



# User Guide (Installer)

## Online Energy Monitoring & Analysis (EMA)

Rev 4.0 12/16

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# Table of Contents

- Log onto EMA Website 5
- Add a New Customer Installation 6
  - Step 1: Entering the Customer’s Personal Information 6
  - Step 2: Configure the ECU 9
  - Step 3: Configure the Inverters 11
    - Method 1: Importing the IDs from the ECU 11
    - Method 2: Manually Entering IDs into the EMA 13
  - Step 4: Configuring Group View 16
    - Method 1: Creating a View Automatically 17
    - Method 2: Creating a View Manually 17
  - Step 5: Uploading the Installation Drawings and/or Photo 20
- Resume an Incomplete Registration 21
- Edit an Existing Customer’s Password 22
- Modify an Existing User Account 24
  - Adding an ECU 24
  - Editing an ECU 26
  - Replacing an ECU 27
  - Deleting an ECU 28
  - Adding an Inverter 30
    - Method 1: Importing the IDs from the ECU 31
    - Method 2: Manually Entering IDs into the EMA 33
  - Editing an Inverter 37
  - Replacing an Inverter 38
  - Deleting an Inverter 39
  - Editing Basic Customer Information 40
- Monitoring and Analysis 42
  - Reviewing the Customer’s Dashboard 42
  - Reviewing the Customer’s Modules 44
  - Reviewing the Customer’s System Reports 46
    - Summary Reports 47
    - ECU Reports 48
    - Inverter Reports 49
    - Download Reports 54
  - Reviewing System Maintenance History 55
    - ECU History 56
    - Inverter History 57

**Remote ECU Management** 58

- Managing the ECU Remotely** 58
  - ECU Status** 59
  - ECU Settings** 60
    - Manage Time Zone** 60
    - Manage Inverter Links** 61
  - AC Protection Parameters** 61
  - Inverter Status** 62
  - Inverter GFDI** 63
  - Inverter Power** 63
  - Setting List** 64

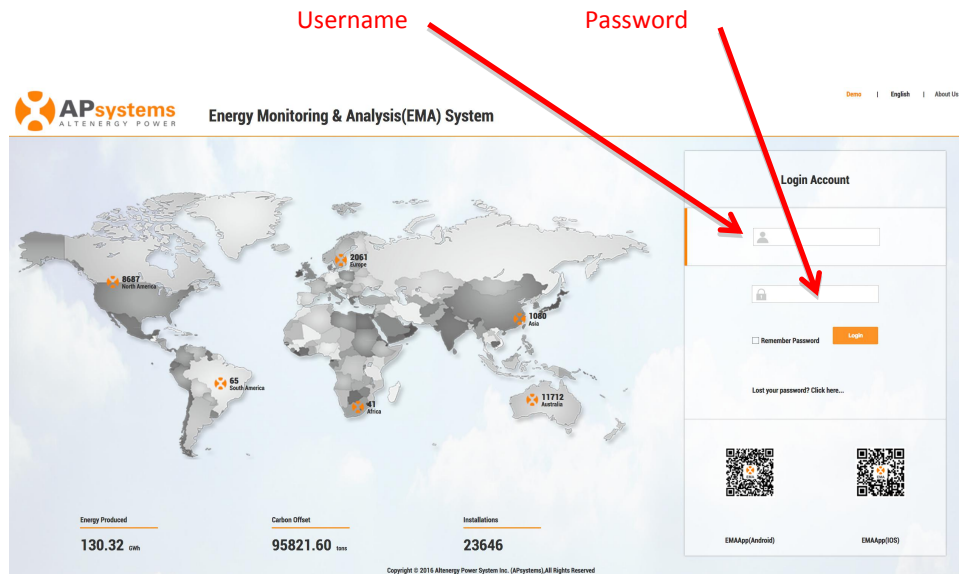
**Managing Your Installer Account Information (and Password)** 66

**Introduction to Your Customer’s System Dashboard** 67

## Log onto EMA Website

1. Go to <http://www.apsystemsema.com>

The APsystems EMA Login page is displayed.



**Note:** You are issued a permanent Username, and a temporary Password when you complete Installer Training with APsystems. Contact APsystems Technical Support to register for Installer Training (go to <https://usa.apsystems.com/resources/training>, or call 1.844.666.7034).

2. Enter your “Username” and “Password”.

**Note:** The Password is case sensitive.

**Note:** If you forget your password, select “Lost your password? Click here ...”.

3. Press the “Login” button.

Your specific Customer List page is displayed.

Continued ...

**CUSTOMER LIST**

ID	Customer Account	ECU ID	Tree Name	Country	State	City	System Size(KW)	Register Date	System Status	Action
1	APSAstest	21300019948	Barney Farpalow	United States	Washington	Bainbridge Island		2014-05-02	<span style="color: green;">●</span>	Delete

Displaying 1 to 1 of 1 items. Total: 1, Go to 1 Go

**Note:** You won't have any customers in your Customer List the first time you log into the system.

## Add a New Customer Installation

Introduction of the two different customers

**Inverter User:** This is for those who wants to monitor the inverter system. For example, YC500, YC600, YC1000, etc.

**OPT700 Series User:** This is for those who wants to monitoring OTP700 system.

There are five (5) major steps involved in adding a new installation (registering) in the EMA. All the following introductions take the inverter user as an example, it also applies to the OTP700 Series Users.

Step 1: Entering the customer's personal information.

Step 2: Configuring the Energy Communication Unit (ECU).

Step 3: Configuring the inverter information(OTP700 SeriesUsers will display OTP700 series).

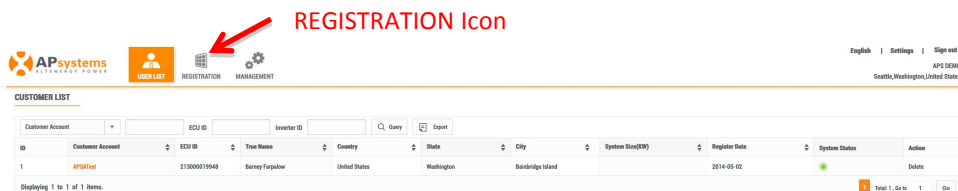
Step 4: Configuring the Group View.

Step 5: Uploading the installation drawings and/or photo.

### Step 1: Entering the Customer's Personal Information

1. Log onto the EMA.

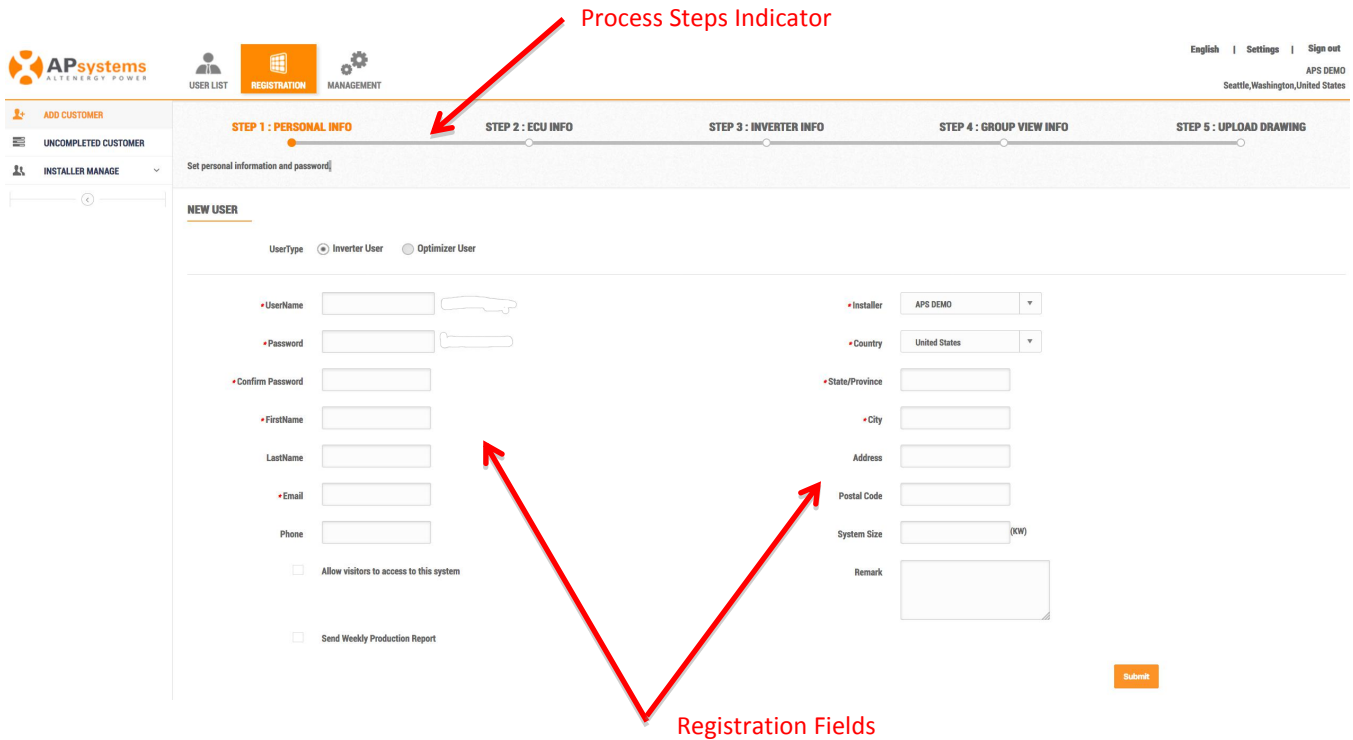
Your specific Customer List page is displayed.



2. Select the REGISTRATION icon at the top of the page.

The New User page is displayed.

Continued ...



Note: Optimizer not available in all regions.

- 3. Fill in the customer details by field, making sure to include all required information.

*UserName*

This is a single “name” (typically the customer’s last name) that identifies this specific customer’s installation. The username appears in the customer’s area on the EMA. (Required)

Only “letters”, “numeric digits”, “underscores”, “@”, “spaces”, and “.” Can be used when creating a username.

**Note:** A username cannot be modified once it has been submitted.

*Password*

This is a temporary password that is emailed to your customer so they can access their account on the EMA. Your customer can change their password should they so choose. (Required)

*Confirm Password* Enter the same password again to confirm. (Required)

*Continued ...*

*Email* This is your customer's email address. (Required)

APsystems sends your customer their password and all system related notifications to this email address.

*First Name* Your customer's first name. (Required)

*Last Name* Your customer's last name. (Optional)

*Phone Number* Your customer's phone number. (Optional)

*Installation Company* This field is automatically generated by the system and can be changed using the pull down selector if necessary. (Required)

*Country* This field is automatically generated by the system and can be changed using the pull down selector if necessary. (Required)

*State/Province* Customer's state or province. (Required)

*City* Customer's city. (Required)

*Address* Customer's street address. (Optional)

*Postal Code* Customer's postal code. (Optional)

*System Size* Calculate the overall system size and enter it here. (Optional)

*Remarks* Add any notes that you may find useful at a later date. (Optional)

4. Select whether to "Allow visitors to access this site".

**Note:** This is an optional selection step. If selected, the system displays an authorization code to be used in embedding this specific customer's EMA data within another website.

5. Select whether to have APsystems "Send a weekly production report".

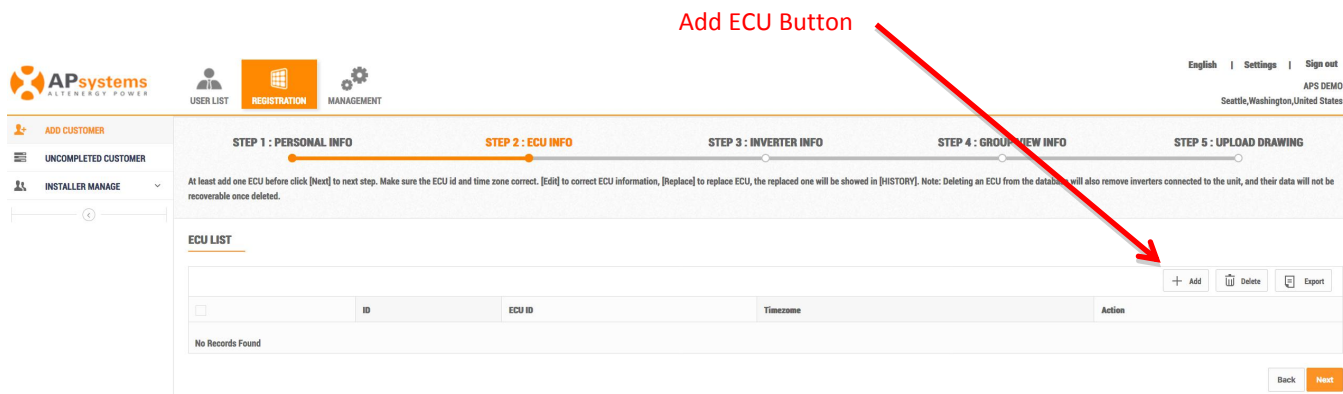
**Note:** This is an optional selection step. If selected, the customer will receive an automatically generated production report on a weekly basis.

*Continued ...*

6. Select the “Submit” button.

**Note:** Once you have selected either the “Next” or “Submit” buttons in any of the major registration steps (1-5), your customer information is saved in the system and you can step away from the process and resume by selecting “Incomplete Customer” (see page 21 –**Resume an Incomplete Registration**).

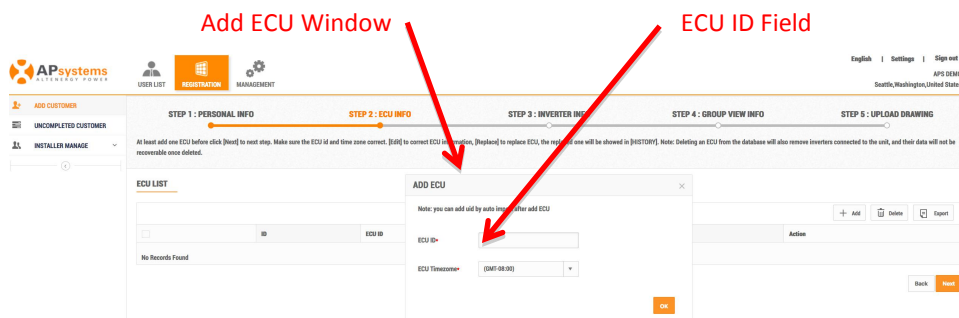
The ECU Information page is displayed.



### Step 2: Configure the ECU

7. Press the “Add” ECU button.

The Add ECU window is displayed.



8. Enter the 12-digit ECU UID number(s) into the ECU ID field.



Continued ...

The ECU UID is located on the top of the ECU, as well as on the front flap of the shipping box.



**Note:** The ECU UID is a unique APsystems “serial number” that is assigned to the ECU during manufacture. It is **NOT** the IP Address of the device.

It is critical that you enter the ECU UID correctly because the EMA uses this number to identify the system it is monitoring and reporting.

9. Select the time zone where the ECU is to be installed.
10. Press the “OK” button.

**Note:** Check **Resume an Incomplete Registration** – Page 21 if you get a system message that indicates that the UID already exists while making these entries.

Once you have entered all of the ECU UID numbers to be installed at a specific location ...

11. Press the “Next” button.

The Inverter Information page is displayed.



- ADD CUSTOMER
- UNCOMPLETED CUSTOMER
- INSTALLER MANAGE

STEP 1 : PERSONAL INFO    STEP 2 : ECU INFO    **STEP 3 : INVERTER INFO**    STEP 4 : GROUP VIEW INFO    STEP 5 : UPLOAD DRAWING

Add inverters for the ECU you entered before, and then you could click [Complete Registration] to finish registration or click [Next] to fill in group view information and upload drawings. [Edit] to correct inverter information, [Replace] to replace inverter, the replaced one will be showed in [HISTORY]. Note: Deleting an inverter from the database will also remove its location information, and the data will not be recoverable once deleted.

**INVERTER LIST**

ECU ID: 204100002641    Inverter ID:     Query

+ Link    + Add    Delete     Export

ID	Inverter ID	Type	Channel	Action
No Records Found				

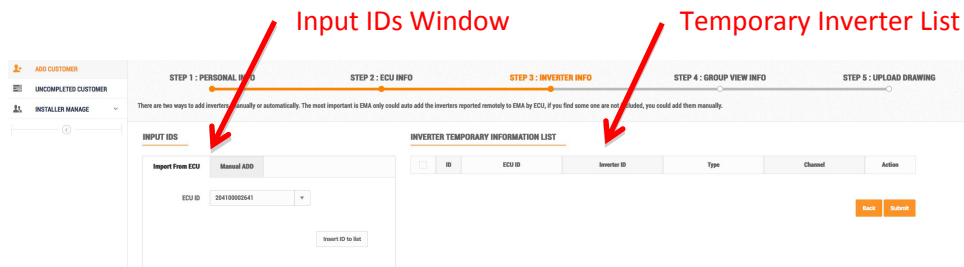
Back    Next

### Step 3: Configure the Inverters

In this step you are assigning the inverters to their associated ECU(s).

12. Select the ECU (ECU Selection field).
13. Press the "Add" button.

The Input Inverter IDs page is displayed.



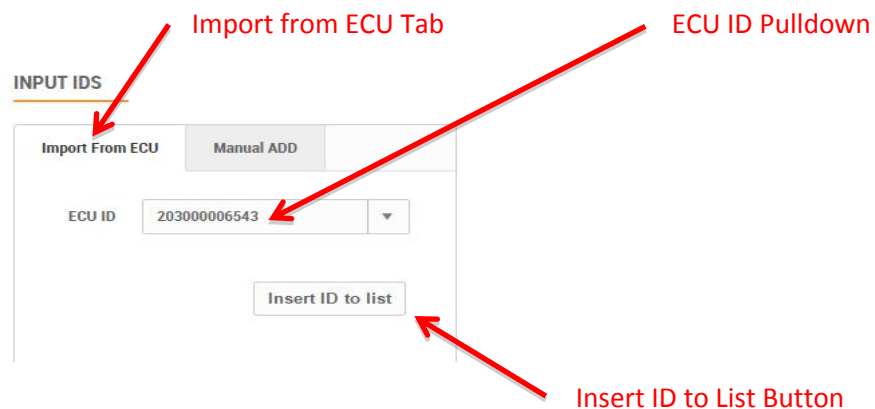
14. Enter the 12-digit inverter ID numbers.

There are two (2) methods for adding inverters to the EMA:

- 1) Importing them from the ECU.
- 2) Manually entering them into the EMA.

#### **Method 1: Importing the IDs from the ECU**

**Note:** When importing the inverter IDs from the ECU, make sure that you have entered all of the inverter IDs into the ECU, and that the ECU is correctly connected to the Internet so that the APsystems server can retrieve the IDs.

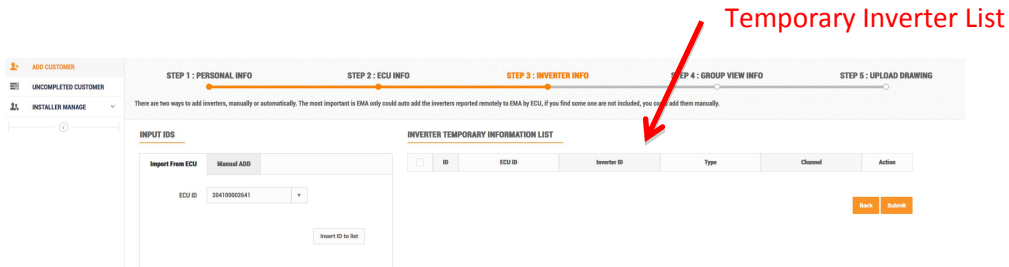


- 1) Select the "Import From ECU" tab.

Continued ...

- 2) Select the ECU from the “ECU ID” pulldown.
- 3) Press the “Insert ID to List” button.

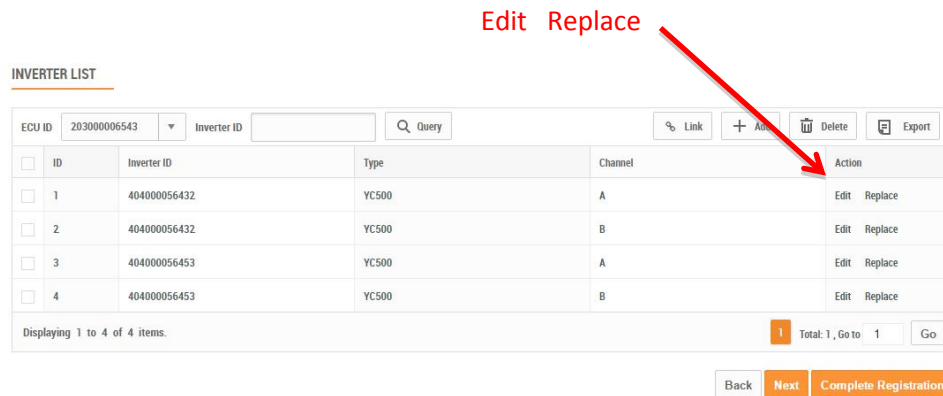
The EMA begins importing all of the inverter IDs on the ECU and placing them onto the Temporary Inverter List.



- 4) Verify that the temporary list of inverter IDs is complete and correct.
- 5) Press the “Submit” button.

The “permanent” inverter list is displayed.

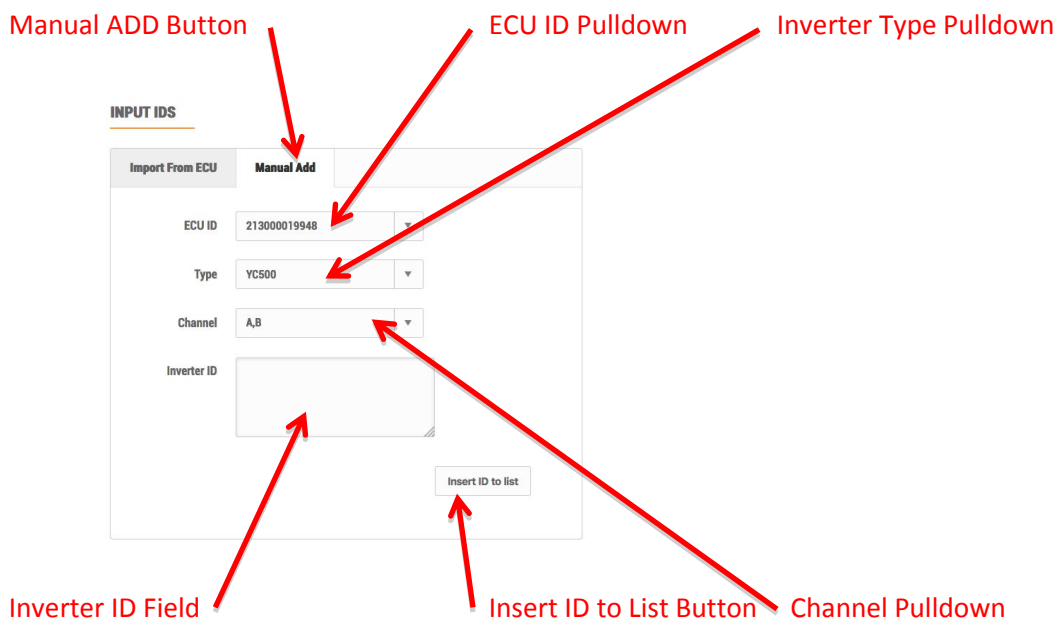
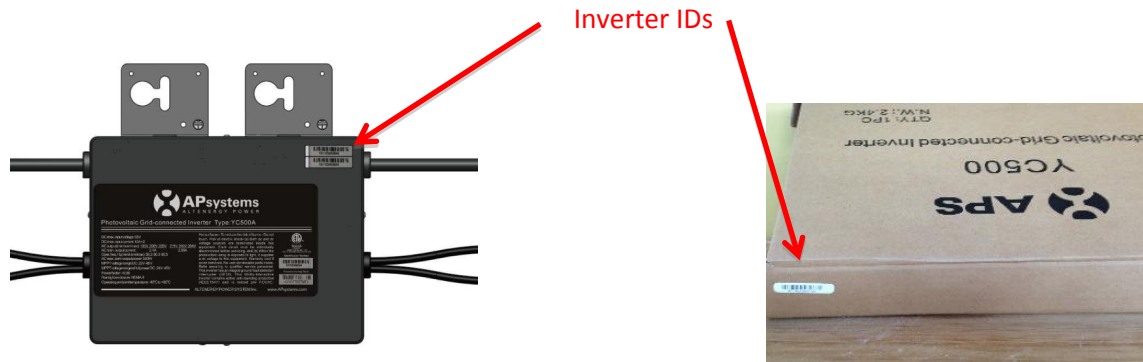
**Note:** This list can be edited if necessary by selecting either “Edit” or “Replace” for each inverter and its associated channel.



Go to Step 4: Configuring Group View to complete the Registration Process.

## Method 2: Manually Entering IDs into the EMA

Each inverter has a unique UID which is located on the front of the inverter, as well as on the back flap of the inverter's shipping box.



- 1) Select the "Manual ADD" button.
- 2) Select the ECU from the "ECU ID" pulldown.
- 3) Select the Inverter type from the "Inverter Type" pulldown.
- 4) Select the Channel(s) for the inverter type.

Continued ...

**Note:** You'll be presented with a number of inverter types. Select the type you are installing, remembering that the YC500 has two (2) channels (A & B), and the YC1000 has up to four (4) channels (1, 2, 3 & 4).

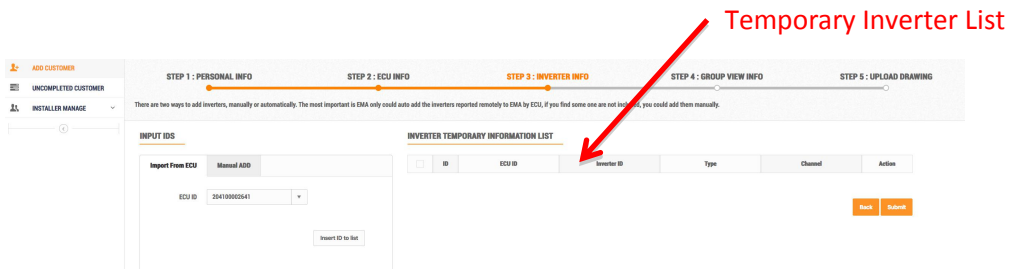
5) Enter the 12-digit inverter ID numbers.

**Tip:** You can scan the inverter UIDs into a spreadsheet and then copy and paste the UIDs from the spreadsheet into the EMA, which makes the entry process easier to manage. The EMA does however have a limitation of 20 UIDs per paste.

**Note:** Check **Resume an Incomplete Registration** – Page 21 if you get a system message that indicates that the UID already exists while making these entries.

6) Press the *“Insert ID to List”* button.

The EMA places the inverter onto the Temporary Inverter List.



7) Verify that the temporary list of inverter IDs is complete and correct.

8) Press the *“Submit”* button.

*Continued ...*

The “permanent” inverter list is displayed.

**Note:** This list can be edited if necessary by selecting either “*Edit*” or “*Replace*” for each inverter and its associated channel.

The screenshot shows the 'INVERTER LIST' interface. At the top, there is a header with 'ECU ID' (203000005643) and an 'Inverter ID' search field. Below this is a table with columns: ID, Inverter ID, Type, Channel, and Action. The table contains four rows of data. The 'Action' column for each row has 'Edit' and 'Replace' buttons. Above the table, there are buttons for 'Link', 'Add', 'Delete', and 'Export'. Below the table, there is a pagination bar showing 'Displaying 1 to 4 of 4 items.' and 'Total: 1, Go to 1, Go'. At the bottom right, there are three buttons: 'Back', 'Next', and 'Complete Registration'. Red arrows point from text labels to these buttons: 'Edit Replace' points to the 'Edit' and 'Replace' buttons in the first row; 'Link Button' points to the 'Link' button; 'Next Button' points to the 'Next' button; and 'Complete Registration Button' points to the 'Complete Registration' button.

ID	Inverter ID	Type	Channel	Action
1	404000056432	YC500	A	Edit Replace
2	404000056432	YC500	B	Edit Replace
3	404000056453	YC500	A	Edit Replace
4	404000056453	YC500	B	Edit Replace

9) Press the “*Link*” button to remotely link the inverters to the ECU.

At this point in the registration process you can decide to “complete the registration”, capturing the customer’s personal information, ECU configuration, and Inverter IDs, coming back to mapping the inverters at a later time(see page 16 -- Step 4: Configuring Group View) – or – continue to move forward with the inverter mapping before completing the registration.

**Note:** If you choose to “complete the registration” at this time, you’ll still need to return to the customer’s account to finish the job by mapping the inverters. Once you have “completed the registration”, the customer account will move from “INCOMPLETED” to the standard customer list and your customer will be able to view their account online.

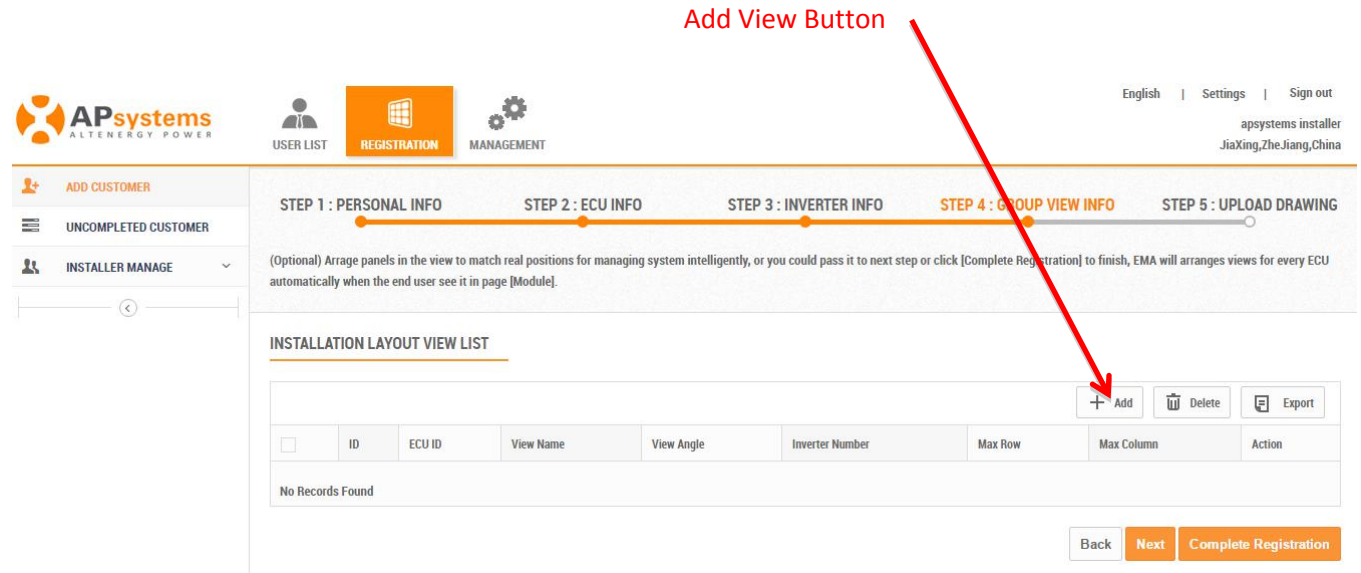
To “complete the registration” process, press the “*Complete Registration*” button.

To continue with the mapping process before completing the registration, press the “*Next*” button.

#### Step 4: Configuring Group View

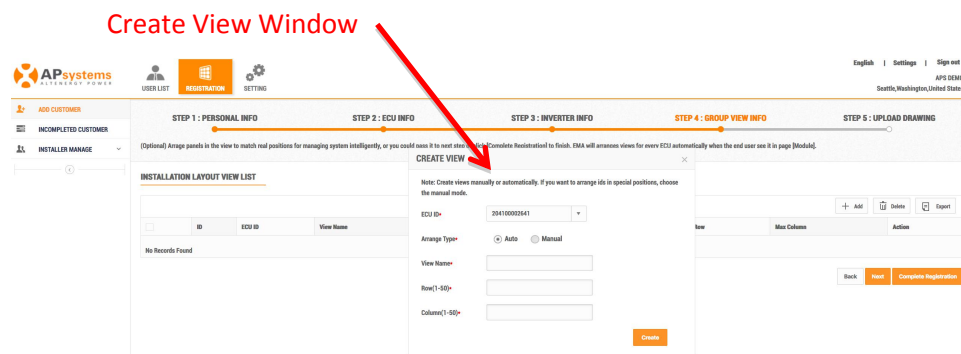
This step assumes you have pressed the “Next” button after entering the inverter IDs.

The Group View page is displayed.



15. Press the “Add” view button.

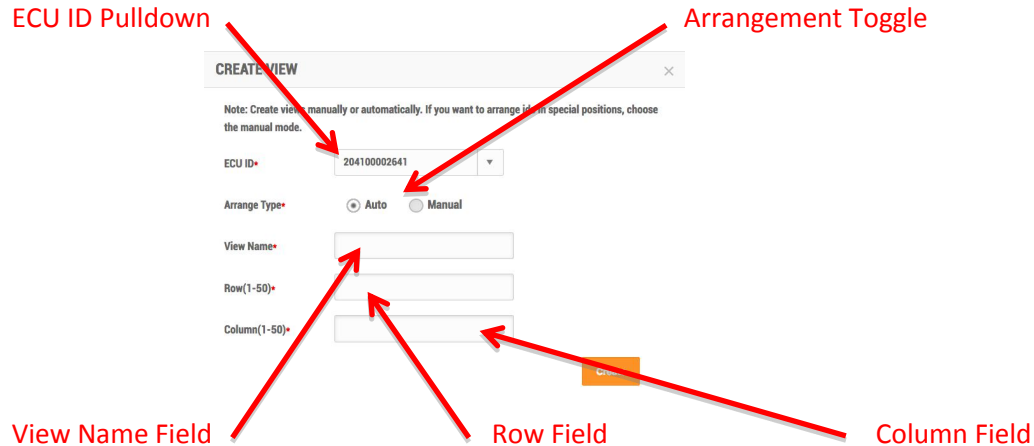
The Create View window is displayed.



There are two (2) methods for creating a view (inverter layout) in the EMA:

- 1) Having the system do it for you automatically.
- 2) Laying out the panels manually.





### Method 1: Creating a view automatically.

Automatic view creation is best for relatively simple layouts.

- 1) Select the ECU from the “*ECU ID*” pulldown.
- 2) Select the “*Auto*” arrangement toggle.
- 3) Enter a view name in the View Name field.
- 4) Enter a number (1-50) in the Row field (rows are horizontal).
- 5) Enter a number (1-50) in the Column field (columns are vertical).
- 6) Press the “*Create*” button.

The EMA arranges the panels (and their associated inverters) are laid out from top-left to bottom right based on their entry into the Inverter List.

### Method 2: Creating a view manually.

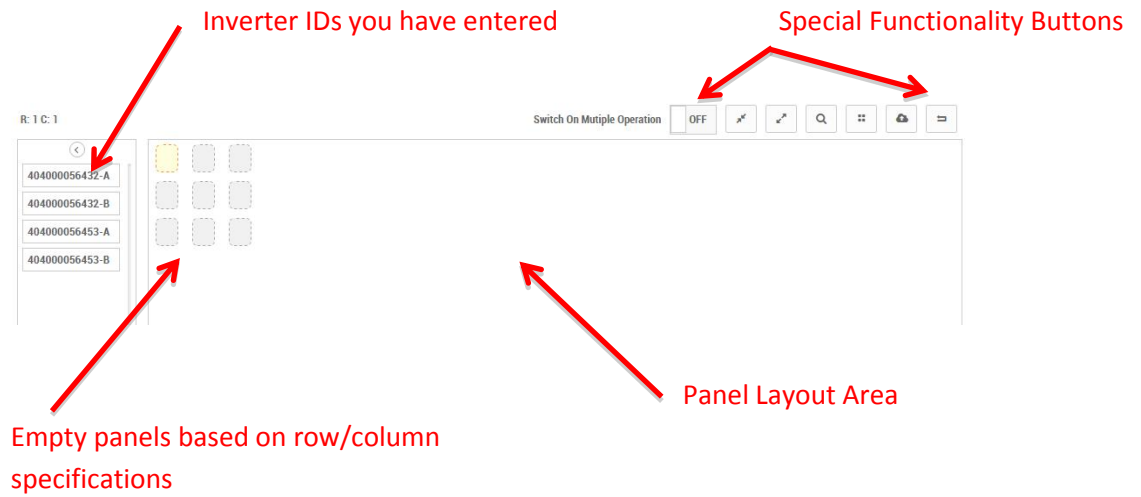
Manual view creation is best for more complex installations where you’ll want to have complete control of where the panels (and their associated inverters) are laid out.

- 1) Select the ECU from the “*ECU ID*” pulldown.
- 2) Select the “*Manual*” arrangement toggle.
- 3) Enter a view name in the View Name field.
- 4) Enter a number (1-50) in the Row field (rows are horizontal).
- 5) Enter a number (1-50) in the Column field (columns are vertical).
- 6) Press the “*Create*” button.

The EMA arranges the panels, without the associated inverters, on a panel layout page based on the rows and columns you have specified.

*Continued ...*

The panel layout page is displayed.



**Note:** Right clicking on any individual panel exposes a list of possible shortcuts.



*Import ID* Import a specific inverter ID to the selected panel.

*Delete ID* Delete a specific inverter ID from the selected panel.

*Change Orientation* Change panel's orientation to vertical or horizontal.

Continued ...

*Change Module*

*Type* Change the module type for the specified panel.

*Delete Module*

Delete both the inverter ID and panel position.

*Add Row Above*

Adds a row above the current panel location.

*Add Column Above*

Adds a column next to the current panel location.

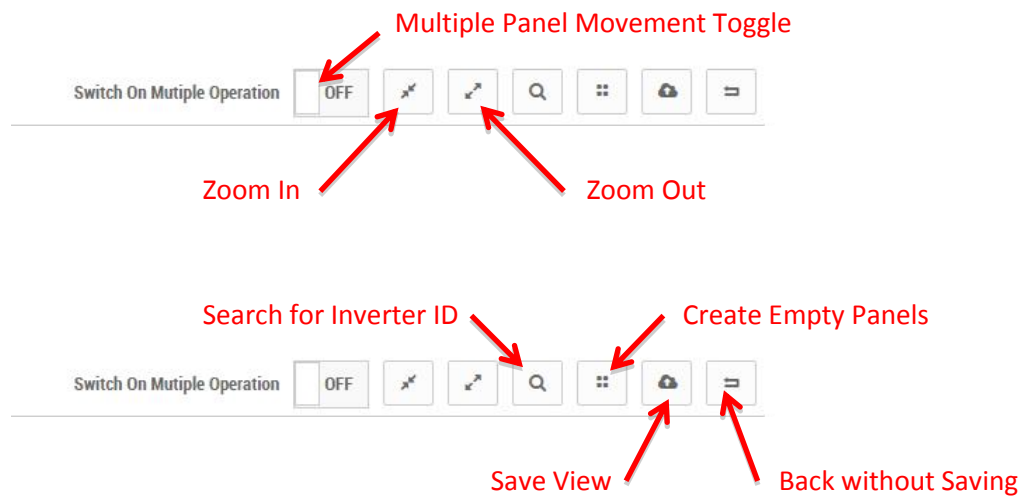
*Delete Current Row*

Delete the row where the specified panel is located.

*Delete Current Column*

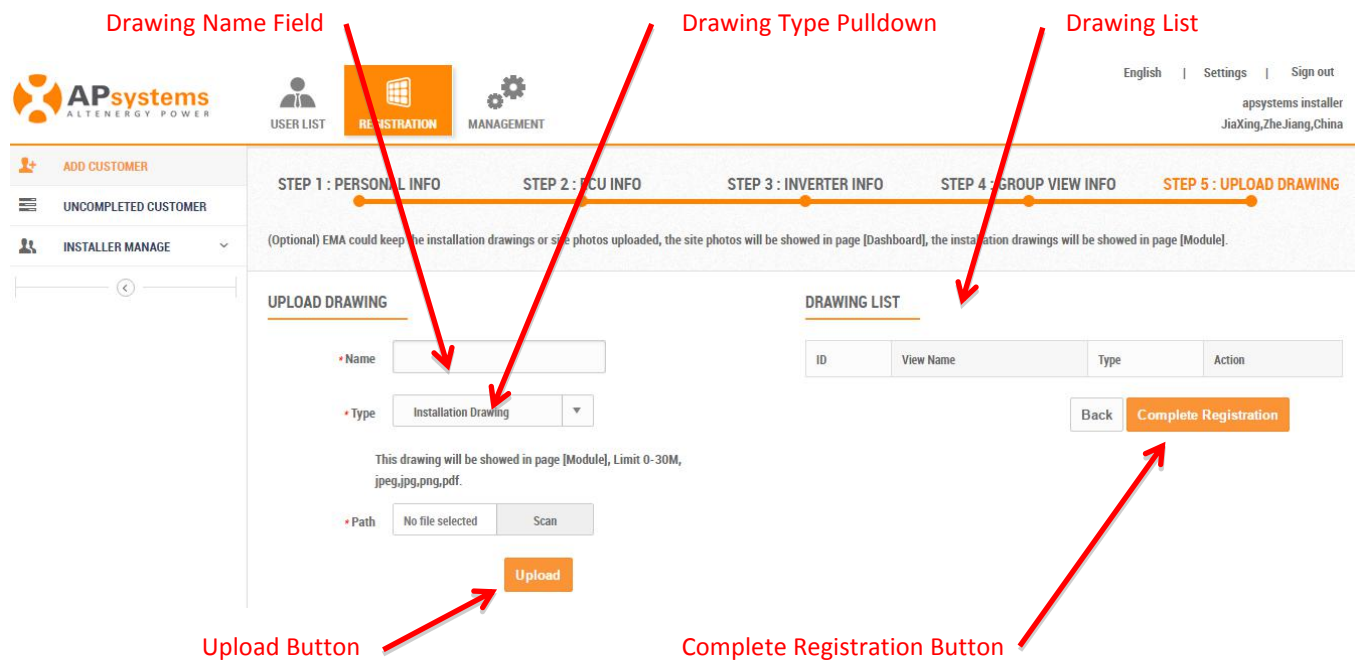
Delete the column where the specified panel is located.

Special Functionality Buttons



- 7) Drag and drop Inverter IDs onto specified inverters.
- 8) Drag the panels on the layout area as they are arranged on the site.
- 9) Press the "Save" button.

The Upload Drawings page is displayed.



### Step 5: Uploading the installation drawings and/or photo

The installation drawings are displayed on the customer’s Module Performance page, and the site photo is displayed on the customer’s Dashboard.

Only the following drawing and photo formats are supported:

- jpeg – jpg
- png
- pdf

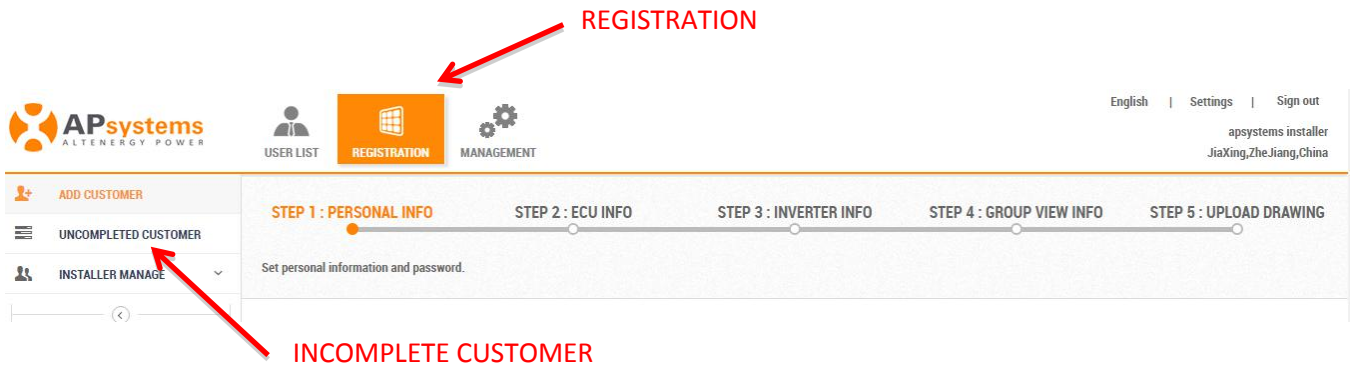
16. Enter the drawing’s name in the “*Drawing Name*” field.
17. Select drawing type in the “*Drawing Type*” pulldown.
18. Locate the file you want to upload (Scan button functions just like a Browse button)..
19. Press the “*Upload*” button.

The drawings you want uploaded to the EMA are reflected in the Drawing List.

20. Press the “*Complete Registration*” button.

## Resume an Incomplete Registration

Once you have selected either the “Next” or “Submit” buttons in any of the major registration steps (1-5), your customer information is saved in the system and you can step away from the process and resume by selecting “Incomplete Customer” under Registration.



1. Log onto the EMA.

Your specific Customer List page is displayed.

2. Select the “REGISTRATION” icon.
3. Select the “INCOMPLETE CUSTOMER” in the left side bar.

A list of your incomplete customer registrations is displayed.

The screenshot shows the APsystems installer interface. At the top, there is a navigation bar with the APsystems logo and three main menu items: USER LIST, REGISTRATION, and MANAGEMENT. The REGISTRATION menu item is highlighted. Below the navigation bar, there is a sidebar with three options: ADD CUSTOMER, UNCOMPLETED CUSTOMER, and INSTALLER MANAGE. The UNCOMPLETED CUSTOMER option is highlighted. The main content area shows a table titled 'CUSTOMER LIST'. The table has columns: ID, Customer Account, Customer Name, Country, State, City, System Size(KW), Register Date, and Action. The table contains four rows of data.

ID	Customer Account	Customer Name	Country	State	City	System Size(KW)	Register Date	Action
1	testuser7872	testuser7872	China	testuser7872	testuser7872		2016-11-25	Delete
2	12	12	China	1	1		2016-11-25	Delete
3	sissi011	sissi	China	Zhejiang	Jiaxing		2016-11-24	Delete
4	zzyfext2016111701	zzz	United States	afsd	faf		2016-11-17	Delete

Displaying 1 to 4 of 4 items. Total: 1, Go to 1 Go

4. Select the customer account you want to complete.
5. Continue where you left off following the steps in the previous section.

## Edit an Existing Customer's Password

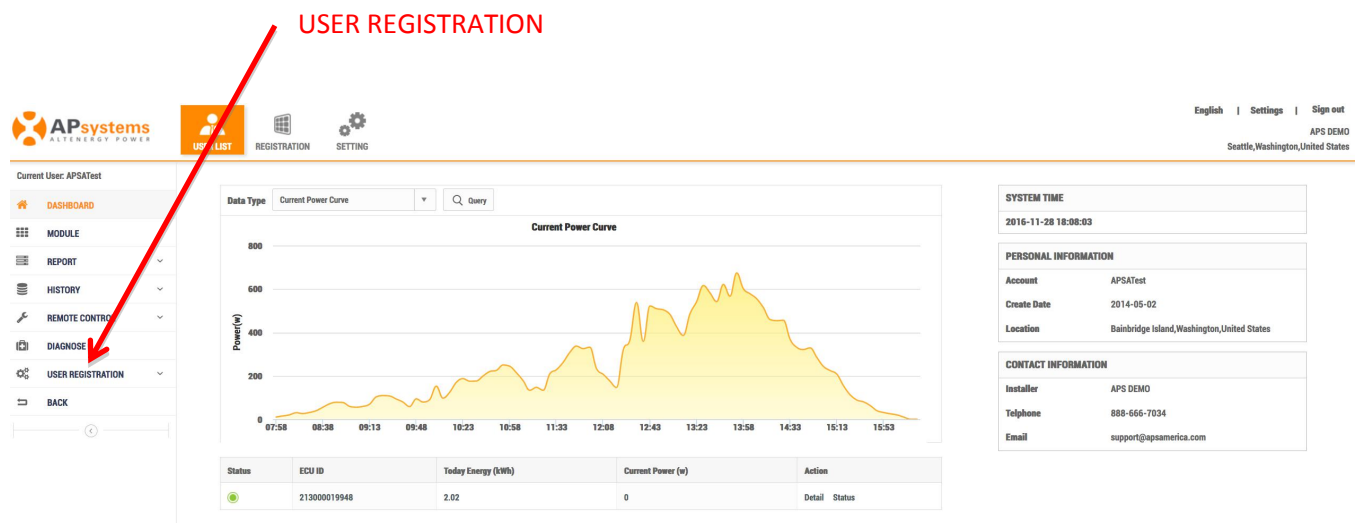
**Note:** Your customer can change their own password by going into the Setting section on their account page.

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

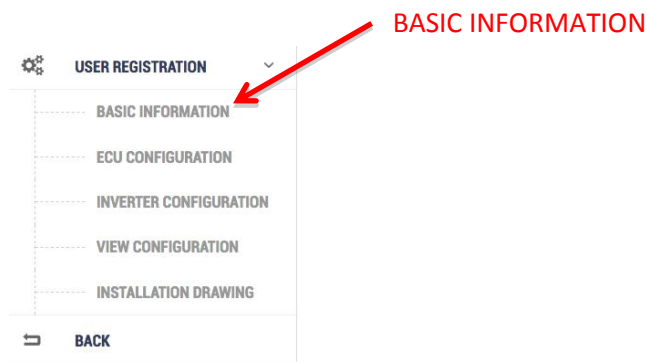
2. Select the customer that wants to have their password changed.

The customer's Dashboard is displayed.



3. Select "USER REGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.



*Continued ...*

4. Select **"BASIC INFORMATION"** under **"USER REGISTRATION"**.

The user's basic information page is displayed.

Edit Password Fields

The screenshot shows the APsystems Customer Information Configuration page. The left sidebar contains navigation options: DASHBOARD, MODULE, REPORT, HISTORY, REMOTE CONTROL, and DIAGNOSE. Under DIAGNOSE, 'USER REGISTRATION' is selected, and 'BASIC INFORMATION' is highlighted. The main content area is titled 'Customer Information Configuration' and 'Set customer information or password.' It features two tabs: 'CUSTOMER INFORMATION' and 'EDIT PASSWORD'. The 'EDIT PASSWORD' tab is active, showing two input fields for 'Password' and 'Confirm Password', and a 'Submit' button. A red arrow points from the text 'Edit Password Fields' to the 'Password' field.

5. Enter the new password in the **"Password"** field.
6. Confirm the new password.
7. Press the **"Submit"** button.

# Modify an Existing User Account

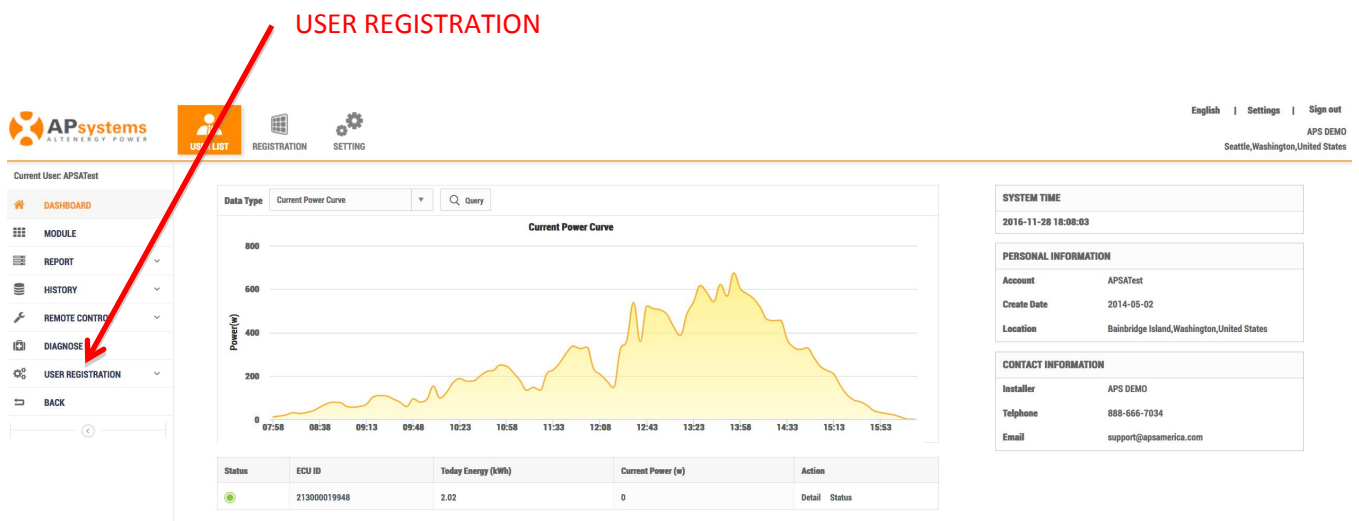
## Adding an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

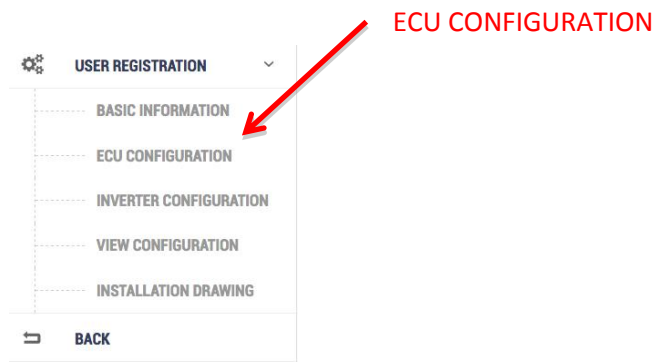
2. Select the customer account you want to modify.

The customer's DASHBOARD is displayed.



3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

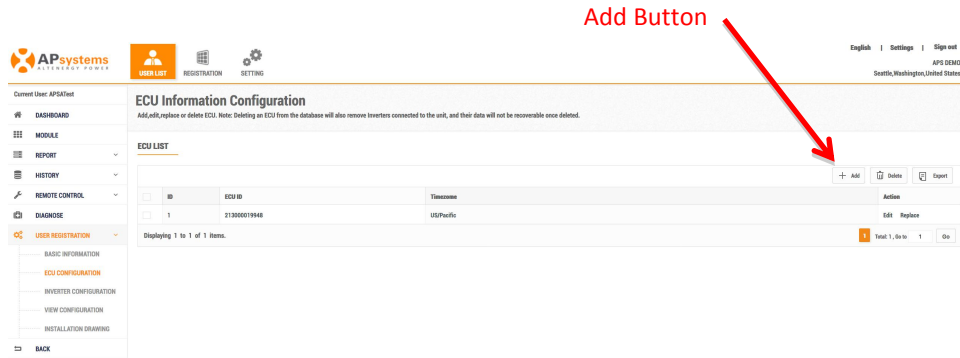


Continued ...



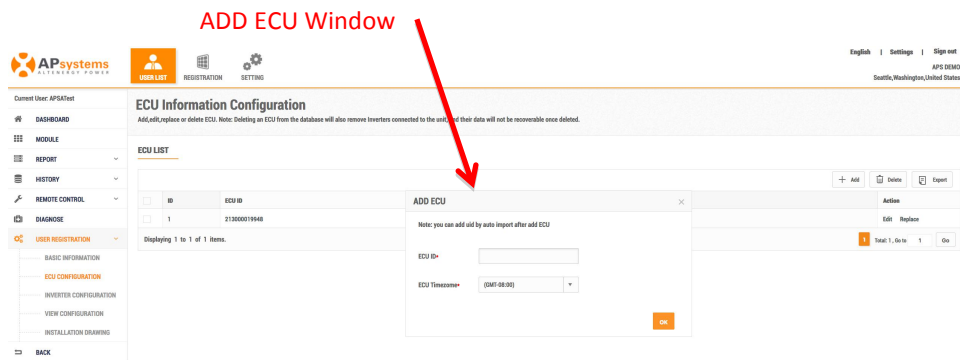
4. Select “ECU CONFIGURATION” under “USER REGISTRTRATION”.

The ECU information page is displayed.



5. Press the “Add” button.

The ADD ECU window is displayed.



6. Enter the 12-digit ECU UID number(s) into the ECU ID field.
7. Select the time zone where the ECU is to be installed.
8. Press the “OK” button.

## Editing an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

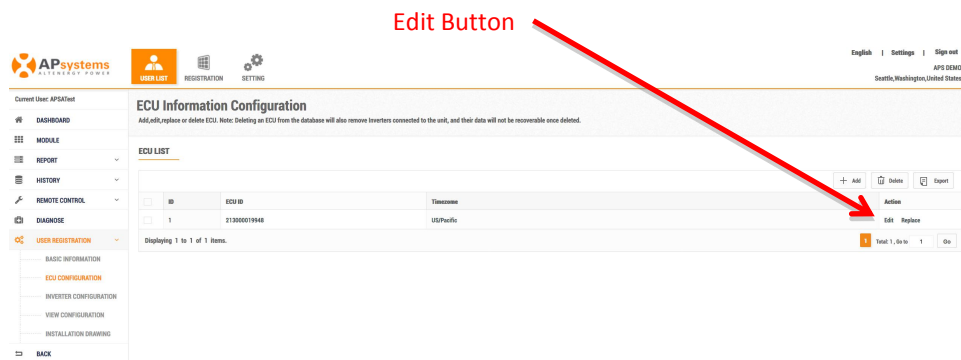
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select "ECU CONFIGURATION" under "USER REGISTRRTATION".

The ECU information page is displayed.

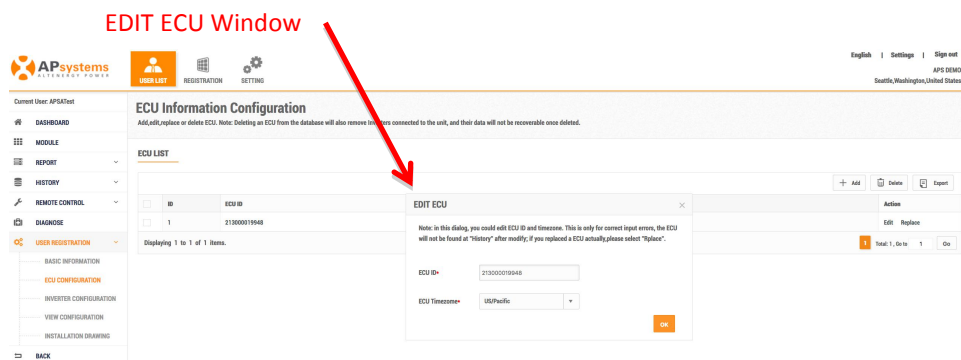


The screenshot shows the 'ECU Information Configuration' page. At the top, there's a navigation bar with 'APsystems' logo and 'USER LIST', 'REGISTRATION', and 'SETTING' tabs. Below that, a sidebar on the left lists various menu items under 'USER REGISTRATION'. The main content area has a heading 'ECU Information Configuration' and a sub-heading 'ECU LIST'. A table below the heading contains one row with columns for 'ID', 'ECU ID', and 'Timezone'. The 'Action' column for this row contains 'Edit', 'Replace', and 'Delete' buttons. A red arrow labeled 'Edit Button' points to the 'Edit' button.

ID	ECU ID	Timezone	Action
1	213000019448	USPacific	Edit Replace Delete

5. Press the "Edit" button.

The EDIT ECU page is displayed.



The screenshot shows the 'EDIT ECU' window overlaid on the 'ECU Information Configuration' page. The window has a title bar 'EDIT ECU' and a close button. Below the title bar, there's a note: 'Note: In this dialog, you could edit ECU ID and timezone. This is only for correct input errors, the ECU will not be found at "History" after modify; if you replaced a ECU actually please select "Replace".' Below the note, there are two input fields: 'ECU ID' with the value '213000019448' and 'ECU Timezone' with the value 'USPacific'. There is an 'OK' button at the bottom right of the window.

Continued ...

6. Edit the ECU UID and/or the time zone.
7. Press the “OK” button.

**Note:** Editing the ECU does not update the system “History”, so no record of the changes are made. Go to Replace an ECU (see below) if you have replaced an ECU and want it recorded in the system “History”.

### Replacing an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

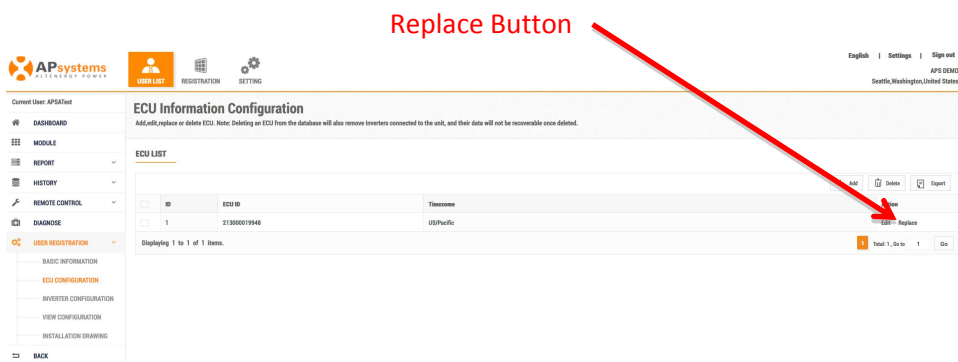
The customer’s DASHBOARD is displayed.

3. Select “USERREGISTRATION” in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select “ECU CONFIGURATION” under “USER REGISTRTRATION”.

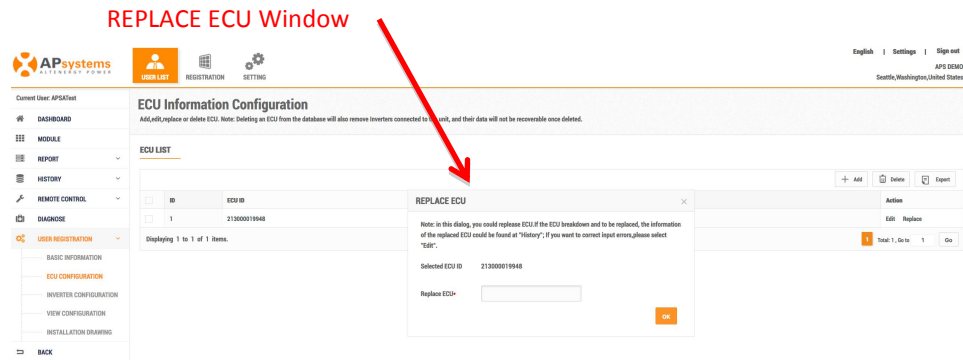
The ECU information page is displayed.



5. Press the “Replace” button.

Continued ...

The REPLACE ECU window is displayed.



6. Select the ECU you want to replace.
7. Enter the new 12-digit ECU UID number into the "Replace ECU" field.
8. Press the "OK" button.

### Deleting an ECU

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

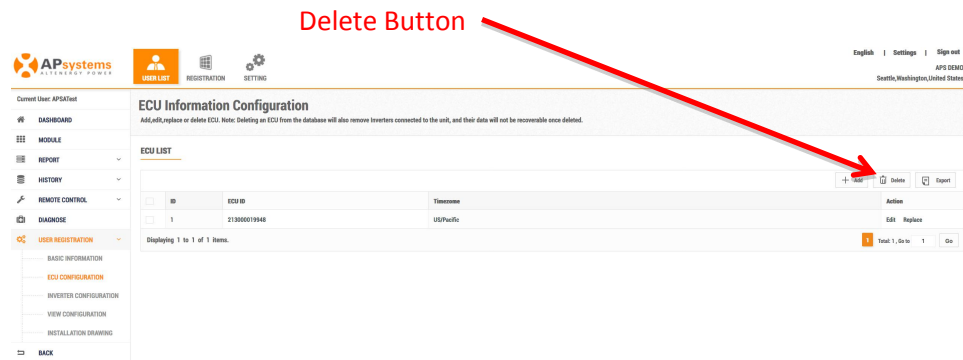
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select "ECU CONFIGURATION" under "USER REGISTRATION".

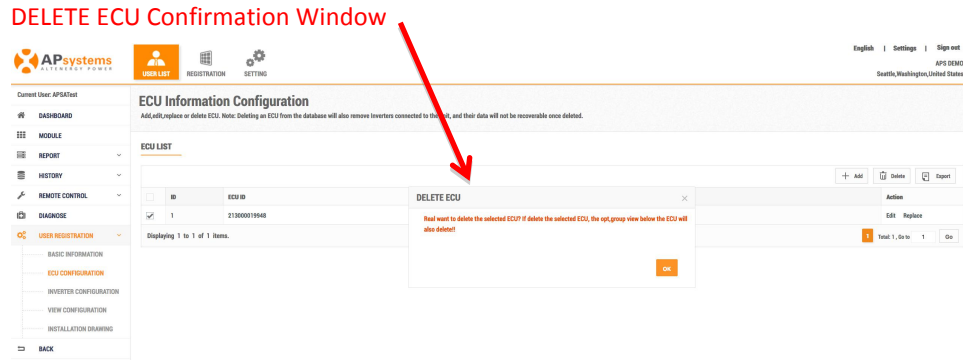
The ECU information page is displayed.



Continued ...

5. Press the “Delete” button.

The DELETE ECU confirmation window is displayed.



6. Select the ECU you want to delete.
7. Press the “OK” button.

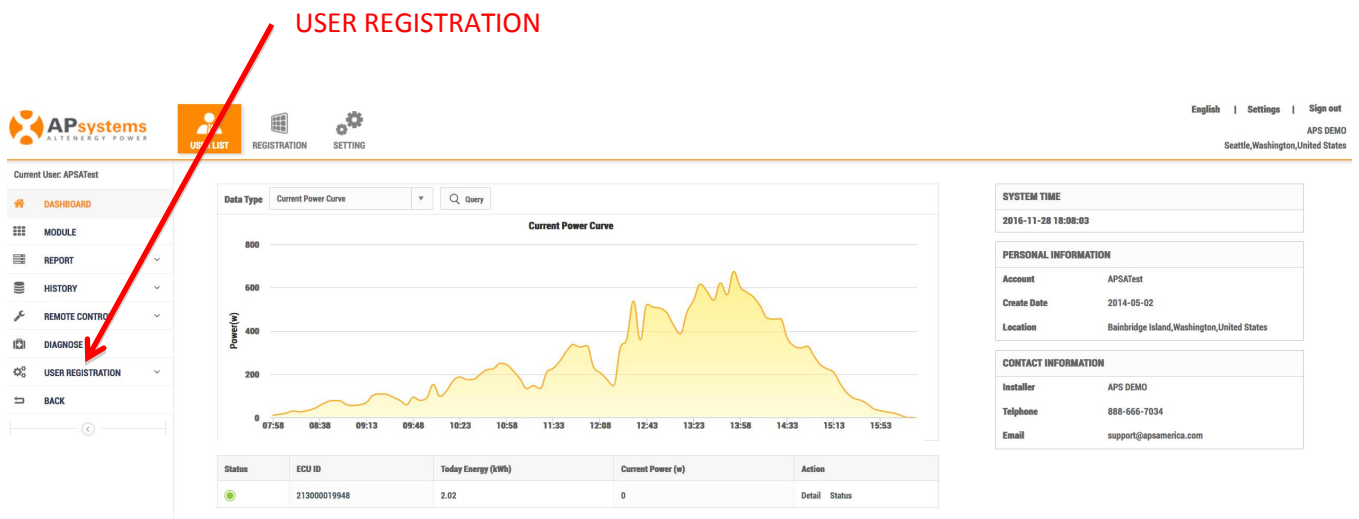
## Adding an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

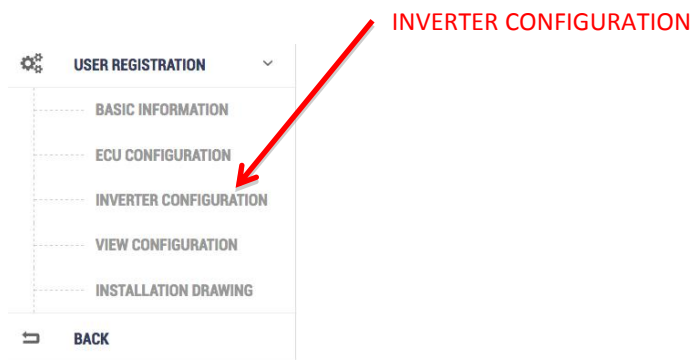
2. Select the customer account you want to modify.

The customer's DASHBOARD is displayed.



3. Select "USERREGISTRATION" in the left side bar.

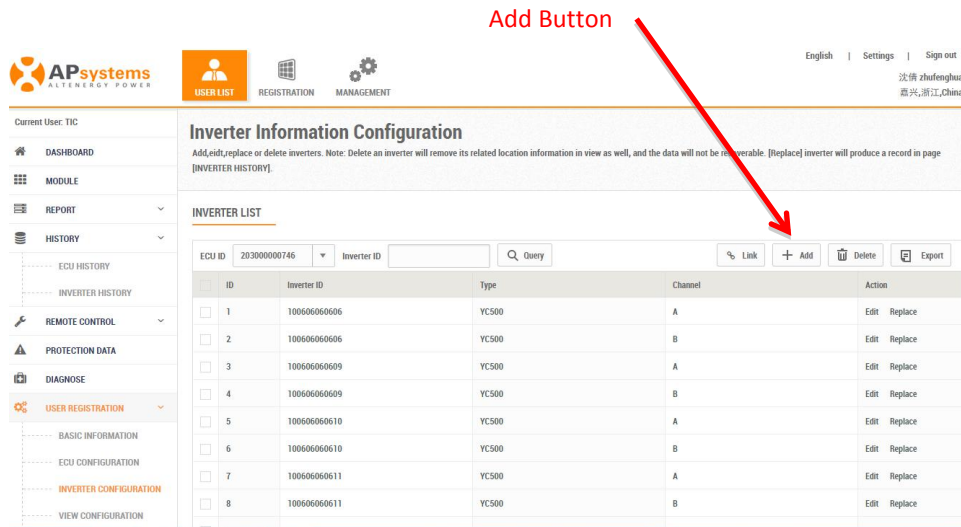
The USER REGISTRATION pulldown is displayed.



4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION". OPT700 Series User will display "OPT700 CONFIGURATION".

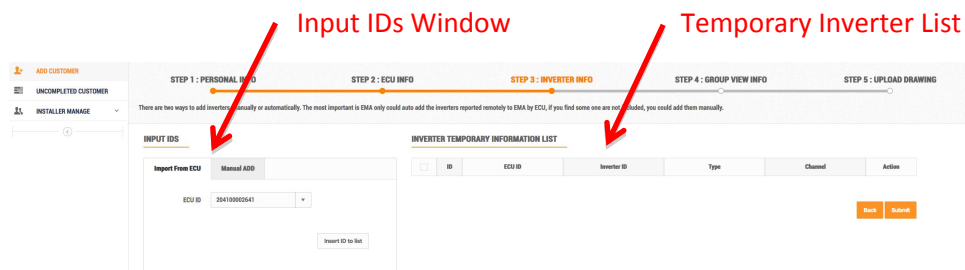
Continued ...

The Inverter Information page is displayed.



5. Press the “Add” button.

The Input Inverter IDs page is displayed.



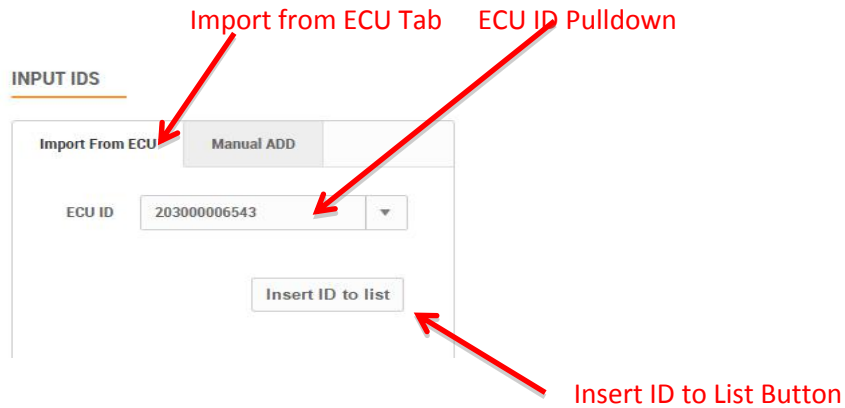
There are two (2) methods for adding inverters to the EMA:

- 1) Importing them from the ECU.
- 2) Manually entering them into the EMA.

### Method 1: Importing the IDs from the ECU

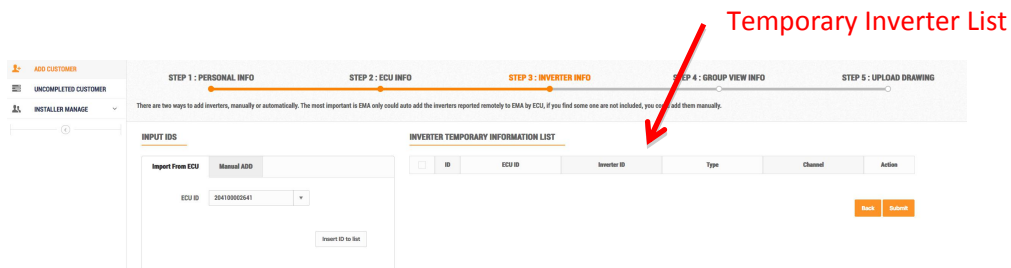
**Note:** When importing the inverter IDs from the ECU, make sure that you have entered all of the additional inverter IDs into the ECU, and that the ECU is correctly connected to the Internet so that the APsystems server can retrieve the IDs.

Continued ...



- 1) Select the “Import From ECU” tab.
- 2) Select the ECU from the “ECU ID” pulldown.
- 3) Press the “Insert ID to List” button.

The EMA begins importing all of the inverter IDs on the ECU and placing them onto the Temporary Inverter List.



- 4) Verify that the temporary list of inverter IDs is complete and correct.
- 5) Press the “Submit” button.

The “permanent” inverter list is displayed.

**Note:** This list can be edited if necessary by selecting either “Edit” or “Replace” for each inverter and its associated channel.

Continued ...



Edit Replace

INVERTER LIST

ID	Inverter ID	Type	Channel	Action
1	404000056432	YC500	A	Edit Replace
2	404000056432	YC500	B	Edit Replace
3	404000056453	YC500	A	Edit Replace
4	404000056453	YC500	B	Edit Replace

Displaying 1 to 4 of 4 items. Total: 1, Go to 1 Go

Back Next Complete Registration

## Method 2: Manually Entering IDs into the EMA

Each inverter has a unique UID which is located on the front of the inverter, as well as on the back flap of the inverter's shipping box.

Manual ADD Button

ECU ID Pulldown

Inverter Type Pulldown

INPUT IDS

Import From ECU Manual Add

ECU ID 213000019948

Type YC500

Channel A,B

Inverter ID

Insert ID to list

Inverter ID Field

Insert ID to List Button

Channel Pulldown

- 1) Select the "Manual ADD" button.
- 2) Select the ECU from the "ECU ID" pulldown.
- 3) Select the Inverter type from the "Inverter Type" pulldown.
- 4) Select the Channel(s) for the inverter type.

Continued ...

**Note:** You'll be presented with a number of inverter types. Select the type you are installing, remembering that the YC500 has two (2) channels (A & B), and the YC1000 has up to four (4) channels (1, 2, 3 & 4).

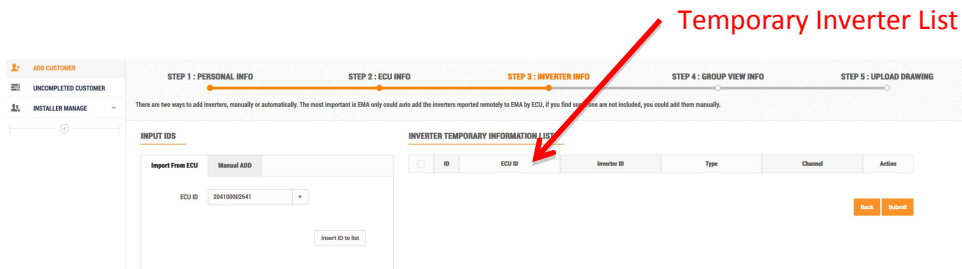
5) Enter the 12-digit inverter ID numbers.

**Tip:** You can scan the inverter UIDs into a spreadsheet and then copy and paste the UIDs from the spreadsheet into the EMA, which makes the entry process easier to manage. The EMA does however have a limitation of 20 UIDs per paste.

**Note:** Check **Resume an Incomplete Registration** – Page 21 if you get a system message that indicates that the UID already exists while making these entries.

6) Press the *“Insert ID to List”* button.

The EMA places the inverter onto the Temporary Inverter List.



7) Verify that the temporary list of inverter IDs is complete and correct.

8) Press the *“Submit”* button.

The *“permanent”* inverter list is displayed.

**Note:** This list can be edited if necessary by selecting either *“Edit”* or *“Replace”* for each inverter and its associated channel.

Continued ...

Edit Replace

**INVERTER LIST**

ECU ID: 203000006543 Inverter ID:  Query:  [Link](#) [Add](#) [Delete](#) [Export](#)

ID	Inverter ID	Type	Channel	Action
1	404000056432	YC500	A	Edit Replace
2	404000056432	YC500	B	Edit Replace
3	404000056453	YC500	A	Edit Replace
4	404000056453	YC500	B	Edit Replace

Displaying 1 to 4 of 4 items. Total: 1, Go to 1 Go

Back Next Complete Registration

Link Button  
Next Button  
Complete Registration Button

- 9) Press the "Link" button to remotely link the inverters to the ECU.
- 10) Press the "Next" button.

VIEW CONFIGURATION

**APsystems**

Inverter Information Configuration

INVERTERS

ID	Inverter ID	Type	Channel	Action
1	404000000001	YC500 2	1	Link Register
2	404000000002	YC500 2	2	Link Register
3	404000000003	YC500 2	3	Link Register
4	404000000004	YC500 2	4	Link Register
5	404000000005	YC500 2	1	Link Register
6	404000000006	YC500 2	2	Link Register
7	404000000007	YC500 2	3	Link Register
8	404000000008	YC500 2	4	Link Register

Displaying 1 to 8 of 8 items.

- 11) Select "VIEW CONFIGURATION" under "USER REGISTRATION".

The View Configuration page is displayed.

Edit

**APsystems**

View information Configuration

INSTALLATION LAYOUT VIEW LIST

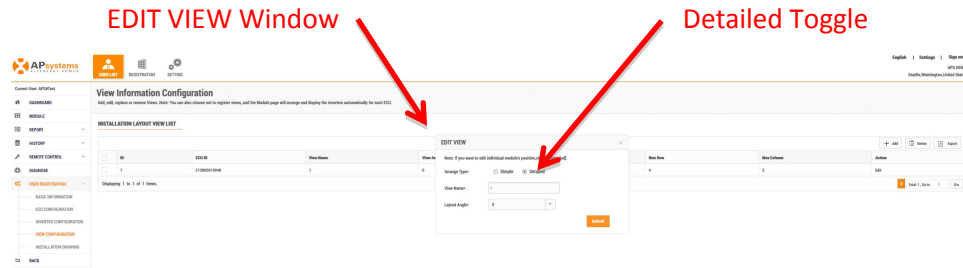
ID	ECU ID	View Name	View Angle	Inverter Position	View Size	View Color	Action
1	203000000000						Link

Displaying 1 to 1 of 1 items.

Continued ...

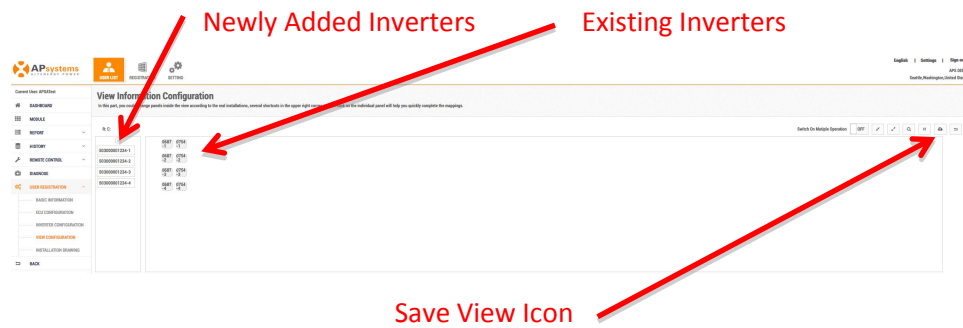
6. Select *“Edit”*.

The EDIT VIEW Window is displayed.



7. Select the *“Detailed”* toggle.
8. Press the *“Submit”* button.

The panel layout page is displayed.



9. Drag and drop the new inverters into position on the layout map.
10. Press the *“Save View”* icon.

## Editing an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

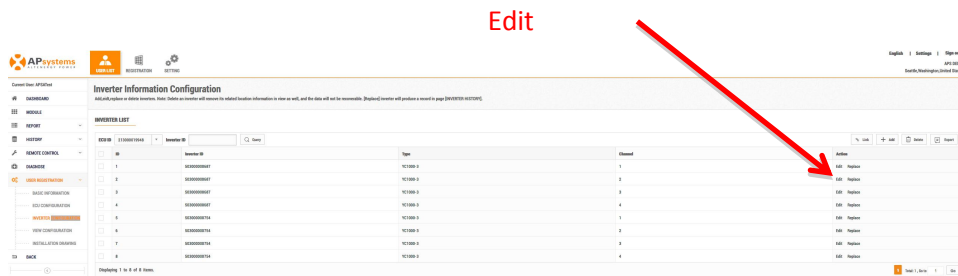
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

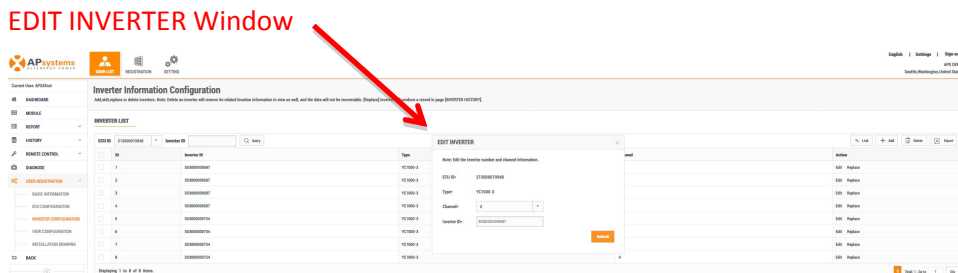
4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

The Inverter Information page is displayed.



5. Select "Edit" for the inverter you want to edit.

The EDIT INVERTER window is displayed.



Continued ...

6. Edit the inverter information.
7. Press the "Submit" button.

### Replacing an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

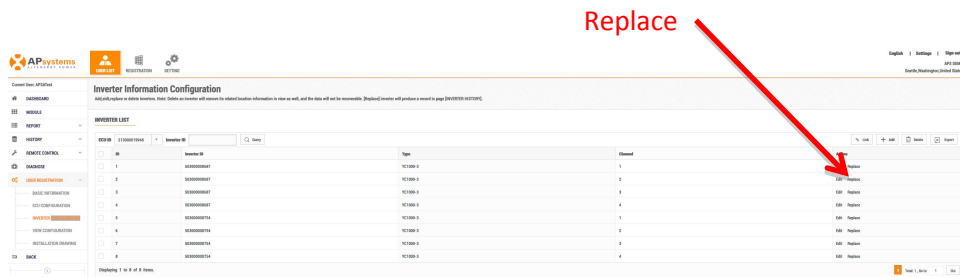
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

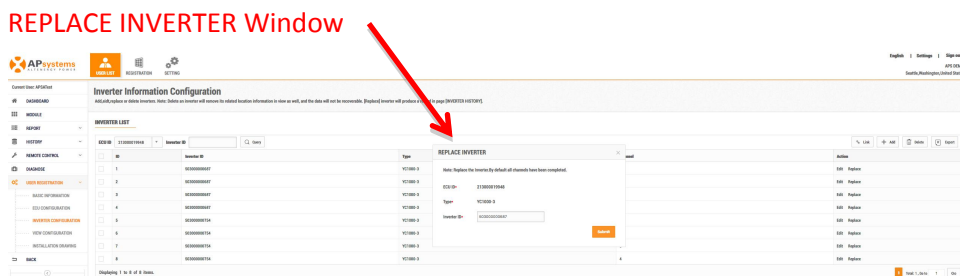
4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

The Inverter Information page is displayed.



5. Select "Replace" for the inverter you want to replace.

The REPLACE INVERTER window is displayed.



Continued ...

6. Enter the new/replacement inverter's ID in the Inverter ID field.
7. Press the "Submit" button.

### Deleting an Inverter

1. Log onto the EMA website.

Your specific Customer List page is displayed.

2. Select the customer account you want to modify.

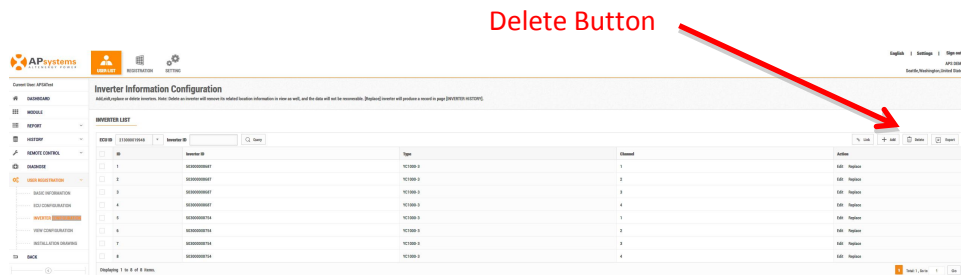
The customer's DASHBOARD is displayed.

3. Select "USERREGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.

4. Select "INVERTER CONFIGURATION" under "USER REGISTRATION".

The Inverter Information page is displayed.



5. Select the inverter you want to delete.
6. Press the "Delete" button.

A confirmation message is displayed.

7. Press the "Submit" button.

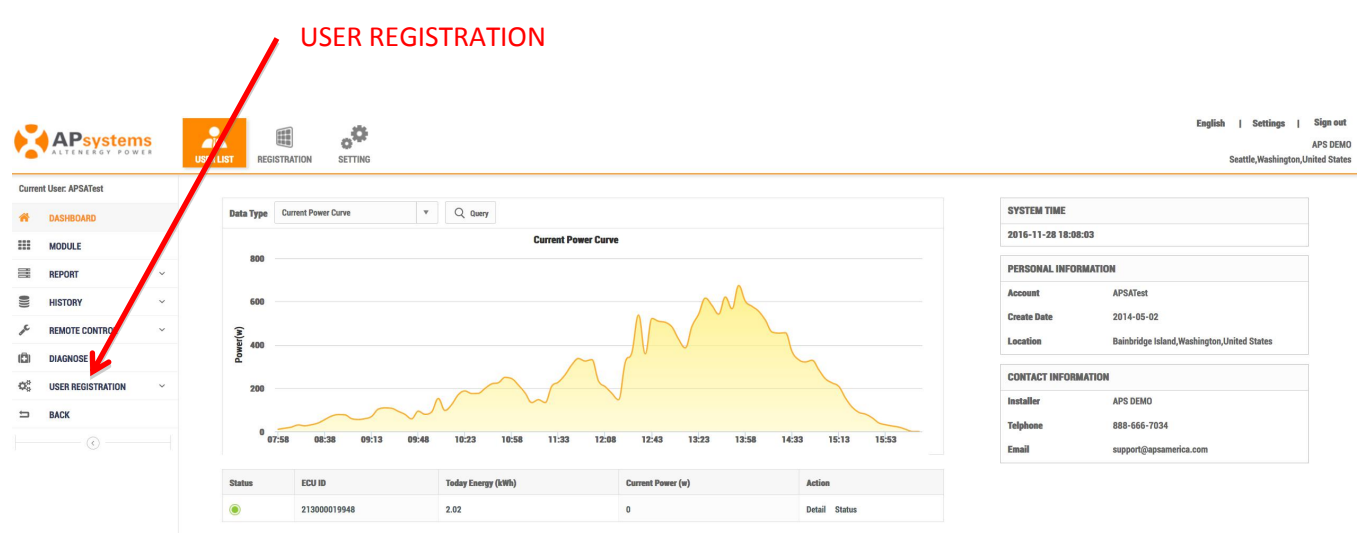
## Editing Basic Customer Information

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

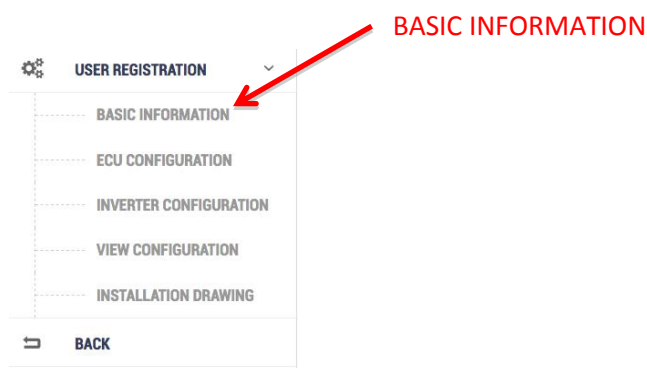
2. Select the customer that wants to have their password changed.

The customer's Dashboard is displayed.



3. Select "USER REGISTRATION" in the left side bar.

The USER REGISTRATION pulldown is displayed.



*Continued ...*



4. Select “BASIC INFORMATION” under “USER REGISTRATION”.

The user’s basic information page is displayed.

The screenshot shows the APsystems web interface. The top navigation bar includes the APsystems logo, a user menu, and links for USER LIST, REGISTRATION, and SETTING. The current user is identified as APStest. The main content area is titled "Customer Information Configuration" and contains a form for editing user information. The form is divided into two sections: "CUSTOMER INFORMATION" and "EDIT PASSWORD". The "CUSTOMER INFORMATION" section includes fields for Username (APStest), Email (iscop@spamerica.com), First Name (Barney), Last Name (Ferguson), Phone (206555291), Installer (AP10360), Country (United States), State/Province (Washington), and City (Bainbridge Island). The "EDIT PASSWORD" section includes fields for Password and Confirm Password, with a Submit button below them. A left sidebar contains a navigation menu with options like DASHBOARD, MODULE, REPORT, HISTORY, REMOTE CONTROL, DIAGNOSE, and USER REGISTRATION. The USER REGISTRATION menu is expanded, showing sub-options for BASIC INFORMATION, ECU CONFIGURATION, INVERTER CONFIGURATION, VIEW CONFIGURATION, and INSTALLATION DRAWING. The BASIC INFORMATION option is selected.

5. Edit the information you want changed.
6. Press the “Submit” button.

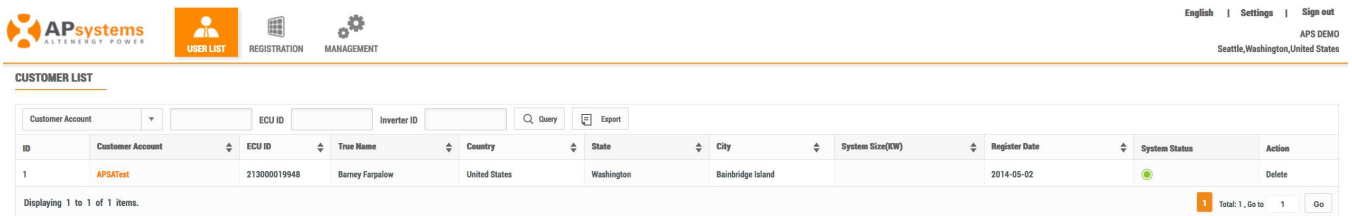
# Monitoring and Analysis

## Reviewing the Customer's Dashboard

**Note:** There are five (5) major steps involved in adding a new installation (registering) in the EMA. All the following introductions take the inverter user as an example, it also applies to the OTP700 Series Users.

1. Log onto the APsystemsEMA website.

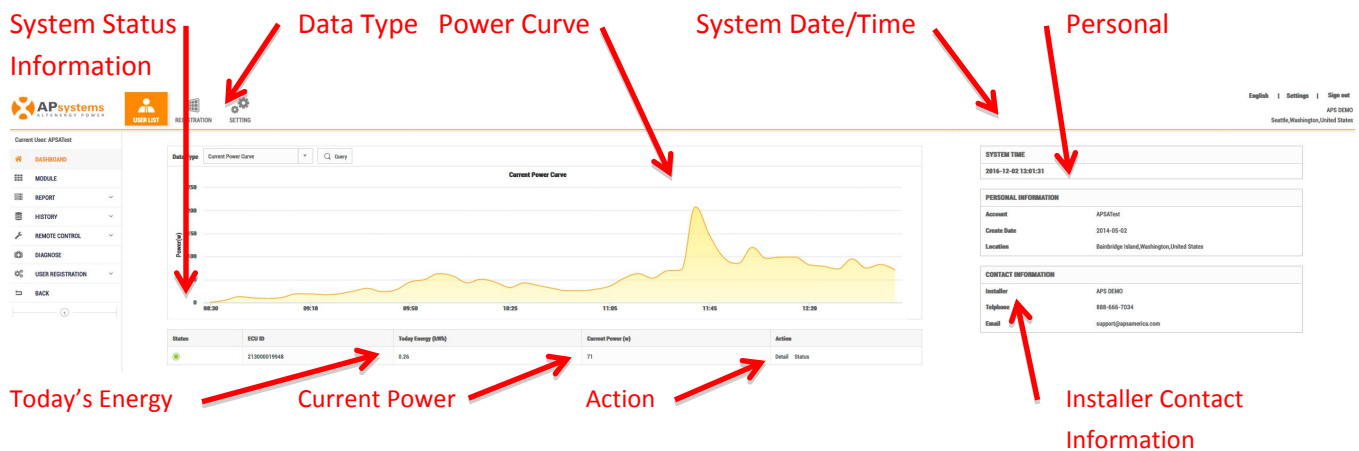
Your specific Customer List page is displayed.



2. Select the customer you want to review from the customer list.

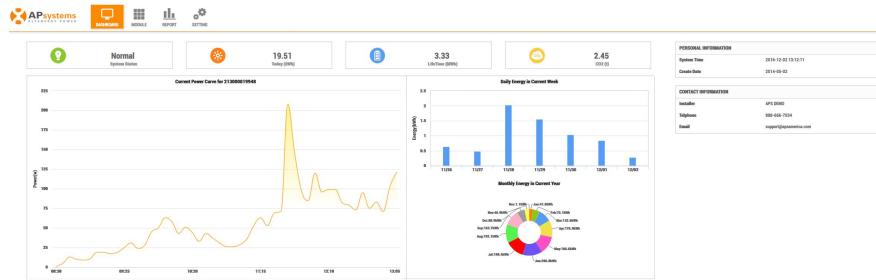
The installer's view of the customer's Dashboard is displayed.

**Note:** While you are viewing the customer's system data, it is presented differently than the System Owner's view.





Continued ...


## Customer View for Comparison



### System Status

 Working normally.

 No Data – System not reporting in as expected. System requires attention.

 System configured without Internet connection.

### Data Type

Data reporting period; Power for the current day, daily power for the current month, monthly for the current year, and yearly for the lifetime of the system.

### Power Curve

Graphic representation of each of the data types.

### System Date/Time

The date and time at the array location.

### Personal Information

The customer's personal information.

### Today's Energy

The amount of energy produced for today's date – expressed in kWh.

### Current Power

The amount of energy being produced at this given time – expressed in watts.

### Action

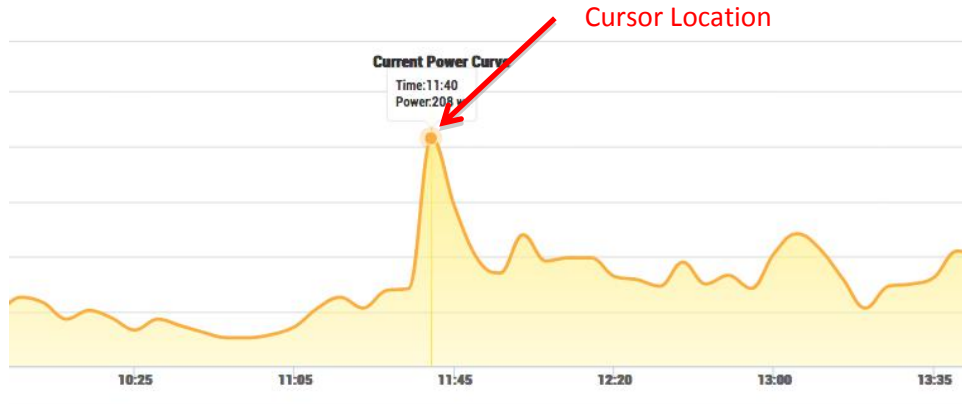
A short cut to ECU reporting (Detail) and reviewing the ECU status (Status).

### Installer Contact Information

The installer's contact information. This information shows up on your customer's view of their account.

*Continued ...*

**Note:** You can check power production at any given point along the “Power Curve” graphs by moving the cursor to the specific time or date in question.



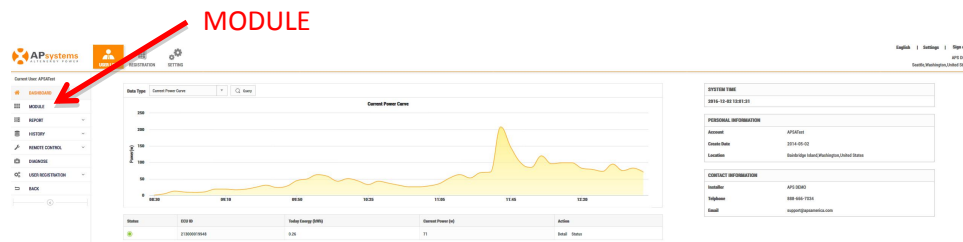
## Reviewing the Customer's Modules

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

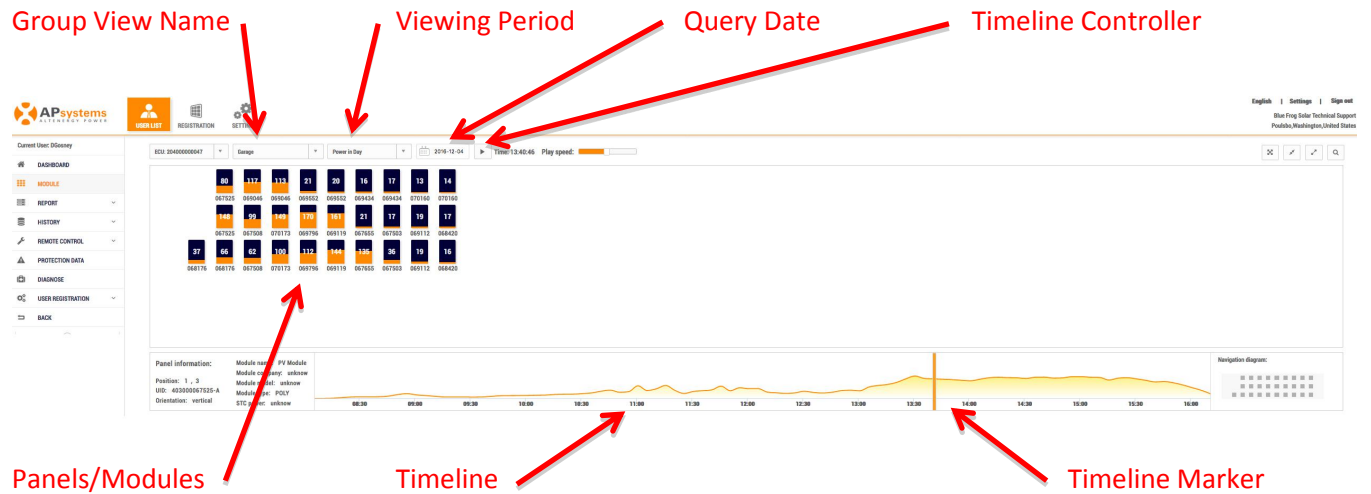
2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.



3. Select "MODULE" in the left side bar.

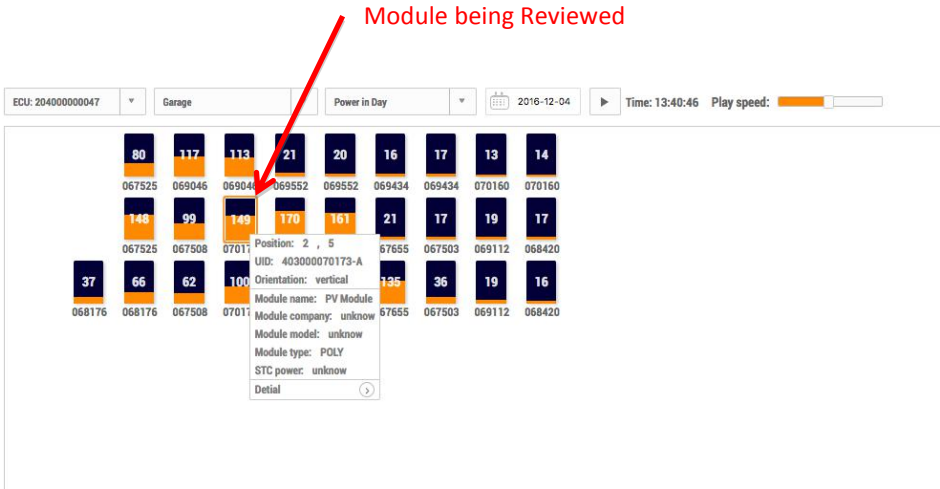
The Module Performance page is displayed.



Continued ...

- Group View Name** Pulldown of the group names associated with this account.
- Viewing Period** Viewing period selection; Power for the current day, and daily energy over the last 30 days.
- Query Date** Select date you want to review.
- Timeline Controller** Advances the Timeline Marker on the timeline.
- Panels/Modules** A graphic representation of how the array is laid out. The number in the center of each module represents the power being generated by the module at the current time – expressed in watts/DC.
- System Performance the Timeline** Graphic representation of the power being generated by the entire system during current viewing period.
- Timeline Marker** Time indicator for timeline. Power is simultaneously displayed on the panels/modules. There are two ways to display power across time; One, select the time period and Press the “Timeline Controller”, and two dragging the timeline marker across the timeline to view a specific production time.

**Note:** Detailed information on each module can be reviewed by clicking on the module.



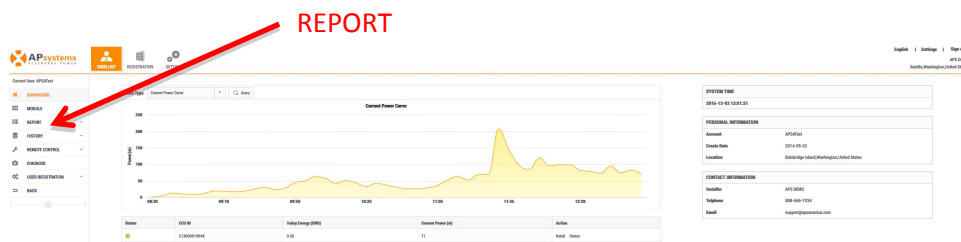
## Reviewing the Customer's Systems Reports

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

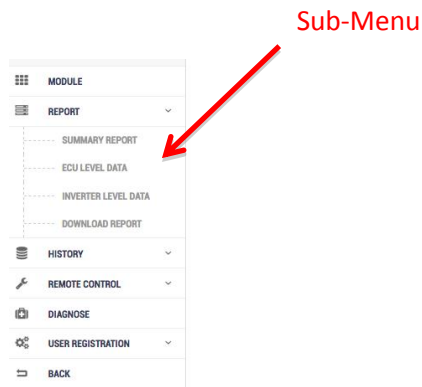
2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.



3. Select "REPORT" in the left side bar.

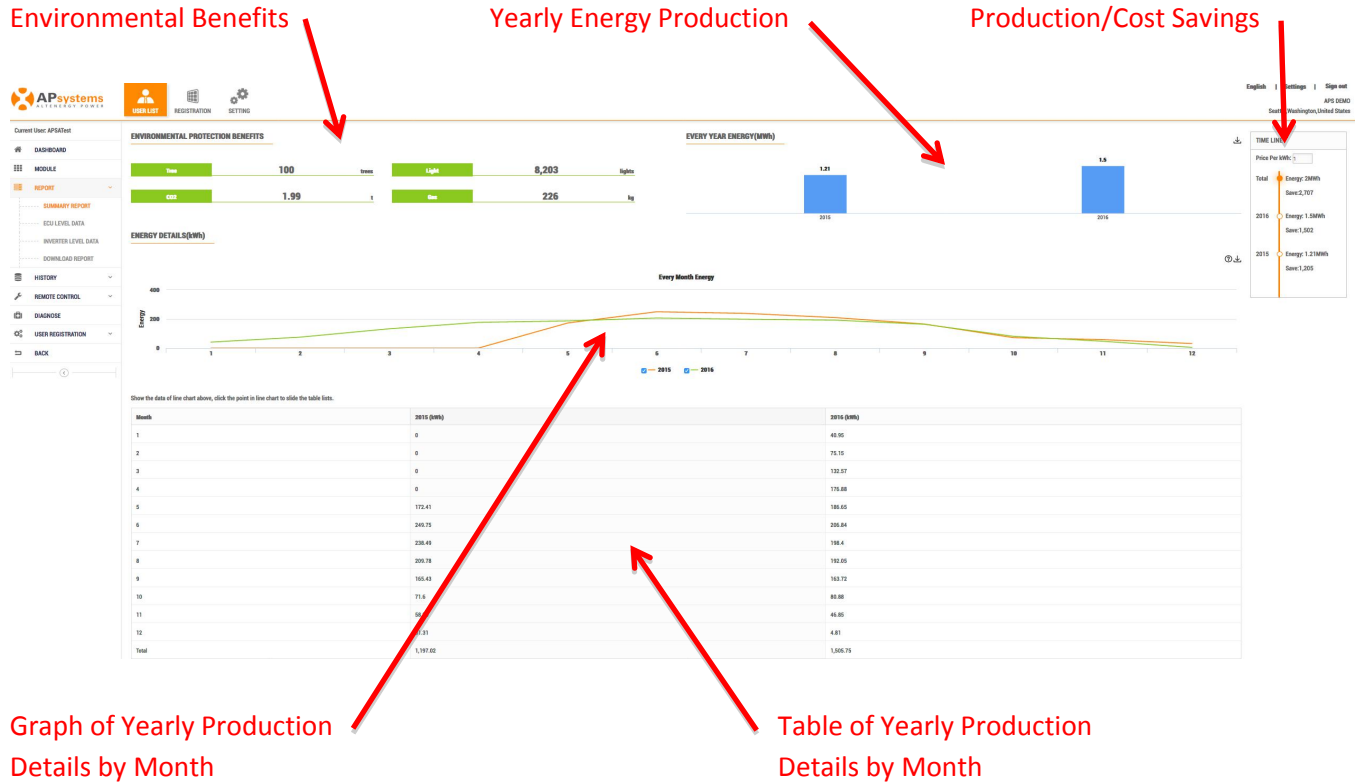
The sub-menu areas are displayed under "REPORT".



## Summary Reports

1) Select “SUMMARY REPORT” under “REPORT” in the left side bar.

The Summary Report page is displayed.



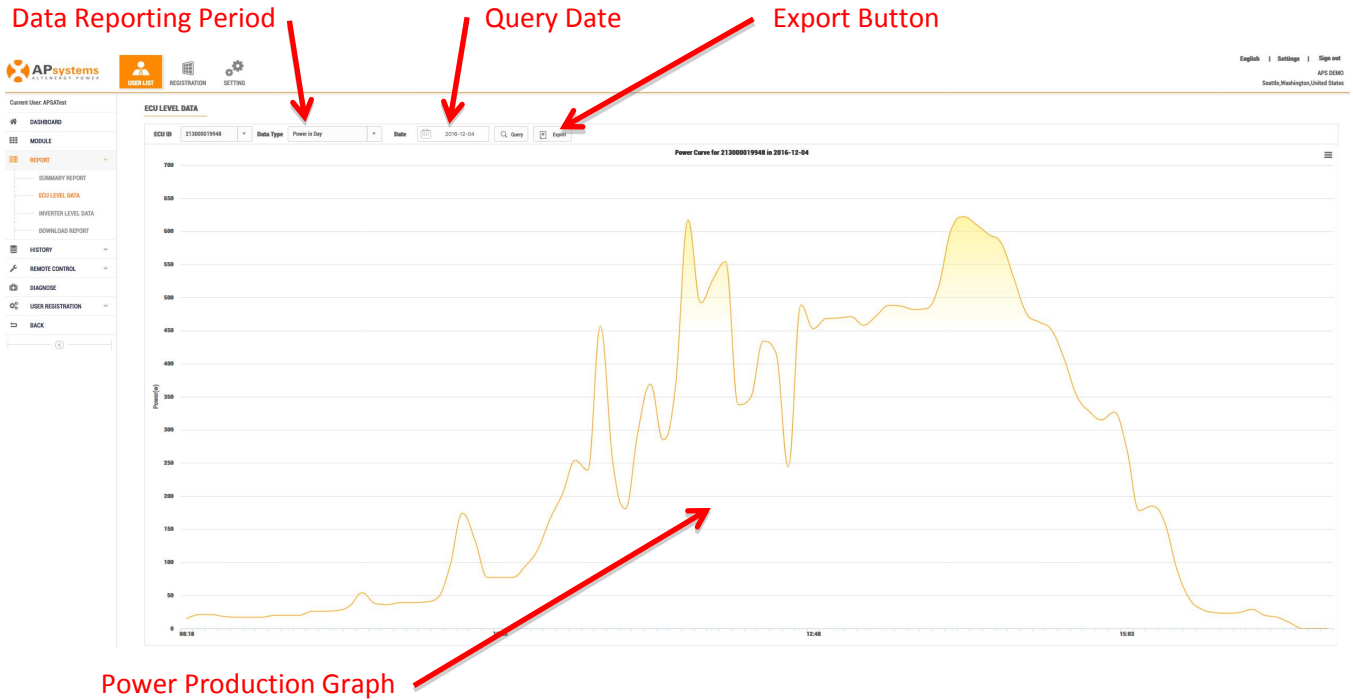
**Note:** The savings reflected in the Production/Cost Savings timeline are calculations based on the utility company’s price per kWh at this location. The price per kWh is entered in the “Price Per kWh” field in the timeline.



## ECU Reports

1) Select “ECU LEVEL DATA” under “REPORT” in the left side bar.

The ECU level data page is displayed.



### *Data Reporting Period*

Data reporting period; Power for the current day, daily power for the current month, monthly for the current year, and yearly for the lifetime of the system.

### *Query Date*

Select date you want to review.

### *Export Button*

Exports the data in a spreadsheet format.

### *Power Production Graph*

Graphic representation of the system’s power production over time.

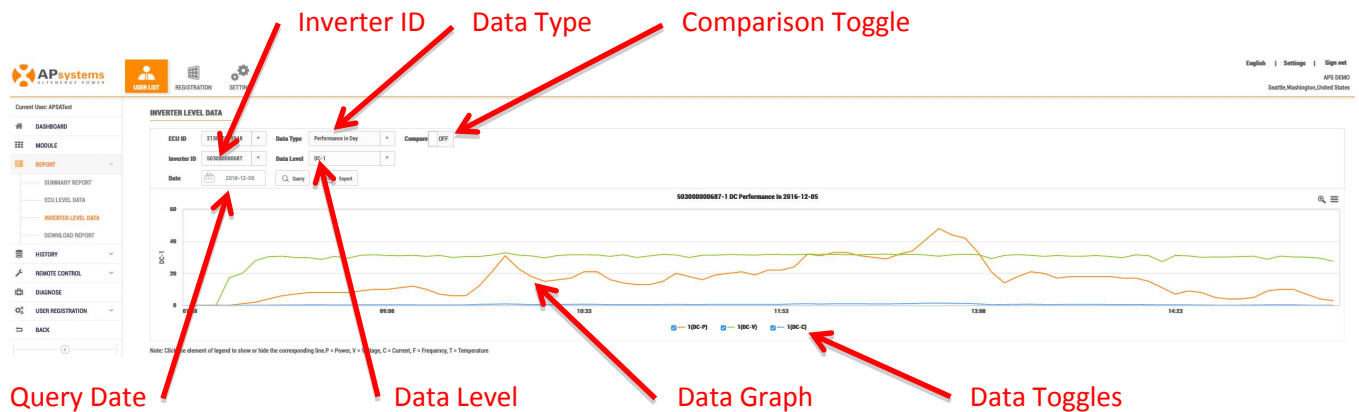
## Inverter Reports

**Tip:** This reporting area is extremely useful in troubleshooting inverter problems.

The Inverter Level reports are used to analyze module power (DC – power/watts, volts, and current/amps), grid parameters (AC volts, frequency, and temperature).

1) Select “*INVERTER LEVEL DATA*” under “*REPORT*” in the left side bar.

The inverter level data page is displayed. OPT700 Series User will display *OPT700 SERIES DATA* .



2) Select inverter ID you want to review from the Inverter ID pulldown.

The data graphic for the selected inverter ID is displayed.

<i>Inverter ID</i>	Pulldown field for viewing and selecting the inverter IDs associated with the account.
<i>Data Type</i>	Data reporting period; Power for the current day, daily power for the current month, monthly for the current year, and yearly for the lifetime of the inverter.
<i>Comparison Toggle</i>	ON and OFF toggle for comparing the data/performance of more than one inverter or data level (see directions for comparisons page 52).
<i>Query Date</i>	Select date you want to review.

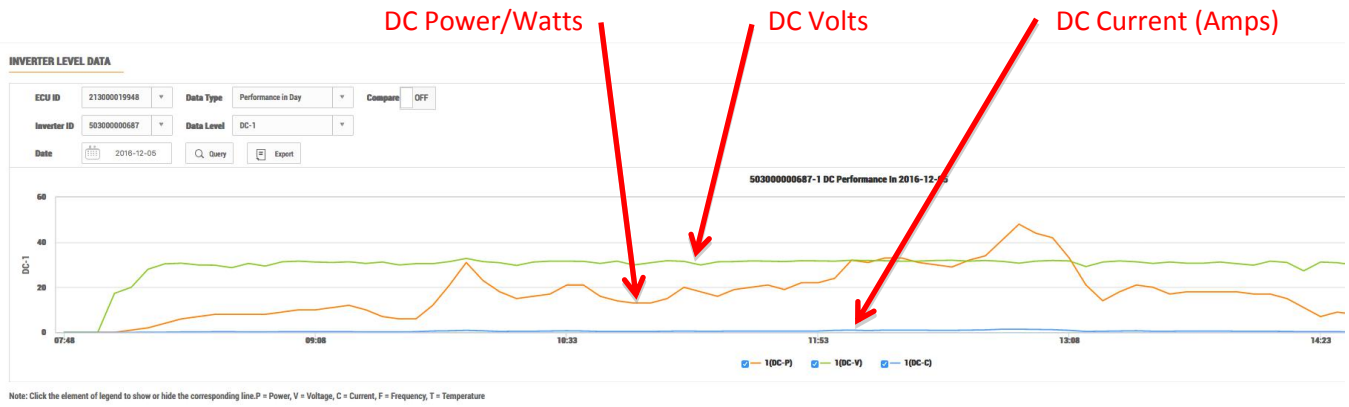
*Continued ...*

**Data Level** Pulldown field for selecting AC or DC data by channel.

**Data Graph** Graphic representation of the selected data types and data levels over time.

**Data Toggles** Used to toggle Data Levels graphs ON or OFF.

### Examples of Inverter Data Graphs



Note the following in the example above:

ECU ID: 21300019948 – Because of 213 prefix, it is a zigbee based ECU

Inverter ID: 503000000687 – Because of 503 prefix, it is a YC1000 inverter, which will have up to four (4) Channels identified as 1, 2, 3, and 4

Query Date: Dec 5, 2016 (2016-12-05 in international date format)

Data Type: Power for the current day

Data Level: DC Power/Watts, Volts, Current (Amps)

Comparison: OFF (so only seeing one inverter channel and/or data level)

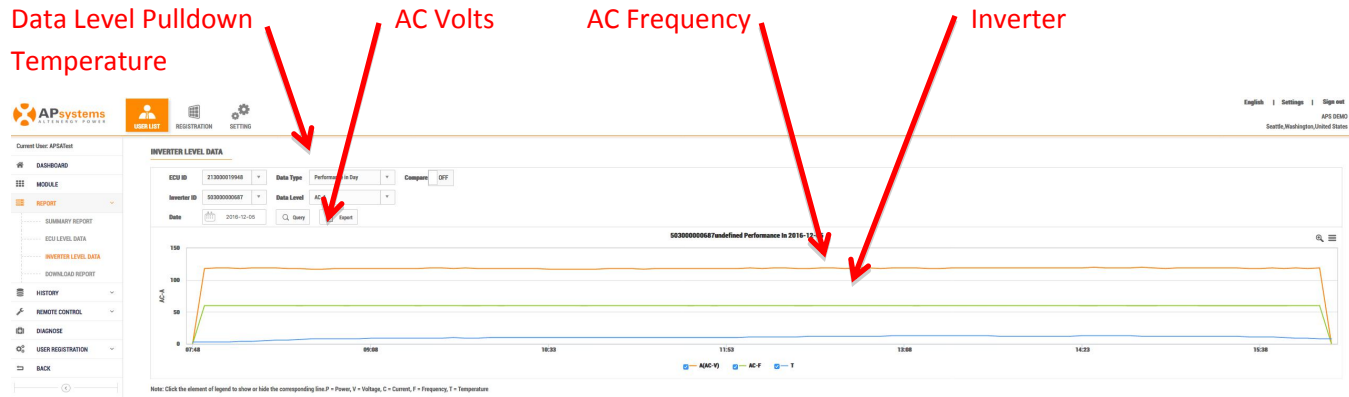
You can see power levels for a specific time by dragging the cursor along the graph.



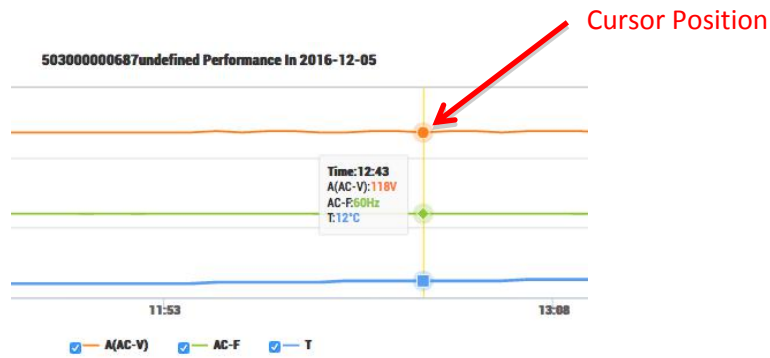
Continued ...

To view the AC (grid) parameters on the same channel for the same inverter:

1) Select "AC-1" in the "Data Level" pulldown.



You can see parameters for a specific time by dragging the cursor along the graph.



Continued ...

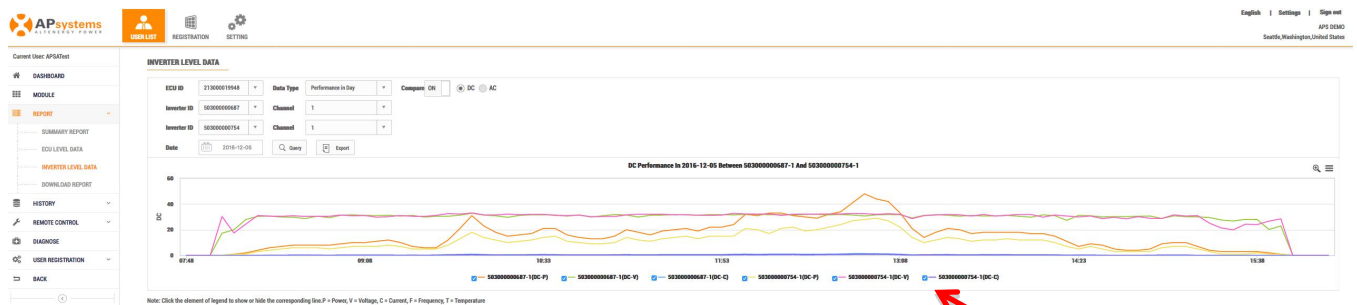
To compare the data levels for two different inverters:

- 1) Turn ON the “Compare” toggle.
- 2) Select the inverters you want to compare.

**Note:** You can select the same inverter and compare different channels if required.

- 3) Select the Channels you want to compare.
- 4) Select whether you want to compare DC or AC.

The graph with both inverter data levels is displayed.



Data Toggles

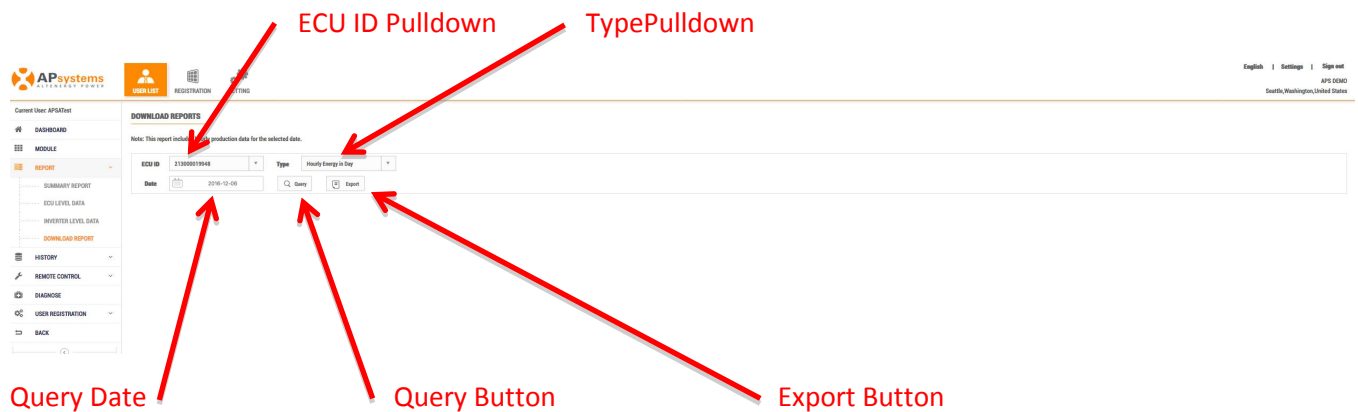
**Note:** You can toggle graph data elements ON and OFF by using the Data Toggles if needed for clarity of the data.

## Download Reports

The reports in this area are detailed numeric reports that can be exported to a spreadsheet.

1) Select “*DOWNLOAD REPORT*” under “*REPORT*” in the left side bar.

The Download Reports data page is displayed.



*ECU ID Pulldown*

Pull-down field for viewing and selecting the ECU ID.

*Type Pulldown*

There are a number of report “types” you can select.

- Hourly Energy for the day
- Detailed Daily Energy for a week (prior to the Query Date)
- Daily Energy for a specified period
- Daily Energy for a specified year
- Weekly Energy for a specified year
- Monthly Energy for a year
- Yearly Energy for the lifetime of the system

*Query Date*

Select date, or data range where appropriate, you want to review

*Query Button*

The Query Button activates the reporting process for the Type and Date(s) You have selected.

*Export Button*

Exports the data in a spreadsheet format.

Please contact the local area technical support if any questions.

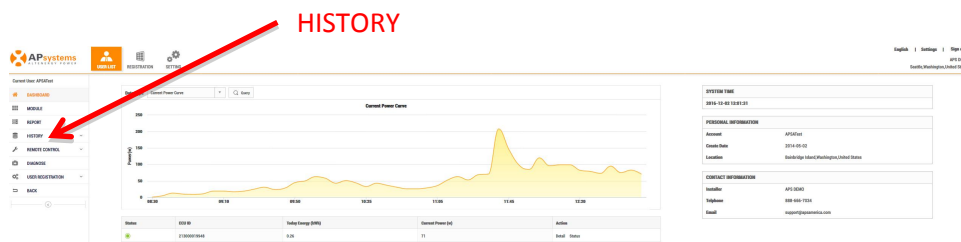
## Reviewing System Maintenance History

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

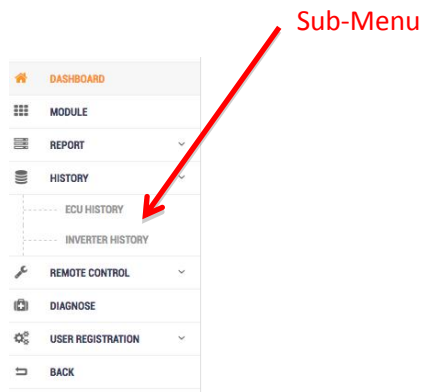
2. Select the customer you want to review from the customer list.

The installer's view of the customer's Dashboard is displayed.



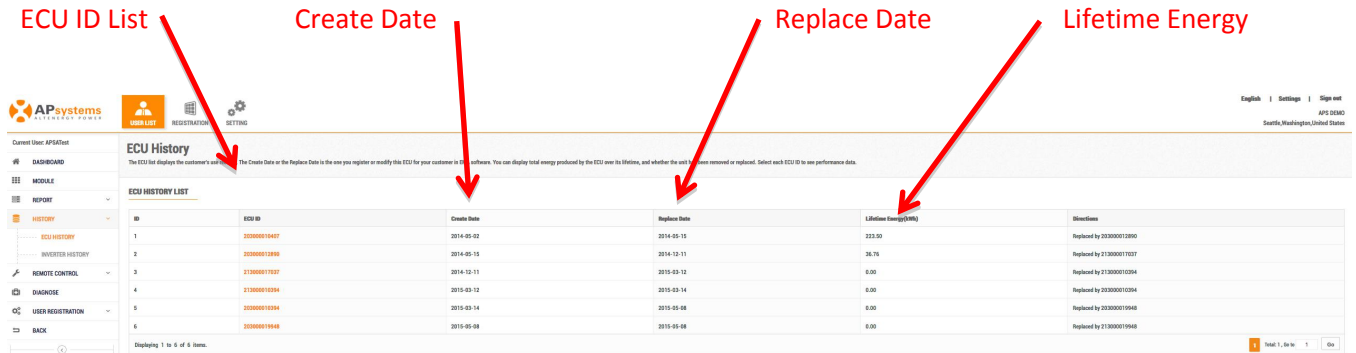
3. Select "HISTORY" in the left side bar.

The sub-menu areas are displayed under "HISTORY".



1) Select “*ECU HISTORY*” under “*HISTORY*” in the left side bar.

The ECU History page is displayed.



*ECU ID List* A list of all of the ECU that have been on the system.

*Create Date* The date the ECU was activated on the EMA.

*Replace Date* The date the ECU was replaced and edited on the EMA.

*Lifetime Energy* A history of the amount of energy (expressed in kWh) produced while the ECU was on the system.

**Note:** Clicking on the ECU ID in the ECU ID List allows you to review power production from the date the ECU was first activated on the EMA.



## Inverter History

1) Select “INVERTER HISTORY” under “HISTORY” in the left side bar.

The Inverter History page is displayed. OPT700 Series User will display OPT700 SERIES HISTORY.

**Inverter ID List**      **Create Date**      **Replace Date**

ID	Inverter ID	Create Date	Replace Date	BlankName
1	503000000003-3	2014-05-02	2014-12-06	Delete
2	454000000000-4	2014-05-02	2014-08-08	Delete
3	503000000018-4	2014-05-02	2015-03-12	Delete
4	503000000001-2	2014-05-02	2014-12-06	Delete
5	454000000006-9	2014-05-02	2014-12-06	Delete
6	454000000044-4	2014-05-02	2014-12-06	Delete
7	503000000014-4	2014-05-02	2014-12-06	Delete
8	454000000004-8	2014-05-02	2014-12-06	Delete
9	503000000003-3	2014-05-02	2014-12-06	Delete
10	454000000021-4	2014-05-02	2014-12-06	Delete
11	503000000018-2	2014-05-02	2015-03-12	Delete
12	454000000009-9	2014-05-02	2014-12-06	Delete
13	454000000006-4	2014-05-02	2014-08-08	Delete
14	503000000003-4	2014-05-02	2014-12-06	Delete
15	454000000000-3	2014-05-02	2014-08-08	Delete

Displaying 1 to 15 of 68 items.

*Inverter ID List*

A list of all of the inverters that have been on the system.

*Create Date*

The date the inverter was activated on the EMA.

*Replace Date*

The date the inverter was replaced and edited on the EMA.

## Remote ECU Management

The ECU has been designed with remote connection and management functionality. You can access this remote functionality through the 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.**

Refer to the ECU Installation/User Manual for detailed ECU installation and operation instruction.

The ECU remote functionality allows you to do the following:

- Set the ECU Status
- Set Time Zones
- Manage Inverter UIDs

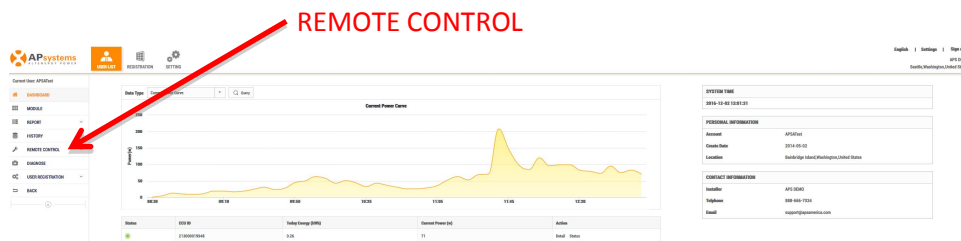
### Managing the ECU Remotely

1. Log onto the APsystemsEMA website.

Your specific Customer List page is displayed.

2. Select the customer you want to review from the customer list.

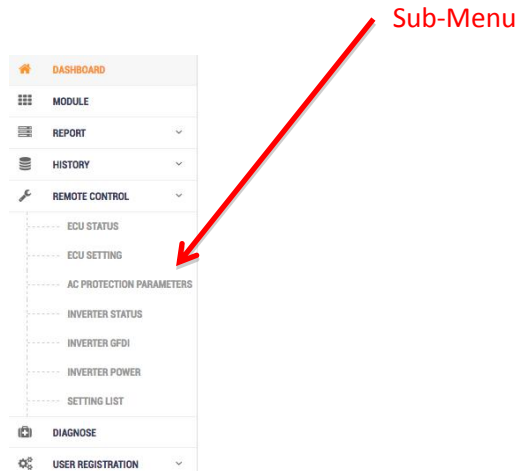
The installer’s view of the customer’s Dashboard is displayed.



3. Select “REMOTE CONTROL” in the left side bar.

The sub-menu areas are displayed under “REMOTE CONTROL”.

Continued ...

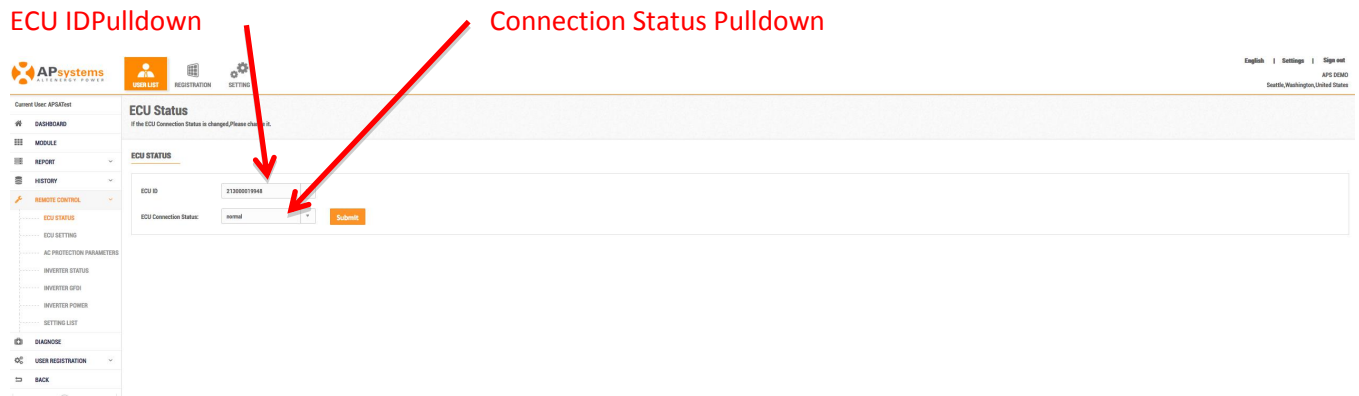


## ECU Status

Entering the ECU Status is for “information only”.

- 1) Select “*ECU STATUS*” under “*REMOTE CONTROL*” in the left side bar.

The ECU status page is displayed.



- 2) Select the ECU ID from the ECU ID pull-down.
- 3) Select the current connection station from the pull-down.
- 4) Press the “*Submit*” button.

## ECU Settings

1) Select “*ECU STETTINGS*” under “*REMOTE CONTROL*” in the left side bar.

The ECU settings page is displayed.

English | Settings | Sign out  
AP Systems  
South Washington, United States

Current User: APSystem

APsystems  
USBA LIFE REGISTRATION SETTING

### ECU Setting

Set the ECU time zone or reset links between the ECU and Inverter as necessary.

#### TIME ZONE CONFIGURATION

Please select ECU ID: 213000019948

ECU time zone: US/Pacific

#### INVERTER LINKS CONFIGURATION

Please select ECU ID: 213000019948

Choose operation: Add

Choose the Inverters: Select from below list

ID	Inverter ID	Link Status	ID	Inverter ID	Link Status
Y	603000000687	Link	2	603000000754	Link

Displaying 1 to 2 of 2 items.

TIME ZONE CONFIGURATION Window

INVERTER LINKS CONFIGURATION Window

## Manage Time Zone

ECU ID Pulldown

ECU Time Zone Pulldown

### TIME ZONE CONFIGURATION

Please select ECU ID: 213000019948

ECU time zone: US/Pacific

ECU ID Pulldown

ECU Time Zone Pulldown

- 1) Select the ECU ID from the ECU ID pulldown.
- 2) Select the correct time zone corresponding to the ECU's location.
- 3) Press the “*Send*” button.

## Manage Inverter Links

ECU ID Pulldown

Operation Pulldown

ID	Inverter ID	Link Status	ID
<input type="checkbox"/>	503000000687	Link	<input type="checkbox"/>
<input type="checkbox"/>			2

Inverter List

Choose the Inverters Pulldown

- 1) Select the ECU ID from the ECU ID pulldown.
- 2) Select the operation (Add, Clear, or Delete) from the Operation pulldown.
- 3) Select the inverter from the Inverter List, or input the inverters.
- 4) Press the “Send” button.

## AC Protection Parameters

The AC protection parameters are preset at the factory, but can be adjusted to meet the specific local grid requirements.

- 1) Select “AC PROTECTION PARAMETERS” under “REMOTE CONTROL” in the left side bar.

The AC Protection Configuration page is displayed.

Parameter Fields

ID	Inverter ID	ID	Inverter ID
<input type="checkbox"/>	503000000687	<input type="checkbox"/>	503000000754
<input type="checkbox"/>		<input type="checkbox"/>	

Inverter List

Choose the Inverters Pulldown

Continued ...

- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Enter the parameters that need to be adjusted.

**WARNING: Be extremely careful when adjusting these parameters. All APsystemsmicroinverters are factory-set to inherently meet IEEE 1547 / UL 1741 by-design and do-not require adjustment by the site owner or installation team. APsystemsmicroinverters monitor voltage disturbances, frequency disturbances, loss of synchronization and/or loss of phase. If required, please consult your local Authorities Having Jurisdiction (AHJ) and APsystems Technical Support before adjusting any parameters.**

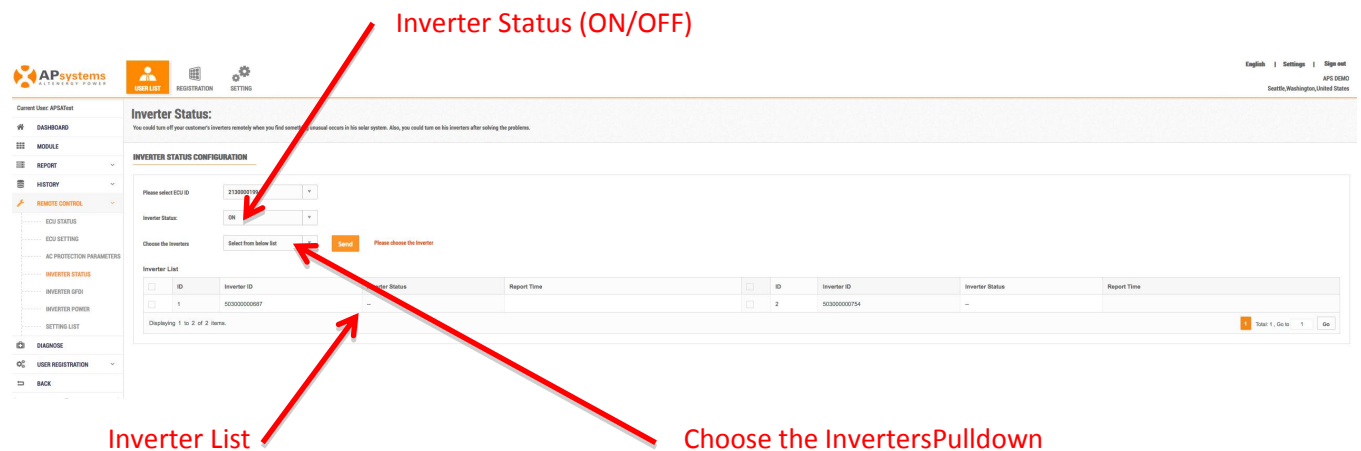
- 4) Using the “Choose the Inverters” pulldown, decided whether you want to adjust all of the inverters, or specific ones from the Inverter List.
- 5) Press the “Send” button.

### Inverter Status

The Inverter Status area is for turning ON and OFF the inverters.

- 1) Select “INVERTER STATUS” under “REMOTE CONTROL” in the left side bar.

The Inverter Status page is displayed.



- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Select either ON or OFF.
- 4) Using the “Choose the Inverters” pulldown, decide whether you want to turn ON or OFF all of the inverters, or specific ones from the Inverter List.
- 5) Press the “Send” button.

## Inverter GFDI

Check the GFDI status to see if the GFDI protection has been tripped. If so, you can reset.

- 1) Select “*INVERTER GFDI*” under “*REMOTE CONTROL*” in the left side bar.

The Inverter GFDI page is displayed.

Choose the InvertersPulldown

Inverter List

GFDI Status

ID	Inverter ID	GFDI Status	Report Time
1	603000000687	--	
2	603000000754	--	

- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Check the GFDI Status for each of the inverters in the Inverter List.
- 4) Using the “*Choose the Inverters*” pulldown, decide whether you want to reset all of the inverters, or specific ones from the Inverter List.
- 5) Press the “*Send*” button.

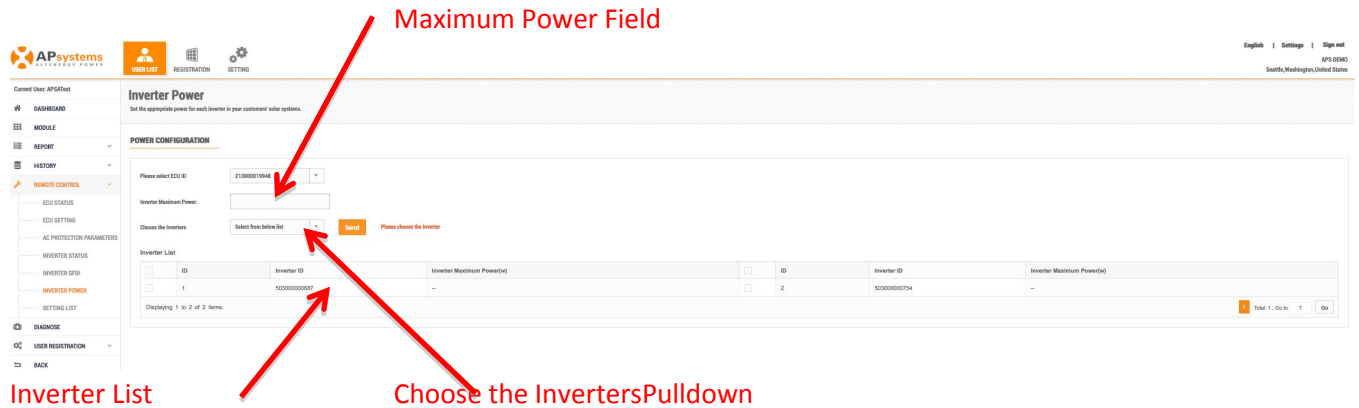
## Inverter Power

Can adjust the internal power (DC/Watts) based on panel and utility requirements – up to the design limitations of the inverter.

- 1) Select “*INVERTER POWER*” under “*REMOTE CONTROL*” in the left side bar.

The Inverter Power page is displayed.

Continued ...



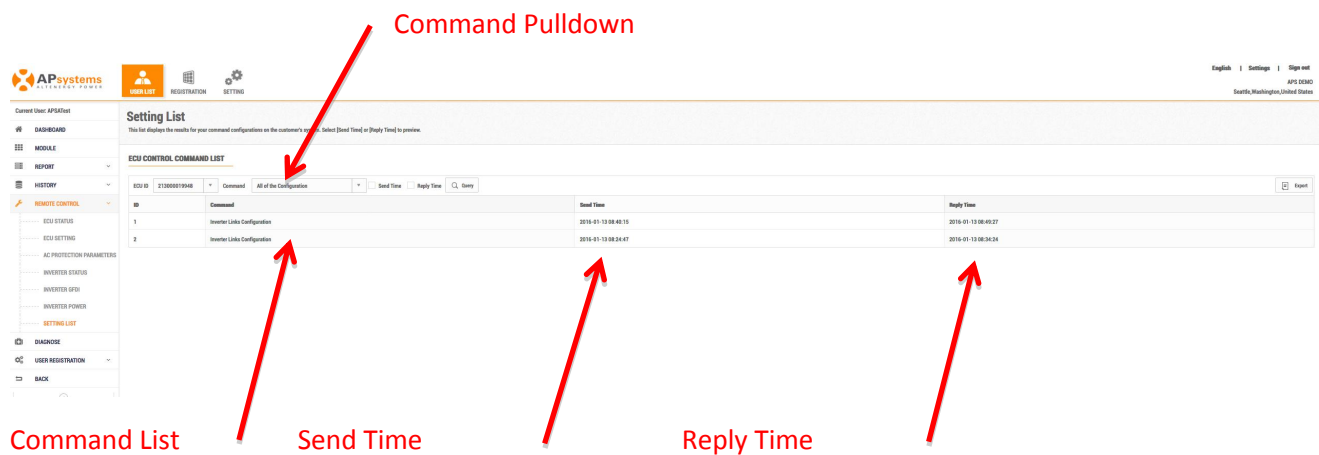
- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Enter the adjusted maximum power rating (in Watts) into the Maximum Power field.
- 4) Using the “Choose the Inverters” pulldown, decide whether you want to adjust all of the inverters, or specific ones from the Inverter List.
- 5) Press the “Send” button.

## Setting List

This page is used to confirm that a remote control command has indeed been send to the APsystems server, and that the ECU has “replied” that the command has been received.

- 1) Select “SETTING LIST” under “REMOTE CONTROL” in the left side bar.

The Setting List page is displayed.



Continued ...



- 2) Select the ECU ID from the ECU ID pulldown.
- 3) Select the command that you want confirmed from the Command pulldown.

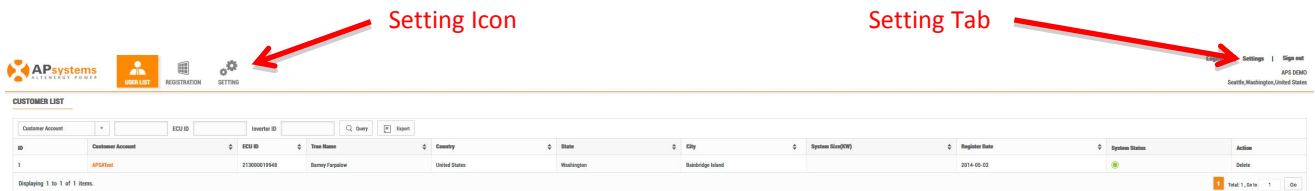
The Send and Reply times are displayed once the commands have been sent and received.

**Note:** It can take a few reporting cycles for the commands to be reflected in the monitoring sections of the EMA.

# Managing Your Installer Account Information

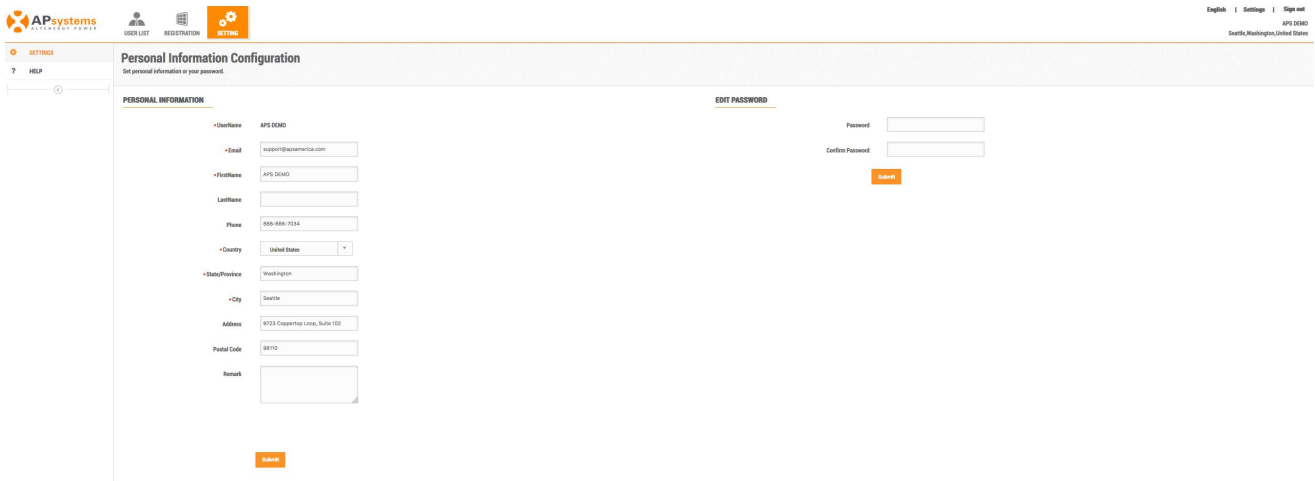
1. Log onto the EMA.

Your specific Customer List page is displayed.



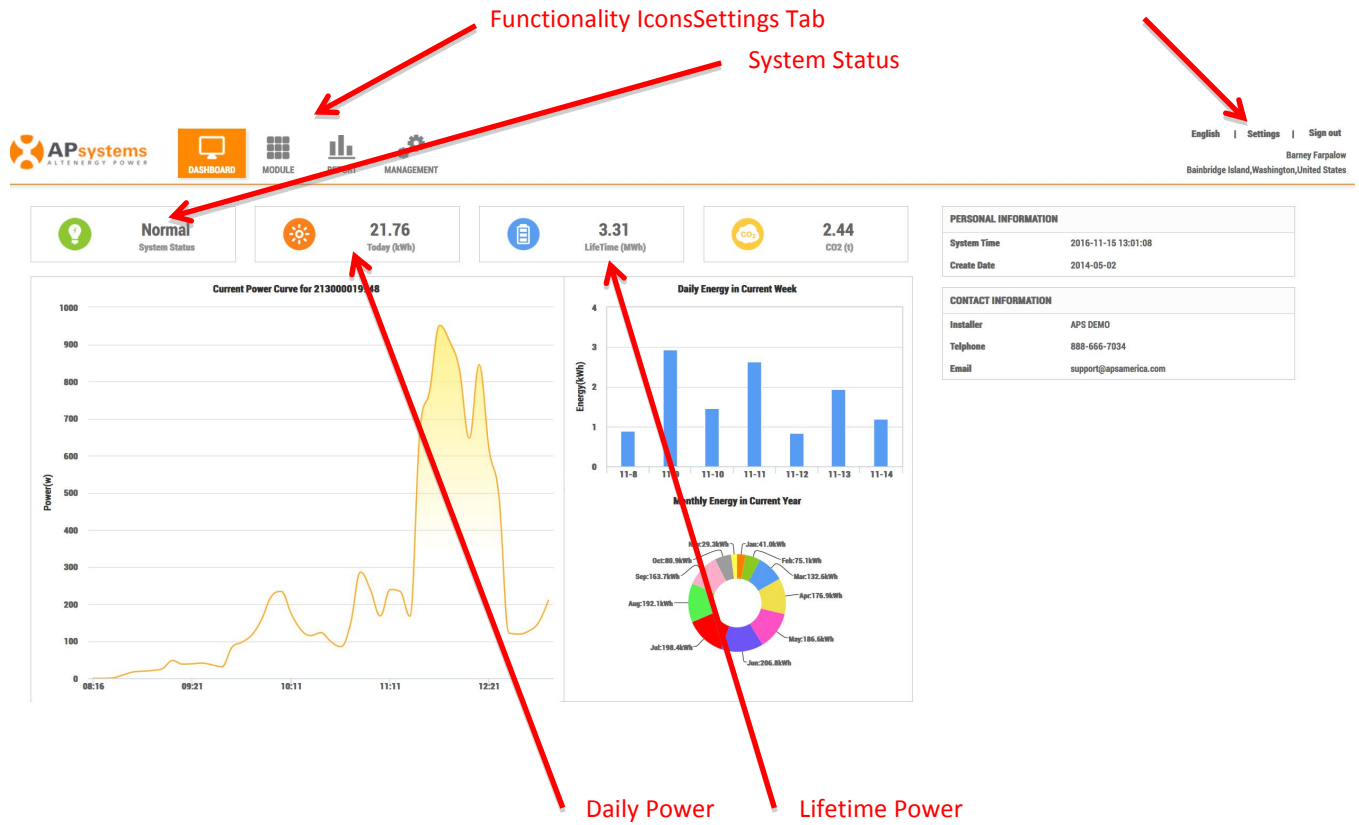
2. Select either the “Setting Icon” or “Setting” tab (they both do the same thing).

The Installer Account Personal Information Configuration page is displayed.



3. Edit the Personal Information form, or change your password.
4. Press the “Submit” button.


# Introduction to Your Customer's System Dashboard




**Functionality Icons**

Select area of the EMA site that you want to review: DASHBOARD, MODULE, REPORT, or MANAGEMENT.

**System Status**

Green  (Normal) – The system is operating and reporting as expected.

Grey  (No Data) – There is a system malfunction that should be investigated. No Production data is being communicated to the EMA server. Check the ECU connection to see if you can isolate the problem. If not, contact your installer.

**Settings Tab**

Where you can change your personal information, including your password.

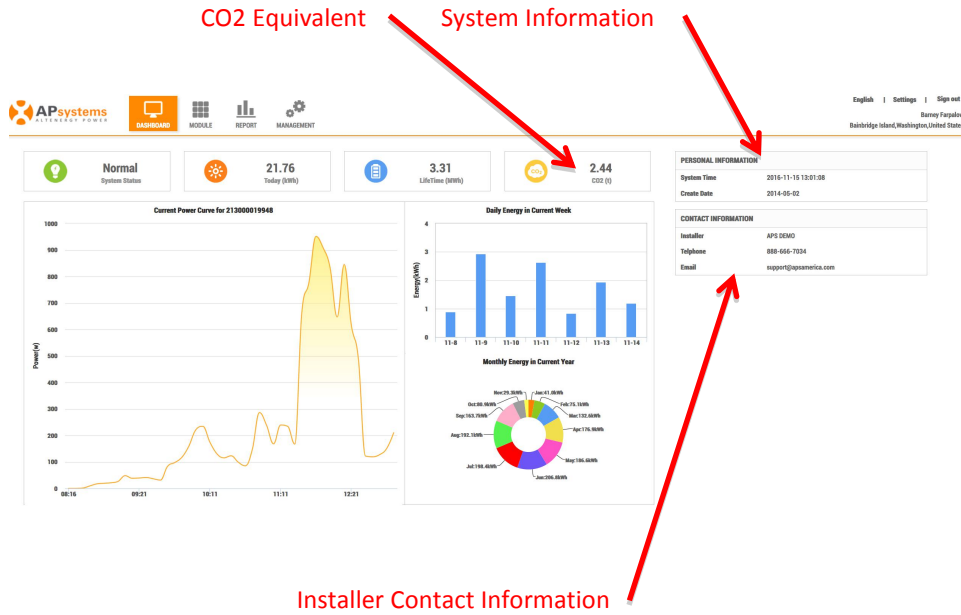
**Daily Power**

The amount of power generated during the current day.

**Lifetime Power**

The amount of power the system has generated during its lifetime.

*Continued ...*



*CO2 Equivalent*

The equivalent amount of CO2 (expressed in tons) benefit the system has provided in its lifetime.

*System Information*

The current date and time for the system, and the date the original account was created.

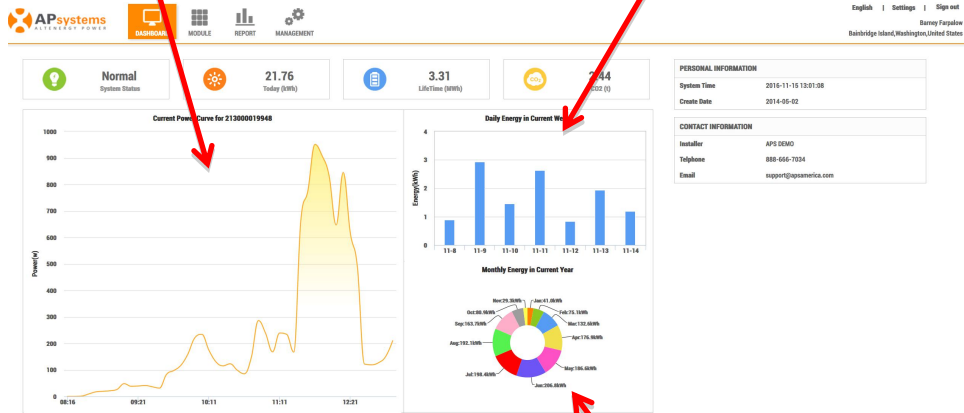
*Installer Contact Information*

Your installer’s company name, phone number and email address.

*Continued ...*

Current Daily Power Graph

Current Weekly Energy Graph



Yearly Energy by Month Graph

Current Daily Power Graph

Graphic representation of the power being generated during the current day.

Current Weekly Power Graph

Graphic representation of the energy that has been generated each day during the current seven day period.

Yearly Energy by Month Graph

Graphic representation of the energy that has been generated each month during the last 12 month period.