

UltraECM HSPI User's Guide

A HomeSeer HS2 plug-in for the
Brultech Energy Consumption Monitors.

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Introduction

UltraECM is a HomeSeer2 plug-in for the Brultech Energy Consumption Monitors. The plug-in reads energy data forwarded by the Brultech Engine Software providing HomeSeer a view into the electrical power consumption of your home.

Intended Audience

This document is intended for the HomeSeer user that has chosen to install and configure the UltraECM HomeSeer Plug-in.

UltraECM HSPI Overview

The Brultech ECM-1240 is a multi-channel Energy Consumption Monitor (ECM) designed for use with residential electrical systems. The ECM-1240 is then connected to the Brultech Engine software running on the HomeSeer computer allowing the UltraECM HSPI to display and graph energy usage in your home.

How It Works

The UltraECM HSPI connects to the Brultech Engine software via a TCP network connection. The forwarded data packets sent from the Engine software can be buffered and averaged to reduce loads for ECM units configured to send frequent updates. The UltraECM plug-in provides real-time access to Watts, Voltage, Amps, and cumulative KWh. The plug-in allows you to create a HomeSeer device for just the ECM devices you want HomeSeer to display and react to.

Features

- Multiple threading allows UltraECM HSPI to communicate with the Brultech Engine software without disrupting the performance of HomeSeer.
- Support for up to 6 Brultech ECM-1240 units when connected to the Brultech Engine software.
- Create only the HomeSeer devices you need to track energy usage in your home.
- Error Try/Catch logic to ensure plug-in doesn't fail with an unhandled exception.

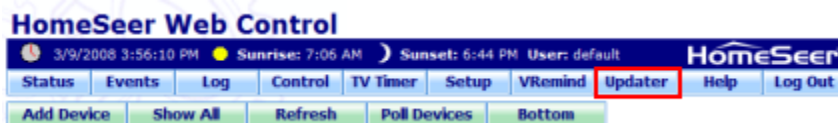
Requirements

- Homeseer 2.2 or greater.
- One or more of the Brultech ECM-1240 units.
- The Brultech Engine software running on your HomeSeer system or another computer on your local network.


UltraECM HSPI Installation

Downloading the HomeSeer Plug-in

1. From your HomeSeer web page, select the Updater button.



2. Click the Next button until you find the entry for UltraECM, then click the checkbox to mark the plug-in for installation.

<input checked="" type="checkbox"/>	Yes		UltraECM (Brultech Energy Consumption Monitor)	Plug-in 1.1.4379.17668 1.1.4379.17668	\$19.95	Ultrajones
Release Info Learn More						

3. Click the Next button to begin downloading the UltraECM plug-in package.
4. Restart HomeSeer once you see the following message displayed:

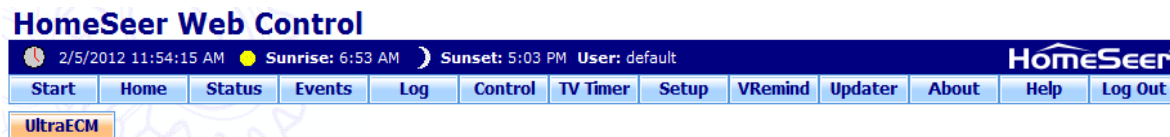
Update Download Status	
Status	Update
Downloaded Successfully	UltraECM (Brultech Energy Consumption Monitor)

Installing the HomeSeer Plug-in

1. During startup, HomeSeer will automatically launch the plug-in installer. Simply step through the plug-in installer wizard to install and enable the HomeSeer plug-in.



2. Once the installer finishes, the UltraECM plug-in should be enabled and ready for use.



UltraECM HSPI Setup

Before you begin to configure the UltraECM plug-in, you'll need to make sure you complete the installation and configuration of each Brultech ECM unit connected to the Brultech Engine software. Refer to the Brultech documentation for additional information.

Initial Setup Checklist

1. **Brultech ECM-1240 Installation** – Refer to the Brultech ECM-1240 Install Guide and ECM-1240 User Manual on how to install and configure the energy consumption monitors.
2. **Brultech Engine Installation** – Refer to the Brultech ECM Engine Manual, Engine Quick Start and Engine Setup Videos on how to install and configure the Engine software. This documentation is available under the Customer Login / ECM 1240 Registered User Support section of the Brultech website <http://www.brultechech.com>.

Screenshot showing 2 EMC-1240 units connected:



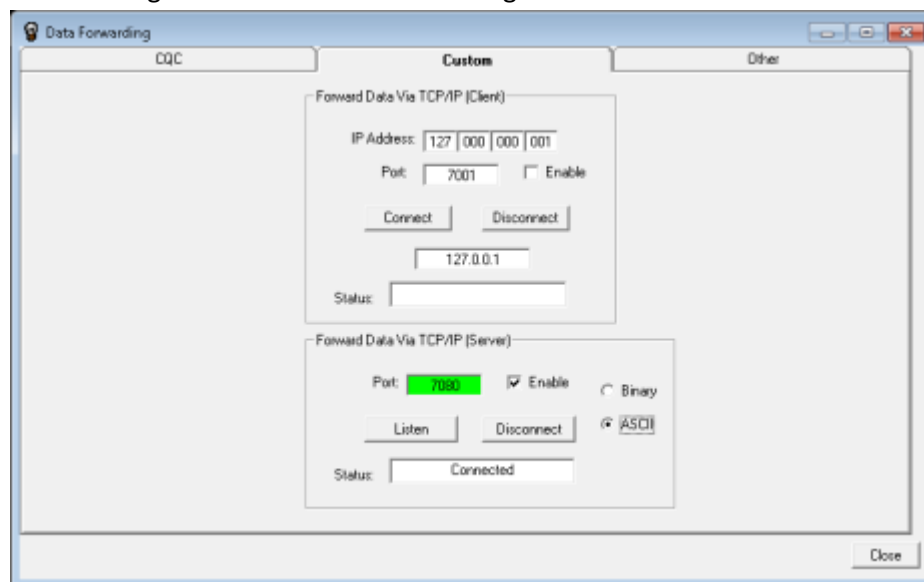
Once the Engine software is properly configured, select Data View > Tabular Data and confirm the inputs channels are configured and the Power Watt for each channel appears to be accurate.

Screenshot of the Engine Real Time Display:

	Power Watt	Current Amps	Energy kWh	Last Update
Main Panel	2647 W	20.5 A	12834532.11 kWh	13:12:57
Air Compressor	0 W	0.1 A	9774226.694 kWh	
Dishwasher	1 W		300.588 kWh	
Laundry	373 W		116.68 kWh	
Sump Pump	6 W		31.979 kWh	
Furnace/Fan	8 W		259.189 kWh	
Automation	160 W		758.831 kWh	
Light Group A	42 W	0.5 A	23823283.122 kWh	13:12:57
Light Group B	318 W	3.4 A	1121.96 kWh	
Basement Plugs	449 W		1109.453 kWh	
Basement Lights	791 W		507.686 kWh	
Kitchen Plugs	140 W		500.775 kWh	
Light Group C	514 W		605.358 kWh	
GDD	1 W		32.133 kWh	

3. **Brultech Engine Data Forwarding Configuration** – Complete the following steps to enable data forwarding to the UltraECM HSPI.
 - a. From the Engine menu, select Forward Data > Home Automation Plugin.
 - b. On the Data Forwarding dialog window, select the Custom tab.
 - c. Under the “Forward Data via TCP/IP (Server)”, enter port 7080, select ASCII, then select the Enable checkbox.

Brultech Engine Software Data Forwarding Screenshot:



4. Start HomeSeer and ignore the UltraECM errors indicating the ECM interface is disabled. Select UltraECM > Options, then enter the IP address of the system running the Brultech Engine software as shown in the following screenshot:



5. Restart HomeSeer to allow the plug-in to properly initialize the UltraECM HomeSeer devices and establish the initial connection to the Brultech Engine software. The HomeSeer status web page should indicate the UltraECM database connection is opened and ECM connection status is connected as shown by the following screenshot:

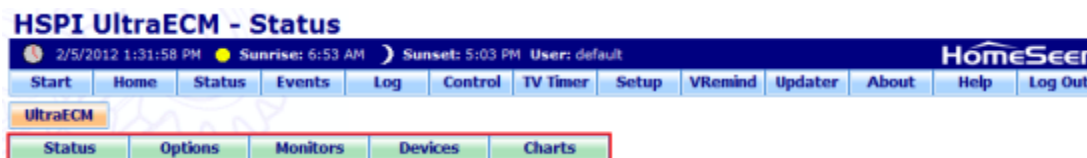
Device List: Sorted by Code, Ascending <small>Turn Off Sorting</small>								
	Status	Location	Grouping	Name	Code	Type	Last Change	Control
	Opened	UltraECM Plugin	Plug-ins	Database Connection	.1	UltraECM	Today 11:50:36 AM	Open Close
	Connected:192.168.2.12	UltraECM Plugin	Plug-ins	ECM Connection State	.2	UltraECM	Today 11:50:36 AM	Connect Disconnect

UltraECM HSPI Configuration

Web Page Layout

The UltraECM plug-in has five web pages that provide access to the available features of the plug-in.

Screenshot



The available web pages are as follows:

1. **Status** – Displays the UltraECM HSPI plug-in status, Brultech Engine connection status, database status, and database statistics.
2. **Options** – Displays and allows you to change the options associated with the plug-in.
3. **Monitors** – Displays and allows you to rename the channels associated with each ECM-1240 connected to the Engine software.
4. **Devices** – A web page that allows you to display the current status of all ECM units and associated channels and provides the ability to automatically create the desired HomeSeer devices.
5. **Charts** – A web page that allows you to chart the energy usage of each ECM unit and associated channels.

Options

All options are set from the Options web page. The following options are supported:

1. **IP Address** – Enter the IP address of the system running the Brultech Engine software.
2. **IP Port** – Enter the TCP/IP port of the Brultech Engine software. The default is 7080.
3. **Data Buffer** – Select the number of packets to buffer and average before updating the underlying HomeSeer devices and database.
Note: If the ECM units are configured to buffer packets, then select 1 packet. If your ECM units send updates every second, then the recommend value is 30 packets.
4. **Authorized User Roles** – Specify the HomeSeer users authorized to access the UltraECM web page.
5. **Register Link** – If set to Yes, the UltraECM button will be displayed on all web pages.
6. **Debug Mode** – If set to Yes, the plug-in will write verbose logging to the HomeSeer log file.

Monitors

The UltraECM HSPI allows you to name the ECM channels for each ECM unit connected to the Engine software. Simply type the correct name in the associated textbox, then click the Save button.

HSPI UltraECM - Monitors

2/5/2012 2:59:12 PM
Sunrise: 6:53 AM
Sunset: 5:03 PM
User: default
HomeSeer

Start
Home
Status
Events
Log
Control
TV Timer
Setup
VRemind
Updater
About
Help
Log Out

UltraECM

Status
Options
Monitors
Devices
Charts

Brultech Energy Consumption Monitors Detected

Unit	Channel 1	Channel 2	Aux 1	Aux 2	Aux 3	Aux 4	Aux 5
A	Main Panel	AC Unit	Unused	Dishwasher	Sump Pump	Furnace/Fan	Automation
B	Light Group A	Light Group B	Basment Plugs	Basment Lights	Kitchen Plugs	Light Group C	GCC

Save
Refresh

Devices

Connection Device

This HomeSeer device is automatically created and manages the connection to the Engine software. If the plug-in happens to lose connection for whatever reason, you can force a connection by selecting reconnect from the Control options. You can also halt the watchdog reconnection functionality by selecting disconnect from the Control options.

Database Device

This HomeSeer device is automatically created and manages the connection to underlying database.

Supported HomeSeer Devices

UltraECM HSPI supports the ability to manually create over 20 HomeSeer devices for each ECM-1240. However, this doesn't mean you need to create that many devices. Review the list below and create just the devices you need to monitor your home energy usage.

Watts

Ch1 Power	Current watts of channel 1	
Ch2 Power	Current watts of channel 2	
Ch1 Polarized Power	Energy flowing from the grid for channel 1	
Ch2 Polarized Power	Energy flowing from the grid for channel 2	
AUX1 Power	Current watts of auxiliary channel 1	
AUX2 Power	Current watts of auxiliary channel 2	
AUX3 Power	Current watts of auxiliary channel 3	
AUX4 Power	Current watts of auxiliary channel 4	
AUX5 Power	Current watts of auxiliary channel 5	

Energy

AC Voltage	Current AC voltage	
Ch1 Current (Amps)	Channel 1 amps	
Ch2 Current (Amps)	Channel 2 amps	

Ch1 Kilowatt-Hour	Cumulative channel 1 kilowatt hours	
Ch2 Kilowatt-Hour	Cumulative channel 2 kilowatt hours	
AUX1 Kilowatt-Hour	Cumulative auxiliary channel 1 kilowatt hours	
AUX2 Kilowatt-Hour	Cumulative auxiliary channel 2 kilowatt hours	
AUX3 Kilowatt-Hour	Cumulative auxiliary channel 3 kilowatt hours	
AUX4 Kilowatt-Hour	Cumulative auxiliary channel 4 kilowatt hours	
AUX5 Kilowatt-Hour	Cumulative auxiliary channel 5 kilowatt hours	

Misc

Device Serial Number	The serial number of the ECM-1240 unit	
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Screenshot

HSPI UltraECM - Devices

2/5/2012 2:59:18 PM
 Sunrise: 6:53 AM
 Sunset: 5:03 PM
 User: default

[Start](#)
[Home](#)
[Status](#)
[Events](#)
[Log](#)
[Control](#)
[TV Timer](#)
[Setup](#)
[VRemind](#)
[Updater](#)
[About](#)
[Help](#)
[Log Out](#)

[UltraECM](#)

[Status](#)
[Options](#)
[Monitors](#)
[Devices](#)
[Charts](#)

UltraECM Device Type: Watts [Update](#)

ECM Devices							
Unit	Input	Name	Label	Type	Value	Last Change	HomeSeer Device <input type="checkbox"/>
A	CH1	Ch1 Power (Watts)	Main Panel	ECM Watts	3093	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	CH2	Ch2 Power (Watts)	AC Unit	ECM Watts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
A	CH1	Ch1 Polarized Power (Watts)	Main Panel	ECM PWatts	3093	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	CH2	Ch2 Polarized Power (Watts)	AC Unit	ECM PWatts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
A	AUX1	Aux1 Power (Watts)	Unused	ECM Watts	1	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	AUX2	Aux2 Power (Watts)	Dishwasher	ECM Watts	518	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	AUX3	Aux3 Power (Watts)	Sump Pump	ECM Watts	6	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	AUX4	Aux4 Power (Watts)	Furnace/Fan	ECM Watts	8	2/5/2012 2:51:18 PM	<input type="checkbox"/>
A	AUX5	Aux5 Power (Watts)	Automation	ECM Watts	160	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	CH1	Ch1 Power (Watts)	Light Group A	ECM Watts	41	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	CH2	Ch2 Power (Watts)	Light Group B	ECM Watts	425	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	CH1	Ch1 Polarized Power (Watts)	Light Group A	ECM PWatts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
B	CH2	Ch2 Polarized Power (Watts)	Light Group B	ECM PWatts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
B	AUX1	Aux1 Power (Watts)	Basment Plugs	ECM Watts	458	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	AUX2	Aux2 Power (Watts)	Basment Lights	ECM Watts	636	2/5/2012 2:59:03 PM	<input type="checkbox"/>
B	AUX3	Aux3 Power (Watts)	Kitchen Plugs	ECM Watts	144	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	AUX4	Aux4 Power (Watts)	Light Group C	ECM Watts	957	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	AUX5	Aux5 Power (Watts)	GCC	ECM Watts	1	2/5/2012 2:59:03 PM	<input type="checkbox"/>

[Save](#)
[Refresh](#)

Adding a UltraECM Device

You can add HomeSeer devices from the UltraECM > Devices web page. Simply select the ECM device type from the drop down, then press the Update button. Once the desired ECM device type grouping is displayed, simply select the checkbox for each HomeSeer device you want to create, then click the Save button. Repeat these steps until you have created all the HomeSeer devices you want to create.

Screenshot

HSPI UltraECM - Devices

2/5/2012 2:59:18 PM

Sunrise: 6:53 AM

Sunset: 5:03 PM

User: default

HomeSeer

Start

Home

Status

Events

Log

Control

TV Timer

Setup

VRemind

Updater

About

Help

Log Out

UltraECM

Status

Options

Monitors

Devices

Charts

UltraECM Device Type:

Watts

Update

ECM Devices

Unit	Input	Name	Label	Type	Value	Last Change	HomeSeer Device
A	CH1	Ch1 Power (Watts)	Main Panel	ECM Watts	3093	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	CH2	Ch2 Power (Watts)	AC Unit	ECM Watts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
A	CH1	Ch1 Polarized Power (Watts)	Main Panel	ECM PWatts	3093	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	CH2	Ch2 Polarized Power (Watts)	AC Unit	ECM PWatts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
A	AUX1	Aux1 Power (Watts)	Unused	ECM Watts	1	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	AUX2	Aux2 Power (Watts)	Dishwasher	ECM Watts	518	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	AUX3	Aux3 Power (Watts)	Sump Pump	ECM Watts	6	2/5/2012 2:59:18 PM	<input type="checkbox"/>
A	AUX4	Aux4 Power (Watts)	Furnace/Fan	ECM Watts	8	2/5/2012 2:51:18 PM	<input type="checkbox"/>
A	AUX5	Aux5 Power (Watts)	Automation	ECM Watts	160	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	CH1	Ch1 Power (Watts)	Light Group A	ECM Watts	41	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	CH2	Ch2 Power (Watts)	Light Group B	ECM Watts	425	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	CH1	Ch1 Polarized Power (Watts)	Light Group A	ECM PWatts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
B	CH2	Ch2 Polarized Power (Watts)	Light Group B	ECM PWatts	0	2/5/2012 2:51:03 PM	<input type="checkbox"/>
B	AUX1	Aux1 Power (Watts)	Basment Plugs	ECM Watts	458	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	AUX2	Aux2 Power (Watts)	Basment Lights	ECM Watts	636	2/5/2012 2:59:03 PM	<input type="checkbox"/>
B	AUX3	Aux3 Power (Watts)	Kitchen Plugs	ECM Watts	144	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	AUX4	Aux4 Power (Watts)	Light Group C	ECM Watts	957	2/5/2012 2:59:18 PM	<input type="checkbox"/>
B	AUX5	Aux5 Power (Watts)	GCC	ECM Watts	1	2/5/2012 2:59:03 PM	<input type="checkbox"/>

Save

Refresh

Modifying an Existing UltraECM Device

You can modify an UltraECM device the same way you modify any other HomeSeer device. Simply click on the device name from the HomeSeer device page, and then change the device properties as needed.

Note: Once a HomeSeer device is created, the plug-in will not overwrite any of the device properties, so feel free to modify the name, location and location2 properties as you see fit.

Deleting an Existing UltraECM Device

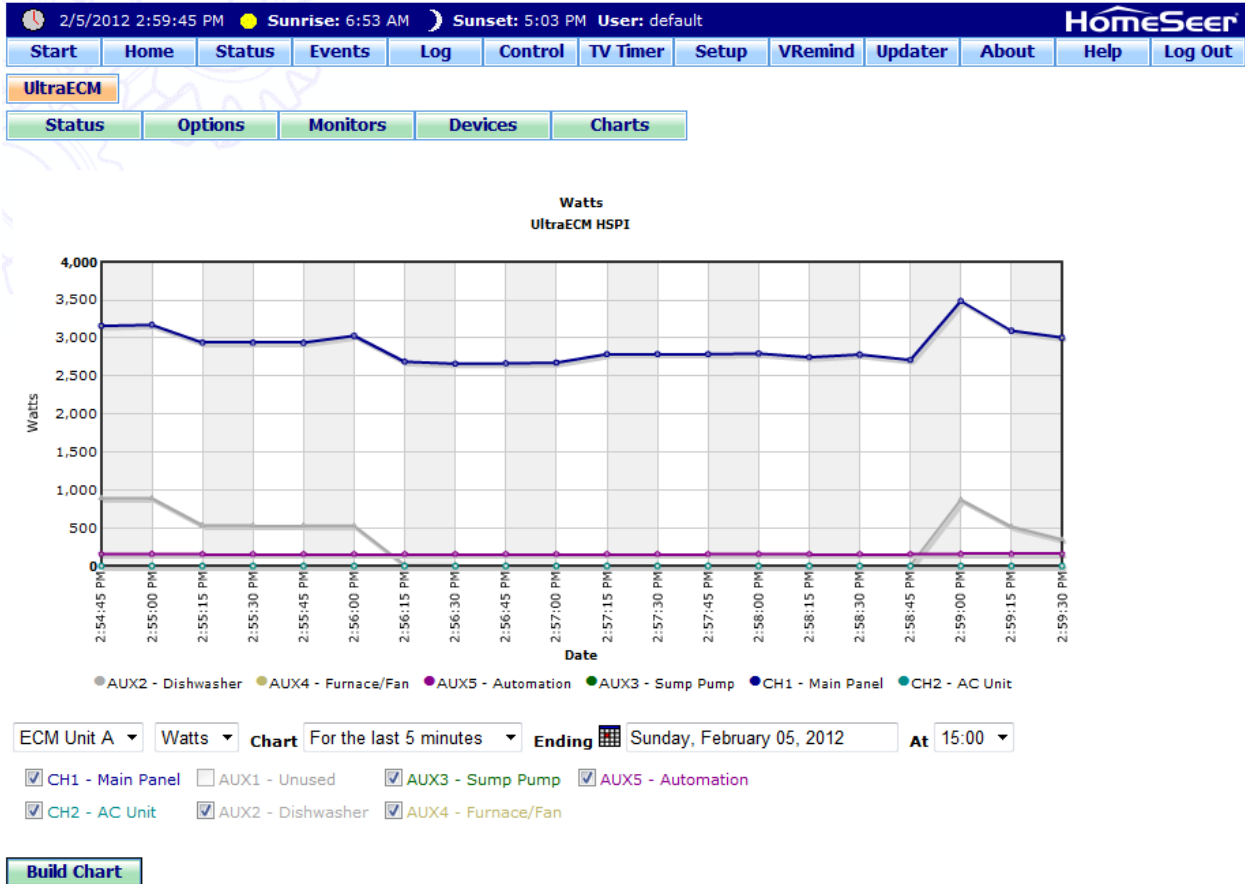
You can delete an UltraECM device the same way you delete any other HomeSeer device. From the HomeSeer device web page, click the device name, then from the HomeSeer modify device web page, click the Delete button.

UltraECM Charts

You can chart the energy usage over time from the Charts web page. Simply select the ECM unit, the duration, the ending date and time, the ECM-1240 channels to chart then click the Build Chart button.

Screenshot

HSPI UltraECM - ChartSelection



If you have multiple ECM-1240 units connected to your Engine software, then you can display the energy usage of the other channels by selecting another ECM Unit, the duration, the ending date and time, the ECM-1240 channels to chart then click the Build Chart button.

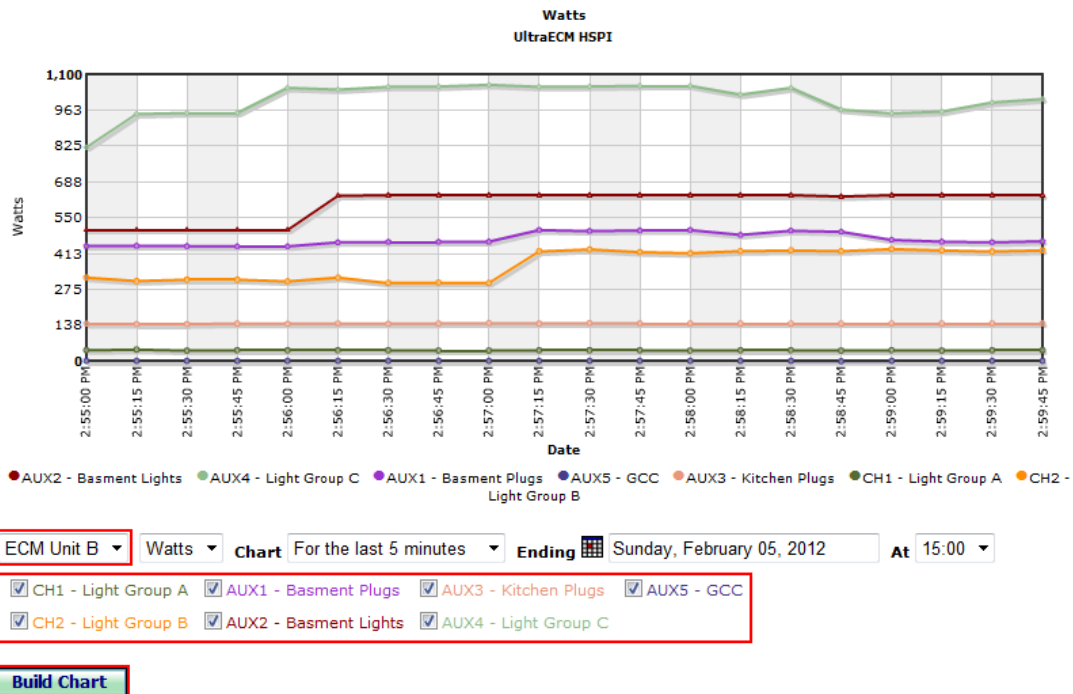
HSPI UltraECM

2/5/2012 2:59:58 PM Sunrise: 6:53 AM Sunset: 5:03 PM User: default **HomeSeer**

Start Home Status Events Log Control TV Timer Setup VRemind Updater About Help Log Out

UltraECM

Status Options Monitors Devices Charts



UltraECM HSPI Triggers

This plug-in does not have any HomeSeer triggers defined.

UltraECM HSPI Trigger Actions

This plug-in does not have any HomeSeer trigger actions defined.

UltraECM HSPI Trigger Conditions

This plug-in does not have any HomeSeer trigger conditions defined.