autani
building controls

User Guide

EnergyCenter®

PLUS Module: Plug Management

EnergyCenter BY AUTANI

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1.   Plug Management Overview

The plug management software module enables wireless control of power usage when using Autani SmartLet Outlet Controllers.

- Multiple SmartLets can be wirelessly networked throughout a building or multiple buildings.
- Each Autani SmartLet Outlet Controller can be used to manage independently the energy consumption of two plugged in devices.
- Autani SmartLets measure and track power consumption in real time.

NOTE: Energy consumption data is not included in total system energy consumption to prevent double counting in metered systems.

For information on features and procedures that are the same in all software modules, refer to the User Guide module entitled 'Tasks Common to All Application (Zigbee)'.

1.1.   Navigating through the Software (Site map)

The following two tables provide site maps of the plug management module. The options on the left navigation bar appear in the tables as the column headings. The column lists are the plug management-related tabs that appear when an option is selected.

Table 1: Site Map for Selecting Options

Devices	Automation	Settings
▪ Plugs	▪ Plugs ▪ 24/7 Schedules ▪ Calendar ▪ Advanced	▪ Customer Information ▪ Contractor ▪ System ▪ Data Maintenance ▪ Energy ▪ Security ▪ Device Setup

Table 2: Site Map for Viewing Data

Groups	Energy	Alerts	Reports	Help
Groups list display and System views	Not applicable	▪ Recent ▪ Alerts ▪ Alert Setup	▪ Devices: Device Inventory ▪ Devices: Detailed Device Inventory	▪ User Guide modules: 　□ Tasks Common to All Applications (Zigbee) 　□ PLUS Module: 　　▪ Plug Management ▪ About

1.2. Configuring the System

To utilize all the features available for plug management, complete the steps summarized in the table below.

> **NOTE**: Installation and configuration tasks are typically performed by the contractor that installs the system.

Table 3: System Setup Tasks

Task	Description	See
Complete hardware setup tasks	▪ Plug Autani SmartLets into grounded electrical outlets. ▪ Plug the devices to be controlled and monitored into the plug management devices, including computers if appropriate.	Installation instructions that came with the plug management device
Access the Autani Manager appliance	Initial steps for setting up the network using one of the following options: 　▪ Remote access over the internet (preferred option) 　▪ Local network access	See included documentation with Autani Manager.
Complete application commissioning tasks	Tasks needed to setup and commission the system, regardless of device-type, including: 　▪ Entering customer and contractor information 　▪ Creating user accounts 　▪ Adding devices 　▪ Creating custom schedules with events 　▪ Creating alerts	User Guide module entitled 'Tasks Common to All Application (Zigbee)'
Define settings	Select device settings	Refer to section *2. Changing Plug Management Device Settings*
Sensors	Select sensors to provide input to devices	Refer to section *4. Using Occupancy Sensors*

2.   Changing Plug Management Device Settings

1. On the left navigation bar, click **Devices**, and click the **Plugs** tab.
2. Click the plug control device name link, double-click the row of the device, or click the row of the device and then the **Details** button.
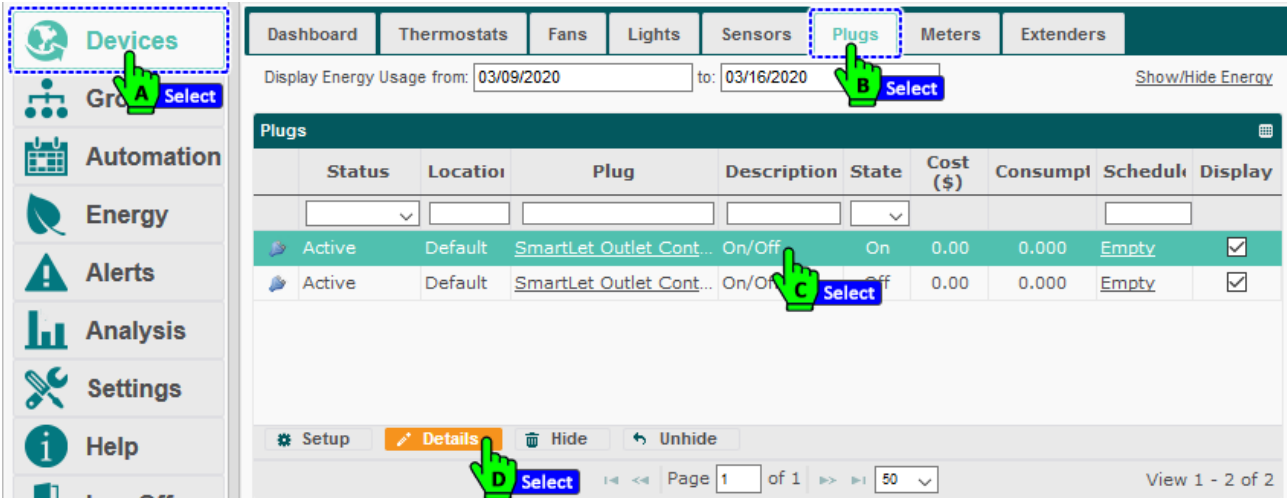
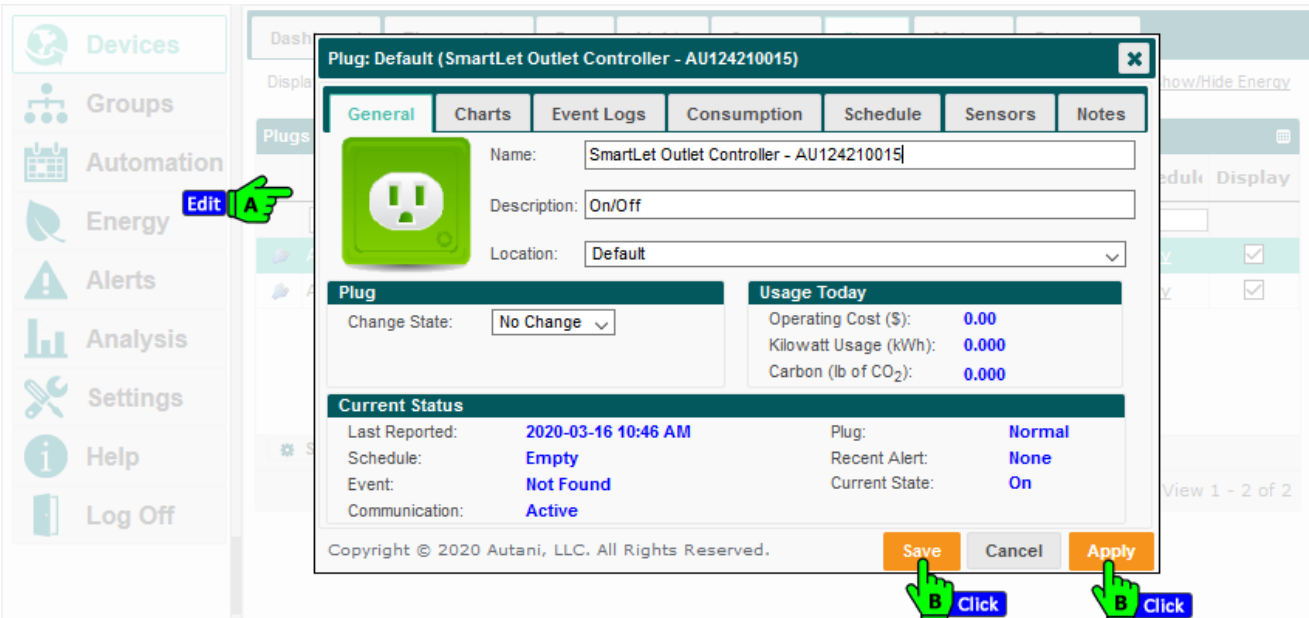3. Update the settings listed in the table below as needed. Click **Save** or **Apply**.

Table 4: Changing Plug Management Device Settings

Setting	Used To	Options
Name	Specify the name of the device	▪ Defaults to device type and serial number ▪ User-defined name ▪ Alphanumeric characters
Description	Describe the device for quick identification	▪ User can change ▪ Alphanumeric characters
Location	Name of the location group to which the device belongs	▪ Assigned to the **Default** location group when a device is first added to the network ▪ User can change ▪ Alphanumeric characters
Change State (SmartLets)	Change device behaviour	▪ No Change ▪ On ▪ Off

3. Checking Plug Management Device Status

3.1. Viewing System Dashboard Data

Click **Devices** on the left navigation bar to view system summary information for the last 24 hours. If the Dashboard tab does not appear, see *6.2.Dashboard does not Appear* in the Troubleshooting section.
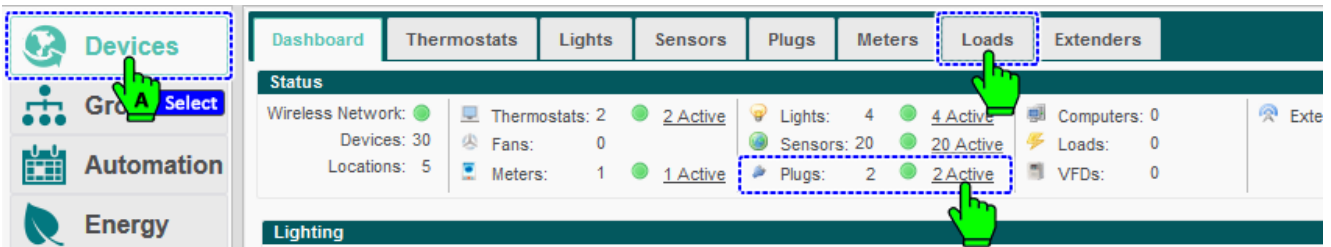
The Dashboard displays the number of active plug management devices in the system. To view additional detail on all plug control devices, click the active status link next to the number of Plugs or the Plugs tab.

3.2. Viewing Summary Data for All Plug Management Devices

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab to view the information in the following table.

NOTE: The spreadsheet format can be modified to quickly view needed information

- Rows can be sorted by clicking a column heading.
- Plugs can be hidden or redisplayed using the Hide and Unhide buttons.
- The width of a column can be changed by dragging the lines on either side of the column heading to the desired size.
- Columns can be hidden or displayed using the picker in the right-hand corner of a heading row.

3. To view energy consumption data and/or the Daily Energy Usage of Selected Plugs chart, click the **Show/Hide Energy** link in the upper right-hand corner of the screen. For more information, see *3.2.Viewing Summary Data for All Plug Management Devices.*

Table 5: Information on Plugs Tab

Column	Used To	Options
Status (with icon)	Describe the communication status for each plug control device NOTE: Communication status is reported every 10 minutes.	▪ Active: Device is online and reporting data. ▪ Error: The device is not communicating with the Autani Manager over the autaniNet network. ▪ Removed: device was removed from the autaniNet network.
Location	Identify the location group to which the plug control device belongs NOTE: A plug control device can belong to only one location group.	▪ Assigned to the **Default** location group when the device is first added to the network ▪ User can change ▪ Alphanumeric characters
Cost ($)	Display the cost of energy consumed by the device based on user-defined utility rates	U.S. dollars and cents
Consumption	Display energy consumption measured by the meter embedded in the plug control device	kWh
Carbon (lb)	Display the carbon footprint to produce the power used by the plug control device NOTE: For information on entering a user-defined consumption factor, see the User Guide module entitled 'Tasks Common to All Application (Zigbee)'.	Default conversion factors: ▪ 1.393 for electricity in kWh ▪ 12.061 for natural gas in therms.
Plug	▪ List the names of each device ▪ Provide link to open other tabs for the devices ▪ Links to tabs: 　□ General 　□ Charts 　□ Event Logs 　□ Consumption 　□ Schedule 　□ Occupancy 　□ Computers	▪ User-defined name ▪ Alphanumeric characters
State	Indicate state of plug control device	▪ ON ▪ OFF ▪ Unknown
Schedule (Available if the plug control device schedule is enabled)	▪ Link to the Schedule tab to review or change the schedule for the plug control device ▪ Indicate if a schedule curtailment or override is in effect ▪ Modify schedule events associated with the plug control device	▪ Schedule: 　□ Name 　□ Description 　□ Disable ▪ Events: 　□ New 　□ Copy 　□ Edit 　□ Delete

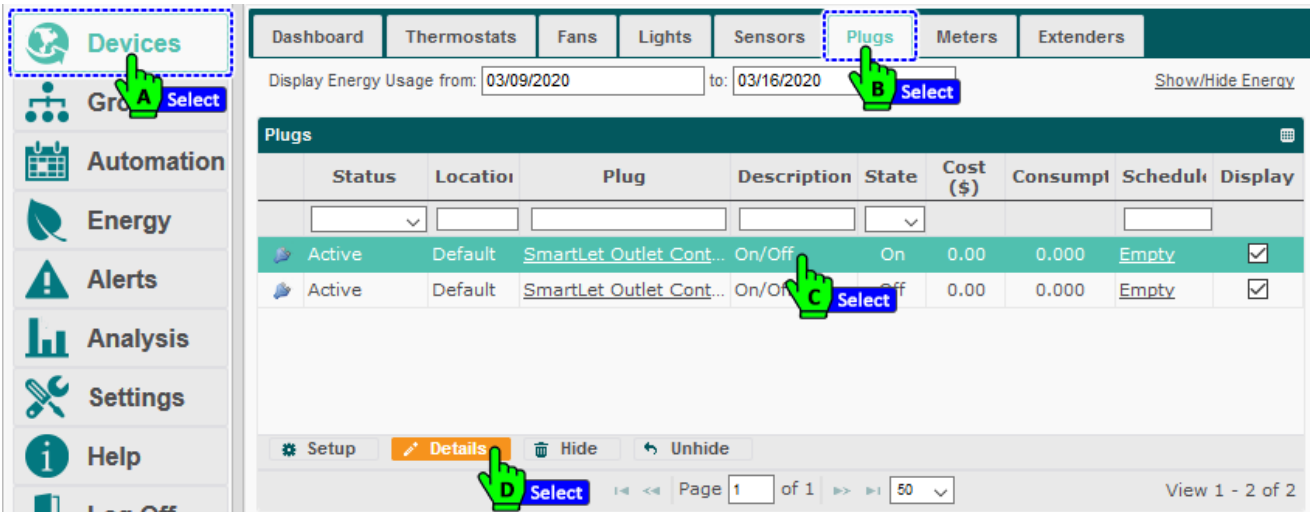| Column	Used To	Options
Display	Select plug control devices to display in the Daily Energy Usage graph on the bottom of the Plugs screen **NOTE**: If the graph does not appear, click the **Show/Hide Energy** link.	Checkbox for each plug control device

3.3. Viewing Energy Usage for Selected Plug Control Devices

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab.
3. If the chart is not displayed, click the **Show/Hide Energy** link in the upper right-hand corner of the screen. The default display is for the week ending with the current day.
4. To select a different date range for the chart, click the **Display Energy Usage from** and **to** textboxes to access the calendar.
5. Select the **Display column checkbox(es)** for an individual plug control device, several plug control devices, or all the plug control devices in the system.
6. To view more exact information, mouse over the displayed data.

3.4. Checking Detailed Status Data for a Plug Control Device

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab.
3. Click the plug control device name link, **double-click** the row of the device, or click the row of the device and then the **Details** button.

4. The Details window pops up with **General** tab selected, the lower section has the Current Status of the Plug listed.
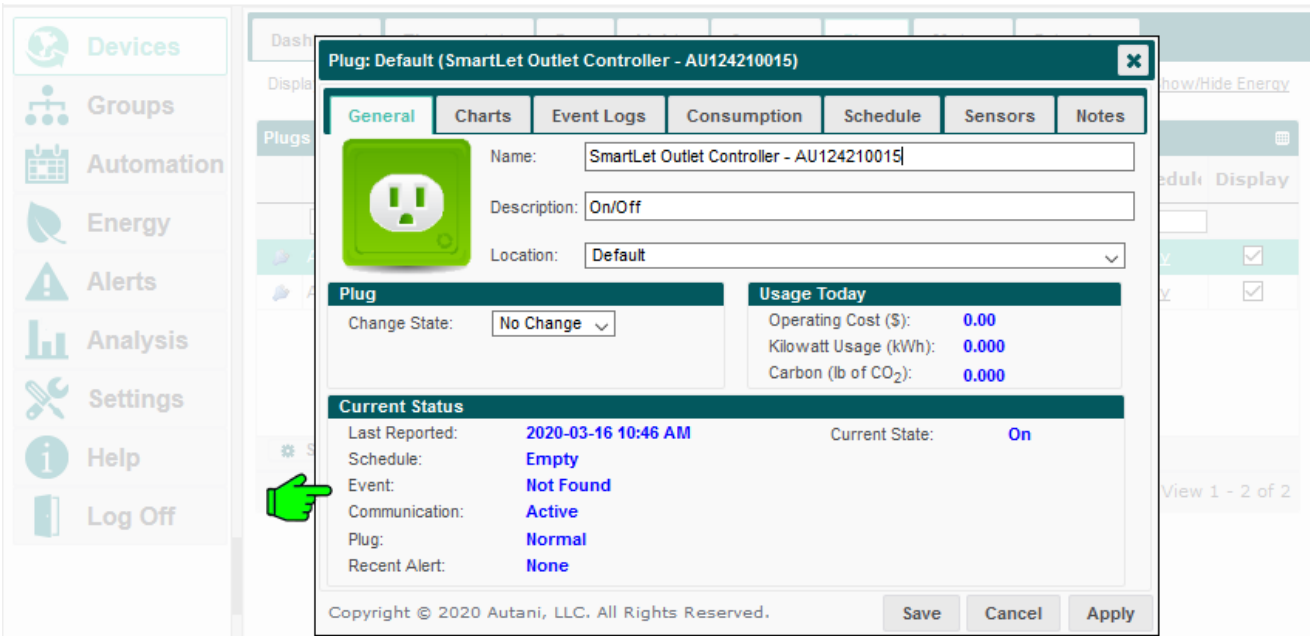

Table 6: Current Status of Plug Control Devices

Setting	Used To	Options
Last Reported	Display time/date stamp of the last communication between the plug control device and the Autani Manager	In the following format: yyyy-mm-dd hh:mm AM/PM
Schedule	Identify schedule currently applied to the plug control device	▪ User-defined schedule names ▪ Alphanumeric characters

| Setting	Used To	Options
Event	Identify schedule event currently applied to the plug control device	▪ User-defined schedule events ▪ Alphanumeric characters ▪ Not Applicable: Schedule is disabled or no schedule has been applied to the plug control device.
Communication	Indicate the communication status of the plug control device	▪ Active: Device is online and reporting data. ▪ Error: Device is not communicating with the Autani Manager over the autaniNet network. ▪ Removed: The device was removed from the autaniNet network.
Plug	Identify the status of the plug control device	▪ Normal ▪ Warning: Specific error status message ▪ Error: Device timeout ▪ Unknown

Recent Alert	Display the condition that triggered a warning or error
	NOTE: To clear an alert:
	   ▪ Click Alerts on the left navigation bar.
	   ▪ Select the checkbox next to the alert(s) to be deleted.
	   ▪ Click the Clear Selected button.
		▪ None
		▪ Error: The device is not communicating with the Autani Manager over the autaniNet network.
		▪ Warning: Specific status message

Current State	Indicate state of plug control device	▪ On ▪ Off ▪ Unknown

3.5. Viewing Plug Device Transition Data Charts

To view transition data for a specific plug control device:

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab.
3. Click the plug control device name link, **double-click** the row of the device, or click the row of the device and then the **Details** button.
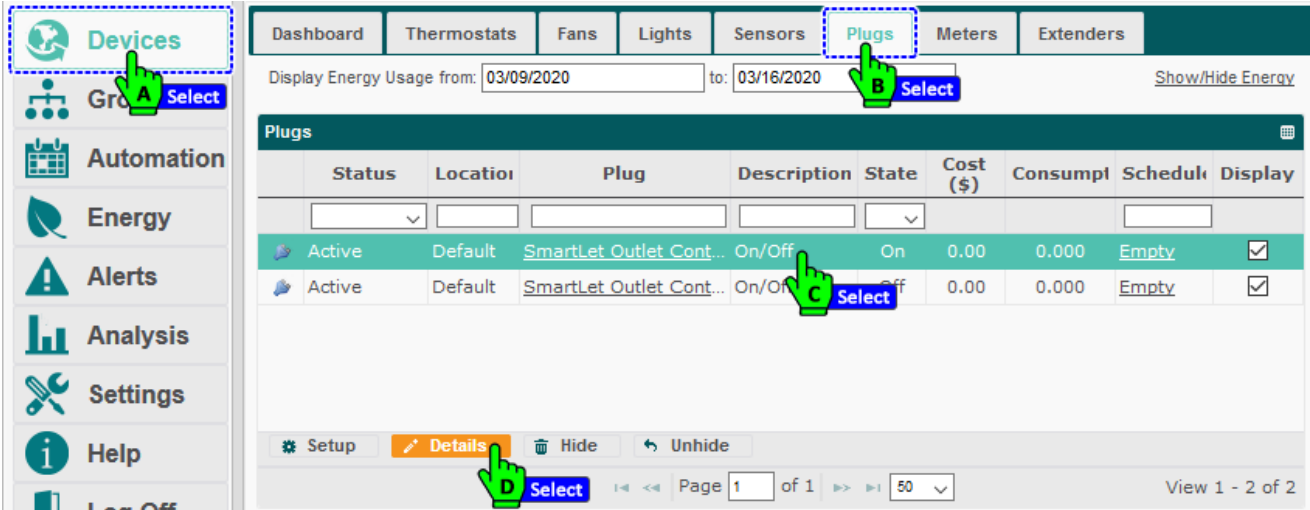

4. Click the **Charts** tab. The default display is for the current date.
5. To select a date range for the chart, click the **Start Date** and **End Date** textboxes to access the calendar.
6. To view more exact information:

   a. Mouse over the displayed data

   b. Zoom in on a defined area of the chart by clicking and dragging the mouse to create a rectangular box. To return the view to its original size, click Reset Zoom in the upper right-hand corner of the chart.
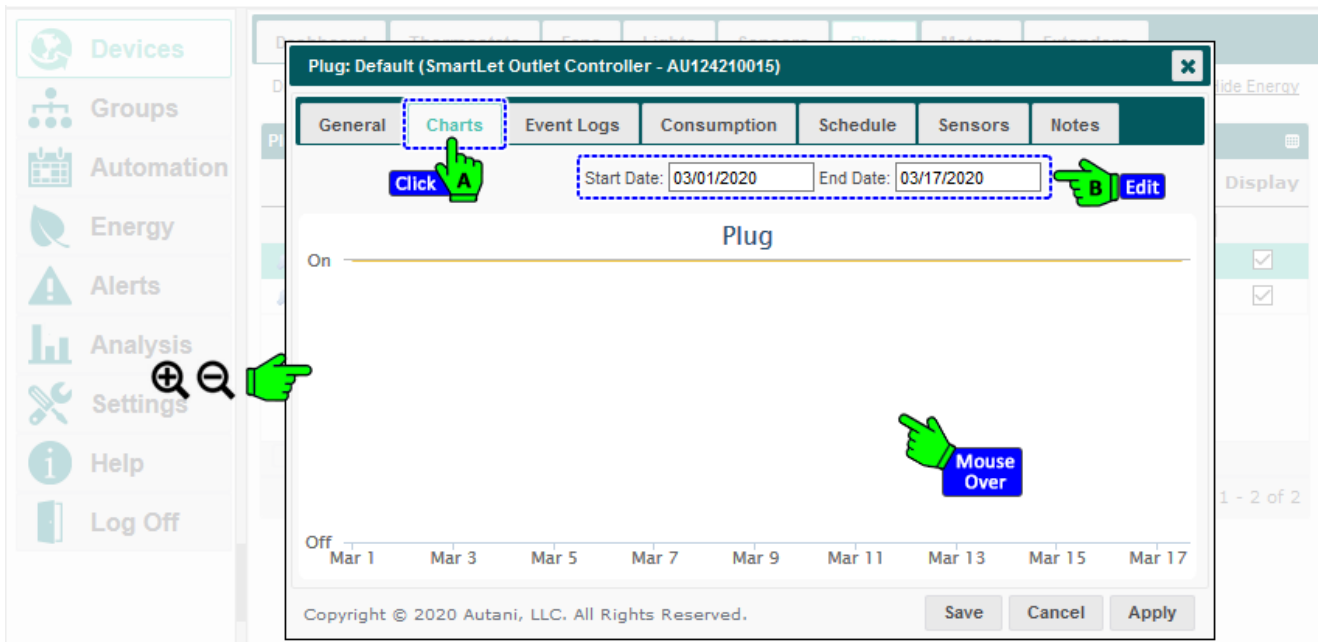
3.6.   Finding Detailed Data for Individual Plug Control Devices

To access information related to individual plug control devices:

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab. See *3.2 Viewing Summary Data for All Plug Management Devices* for specific information displayed on the tab.
3. To view additional information or enter data, click the plug control device name link, double-click the row of the device, or click the row of the device and then the **Details** button.
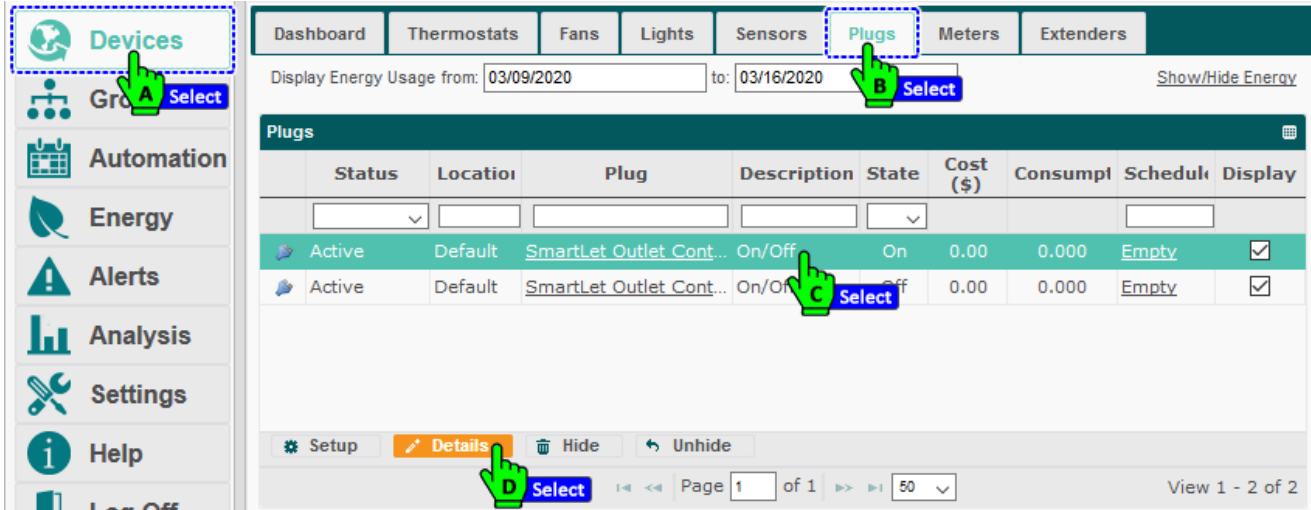
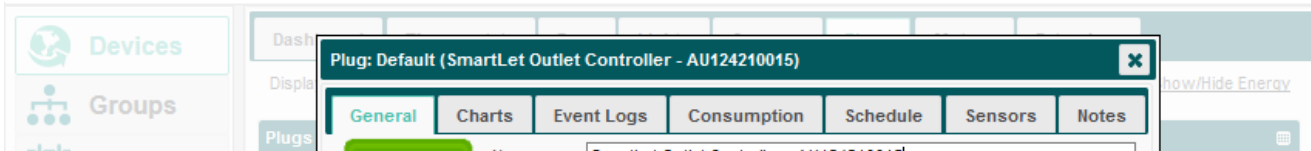The detail tabs that appear are described in the following table.

Table 7: Detailed Data Tabs for Plug Control Devices

| Tab	Used To
General	▪ Change general descriptive information ▪ Change the state of the device ▪ View current status information
Charts	View graphical representations of device status changes over a defined date range
Event Logs	View data on recent events
Consumption	View energy consumption in 15-minute intervals
Schedule	▪ View event schedule information ▪ Change general descriptive information ▪ Disable the schedule ▪ Link to screens to create or modify schedules and related events
Sensor (Occupancy) (Available if occupancy-related sensors are used including motion or contact sensors or computer keyboards)	Select sensors to provide input to the plug control device
Notes	

3.7.   Using Event Logs for Plug Control Devices

Event logs are created to record all important events related to plug control devices. The tabular data view can be used to understand:

- Usage patterns and determine ways to fine tune the system.
- Why and when a problem occurred and how to fix it.

To view a plug control device event log:

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab.
3. Click the plug control device name link, **double-click** the row of the device, or click the row of the device and then the **Details** button.
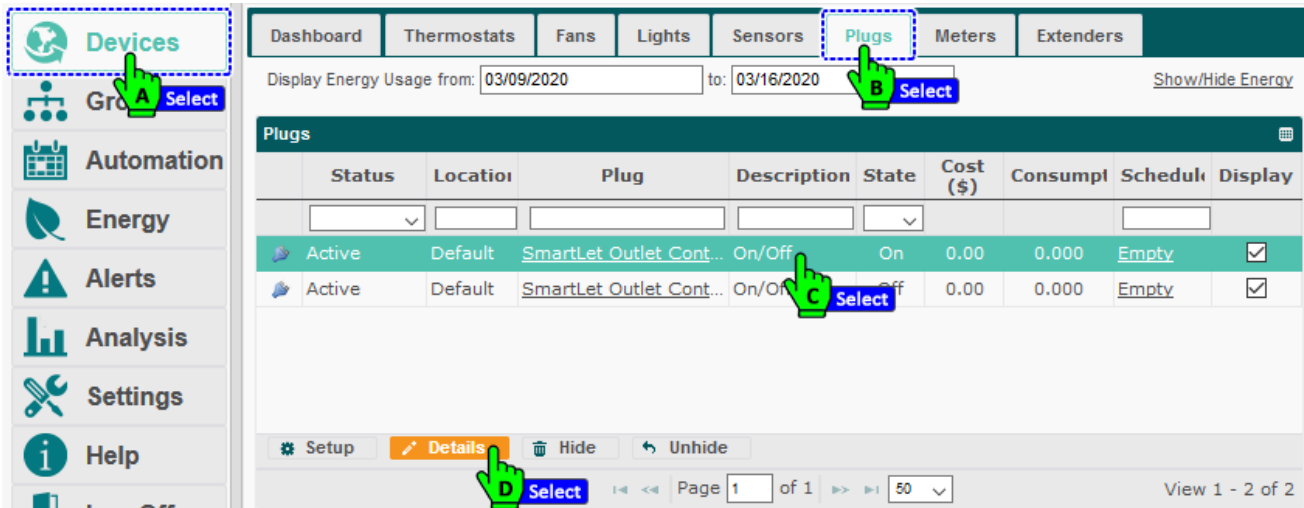
4. Click the **Event Logs** tab. The default display is for the current date.
5. To select a date range, click in the **Start Date** and **End Date** textboxes to access the calendar.

   NOTE: Event logs include events that began before the date range if the event continued during the selected date range.
6. To display hidden columns; click the **picker**, select the checkbox(es) for the column(s) to be displayed, click **OK**.
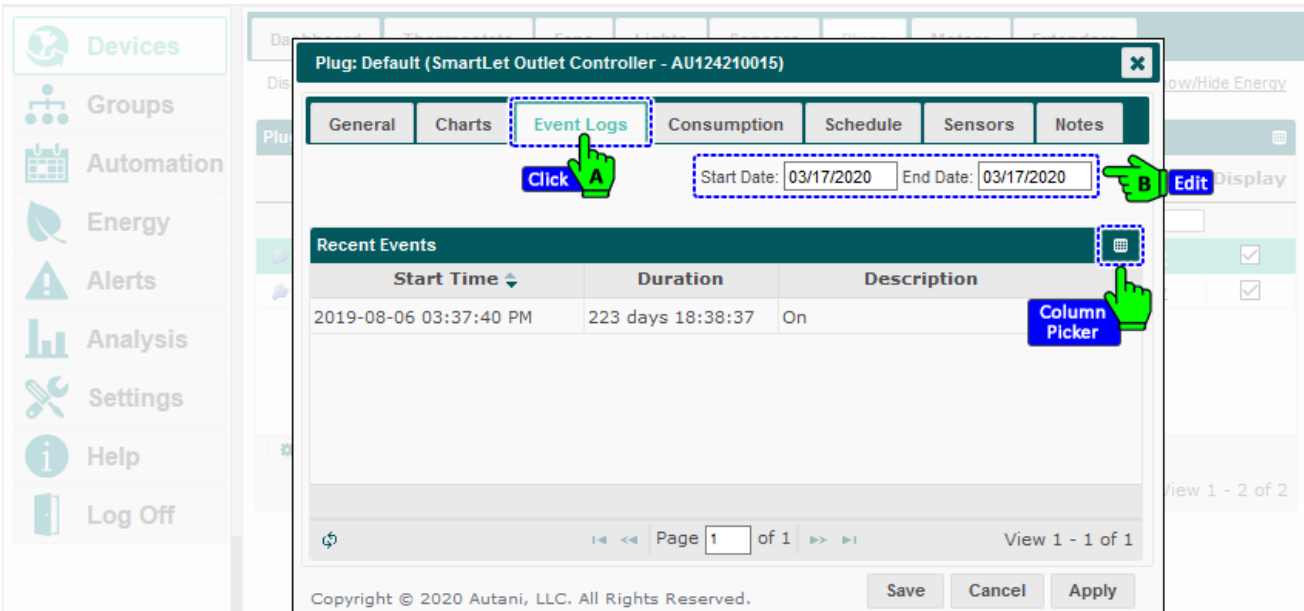
7. After viewing the event logs, either:
   - Click **Apply** to remain on the Event Logs screen.
   - Click **Save** or **Cancel** to close the dialog box.

4. Using Occupancy Sensors

4.1. Understanding Differences based on Occupancy Sensor Installation

Occupancy sensors detect movement which the application uses to determine if a space is occupied. Sensors can be used in tandem with plug control devices to eliminate unnecessary energy consumption.

For example, settings can be used to turn plug control devices:

- Off when a space becomes vacant and remains that way for a user-defined period of time.
- On when someone returns, and their movement is detected.

Schedules can be used to define device settings for occupied and unoccupied spaces. Options for controlling plug control devices depend on how sensors are installed. For more information, see the table below.

Table 8: Occupancy Sensor Installation Effects on Occupancy Settings

Sensor Installation Status	Occupancy Setpoint Settings
No sensor installed	Occupancy setpoints are not available for plug control devices.
▪ Integrated into application ▪ Not assigned to an Autani plug management device	Occupancy setpoints are not available for the plug control devices.

▪ Integrated into application module
▪ Assigned to Autani plug management device
	▪ Occupancy can be set remotely using a schedule.
	▪ Use of occupancy differs by mode:
	    □ ON: Occupancy sensor data is not used to turn plug control devices off.
	    □ OFF: Occupancy sensor data is not used to turn plug control devices on.
	    □ Users can specify unoccupied-related delay intervals to control how quickly plug control devices are turned off.

4.2. Associating Occupancy Sensors with Plug Control Devices

To assign occupancy sensors to plug control devices:

1. On the left navigation bar, click **Devices**.
2. Click the **Plugs** tab.
3. Click the plug control device name link, **double-click** the row of the device, or click the row of the device and then the **Details** button.

4. Click the **Sensors** tab.
5. Select the checkbox(es) next to the sensor(s) that are to be considered in occupancy decisions for the plug control device.

NOTE: To disassociate a sensor from a plug control device, deselect the checkbox associated with the sensor.

6. Click **Save** or **Apply**.

5. Creating and Assigning a Schedule

The application can be used to change settings for plug control devices based on scheduled events.

The steps below are required to create a schedule template and use it to assign a schedule to one or more plug control devices.

1. Create a schedule template by modifying a copy of the default template or another existing template.

2. Create or modify template events as described in the table below.

3. Assign a schedule template to one or more plug control devices or a group of plug control devices.

For detailed step-by-step instructions on creating groups, schedules, overrides or curtailments, refer to the EnergyCenter® User Guide module entitled 'Tasks Common to All Application (Zigbee)'.

1. On the left navigation bar, click **Automation** > **24/7 Schedules** > **Plugs**. Click **New** to create a new event.

2. The **New Event** dialog appears, make the changes as needed.

The following table describes about all the settings inside New Event dialog.

Table 9: Event Configuration Settings

Setting	Used To	Options
Name	Enter a name for the event	▪ User-defined ▪ Alphanumeric characters
Change State	Enter a behaviour mode for the plug control device **NOTES**: ▪ Each option is described when selected. ▪ If any computers are plugged into the device, they will be set to Hibernate by default before power is turned off.	▪ On ▪ Off If a sensor is being used, the following options also appear: ▪ Smart On/Off ▪ Vacancy
Off Delay Available if system includes sensors)	Delay powering off plug control devices when: ▪ Off is selected ▪ Smart On/Off or Vacancy is selected when a sensor is being used.	▪ 1-1440 minutes (24 hours) ▪ Default: One minute delay If a sensor is being used, the following options also appear: ▪ Smart On/Off ▪ Vacancy
Effective Days	Select the days of the week the event is to apply	▪ Days of the week ▪ Weekday ▪ Weekend ▪ All
Effective Time	Specify when settings should take effect **NOTE**: Scheduled event settings remain in effect until another event begins.	▪ The hour and minute ▪ AM or PM

6.   Troubleshooting

6.1.   Devices are not Reporting Data

6.1.1. Power LED is not Green

Check the power connection to the Autani plug control device:

1. Toggle the On/Off switch to the ON position.
2. Unplug and replug the device firmly plugged into the electrical outlet.
3. To make sure the device is plugged into a working electrical outlet, test the outlet:
    - Using a voltage meter.
    - By connecting another device to the outlet, and testing that it turns on.

6.1.2. Device is in Error or Warning State

If communication has been interrupted, the Error status of the plug control device is displayed on the Plugs device tab.

> **NOTE**: During initial setup, devices are in an error state until the mesh network is established. If the status does not change momentarily to Active, click **Alerts** on the left navigation bar to check the alert log.

Table 10: Error and Warning Troubleshooting

Issue	Cause	Potential Solution
Device Timeout Error	Excessive distance between devices or thick walls	▪ Unplug and replug the plug control device into an active wall outlet. ▪ Move devices closer together. ▪ Install an extender.
Error	Device is not communicating with the Autani Manager over the autaniNet network	▪ Unplug and replug the plug control device into an active wall outlet. ▪ Check power status of Autani Manager.
Warning	Specific condition listed	Dependent on warning condition listed

6.1.3. Rediscover the Device

1. On the left navigation bar, click **Settings**.
2. Click the **Device Setup** tab.
3. Click the **View Wireless Network** button.

4. Click the row of the plug control device to be rediscovered.
5. Click the **Rediscover** button.

- The description in the Type column changes to "Discovering."

- The time/date stamp in the Last Discovered column changes to "Starting discovery" in red.
- When the device has been rediscovered, the type of device reappears, and the new date/time stamp is listed.

6.2. Dashboard does not Appear

To enable the dashboard:

1. On the left navigation bar, click **Settings**.
2. Click the **System** tab. From the **System Device** drop-down list, select **Enabled**.
3. Click **Save**.

6.3.   Events are not Occurring as Scheduled

There are several reasons why it may appear that scheduled events are not occurring as expected. They include:

- Two events cannot start at the same time on the same day.
- The event was superseded by a scheduled override or by a curtailment. For more information, refer to the User Guide module entitled 'Tasks Common to All Application (Zigbee)'.
- Programmed delays may be affected if the system includes third-party sensors that have their own delay schedules. For more information, refer to the documentation that came with the sensor.
- A device was added to a group. Devices are not automatically assigned the Schedule Template that applies to the group.
- A Schedule Template may have been changed. Schedule template changes are not automatically copied to a device.

6.4.   Event Log Contains Data Outside the Selected Date Range

EnergyCenter® is programmed to include all data collected during a specified date range. Consequently, Event logs include events that began before the selected date range when those events continued during the date range.

6.5.   Error Message when Selecting a Date Range

If the desired start date is later than the default start date, set the end date before setting the start date to avoid receiving an error message.

6.6. Contacting Customer Support

For assistance after following the steps in Troubleshooting, contact Customer Support at:

- □ **Contact Autani Support.**
    Phone: 443.320.2233 x2
    Address: 7001 Columbia Gateway Drive, Suite 210, Columbia, MD 21046 USA
    Support / Commissioning Services: support@autani.com

- □ **Contact Autani Sales**
    Phone: 443.320.2233 x1
    Sales/Quotations: sales@autani.com, quotes@autani.com
    General Inquiries: information@autani.com

    Hours of Operations: Monday to Friday, 9am to 5pm, Eastern Standard Time.

7.   Glossary

Table 11: Glossary

Term	Description
Carbon Footprint	▪ Total greenhouse gases emitted during production of the energy used by an organization or to produce a product ▪ In EnergyCenter®, greenhouse gas emissions associated with an event ▪ Estimated for in pounds of carbon dioxide emitted
Curtailment	Used to immediately implement an Event Rule(s) to supersede a regularly scheduled Event or Override
Curtailment Stage	A trigger used to immediately implement a group of curtailments at the same time
Event	Setting or group of settings used to set the state on a single controllable point of a device at a certain time
Event Rule	Setting or group of settings used to set the state on a single controllable point of a device, or multiple points of the same type, triggered by an event defined in an override or curtailment
Kilowatt Hour (kWh)	▪ Unit of energy equivalent to one kilowatt of power expended for one hour ▪ Billing unit by electric utility company for energy delivered to its consumers
Override	Used to schedule one or more Event Rules to supersede a regularly scheduled Event
Schedule	Used to implement Events at a specific time, on a recurring basis, or based on conditions reported by sensors
Schedule Template	Schedule that is used as a pattern to quickly and easily apply the same setting(s) to multiple devices of the same types

8. Index

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