone*" pull down field, select the appropriate time zone.
3. Press "*Send*".

MANAGING INVERTER UIDS AND UPDATING THE INVERTER UID LIST

NOTE: To remotely manage the inverter UID list within the ECU, you must fully register the user and their inverters in the EMA. Registering the user's inverters enters the UIDs within the EMA system, but does not upload the UIDs to the ECU until you complete the following.

1. Select the "*ECU SETTING*" tab.

The ECU Configuration page is displayed.

2. Select the "*Inverter Links*" tab.

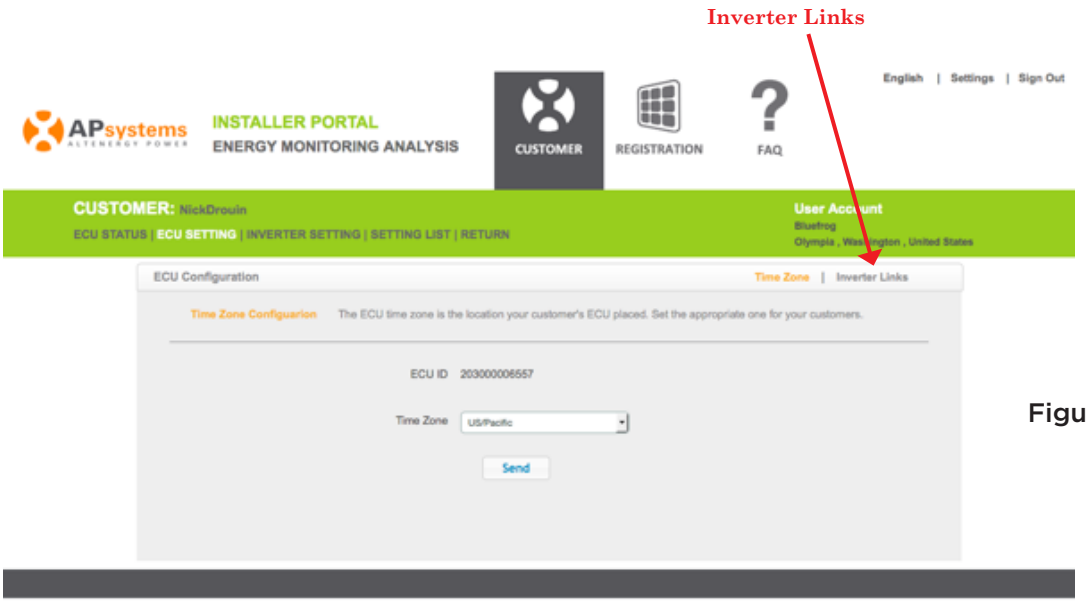

Figure 55

The Inverter Links Configuration page is displayed.

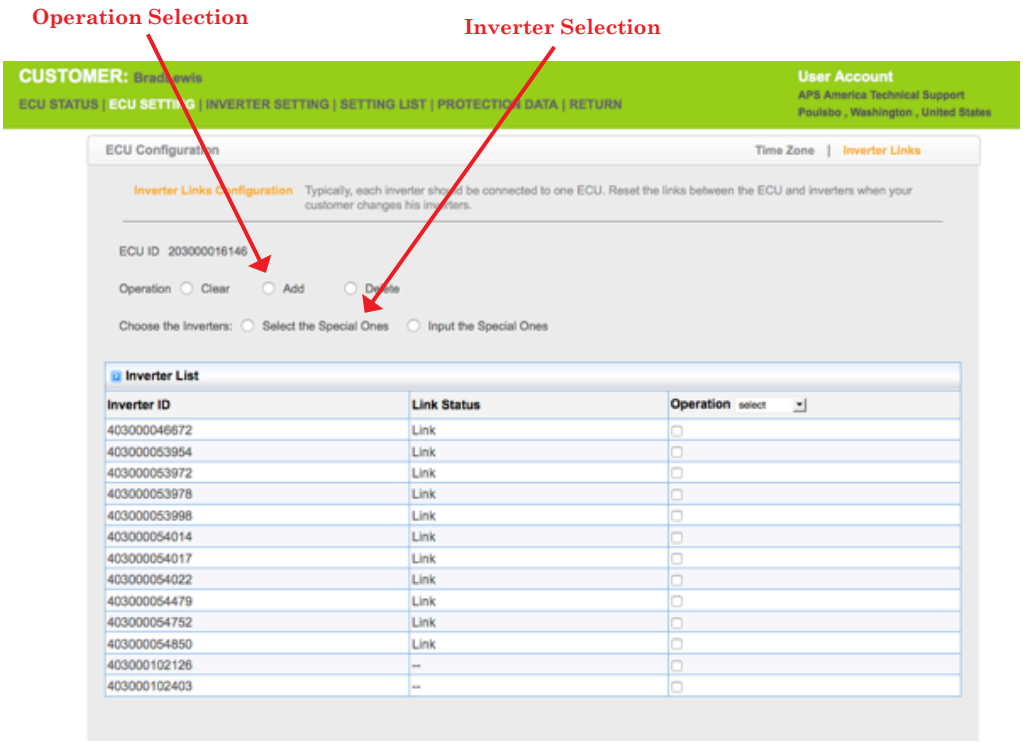

Figure 56

The inverter UIDs that have been registered in the EMA appear in the "Inverter ID" column.

NOTE: "Link" in the "Link Status" column means that the inverter UID has been registered in the EMA and has been uploaded to the ECU. "- -" in the "Link Status" column means that the inverter UID has been registered in the EMA, but has **NOT** been uploaded to the ECU.

Uploading a Complete List of Inverter UIDs for a Newly Installed System

1. Select "*Add*" in Operation Selection.
2. Select "*Select the Special Ones*" in Inverter Selection.
3. Open the pulldown menu in the "*Operation select*" column.
4. Select "*Check all*".
5. Press "*Send*".

Uploading New Inverter UIDs into an Existing System

1. Select "*Add*" in Operation Selection.
2. Select "*Input the Special Ones*" in Inverter Selection.
3. Enter the 12-digit inverter UID into the blank field area. The UID is automatically placed in the Inverter ID column.
4. Press "*Send*".

Delete UIDs from Inverter List

1. Select "Delete" in Operation Selection.
2. Select "*Input the Special Ones*" in Inverter Selection.
3. Select (check box) the inverter UIDs you want to delete from the system in the "*Operation select*" column.
4. Press "*Send*".

TECHNICAL DATA

Model: ECU-3 Version: 4	
Communication Interface	
Power Line	APsystems Proprietary
Integrated Wi-Fi	802.11g/n
Ethernet	10/100M Auto-sensing, Auto-negotiation
USB interface	Standard
RS232	Standard
Power Requirements	
AC Outlet	110~240 VAC, 50~60 Hz
Power Consumption	2.5 W
Mechanical Data	
Dimensions(W×H×D)	182mm×113mm×42mm (7.1''×4.4''×1.6'')
Weight	380g (0.83lbs)
Ambient Temperature Range	-10°C to +65°C (14°F to 149°F)
Cooling	Natural Convection; No Fans
Enclosure Environmental Rating	Indoor - NEMA 1(IP30)
Features	
Compliance	IEC 60950-1, EN60950-1, IEC 60529, EN 60529, ANSI/UL 60950-1, CAN/CSA C22.2 No.60950-1, UL50E, FCC part 15, EN61000-6-1,EN61000-6-3, ICES-003, AS NZS 60950-1, GB/T17799

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.

This Class B digital apparatus complies with Canadian ICES-003.