Tigo energy

System Owner's Manual

Tigo Energy® Maximizer™ System

Applies to the following:

Tigo Energy® Module Maximizer™ (MM-ES)

Tigo Energy® Maximizer™ Management Unit (MMU)

Model numbers: All MM-ES and MMU

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This System Owner's Manual contains important instructions for usage and maintenance of the Tigo Energy product models MM-ES, MMU, and related Tigo Energy software applications. The Tigo Energy® MaximizerTM system must be installed and serviced by a trained solar installation professional.

System Owner's Manual V.1

To see if a newer manual version is available for download, please log in to your Tigo Energy account and click on the "Manual" link in the top right corner.

User Name: _____

Password: _____

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1. Tigo Energy® Maximizer™ System

For residential, commercial, and utility scale photovoltaic solar arrays, the Tigo Energy Maximizer System (patented) optimizes power output per-module. The Tigo Energy solution also delivers module-level data for operational management and performance monitoring.

In well-designed large-scale systems, Tigo Energy Maximizer systems will return up to 8% incremental power output, while in residential or commercial systems with partial shading, the system can return up to 20% additional energy throughout the life of the system.

The product's low part-count and small footprint were designed to minimize cost and enhance the reliability of photovoltaic projects. In addition to being ideal for new installations, the Tigo Energy Maximizer System may be retrofitted to existing systems in a series configuration (MM-ES) without modification to the existing wiring or inverter.
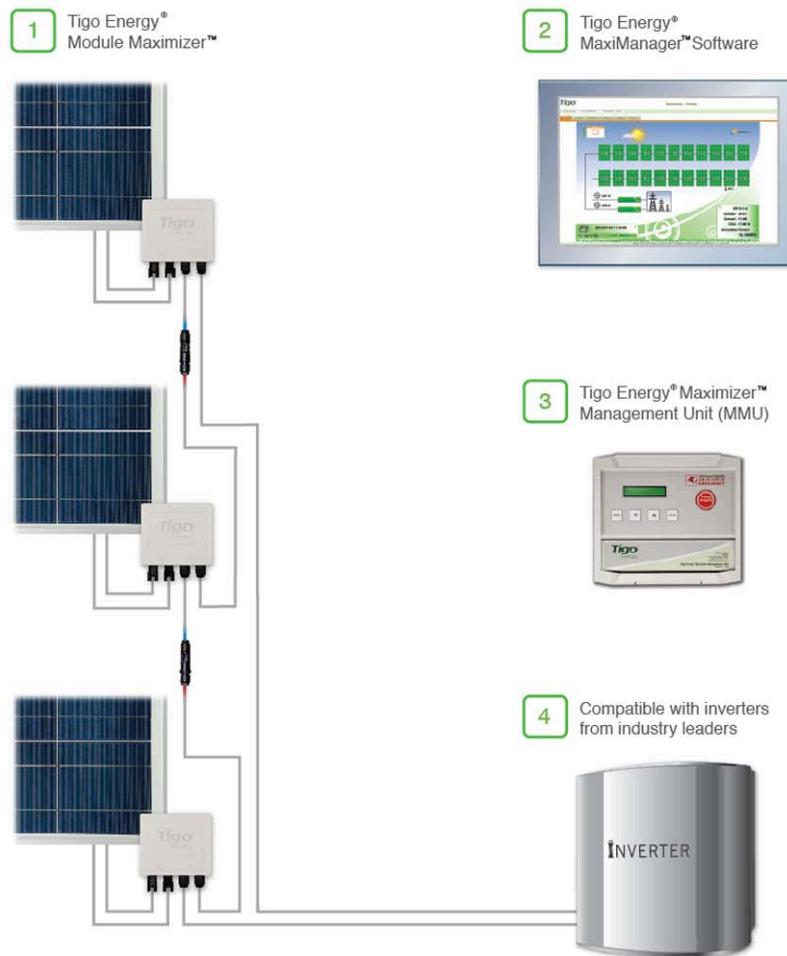
Tigo Energy Maximizer System

2.   Tigo Energy® PV-Safe™ Feature

When inspecting your installation, check the front panel of the Tigo Energy® Maximizer™ Management Unit (MMU) for the Tigo Energy PV-Safe logo. This is an indicator that the system is equipped with the advanced safety feature.

The Tigo Energy PV-Safe feature provides the ability to de-energize your solar array at the module, so there are no high-voltage wires running down from the array. This should be used in emergency or maintenance situations. By pressing the PV-Safe button on the Management Unit, the Tigo Energy® Module Maximizers™ will attempt to stop voltage from passing to the PV wiring between the Module Maximizer and the inverter.

If the Maximizer Management Unit does not have access to AC power or is otherwise impaired, the PV-Safe function will not be able to be initiated from the PV-Safe button on the MMU. However, a system configured with the Tigo Energy Maximizer solution will attempt to enter the PV-SAFE mode automatically when the AC is disconnected at the building main breaker).

Always activate the PV-Safe function prior to shutting off the inverter.
Once PV-Safe is activated, always seek active feedback that the modules are disabled by confirming on the Management Unit display, on the "Summary" page of the web-based software tool, or by testing the DC lines with a voltmeter.

When the PV-Safe button is activated, the MMU will display "PV-SAFE PRESSED" and "Requesting ..." to indicate the command has been sent to the Maximizers. As the Maximizers are responding, the MMU display will indicate how many have successfully disconnected (example: "Resp: 15/48"). Once the system successfully receives acknowledgement from all of the Module Maximizers in the array, the MMU will display "RESPONDING".

Tigo Energy Maximizer Management Unit (MMU)

Should the MMU not receive proper response from one or more of the Module Maximizers or communication has been lost, the display will read "NOT RESPONDING". If the "NOT RESPONDING" message is present, the system owner must assume that the system is still active and voltage is present as in a standard PV array.

After PV-Safe has been activated, always inspect the system prior to re-energizing the modules. Returning the modules to the "ON" state may only be done from the MMU console. Ensure the MMU is properly powered and the inverter is in the "ON" position. Lift the protective cover on the MMU and press the "MENU" button - then press "ENTER". Use the down arrow to select "2. CONTROL" - then press "ENTER". Scroll down to "2.1. PANELS ON" - then press "ENTER". Press "ENTER" again to confirm. Ensure the inverter is receiving DC voltage.
While PV-Safe is meant to enhance system safety, care should always be exercised to avoid high voltage DC wiring regardless of whether the PV-Safe function is enabled. Tigo Energy cannot guarantee complete deactivation of the array when the PV-Safe button is pressed. Tigo Energy PV-Safe must be tested as part of the installation process, and should be routinely tested on an annual basis.

2. PV-Safe

3. Tigo Energy® MaxiManager™ Software

The Tigo Energy MaxiManager software manages utility, commercial, and residential PV arrays to give system owners unprecedented visibility. System owners are alerted to actionable information so that they can manage their system based on pre-set parameters.

System analytics track performance relative to expectations and proactively suggest maintenance actions to keep the system operating at maximum production and uptime.

This System Owner's Manual shows you how to access the features of the MaxiManager software and manage your PV array.

3.1. Log In

To manage and view your system, please open your web browser and navigate to: **www.tigoenergy.com**
In the upper right hand corner of the home page, click the Login link to go to the Login screen.

Please enter the login and password that was provided to you by your installer.
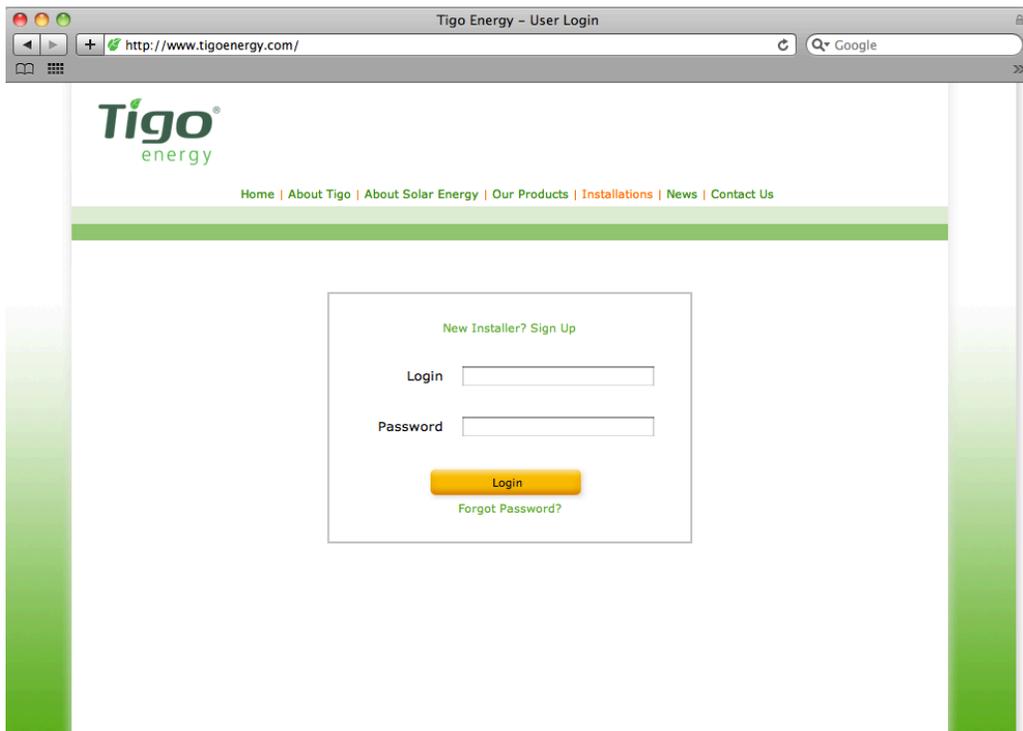
3.2 My Installations Page

The "My Installations" page shows a list of your installations. From here, select the installtion that you would like to access by clicking the project name (usually location) of the system.

Each site has information in this list including its status, the site name and address. In the status column a green check mark indicates that the array is functioning correctly. A red "X" means that the system needs immediate attention. When the management unit has been offline for more than 7 days, a yellow icon is displayed. A gray bar indicates that the system has yet to be activated.

Status Icon Reference:

- ✅ All Systems OK
- ▬ System has not been activated
- 😐 Needs attention
- ❌ Needs immediate attention

In the upper right corner you can download the most up-to-date System Owner's Manual for your Tigo Energy System.
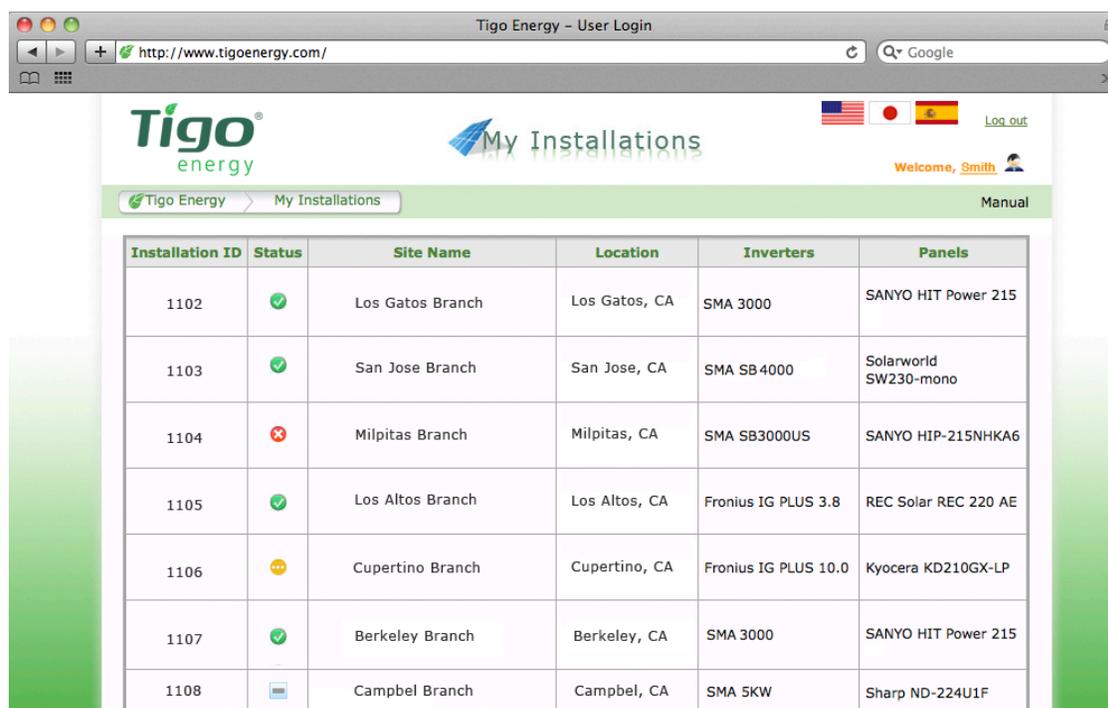
Installation ID	Status	Site Name	Location	Inverters	Panels
1102	✅	Los Gatos Branch	Los Gatos, CA	SMA 3000	SANYO HIT Power 215
1103	✅	San Jose Branch	San Jose, CA	SMA SB 4000	Solarworld SW230-mono
1104	❌	Milpitas Branch	Milpitas, CA	SMA SB3000US	SANYO HIP-215NHKA6
1105	✅	Los Altos Branch	Los Altos, CA	Fronius IG PLUS 3.8	REC Solar REC 220 AE
1106	😐	Cupertino Branch	Cupertino, CA	Fronius IG PLUS 10.0	Kyocera KD210GX-LP
1107	✅	Berkeley Branch	Berkeley, CA	SMA 3000	SANYO HIT Power 215
1108	▬	Campbel Branch	Campbel, CA	SMA 5KW	Sharp ND-224U1F

3.3 Summary Page

Once the system that you would like to access has been selected, you will default to the Summary page. This screen shows real-time and historic power production from each module of your array.

The color of each PV module indicates a comparative measurement of power generated among panels (brightest indicates most power production). This is particularly useful in finding anomalies such as shading.

The number displayed inside each module is the instantaneous power measured at the time indicated in the Data Navigator (lower left corner of the Summary page).

When placing the cursor over a panel, the program automatically highlights all panels on the same string, along with its corresponding inverter. When the cursor is over the inverter, all strings attached to that inverter are highlighted.

If the installer has included an optional light sensor, the sun intensity (irradiance, measured in Watts per square meter - W/m2) is indicated in the upper right hand corner above the modules. Similarly, if the system is equipped with temperature sensors, the ambient or module temperature (depending on the placement of the sensor) will be displayed next to the small thermometer icon.

* Note: If the module placement does not represent the physical layout of your array, see section 3.6.2. This section will provide instructions how to move the panels and inverters on the Summary page to more accurately reflect the actual layout of the PV array.

Data Navigator

In the bottom left corner there is a "Data Navigator", a tool bar that can be used to view data at different time intervals. Drag the yellow square knob left or right to see power production throughout the day. Alternatively, drag the sun back and forth to achieve the same effect or use the play button to see a continuous time-lapse of the day. Time will change in one minute intervals.

There will be a calendar icon in the upper left-hand corner of the Data Navigator. Clicking on this icon enables the selection of a particular day so that its summary data may be viewed.

Carbon Offset

In the lower right hand corner of the summary view there is a box that displays the total energy generated for the day.

This box also shows the amount of carbon dioxide, CO_2 (in pounds) the system has saved.

This display box, as well as the toolbox aforementioned, can be minimized by clicking the arrow button in the upper right and upper left hand corners of the boxes respectively.
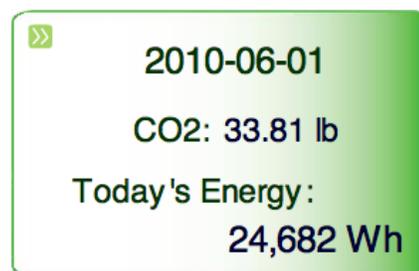
Zoom Control

In the upper left-hand corner of the Summary view is a "Zoom Control" that may be used to zoom in or out of the array.

This tool is particularly useful for large systems with hundreds or thousands of panels. Once zoomed in at any level, drag the viewing area within the mini map to focus on a particular portion of the array. Alternately, the main view of the summary may be dragged around the screen.

The visibility of the Zoom Control window may be toggled by mousing over it and clicking on the top right arrow that appears. It will slide in/out much like the lower display boxes.

3.4 Energy Page

Click on the Energy tab in the menu bar to see information on the energy output of the array over a given period of time.

This page will default to the Performance sub-tab view and show the energy your array produced today by hour. Elect to see data from each inverter, string, or even panel by clicking on the System icons on the left. Press Shift and click on multiple icons to compare different objects.

To change the timescale select the desired time interval located at the bottom of the Performance tab. The date selection may also be made from the calendar icon in the bottom right corner.

By clicking on the Advanced sub-tab, choose to compare objects by power, temperature, voltage and a number of other variables. In the bottom right corner, click the Download button to export the raw data to a .CSV file format, or choose Open Graph button to view the data in a Java based graphing tool.

Summary for the dates selected on the Performance and Advanced pages will also be displayed on the Summary page.

3.5 Installation Page

The Installation tab shows non-editable information about your site. From this page, you may add comments about your installation by clicking on the "Add a Comment" button. You may also view pictures in the album by clicking on them. (To add a picture to the album, see section 3.6.2.)

3.6 Admin Page

The Admin section consists of additional sub-tabs that allow you to view, add or modify site related information, such as site name, company, contact details, images of the installation and more.

3.6.1 Settings Sub-tab

When the Admin tab is selected, the "Settings" sub-tab is selected by default. Modify site information or change the system log-in password in this window.

3.6.2 Appearance Sub-tab

Navigating to the "Appearance" sub-tab allows you to add or change the display of the system. Add an image by clicking the "Add New Picture" button. From the pop-up, upload a picture, add comments about this picture, and choose to set the picture to be displayed in the Installation page.
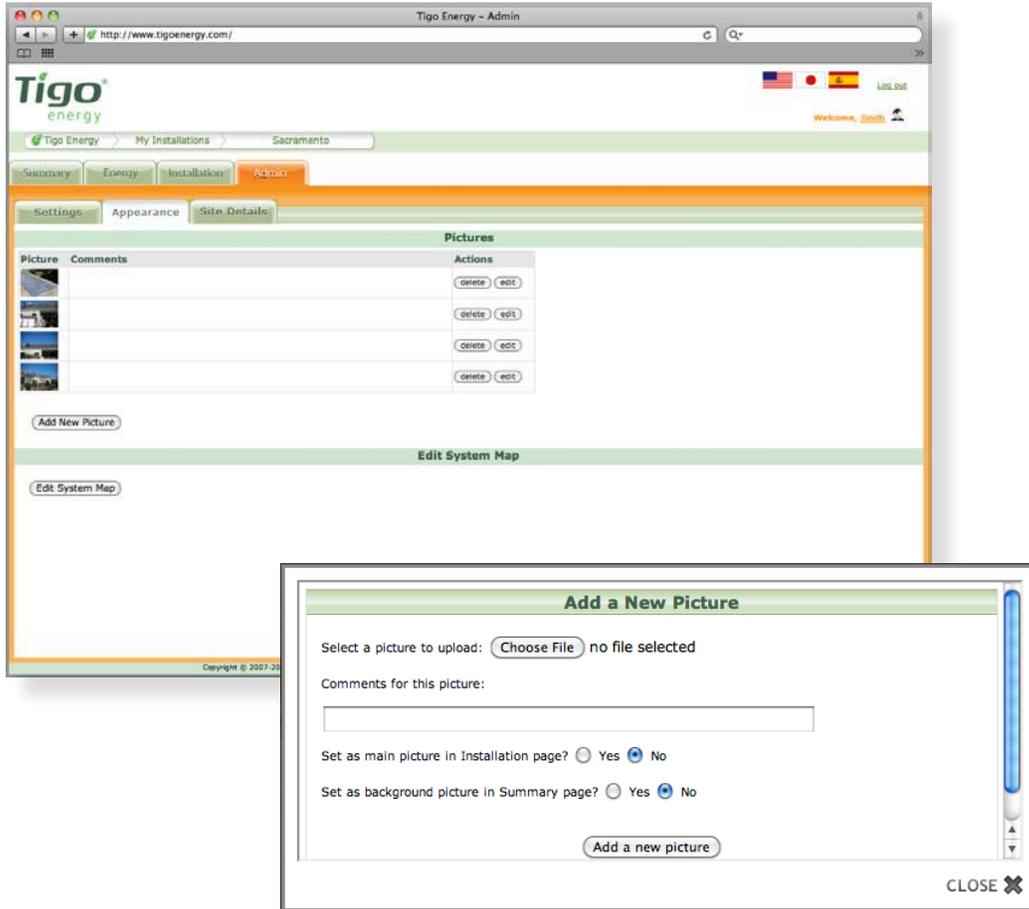
Edit System Map:
Click on the "Edit System Map" button for the pop-up window to appear.
The "Edit System Map" is a tool which enables the system owner to modify the appearance and placement of modules when they are on the Summary page. Modify the layout of the array by clicking and dragging modules with the cursor. To snap the modules to a grid, click the "Grid" check box in the upper left.

Add Lines and Labels:
Lines and labels can be added to the system map under the tools category. Clicking on anything in the picture will pull up the properties menu. In this menu modules can be moved and arranged in landscape orientation.
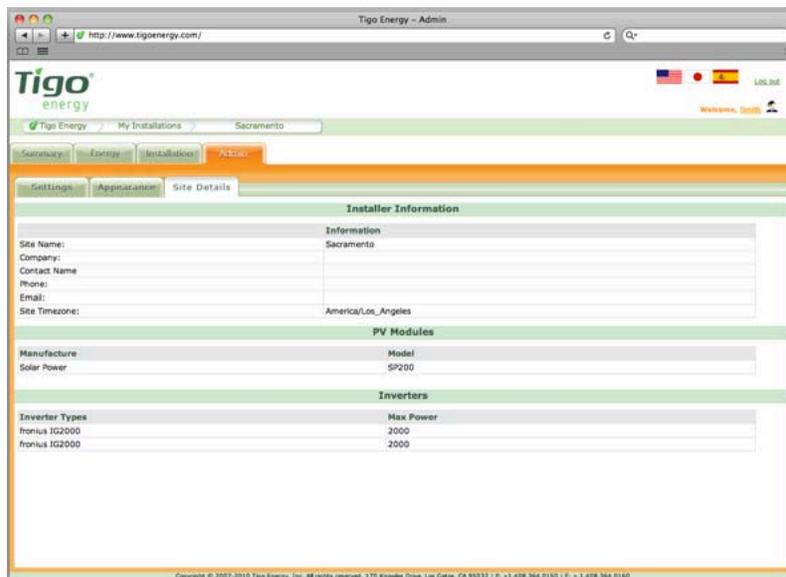
Select a Background Picture:

A picture can be uploaded to the background of the site if a system owner chooses to. This can be done under the background menu on the bottom left of the "Edit System Map" pop-up window.

When a system looks correct and the desired modifications are compete, hit the "Save" button and the changes will reflect in the Summary page.
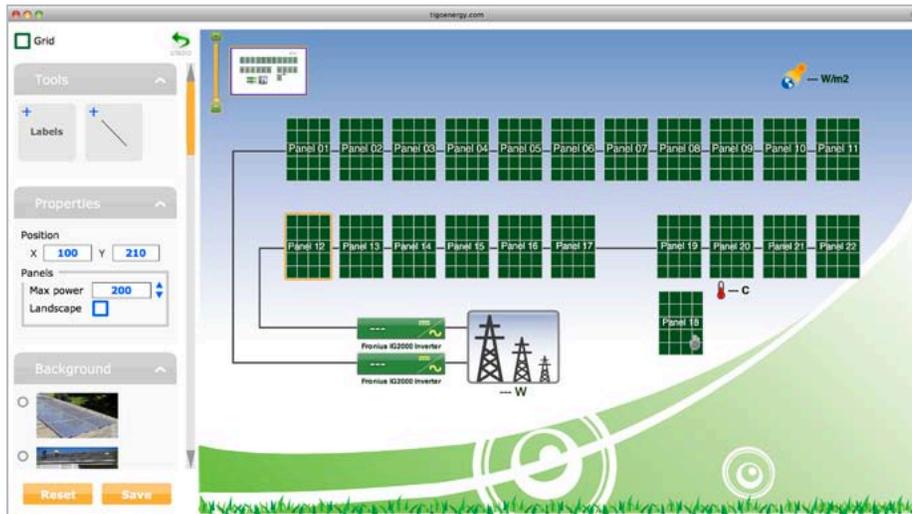
3.6.3 Site Details Sub-tab

You can view your installation details such as information of your Installer, PV Modules, and Inverters by selecting the "Site Details" sub-tab.
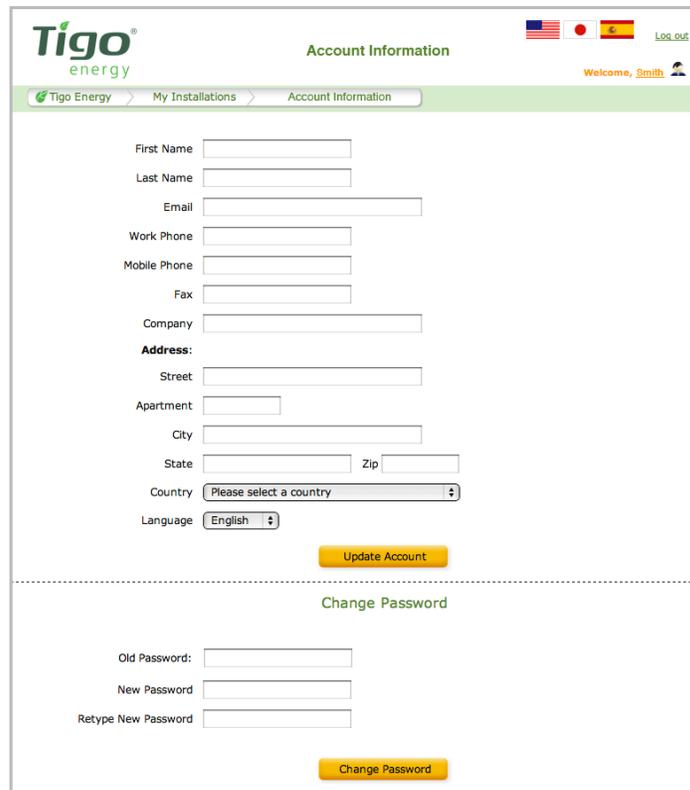
3.7 Account Information Page

To view or update your account information, click on your name displayed in the top right corner. This will take you to the "Account Information" page.

Here you can view or edit your account infomation, including selecting your language preference from a language drop-down menu, or changing your password. Click on the "Update Account" button to save your changes.

Notes

Customer Support Line (toll-free in US):
1-888-609-TIGO (8446)

Customer Support Fax (toll-free in US):
1-888-681-TIGO (8446)

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