



Smarthome™ Manager

The First Affordable Stand-Alone USB-Based Home Automation Controller!

For models:
#1132CU

PowerLinc™ Controller with
Smarthome Manager Essential

#1132CUPLUS

PowerLinc™ Controller with
Smarthome Manager Plus

SMARTHOME™
MAKING LIFE MORE CONVENIENT, SAFE AND FUN

Congratulations and Introduction

Smarthome Manager is a suite of software tools that allows you to automate, control and monitor your home. It includes modules that provide two major functions:

- Software for PowerLinc™ Controller USB
- Software for SmarthomeLive™

PowerLinc Controller

The PowerLinc Controller USB is the world's first downloadable home automation interface for X10/PLC (Power Line Carrier) control that connects to a computer's Universal Serial Bus (USB). It is a stand-alone home automation interface for controlling lights, appliances, heating/air conditioning systems and alarm systems. This totally new module is just like our original PowerLinc USB Interface (1132U), but now includes on-board processing so timers and macros can be downloaded without the need to leave the host computer up and running.



Unlike previous solutions that used the slower-speed RS-232 Com Port and required the use of a dedicated interrupt control line (IRQ), PowerLinc Controller USB uses the newer and more flexible USB channel found on nearly all computers. USB ports support higher speeds and multiple devices can be attached to the computer at the same time.

PowerLinc Controller USB works with all USB-aware versions of Microsoft® Windows® starting with Microsoft Windows 98se and above. It uses the Microsoft Windows Human Interface Drivers that are already in use and installed on all versions of Microsoft Windows 98se and later. This means there are no hardware drivers to install or conflict with other hardware or software.

SmarthomeLive

SmarthomeLive is an Internet-based controller that allows a homeowner to maintain total control of a home from any computer or web-enabled device. It includes a full-featured monitoring application that lets a user see around a home, receive e-mails or text messages when an issue (like motion or an exceeded temperature) is detected, and remotely control electronics, from anywhere in the world where there is Internet access.

Unlike other home monitoring systems that only provide video monitoring, or send passive alerts when motion is detected, SmarthomeLive is one of the only systems available that gives you on-command control of electronic devices. You'll be able to control lights, turn the stereo on or off, or even tell a TiVo® to record a show if you're held up at the office and won't be home in time to watch it live. With SmarthomeLive, the home monitoring possibilities are endless.

PowerLinc Controller Key Features

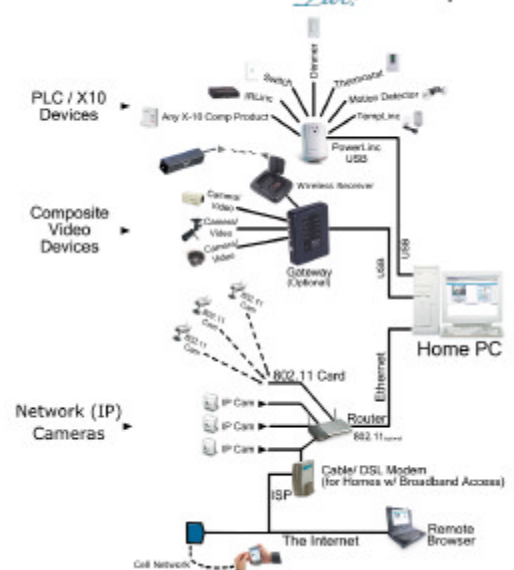
- Includes internal memory and clock for PC-free operation
- Easy and trouble-free USB connection
- Stores over 1,000 commands in 32KB of memory
- Includes Smarthome Manager Essential automation software
- Feed-through outlet won't block you from plugging in other devices
- Compatible with third-party programs
- Uses the HID (human interface device) drivers already installed with Windows®



SmarthomeLive Features

- View live video of your the home on nearly any browser
- View up to 4 cameras hardwired to the SmarthomeLive gateway and 3 IP net cameras
- Control any PLC/X10 device in the home
- Monitor and control up to 4 X10/PLC thermostats
- Setup and execute simple PLC/X10 macros or scenes
- Receive email alerts or cell phone text messages upon an event or when a HVAC zone exceeds a high or low set point
- Archive 60 seconds of video when an event is detected
- Monitor temperature and a single camera from your Windows desktop
- Password protected set-up screen enables friends to view cameras, but not change setup options
- SmarthomeLive IP address authentication provides improved security
- Logs recorded for all PLC/X10 traffic, IP connections, email alerts, archives recorded
- Automatic authentication of IP net cameras behind a router's firewall

SMARTHOME Live! -Setup



For detailed features on SmarthomeLive, please see the SmarthomeLive manual (on the Smarthome CD) or on line at: www.smarthome.com/smarthomelive.html

Smarthome Manager Essential Features:

- Timer events can be based upon the same time every day, sunrise/sunset, and randomized for security purposes,
- Stores over 1000 commands (depending on complexity) in a 32KB EEPROM memory chip inside the PowerLinc Controller
- Celestial clock that tracks sunrise and sunset times for any place on the planet
- Macro triggers support allows one incoming signal to cause PowerLinc controller to send a series of commands to your receiving modules
- Can send unique commands like Preset Dims, individual key presses (address with no command), on only, off only, etc.
- Setup modules by room or section of the house for easy organization
- Keeps a master reference list of all modules and scene addresses with links to room locations for those locations
- Handy setup wizards for the Smarthome series of Linc modules
- Directly control modules from the computer by right clicking on the icon and choosing the command
- Monitor and log sent and received PLC/X10 signals

Smarthome Manager Plus Features:

Smarthome Manager Plus is an upgraded version of Smarthome Manager Essential. It contains more powerful programming options and additional features to make your system work at a more intelligent level.

- Smarthome Manager Plus software includes all the features of the Essential software plus these features:
- Outgoing signals can be conditional on time, date, day of the week, the state of any X10 address, and more.
- Set up Sequences of frequently used commands so that they can be easily copied into Timer and Event-based actions
- New module automatic detection (automatically detects signals for new 2-way enabled modules)
- Convenient monitoring of PLC/X10 signals on the bottom of the screen

For Essential users, these features will be grayed out in the software. To upgrade from Essential to Plus, please see your distributor or the Smarthome Web site.

Parts included with PowerLinc Controller USB

- PowerLinc Controller Interface
- 6 ft. USB Cable
- Smarthome CD ROM Windows-based software*
- Quick Start Guide

* Some PowerLinc Controller kits may not include the CD ROM software or another software package may be substituted. Always check the Smarthome Web Site for software updates so you are sure to have the latest version for your application.





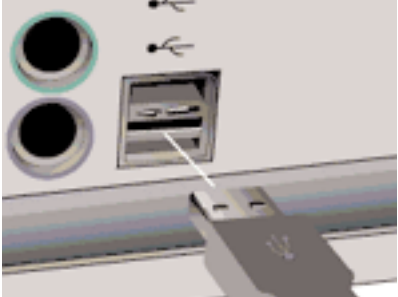
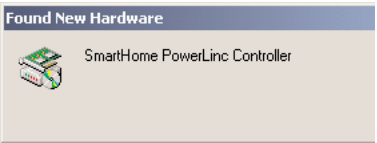

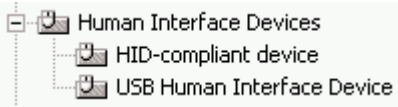
Included Parts with PowerLinc Controller

Computer Requirements

PowerLinc Controller works with any computer running Microsoft Windows® 98se and above (with exception of Windows 2000 Server). And because it uses Microsoft's Human Interface drivers that are already in use on those systems, you won't have to install any additional drivers or worry about conflicts with other hardware or software. A CD-ROM drive is required to load the software.

- Minimum: 300MHz CPU or better, 32MB RAM, at least one available USB Port
- Recommended: 600MHz CPU or better, 64MB RAM, at least one available USB Port

How to Install the PowerLinc Controller Interface

		
<p>1. Turn on and boot up your computer (if already on, turn off all running programs).</p>	<p>2. Plug in the PowerLinc Controller USB into an AC outlet and connect the USB cable into the outlet on the PowerLinc Controller USB. The green LED will illuminate.</p>	<p>3. Once the computer is fully booted up, plug in the USB cable into a USB port on the computer.</p>
		
<p>4. In a few seconds, the computer displays the message above.</p>	<p>5. Moments later, the computer will display a message indicating that it is using drivers already built into Windows. In some cases, you may need your original Windows Installation CD to load the HID drivers.</p>	<p>6. The computer is now ready to use the PowerLinc Controller. You can confirm that Windows has recognized the PowerLinc Controller by looking it up in Windows' Device Manager.</p>

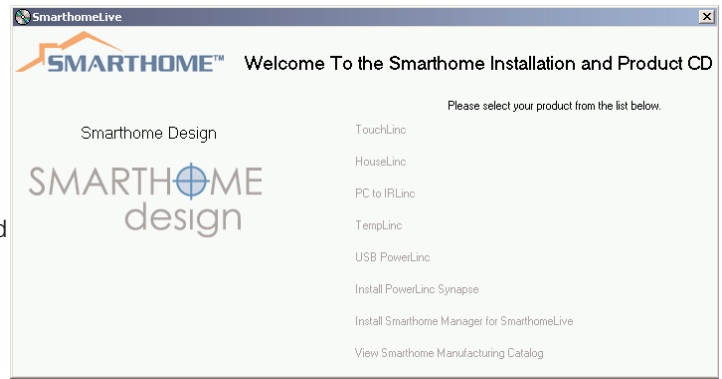
Installing Smarthome Manager Software

The PowerLinc Controller USB includes Windows-based programming on a CD ROM. The Smarthome Manager program will allow you to set up timers, macros and other home automation events for the PowerLinc Controller USB. Once the events are added, they are downloaded into the Controller's on-board memory and will execute independently of the computer's status. An internal battery will keep the time and preserve the programming if the interface is disconnected from electricity. The software will need approximately 20MB of hard drive space.

Follow these steps to start automating your home:

1. Place the CD ROM into the computer's CD drive.
2. A selection screen will be displayed.
3. Choose Smarthome Manager to begin the installation.
4. Follow the on-screen instructions.

After the installation, an icon will appear on your desktop.



Tips for Using PowerLinc Controller USB

- The cable cannot be any longer than 10' (6' or less is recommended).
- Do not plug PowerLinc Controller USB into a AC line filter or a power strip.
- Use only one PowerLinc Controller USB per computer.
- Some computers and their accessories can absorb Power Line Carrier (PLC) signals off the power lines. Since PowerLinc Controller will be so close to the computer, the power strip for the computer should be filtered. Use Smarthome's FilterLinc #1626 on the computer's power strip to keep the PowerLinc Controller's signals from getting absorbed by the computer equipment.
- Don't plug other PLC transmitters into the same outlet as PowerLinc Controller USB. Every PLC transmitter will absorb the other transmitter's PLC signals when they are not transmitting. In some cases, up to half the signal can be lost nearby transmitters.

Using the PowerLinc Controller Interface

The PowerLinc Controller Interface has the following features:

Green Status Indicator: Illuminates steady when powered on and blinks when receiving PLC signals.

Set Button: Press and hold when plugging into an AC outlet to perform a factory reset.

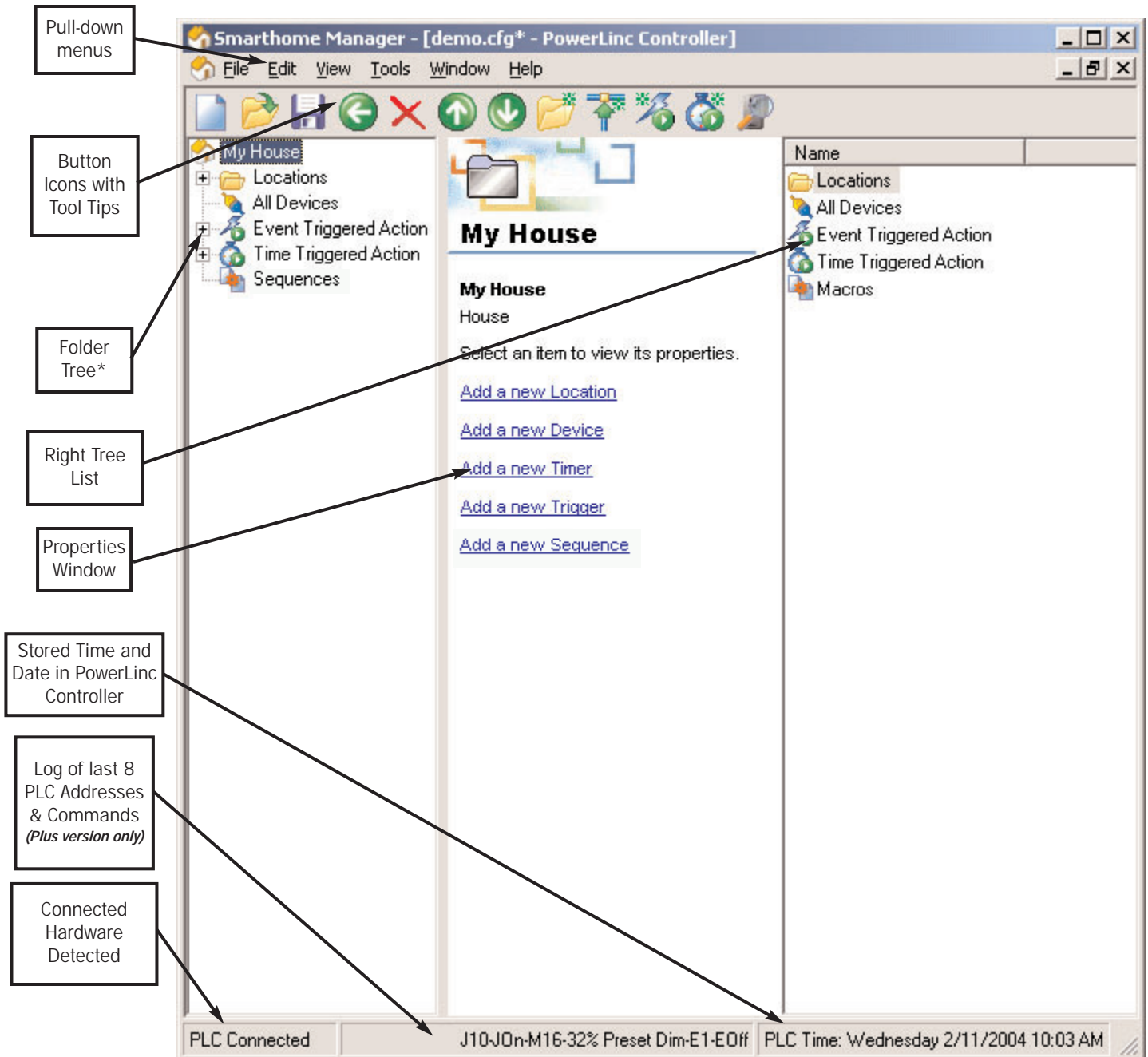
Always On AC Outlet: Plug-in any non-automation device into this outlet. It passes 120-volts (up to 15 amps) through the interface. To preserve the signal strength transmitted by PowerLinc Controller, don't plug in a PLC/X10 transmitter or computer-related devices. These devices are well known to absorb PLC/X10 signals. Ideally, a passive device (to PLC signals) like a table lamp or pencil sharpener is ideal for this outlet.

USB Interface: Connects to the USB cable, which is then connected directly to the computer. The PowerLinc Controller uses the USB 1.1 specification, but is fully compatible with computers that support USB 2.0.



Starting Smarthome Manager

To start the Smarthome Manager program, click on the desktop icon or the short cut installed into the Programs menu of the computer. The program will appear:



* The Sequences function will be grayed out on Smarthome Manager Essential.

Smarthome Manager Screen Explained

Folder Trees

The left and right folder trees operate very much Windows Explorer. The left panel shows the main objects in an outline form. From here, you can expand the tree to show Locations, All Devices, Event Triggered Actions, Time Triggered Actions, and Sequences. When a "+" appears to the left of the object, it signifies that there are additional items that can be displayed. By double-clicking on the word (like "Devices") or the icon, you can expand the list in that tree as well as reveal the members of that object in the right tree.

Smarthome Manager supports many of the same features found in Windows Explorer. The panels can be resized and the details of the right pane can be adjusted from the "View" pull-down menu. In many cases, devices can be dragged and dropped between panels. Right clicking on most items will bring up a pop-up menu with several choices. These functions will be covered in more detail.















Center Window Properties

The Center Properties Windows will show different actions that can be performed or the properties of a device (like a lamp module).



Button Icons with Tool Tips

This is the row of graphics icons directly below the pull-down menus. These buttons provide a convenient short-cut to the most commonly used commands:

Icon	Name	Keyboard Shortcut	Description
	New	Ctrl + N	Starts a new file
	Open	Ctrl + O	Retrieves a saved file from the computer's drive
	Save	Ctrl + S	Save current work under the existing name
	Up		Moves the selected folder up one level
	Delete	Delete	Deletes currently selected item
	Move Up		Moves the selected node up one line
	Move Down		Moves the selected node down one line
	Insert Location	Ctrl + L	Adds a new room or location
	Insert Device	Ctrl + D	Adds a home automation device
	Insert Time Triggered Action	Ctrl + T	Adds a new Timer Event
	Insert Event Triggered Action	Ctrl + R	Adds a new Event Triggered Event (Macro)
	Check Space Remaining		Checks the free space in the PowerLinc Controller
	Connect to PowerLinc Controller		Establishes a connection to the PowerLinc Controller (if the interface was disconnected when the program was started)
	Download Current Program	F 12	Forces the program to download data to the Interface

Bottom Status Bar



Connected Hardware Detected - shows the connection status between the computer and the interface. Smarthome Manager will show "PLC Connected" when the PowerLinc Controller is connected and "PL USB Connected" when the PowerLinc USB is connected. Please note that the PowerLinc USB will not accept downloads, perform any timer, or event functions from Smarthome Manager. It will send and receive signals when working as a server with SmarthomeLive.

Mini Log (*Plus version only*) - shows the last eight PLC addresses and commands received. A more extensive log monitor is available under "Advanced Controller" (under the Tools menu).

PLC Time - Displays the current time in the PowerLinc Controller.

Smarthome Manager Pull-down Menus

The pull-down menus in Smarthome Manager program allow the user to perform many different functions. Many of the entries are similar to other Windows-based programs, so only a brief mention will be made for those. Entries that are grayed out are features or functions that are unavailable due to connected hardware, program version, or used with the SmarthomeLive service.

File

New	Starts a new configuration file
Open	Opens an existing configuration file
Save	Saves the existing file to the hard drive
Save As	Saves the current file with a new name
Export	Saves the current configuration as a HTML file for viewing in a browser program
Print	Prints out defined devices, time and event-triggered actions
Download	Downloads data to the interface
Exit	Ends the program

Edit

Insert

Location	Adds a new room or house location to the Locations folder
Device	Adds a new device to the All Devices folder
Timer	Adds a timer event to the Timer folder
Trigger	Adds a new trigger (input event, macro) to the Event Triggered Action folder
Rename	Renames the currently selected item
Delete	Deletes the currently selected item

View Menu

Tiles, Icons List, Details	Changes the right tree's display mode
Toolbar	If checked, enables the view of the tool button bar
Tips of the Day	If checked, displays useful tips when the program is first started
Archive Viewer	Used with SmarthomeLive. Load and plays back a previously recorded video archive file.
Video Window	Used with SmarthomeLive. Displays video images from the cameras. The specific camera settings (channel, brightness, contrast, etc.) from IP Net cameras will not be enabled. Click Start to begin recording the video and stop to pause the recording. This window must have video in order for SmarthomeLive to stream images over the Internet to a remote user.
Internet Window	Used with SmarthomeLive. The main window for Smarthome Manager when using SmarthomeLive. Shows connection status between hardware and the servers at Smarthome. This screen will first be shown if there is an active SmarthomeLive account.
View Account Info	Used with SmarthomeLive. Displays current account name with the password hidden. To updated or change account information, enter the new user name and password. Smarthome Manager will need to be re-started for the changes to be applied.
SwitchLinc/LampLinc Window	Provides several helpful wizards that make setting up scenes, SwitchLinc, LampLinc and other Smarthome products easier.

Smarthome Manager Pull-down Menus (Continued)

Tools Menu

Signal Test

The signal test function will send a continuous stream of PLC signals. Any house and unit code combinations can be used. This test is ideal for measuring the reliability of the system. The delay between the ON and OFF signals can be adjusted between one and 10 seconds. The test signal will continue to be sent until stopped.

Advance Controller

The Advanced Controller allows the user to send and monitor any PLC/X10 signals. It is fully functional with either PowerLinc USB or PowerLinc Controller. It includes the following features and functions:

Status Bar:

The Status Bar in the center of the screen monitors the computer's connection to the interface (PowerLinc USB or PowerLinc Controller). The status bar will report one of these four conditions:

- USB PowerLinc not found
- Successful USB Connection
- PowerLinc in Report Mode
- PowerLinc in Quiet Mode

For Smarthome Manager to receive and send home automation PLC signals, it must report that the PowerLinc is in the "Quiet Mode" or in the "Report Mode." Double-click anywhere in the Status bar will force Smarthome Manager re-check the connection to the interface. The Status bar will report "Successful USB Connection" if the PowerLinc USB or PowerLinc Controller is found. Please note that Smarthome Manager will report a good connection even if the PowerLinc USB Interface is disconnected from the AC outlet.

Monitor Window:

The monitor window displays the X10/PLC activity on the AC lines. Recorded signals in the monitor window will be preceded by a "R:" for received signals or a "T:" for transmitted signals. For example:

T: K10 - 9:17:33 AM 7/31/2003
T: KOff - 9:17:34 AM 7/31/2003
R: J8 - 9:17:42 AM 7/31/2003
R: JOff - 9:17:42 AM 7/31/2003

When the "Report Mode" box is checked, the log window will show a binary representation of the signals. This mode may be helpful to developers and power users.

Select X10 Retries:

This is the number of retries Smarthome Manager will try to send a signal if the PowerLinc fails for any reason.

Quiet Mode:

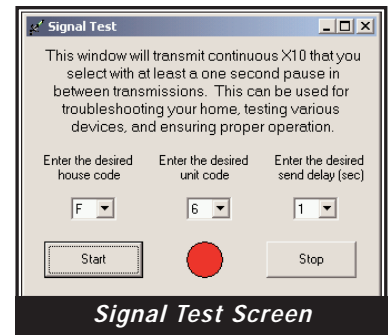
This is the amount of retries the PowerLinc will try to send a signal if the powerline is busy.

Polite Retries:

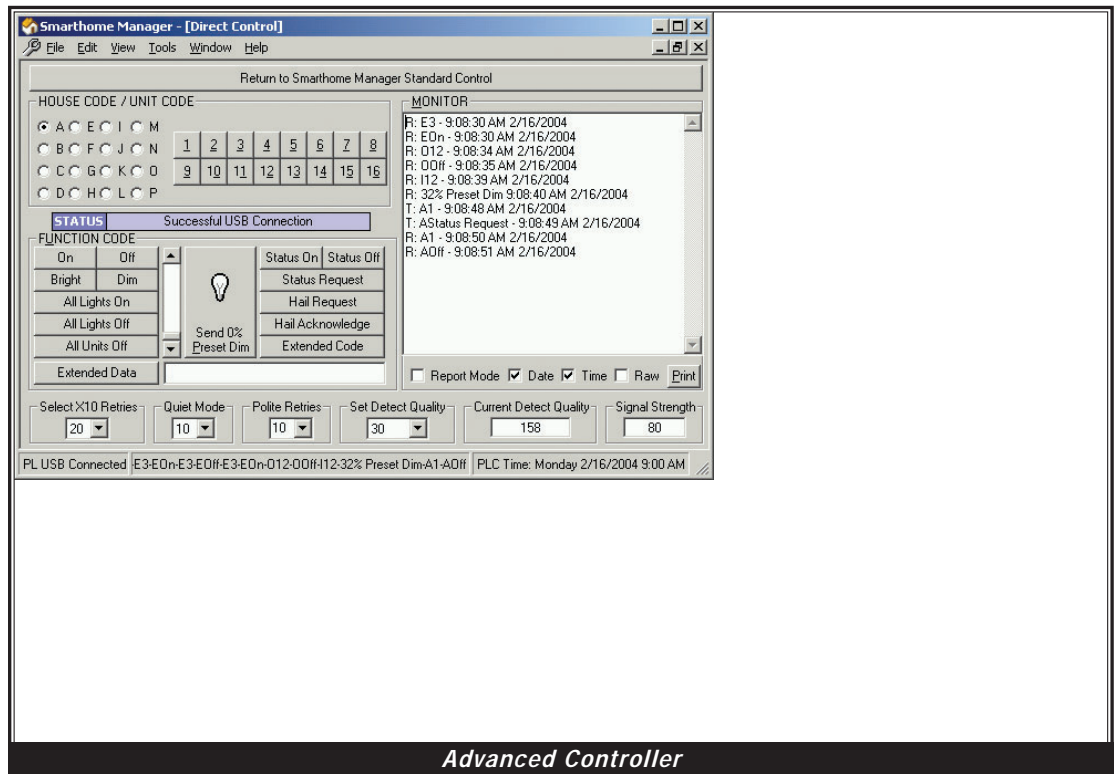
The amount of retries the PowerLinc will try to send a signal if it gets interrupted by the signal transmission of another device.

Set Detect Quality:

Allows the user to set the minimum level of acceptable signal quality of PLC/X10 communications received by PowerLinc. A setting of 120 is optimal and anything below 20 is considered unreadable. Choosing a high number may help eliminate interference from electrical noise.



Signal Test Screen

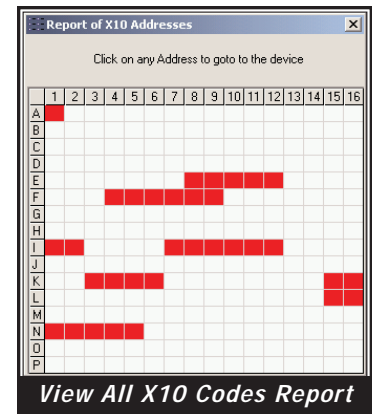


Advanced Controller

Smarthome Manager Pull-down Menus (Tools Menu continued)

View all X10 Codes

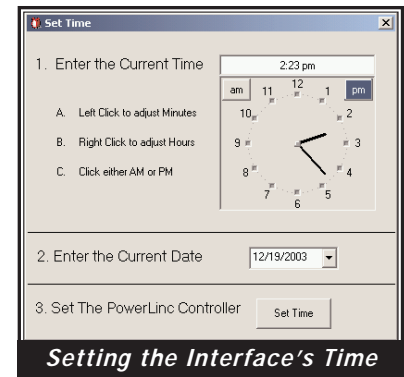
Opens a graphical window that shows all the PLC address that Smarthome Manager is tracking (has defined devices). Using this reporting tool, a user can quickly see which addresses are in use and those that are available for new devices. Each red indicator shows an address that is in use. Clicking on any in-use square will force Smarthome Manager to display that module in the right tree and the properties in the center panel.



Set Time

Allows the user to manually adjust the PowerLinc Controller's time. This is ideal for testing programming with conditionals. For example, an Event Triggered Action that only happens if the time is between 10pm and 6am. Rather than waiting for the actual time to occur, the interface's time can be adjusted.

1. Use the left mouse button to set the minutes by clicking and holding the button then moving the cursor to the desired time.
2. Click and hold the left mouse button sets the hours.
3. A single left click on the "AM" or "PM" completes the time setting.
4. To set the date, use the mouse pointer and click on the digit to be changed or select a date from the drop down menu.
5. Click the "Set Time" button to save the time into the PowerLinc Controller.



Synchronize Time to PC

Smarthome Manager will automatically download the computer's PC time into the PowerLinc Controller. A dialog box will appear to confirm the action.

Get Time

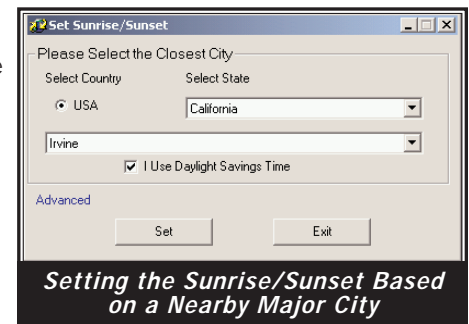
Retrieves the stored time in the interface. The time and date can also be recalled by clicking on the time in the lower right corner of Smarthome Manager.

Set Sunrise/Sunset

This feature allows timer events to occur in conjunction with local sunrise and sunset times. Smarthome Manager will calculate the times for every day of the next year and download it to the interface. This feature must be run at least once a year so the interface has a current table of times.

Basic mode (default screen)

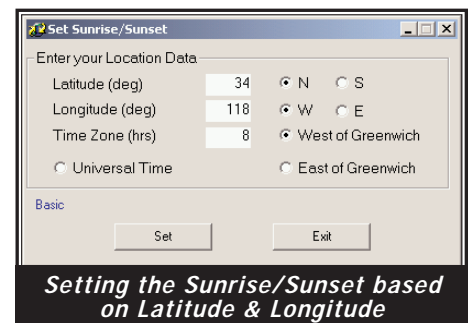
1. Select the state and nearest major city. When timers are set up (see page 14), you'll have a change to more finely adjust the calculated sunrise/sunset time based on when it gets light and dark at your home.
2. Check the "I Use Daylight Savings Time" box if Daylight Savings is used in your location.
3. Click "Set" to download the table to the PowerLinc Controller.



Advanced Mode

Click the "Advanced" link on the "Set Sunrise/Sunset" window to set your location based on longitude and latitude. This setting will result in a more precise calculation for the sunrise and sunset times for your location.

1. Enter your latitude in a decimal format (e.g. 33.695) and select "N" or "S" for locations north of the equator (North America) or south of the equator.
2. Enter the longitude in a decimal format (e.g. 117.828) and select "W" for locations in the western hemisphere (North and South America) or "E" for locations in the eastern hemisphere (Europe and Asia)
3. Enter the "Time Zone" offset and select "West of Greenwich" or "East of Greenwich." For example, residents in the U.S. Eastern Time Zone would select "5" to represent a four hour difference between Greenwich England and the Eastern Time zone. Central Time is 6, Mountain Time is 7, and Pacific Time is 8.
4. Click "Set" to download the table to the PowerLinc Controller.



Smarthome Manager Pull-down Menus (Tools Menu continued)

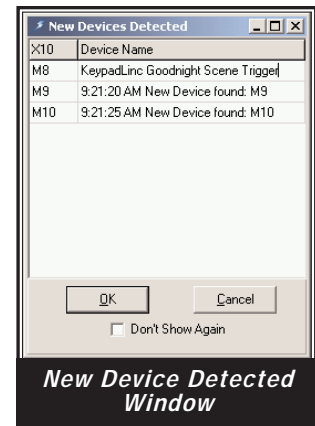
Connect to PowerLinc Controller

Causes Smarthome Manager to attempt to make a connection to the interface.

Auto Detect Device *(Plus version only)*

When this feature is enabled, the Smarthome Manager program will automatically pop-up a prompt when a new address is detected for the first time. This feature is ideal to help you organize modules and addresses. For this feature to work, the Smarthome Manager program must be running. The PowerLinc Controller will not store and log codes while the program is not running.

Please note that most modules are receivers of signals and won't transmit anything. Some 2-way modules won't transmit until they are activated manually, like turning on a SwitchLinc 2-Way Wall Switch. Also, the program has no way of knowing what kind of module is being detected, so "Generic Appliance" is the default selection until changed.



Options

Change PowerLinc Poll Time

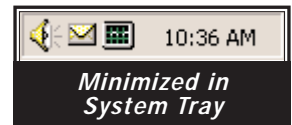
This command controls how Smarthome Manager looks for incoming PLC signals from the PowerLinc Controller or PowerLinc USB. In most cases, the default setting of 400 will result in Smarthome Manager receiving all the PLC signals. In homes with a heavy load of PLC signals, some commands may be missed. Selecting a lower setting of 300 to 350 will usually solve missing commands. However, the lower the setting, the more time and resources will be spent on monitoring for activity from the interface. The performance of other tasks, such as video, may be noticeably degraded.

Change X10 Send Delay

Smarthome Manager has a built in delay of 400ms between PLC transmissions. If the home has multiple coupler-repeaters or some of the receivers are missing PLC commands, then add an additional pause between transmissions. Enter a number here, in milliseconds, to add onto the existing built-in 400ms delay. For example, to create a two-second pause between transmissions, enter 1600. The 1600ms pause plus the built-in 400ms delay will force Smarthome Manager to wait a total of 2000ms or two seconds.

Minimize to System Tray

When minimized, Smarthome Manager can be placed in the Windows system tray (next to the PC clock) instead of the regular Windows task bar with other running programs. This allows Smarthome Manager to run in the background and not interfere with other programs (browsing, email, word processing).



Minimize on Startup

Selecting this option will force Smarthome Manager to run minimized upon startup. The Smarthome Manager splash screen will still appear, but once loaded, it will be minimized. This is most useful with the Minimize to System Tray option.

Auto Start

Selecting this option will automatically run Smarthome Manager every time the PC is started. Un-checking the box will remove this feature. Smarthome Manager may also be manually added or removed from the Start-up folder in the Programs Group. This feature is ideal if you need to remotely re-boot the computer and still have Smarthome Manager automatically load upon startup.

Show Tips on Startup

When this option displays a check mark on the left, the program will display a useful tip when Smarthome Manager is first started.

Windows Menu

These options allow the user to automatically sort and organize multiple windows within Smarthome Manager. By resizing the windows (i.e. Device List, Advance Controller, SwitchLinc/LampLinc Setup, etc.) you can have multiple resources on the screen at the same time. This feature works much like other Windows-based applications.

Help Menu

About

Displays version information about Smarthome Manager software. If you need to contact Smarthome Technical support about an issue, please include the software's version number. Updates to Smarthome Manager may be downloaded from the Smarthome Web site at

www.smarthome.com/1132c.html

PC Devices

Displays information about the connected hardware. Smarthome Manager supports the PowerLinc USB and PowerLinc Controller interfaces. For the PowerLinc Controller, it displays the internal firmware's revision number and the amount of free space for programming. A new, un-programmed PowerLinc controller will have 99% Space remaining.

Email Tech Support

Setting Up and Editing Locations

Smarthome Manager allows automation modules to be organized and divide up by locations in and around the home. The use of the feature can be as simple or as complicated as you like. For a small system that only has a few modules, all the units can be in one location. For larger systems, multiple locations and sub-locations can be created to help organize everything. Locations can even be created for pseudo modules like flags, scene triggers, or macros.

The Locations function works much like folders within Microsoft Windows. Many actions found in Windows can be applied here. For example:

Folders can have sub-folders

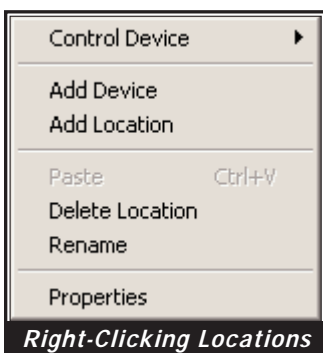
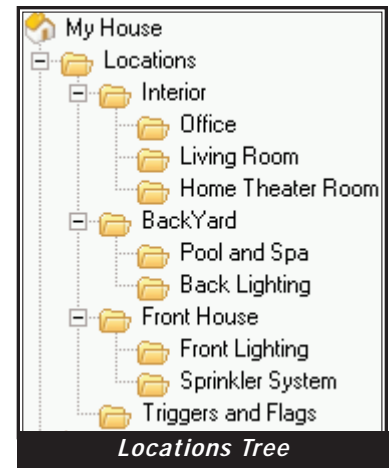
For example, in the "BackYard Location", there can be sub-locations for Pool & Spa and Lighting. Sub-folders are optional and allow further organization of the automation devices.

Folders can be dragged and dropped into other folders:

In the example on the right, the folder "Sprinkler System" can be dragged from the "Front Yard" to the "Back Yard" using the familiar drag and drop technique.

Contents of a select folder appear on the right tree

By clicking on a folder on the left tree, the contents will appear on the right side. The same familiar dragging and dropping between trees can also be accomplished within Smarthome Manager.



Right mouse-button clicking on a location

Right or alt-clicking on a location will open a drop-down menu with multiple selections:

Control Device	Sends individual commands to turn on or off all devices in that location
Add Device	Opens the "New Device Properties" window for adding a module to that room
Add Location	Adds a new location under the current location
Paste	Pastes a location that was copied (CTRL+C) or cut (CTRL+ X)
Delete Location	Deletes the selected location
Rename	Allows the user to rename the selected location
Properties	Same function as Rename

The order of the locations can be changed

The order in which the locations appear in the left tree can be changed by clicking and holding a room and dragging it to the top "Locations" folder.

Sorting the right tree

The devices within room can be sorted by name, address, or type. Click the appropriate bar (Name, Address, or Type) to sort the devices within that room. Multiple clicks on the same bar resorts the list alternately between ascending and descending order. This feature operates very much like the sort feature in Windows Explorer.

Name	Address	Type
Dining Room	I10	2380 (w/I) - SwitchLinc 2-Way Dimmer (600w)
Drapes	D01	IDLinc
Foyer	I02	2386 (w/I) - SwitchLinc PLUS Dimmer (600w)
Hallway	I15	23883 (w/I) - SwitchLinc Relay 2-Way Switch (15A)
Night Light	I08	2000SLS - LampLinc Plus Plug-in Dimmer (400w)
Reading Lamp	I11	12073 - KeypadLinc 6 w/Dimmer
Table Lamp	I06	2000STW - LampLinc 2-Way Plug-in Dimmer (400w)

Sorting the Right Tree Devices within a Location

Using the Locations function is completely optional and is only to help organize everything. At least one location needs to be defined.

Setting Up and Editing Devices

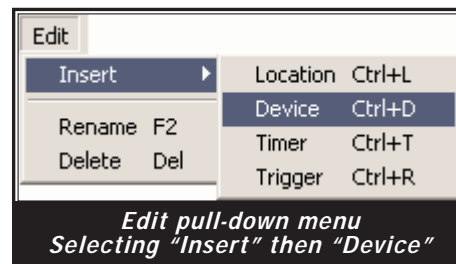
Devices represent the automation products installed in the home. They are mostly the receiving devices that Smarthome Manager will communicate to when it sends PLC/X10 signals over the AC lines. Wall Switches, Lamp, and Appliance Modules are the most common home automation devices.

Devices are not strictly limited to traditional modules like those previously mentioned; they may also include any receiver or transmitter that can have an address assigned. An I/O Linc™ that turns on sprinkler valves or monitors the open/close status of a garage door may be defined as a device within Smarthome Manager. Basically, anything that can be assigned an address can be a device.

Please note that it is not a requirement that all home automation devices be set up within Smarthome Manager. Only modules that will have some interaction with program will need to be defined. For example, a SwitchLinc Transmitter that remotely turns the stairway lights does not need to be setup in Smarthome Manager (unless you'd light those light to automatically turn off after a certain amount of time).

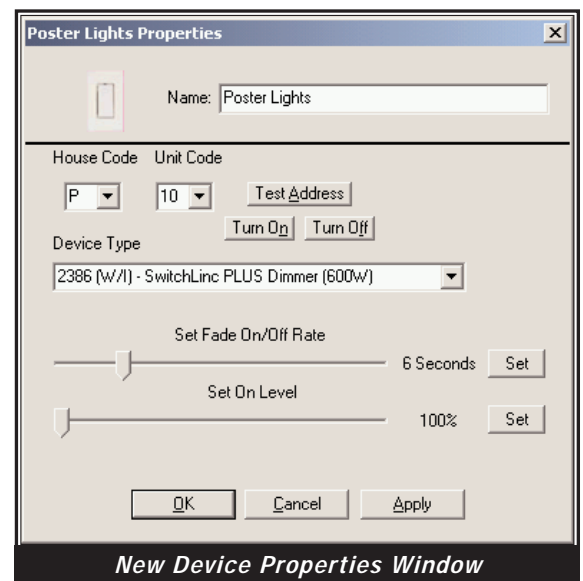
Adding a Device

1. Select one of the methods below to begin adding a device:



2. The "New Device Properties" window will appear.
 - a. Enter the name of the device the module is controlling (e.g. Poster Lights)
 - b. Assign the House and Unit Codes
 - c. Test the address (Optional)
 - d. Select the type of module (e.g. SwitchLinc Plus Dimmer)
 - e. For Smarthome Dimmer Modules
 1. Set the primary address' Fade On/Off Rate (Optional)
 2. Set the On Level for the primary address (Optional)

The new device will be stored in the "All Devices" folder with the location unassigned. To move the new device to a location, simply click on it (in the right tree) and drag it to a location in the left tree.



Setting Up and Editing Devices (continued)

Running the Signal Test

During the setting-up of the device, there is an opportunity to test the communications between the PowerLinc Controller and the module. We recommend running the test to insure the module is set to the right address and most importantly, that it can receive the signals from the PowerLinc Controller. Poor signal communications is the most common complaint with powerline technology, but it is easily solved. See [How Powerline Signals Travel Around A Home and How To Improve Reliability](#) on page for more information.

Test Address - Sends a continuous stream of ON and OFF commands for that address. This will cause the module to turn on and off. In the case of a lamp, the light bulb will turn on and off. Pressing the "Stop" button cancels the test.

Turn On - Sends a single ON command for the selected address.

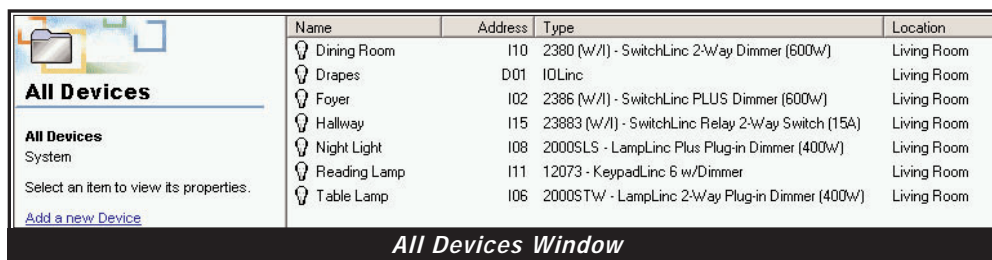
Turn Off - Sends a single OFF command for the selected address.

What happens if it doesn't communicate?

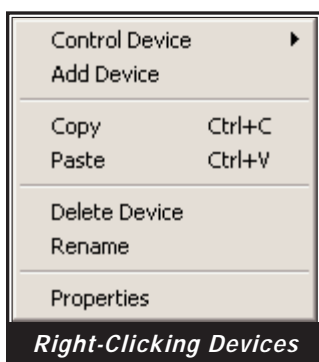
Nearly all Smarthome modules include a LED status indicator that will blink whenever X10/PLC signals are detected. If the LED is blinking while the test is running, the module is detecting signals from the PowerLinc Controller but not reacting to them. Check or re-learn the modules address. If the LED isn't blinking, you may need to double check the troubleshooting tips in the Quick Start Guide or visit the Troubleshooting pages on the Smarthome web site. In most cases, installing a Signalinc Phase Coupler or Signalinc Repeater will solve the problem.

Viewing All Devices

All the defined automation devices can be viewed by clicking the "All Devices" line on the left window. An example is on the right. The appearance order can be sorted by clicking on the "Name", "Address", "Type", or "Location" bars. When a device is selected, (single click with the mouse), the properties will be shown in the center window. Multiple clicks on the same bar re-sorts the list alternately between ascending and descending order. This feature operates very much like the sort feature in Windows Explorer.



Name	Address	Type	Location
Dining Room	110	2380 (w/I) - SwitchLinc 2-Way Dimmer (600w)	Living Room
Drapes	D01	IDLinc	Living Room
Foyer	102	2386 (w/I) - SwitchLinc PLUS Dimmer (600w)	Living Room
Hallway	115	23883 (w/I) - SwitchLinc Relay 2-Way Switch (15A)	Living Room
Night Light	108	2000SLS - LampLinc Plus Plug-in Dimmer (400w)	Living Room
Reading Lamp	111	12073 - KeypadLinc 6 w/Dimmer	Living Room
Table Lamp	106	2000STW - LampLinc 2-Way Plug-in Dimmer (400w)	Living Room



Right mouse-button clicking on a device

Right or alt-clicking on a device will open a drop-down menu with multiple selections:

Control Device	Sends individual commands to turn on or off the module.
Add Device	Opens the "New Device Properties" window for adding a module.
Copy	Copies device into memory.
Paste	Pastes a device that was copied (CTRL+C) or cut (CTRL+ X).
Delete Device	Deletes the selected device.
Rename	Allows the user to rename the selected device.
Properties	Open the device's Properties Windows for editing its settings.

Editing Devices

Once a device is defined, its properties can be changed.

1. Click on the device.
2. Click "Edit Device Properties" in the center window.
or
Right click and select "Properties."
3. The properties window will appear. See "Properties Window" on the previous page.
4. Make any changes and select "OK" to apply the changes.

Directly Controlling a Device

A device can be immediately commanded to turn on (if it was off) or turned off (if it was on) by double clicking the device. The PowerLinc Controller usually knows a device's power status, but in some cases, it might not. For example, it might send an ON command when the device was already on. By double-clicking the device a second time, the correct command will be sent.

Setting Up and Editing Time Triggered Actions

Overview

Time Triggered Events set the times and dates that PowerLinc Controller will send automation signals. Using Smarthome Manager, the device(s), times, and conditions will be programmed. Once the timers are set up, they are downloaded (with event-triggered actions) into the PowerLinc Controller. The internal clock will automatically send the command(s) at the specified time and only if the specified conditions exist.

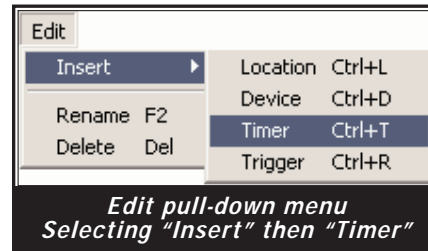
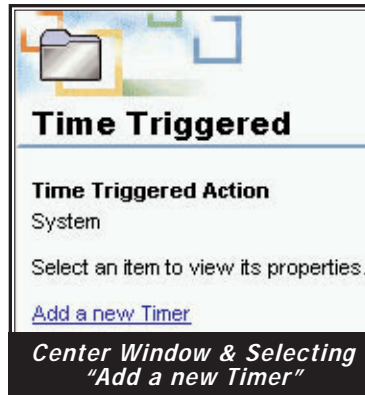
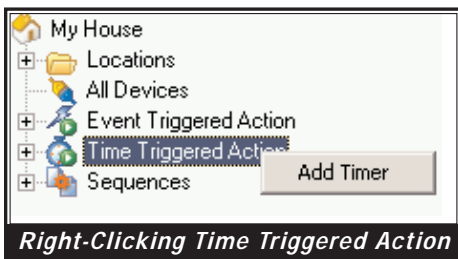
Conditionals, which are available in Smarthome Manager Plus, are optional items that can prevent or delay the timer event from happening. For example, a timer event to ring a chime can be programmed to occur only on Tuesday mornings at 7am (to remind you to put out the trash cans). Or, 50 minutes after sunrise, your sprinklers can water the lawn and garden only if the rain sensor is dry.

Time Triggered events can have multiple steps, delays, and conditionals (*for Plus version only*). At a minimum, a Time Triggered Action will have two steps:

- A Time Specifies the time for something to happen
- An Action Specifies the command for PowerLinc Controller to send

Adding a Timer Event

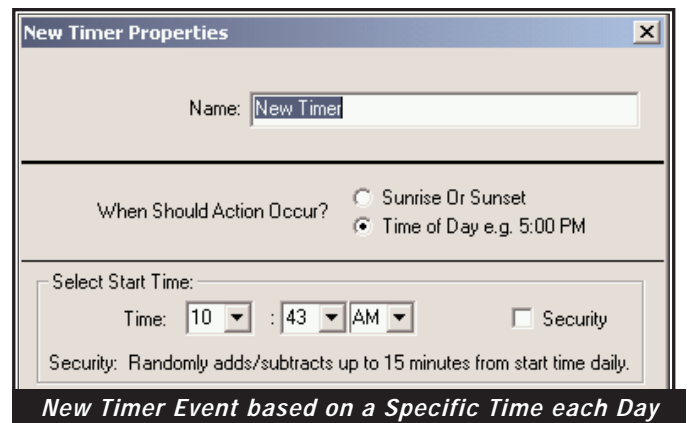
1. Select one of the methods below to start the sequence.



2. The "New Timer Properties" window will appear.
 - a. Enter a name to describe the Time Triggered Event
 - b. Next to "When Should Action Occur", select "Sunrise or Sunset" or "Time of Day"

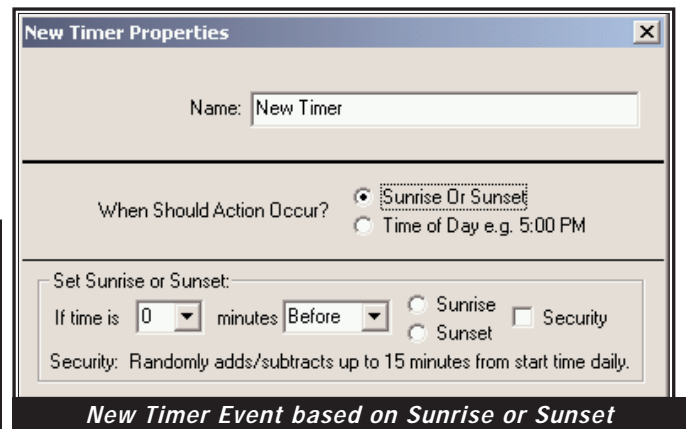
For Time-based events:

 1. Selected the time
 2. Optional, Check "Security" to randomize the time by plus/minus 15 minutes each day



For Sunrise - Sunset events

1. Select the amount of time before or after the sunrise/sunset time for the event to happen
 2. Select "Before" or "After"
 3. Select "Sunrise" or "Sunset"
 4. Optional, Check "Security" to randomize the time by 15 minutes each day
3. Click "OK" to save the time. The window will close and the new timer event will appear in the left window.

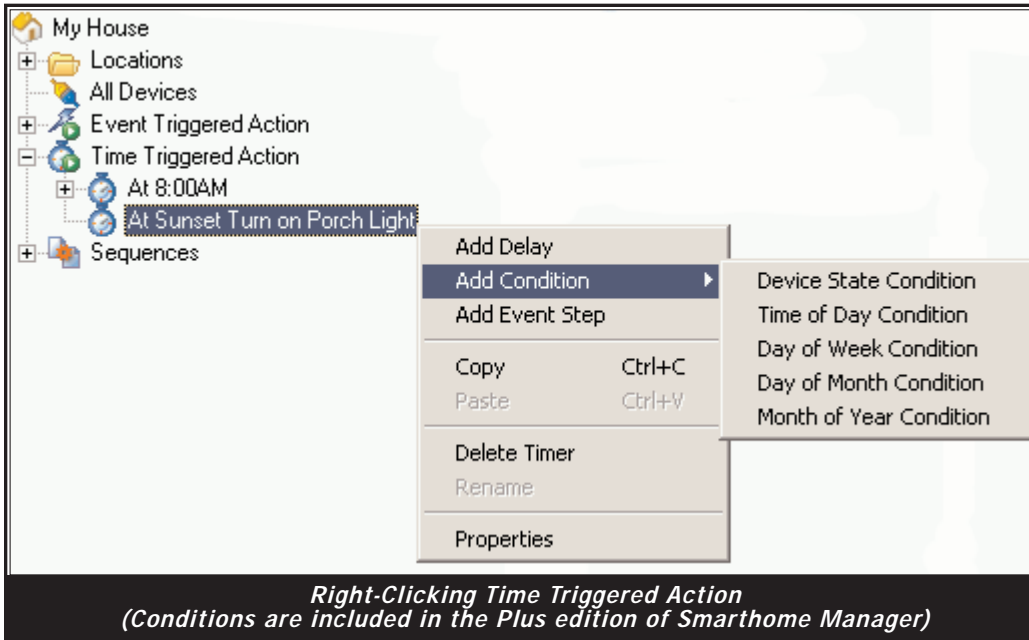


TIP: Downloading to the Interface
 When a Time or Event Triggered Action is created or modified, it must be downloaded to the interface for it to become effective. If multiple events are created during the same session, simply downloading to the interface at the conclusion of the work is sufficient. Basically, anytime the download is started, all the data will be transferred to the PowerLinc Controller.
 Time or Event Triggered Actions will not run from the computer if the Smarthome Manager program is running and an interface is connected (but not downloaded to). This mostly applies to users of PowerLinc USB (#1132U), which is incapable of accepting a download.

Setting Up and Editing Time Triggered Actions (continued)

4. Select the new Timer Event (in the left window) with the mouse and right-click on the event. A drop-down menu will appear with multiple selections.

Add Delay	Allows a delay between one second and one hour to the timer sequence
Add Condition <i>(Plus version only)</i>	Selecting a condition will allow a timer event to proceed. Conditions that can be applied are:
Device State Condition	In a device is presently ON or OFF
Time of Day	(typically not used within a timer event)
Day of Week	(Monday, Tuesday, Wednesday, etc.)
Day of Month	(1st, 15th, 30th, etc.)
Month of Year	(January, February, March, etc.)



Add Event Step	The action part of the event happens here.
Copy	Copies the selected line into memory.
Paste	Pastes a line that was copied (CTRL+C) or cut (CTRL+X)
Properties	Allows the action's time or name to be edited or changed.

Choose "Add Event Step" with the mouse and the window on the right will appear. On this screen, choose the action the module is to perform when the timer event is triggered. Your choices are:

- Turn device On
- Turn device Off
- Increment device Brighter
- Increment device Dimmer
- Set (brightness) to a specific Level

Depending on how the module was defined, some of the choices may be grayed out. For example, an appliance module that can't dim a load will have the functions related to dimming grayed-out. If the module supports PRESET Dim Commands, like Smarthome's dimmer-enabled modules, the "Set to Level" option will not be grayed-out.



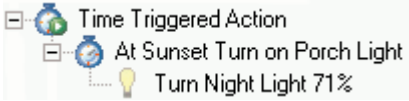
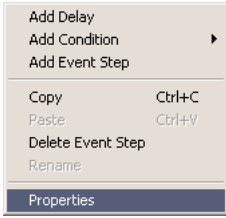

After Clicking OK, the event will appear in the left window. See the example below.



Setting Up and Editing Time Triggered Actions (continued)

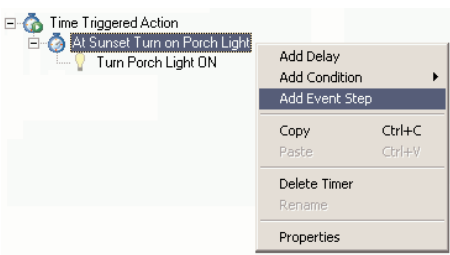


Editing a Time Triggered Action

Any of the lines in a Time Triggered Action can be edited or changed. For example, it is possible to change the time, the device, or the action that's performed when the event is activated. Follow these steps to change a line:

		
<p>1. Highlight the line to be changed (easiest if done from the left window).</p>	<p>2. Right or alt-click to bring up a menu of options. Select "Properties".</p>	<p>3. Make any adjustments and click OK to save the changes.</p>

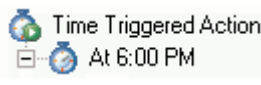
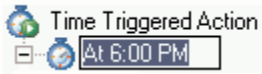

Creating a Time Triggered Action for Multiple Devices

Timer Events can include multiple Event Steps to control additional devices. Instead of creating separate events to turn on multiple devices; all the commands can be under one event. Follow these steps to add additional commands to an existing timer event:

		
<p>1. Right click on the timer event in the left window and select "Add Event Step."</p>	<p>2. Select the automation device from the "Select Device Action" window and what it should do (i.e. Turn On). Click OK.</p>	<p>3. The additional Event Step will appear under the same event in the left tree.</p>

Renaming a Timer Action


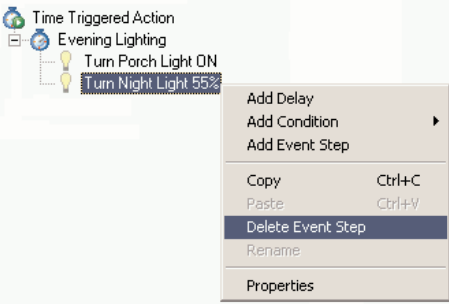
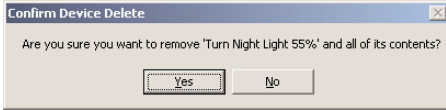
When a Timer Event is created, Smarthome Manager gives it a basic name, like "At 6:00PM". The timer event can be renamed. The method is very similar to renaming files in Windows. Follow these steps to rename an event:

		
<p>1. Single click "Time Triggered Events" in the left window to highlight it.</p>	<p>2. Press "F2" or select "Rename" from the Edit pull-down menu. The old name will be highlighted, type in the new name.</p>	<p>3. Press <Enter> or click the mouse somewhere outside the name box. The new name will be stored.</p>

Setting Up and Editing Time Triggered Actions (continued)




Deleting a Line in a Time Triggered Action

Any of the lines in a Time Triggered Action can be deleted if necessary. Follow these steps to delete a line:

		
<p>1. Highlight the line to be deleted (easiest if done from the left window).</p>	<p>2. Right or alt-click to bring up a menu of options. Select "Delete Line" or press the <Delete> key on the computer.</p>	<p>3. Click "Yes" to confirm the deletion.</p>

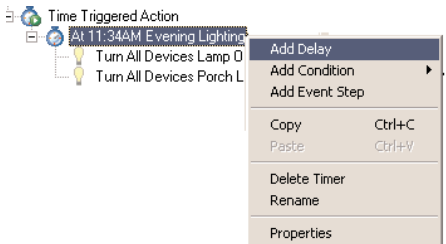
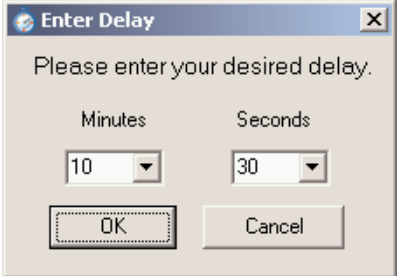
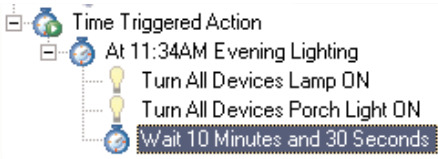
Changing the Order of the Lines in a Time Triggered Action

The order of any of the lines in a Time Triggered Action can be changed if necessary. The order in which the lines appear will determine the order that the PowerLinc Controller activates the units. In the example below, the Porch light will come on first, followed by the Night Light. Follow these steps to change an events execution order:

		
<p>1. Highlight the line to be re-ordered.</p>	<p>2. Press the UP or Down Arrows in the tool bar to move the selected line.</p>	<p>3. Alternative: The highlighted line can be dragged (Click with the mouse and hold) to another location.</p>

Inserting a Delay in a Time Triggered Action

Delays can be inserted between Event Steps. A single delay step can be programmed to pause the action for up to 59 minutes, 59 seconds. Delays allow for simpler organization of actions. To inset a delay, follow these steps:

		
<p>1. Highlight the timer where the delay will be added. The delay will be inserted under the timer. Right click and select "Add Delay."</p>	<p>2. Enter the delay time and click OK.</p>	<p>3. The delay command will appear in the left window. Right-click the delay to add an event step.</p>
<p><i>To edit the delay, right click on the delay line and select "Properties."</i></p> <p><i>To delete the delay, right click on the delay line and select "Delete Delay."</i></p>		

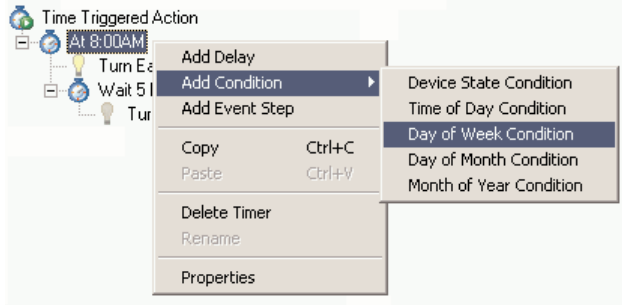
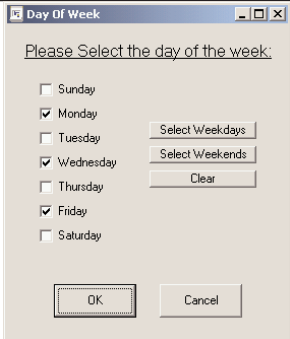
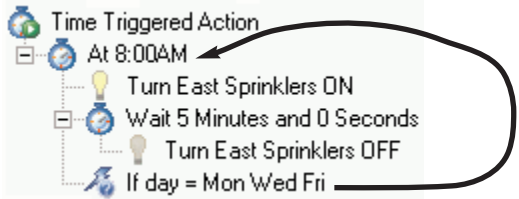
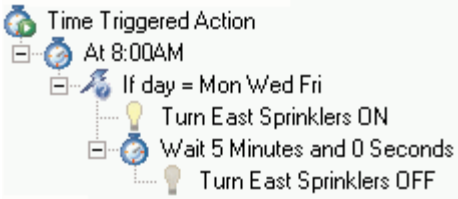
Special Note about using Delays under 5 Seconds

When a delay of 5 seconds or less is programmed, the PowerLinc Controller will halt all operations during that time. It will ignore all incoming commands and not process any data. The clock will continue to run normally. Delays over 6 seconds will not affect the PowerLinc Controller's ability to process signals.

Setting Up and Editing Time Triggered Actions (continued)


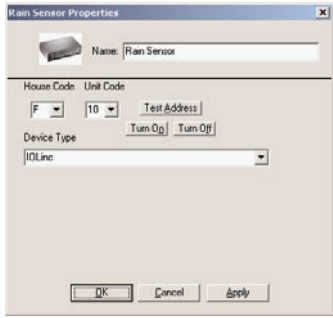
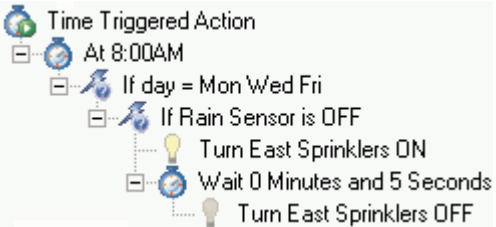
Adding a Conditional to a Time Triggered Action (Plus versions only)

A "Conditional" can be inserted before any action to allow or prevent any Event Steps under the conditional from occurring. All the Event Steps, Delays, and additional conditions under the program condition will be affected. Conditional programming is only available in Smarthome Manager Plus. Follow these steps to insert a conditional:

	
<ol style="list-style-type: none"> 1. Highlight the Time Triggered Action to receive the conditional. 2. Right click the mouse and select "Add Condition" 3. For this example, select "Day of Week Condition" 	<ol style="list-style-type: none"> 4. Select the days for the action to occur. In this example, select the days the East Sprinklers are to run for five minutes. Click OK to save the conditional.
	
<ol style="list-style-type: none"> 5. The condition line will be placed within the Event Steps and Delays. To have the condition applied to the whole event, move it to the top with the UP Arrow in the tool bar or click and drag. 	<p>Now, at 8AM on Mondays, Wednesdays, and Fridays, the East Sprinkler will run for five minutes.</p>

Creating Complex Conditional Time Triggered Actions (Plus versions only)

A Time Triggered Action can have multiple conditionals applied to the event. That is, multiple items must be true for the event to occur. In the example below, the sprinkler event, created previously, now has an additional conditional that will keep the sprinklers from running if a sensor has detected rain recently. (Conditional programming is only available in Smarthome Manager Plus.)

 <p>Rainfall Sensor IO Linc</p>		
<ol style="list-style-type: none"> 1. Install a sensor that can sense rainfall and connect it to a device that can transmit PLC signals when the contacts are closed, like an IO Linc #1624. 	<ol style="list-style-type: none"> 2. Define the device in Smarthome Manager and assign it a unit code (see page 13). 	<ol style="list-style-type: none"> 3. Right Click on the Event and select "Add Condition" and select "Device State Condition." 4. In the "Enter Condition" Window, select the device and the state it must be in, click OK. 5. Use the Move feature to position the conditional where it will effect all subsequent lines.

Setting up and Editing Event Triggered Actions

Overview

Event Triggered Actions are programming sequences that occur after a specified condition is detected. They are sometimes called "Macros" or "Input Events". Basically, when the PowerLinc Controller detects a pre-programmed powerline signal, it will respond with a series of its own commands. Event Triggered Actions will only occur when a trigger signal is detected from an external source whereas a Time Triggered Action occurs only at a specified time.

Some examples of Event Triggered Actions are:

- When a motion detector trips, lights are turned on
- When the garage door opens, the garage lights turn on
- When a door opens, music turns on
- When an address is received, the lights are dimmed and the TV is turned on

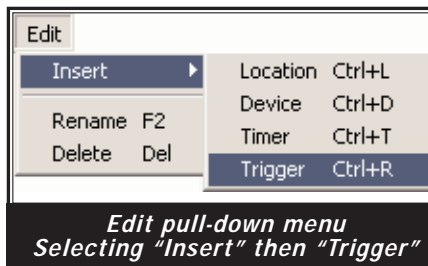
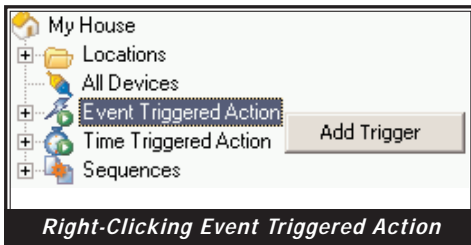
Just like Time Triggered Actions, Event Triggered Actions can have multiple steps, delays, and *(for Plus users)* conditionals applied to the programmed results. For example, if a motion detector detects movement between 11 pm and 5 am, turn on the sprinklers for 15 seconds, otherwise don't. Or, if the front door opens between 8 am and 5 pm, don't turn on the foyer lights.

At a minimum, an Event Triggered Action will have two steps:

- The Trigger Signal Specifies the PLC/X10 signal that must be detected to start the event
- An Action Specifies the command or commands for PowerLinc Controller to send

Adding a Event Triggered Action

1. Select one of the methods below to start the sequence.



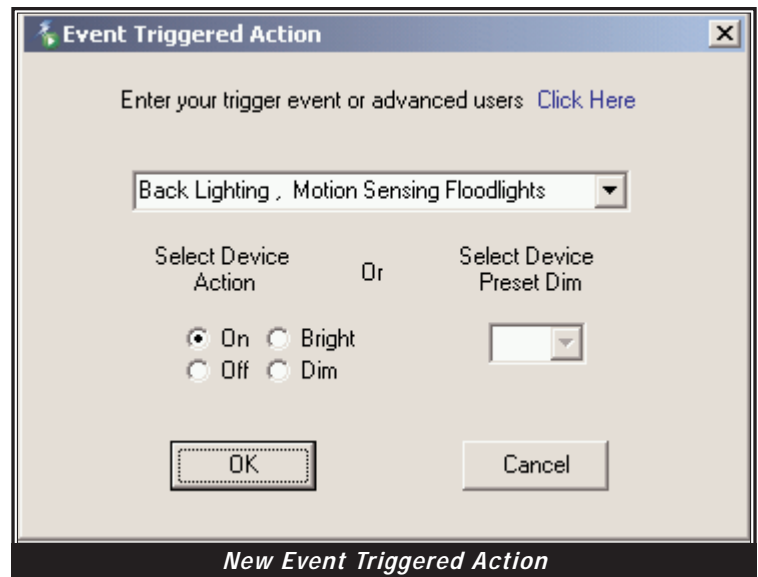
2. The "Event Triggered Action" window will appear

- a. Select the device that will be sending the signal.
If the Device has not been defined, you can click Cancel and proceed to the All Devices section to set up the automation module that will be sending the signal. Or select the option for advanced users at the top of the window (see instructions on p. 25).
- b. Select the command that will trigger the Action.
The command can be an ON, OFF, BRight, DIM, or a Preset DIM level.
- c. Click OK

**Special Note about using
2-Way Smarthome Wall Switches**

Smarthome's 2-Way wall switches and dimmers have the ability to send multiple signals when turned on. Normally, when manually turned on, a SwitchLinc 2-Way Dimmer will send its primary address and an ON command. Like any other transmitter, this can start an event triggered action. However, by double to triple tapping the switch, multiple signals are sent and those can start an action in PowerLinc Controller.

If the Selected Device was defined as a SwitchLinc or ToggleLinc 2-Way, a special option will on the Event Triggered Action window to allow a single, double, or triple tap to start an Action.



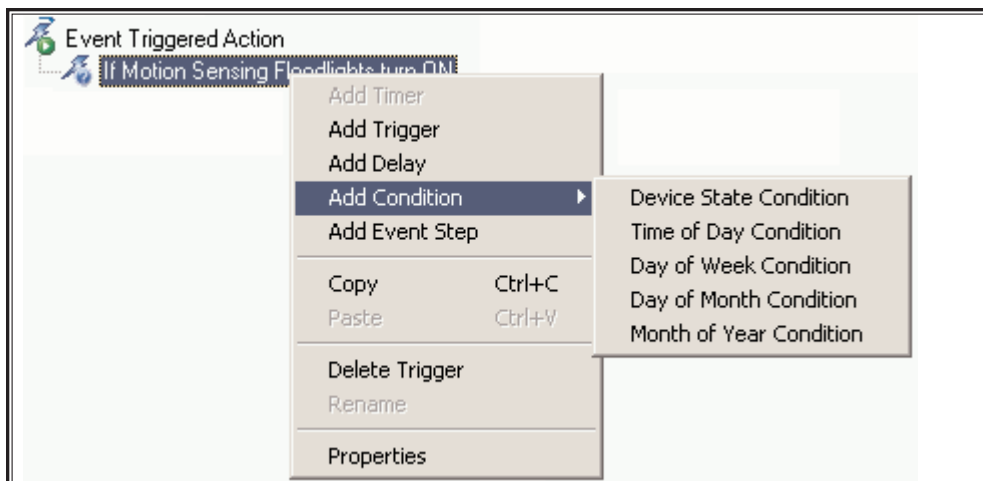
- 3 The first step in the Action will appear in the right and left columns. This represents the signal the PowerLinc Controller must see to start the action.



Setting Up and Editing Event Triggered Actions (continued)

4. Select the new Event Triggered Action (in the left window) with the mouse and right-click on the event. A drop-down menu will appear with multiple selections.

Add Trigger	Inserts a new Event Triggered Action
Add Delay	Inserts a delay between one second and one hour between event steps in the sequence
Add Condition	Selects a condition will allow an event step to proceed. Conditions that can be applied are:
<i>(Plus version only)</i> Device State Condition	If a device is presently ON or OFF
Time of Day	Specifies the time range that allows the event step to occur
Day of Week	Specifies the day of the week that allows the event step to occur (Monday, Tuesday, etc.)
Day of Month	Specifies the date that allows the event step to occur (1st, 15th, 30th, etc.)
Month of Year	Specifies the month that allows the event step to occur (January, February, March, etc.)
Add Event Step	The action part of the event happens here
Copy	Copies the selected line into memory
Paste	Pastes a line that was copied (CTRL+C) or cut (CTRL+ X)
Delete Trigger	Deleted the currently selected line
Rename	Renames the highlighted line
Properties	Allows the triggering event to be edited or changed



Right-Clicking Event Triggered Action
(Conditions are included in the Plus edition of Smarthome Manager)

Choose "Add Event Step" with the mouse and the window on the right will appear. On this screen, choose the action the module is to perform when the event is triggered. Your choices are:

- Turn device On
- Turn device Off
- Increment device Brighter
- Increment device Dimmer
- Set (brightness) to Lever

Depending on how the module was defined, some of the choices may be grayed out. For example, an appliance module that can't dim a load will have the functions related to dimming grayed-out. If the receiver supports PRESET Dim Commands, like Smarthome's dimmer-enabled modules, the "Set to Level" option will not be grayed-out.



Defining an Action Step for a Timer Event

After Clicking OK, the event will appear in the left window. See the example on the right.


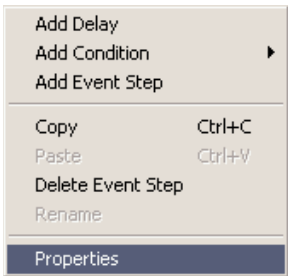



Completed Event Triggered Action
in left window

Setting Up and Editing Event Triggered Actions (continued)

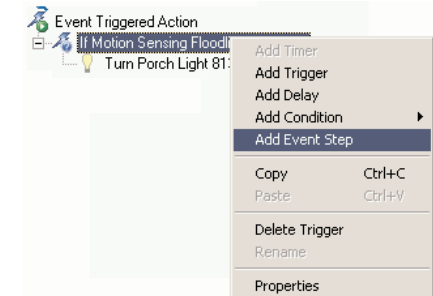
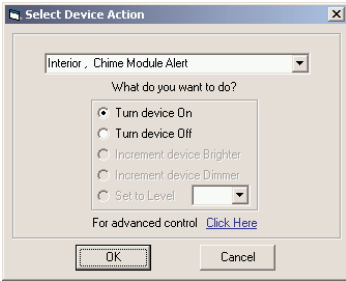
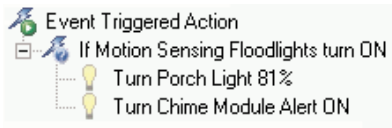
Editing an Event Triggered Action

Any of the lines in an Event Triggered Action can be edited or changed. For example, it is possible to change the command signals sent after an Event is started. Follow these steps to change a line:

		
<p>1. Highlight the line to be changed (easiest if done from the left window).</p>	<p>2. Right or alt-click to bring up a menu of options. Select "Properties".</p>	<p>3. Make any adjustments and click OK to save the changes.</p>

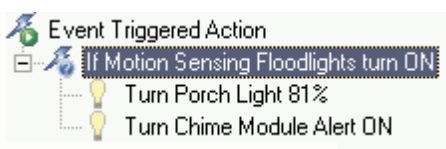
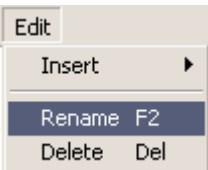
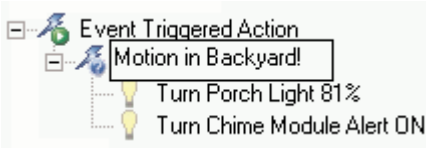
Creating an Event Triggered Action for Multiple Devices

Event Triggered Actions can include multiple Event Steps to control more than one device. The Event Steps (sent commands) will be transmitted in the order they are listed. Follow these steps to add additional commands to an event:

		
<p>1. Right click on the trigger step (the first step that initiates the event) in the left window and select "Add Event Step."</p>	<p>2. Select the automation device from the "Select Device Action" window and what it should do (i.e. Turn On). Click OK.</p>	<p>3. The additional step will appear under the same event in the left tree.</p>

Renaming a Event Triggered Action

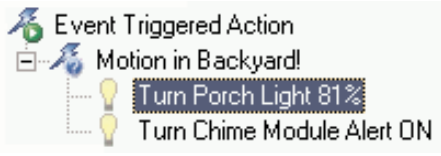
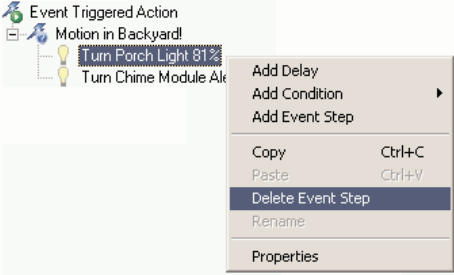
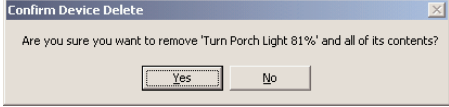
When an Event Triggered Action is created, Smarthome Manager gives it a basic name that describes the action of the triggering device, like "If Motion Sensing Floodlights Turn On". The Event can be renamed from the pull-down menu. Follow these steps to rename an event:

		
<p>1. Single click the event to be renamed in the left window so that it is highlighted.</p>	<p>2. Select Edit from the pull-down menu and click Rename. You may also press "F2" on the keyboard.</p>	<p>3. With the name highlighted, type in the new name. Press <Enter> or click the mouse somewhere outside the name box. The new name will be stored.</p>

Setting Up and Editing Event Triggered Actions (continued)

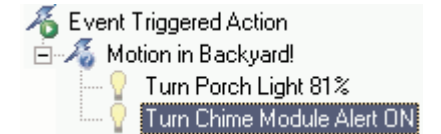

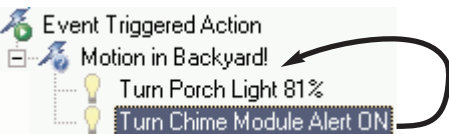
Deleting a Line in an Event Triggered Action

Any of the lines in an Event Triggered Action can be deleted if necessary. Follow these steps to delete a line:

		
<p>1. Highlight the line to be deleted (easiest if done from the left window).</p>	<p>2. Right or alt-click to bring up a menu of options. Select "Delete Event Step" or press the <Delete> key on the computer.</p>	<p>3. Click "Yes" to confirm the deletion.</p>

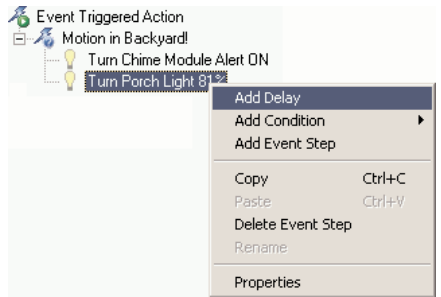
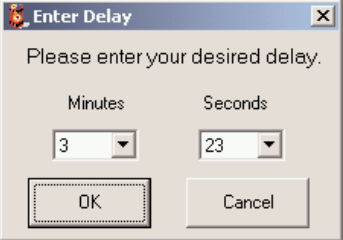

Changing the Order of the Lines in an Event Triggered Action

The order of any of the lines in an Event Triggered Action can be changed if necessary. The order in which the lines appear will determine the order that the PowerLinc Controller activates the units. In the example below, the Porch Light will come on first, followed by the Chime Module sounding. Follow these steps to change a lines order:

		
<p>1. Highlight the line to be re-ordered.</p>	<p>2. Press the UP or Down Arrows in the tool bar to move the selected line.</p>	<p>3. Alternative: The highlighted line can be dragged (Click with the mouse and hold) to another location.</p>

Inserting a Delay in an Event Triggered Action

Delays can be inserted between Event Steps. A single delay step can be programmed to pause the action for one to 59 minutes, 59 seconds. Delays allow for simpler organization of the action. To inset a delay, follow these steps:

		
<p>1. Highlight the line where the delay will be added. The delay will be inserted above this point. Right click and select "Add Delay."</p>	<p>2. Enter the delay time and click OK.</p>	<p>3. The delay command will appear in the left window. Use the mouse to move the command to the proper location.</p>

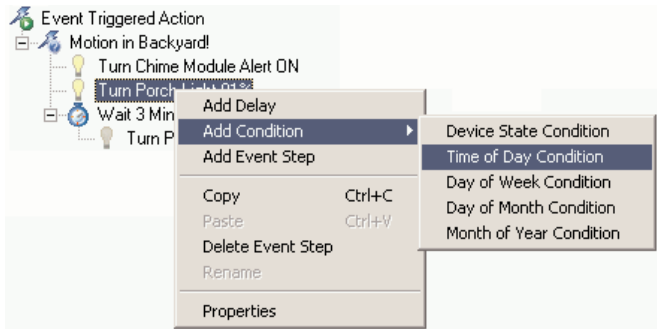
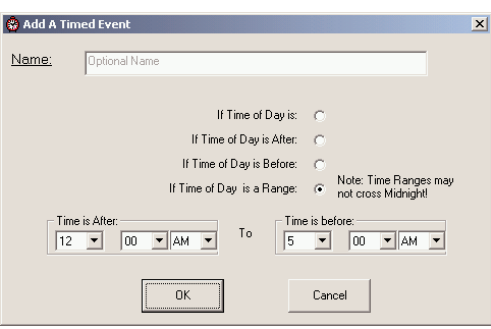
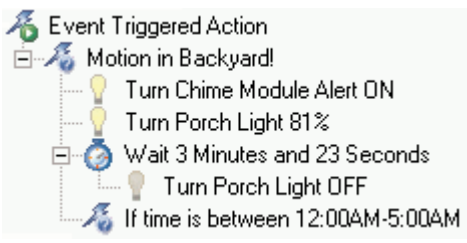
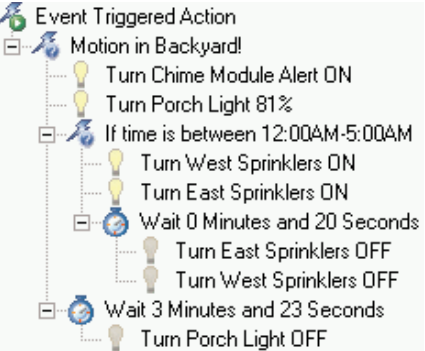
To edit the delay, right click on the delay line and select "Properties."

To delete the delay, right click on the delay line and select "Delete Delay."

Setting Up and Editing Event Triggered Actions (continued)

Adding a Conditional to an Event Triggered Action (Plus versions only)

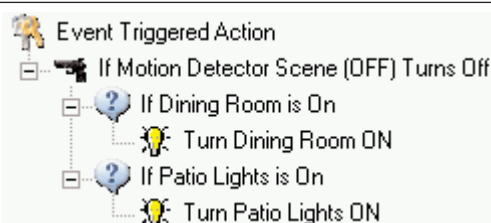
A "Conditional" can be inserted before any action to allow or prevent the Event Step from occurring. All the Event Steps, Delays, and additional conditionals within that branch of the action. The function works like conditionals for Time Triggered Events. (Conditional programming is only available in Smarthome Manager Plus.) Follow these steps to insert a conditional:

	
<ol style="list-style-type: none"> 1. Highlight the line within the Event Triggered Action to receive the conditional. If the conditional ends up in the wrong place, it can be easily moved (see Changing the Order of Lines on page 22). 2. Right click the mouse and select "Add Condition" 3. For this example, select "Time of Day Condition" 	<ol style="list-style-type: none"> 4. Select the time period that will allow the action to occur. In this example, we'll turn on the sprinklers when an intruder is detected on the property between midnight and 5am. Check the "If Time of Day is a Range" and enter the time range. Click OK to save the conditional.
	
<ol style="list-style-type: none"> 5. The condition line will be placed within the Event Steps and Delays. Use the UP or DOWN arrows in the tool bar to position the conditional in the correct spot if needed. 	<ol style="list-style-type: none"> 6. Continue to enter additional event steps to complete the event. In this case, the sprinklers will run for 20 seconds to chase off any intruders or stray animals.

Creating Complex Conditional Event Triggered Actions (Plus only)

An Event Triggered Action can have multiple conditionals applied to the event. That is, multiple items must be true for the events to occur.

In the example below, after the motion detector has turned itself off and any Smarthome 2-Way Scene-enabled modules, those receiver will be turned back on if PowerLinc Controller knew they (their primary address) was ON before the scene triggered.



After an OFF command is received, PowerLinc Controller will turn on the Dining Room and Patio Lights if they were on before the ON command (from the motion sensor) triggered the scene. PowerLinc Controller will have either previously sent commands to turn them on or will have monitored the powerline to know if they were turned on manually or by another transmitter.

TIP: Testing the Action Triggered Events

After an event (Action or Timer based) is created, it should be tested to make sure everything runs correctly. Follow these steps to test the event:

1. Download the programming to the PowerLinc Controller (press F-12)
2. Open the Advance Controller (under the Tools Menu) to monitor the signals

For Event Triggered Actions

3. Send the trigger signal from an *external* transmitter. It can be the same transmitter that will normally be sending the signals (like motion sensing floodlights) or a stand-alone controller like ControlLinc or a Maxi-Controller.

For Time Triggered Actions

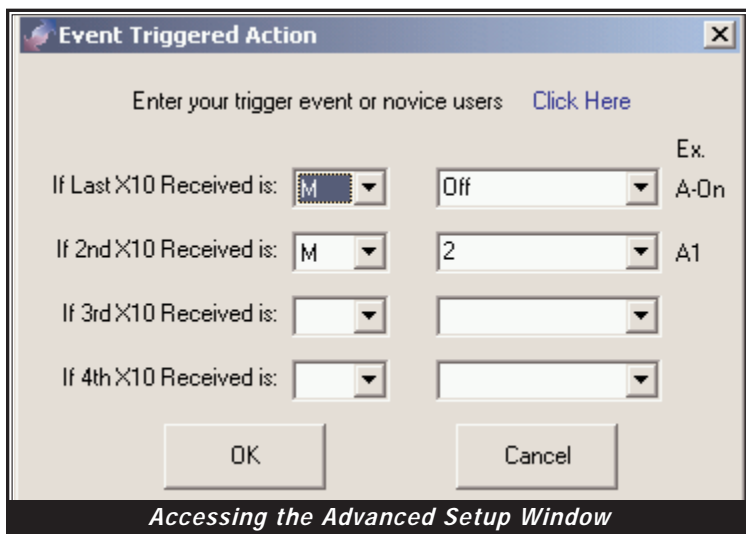
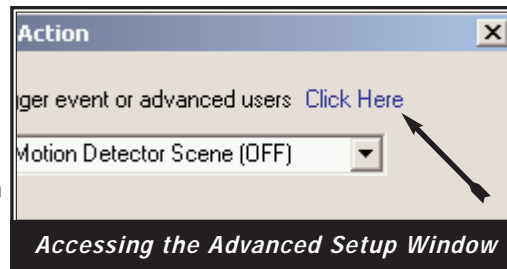
3. Set the PowerLinc Controller's clock to the same time as the action. When the "Set Time" button is pressed, the action will immediately execute.

For complex actions that include conditionals (time, day, unit status, etc.) make the appropriate adjustments and trigger the event (using the clock or an external transmitter).

Setting Up and Editing Event Triggered Actions (continued)

Alternative to Using a Previously Defined Device to Trigger an Event

Smarthome Manager includes an advanced setup feature for defining the trigger signal. In addition to a regular address and command being able to start the event, multiple addresses and unusual commands can be used. By using the advance feature, there will be no need to create a device to represent the triggering device. For example, in the previous example where a device was set up to represent the OFF signal from the motion detector, we could just tell the PowerLinc Controller to monitor M2-OFF. To access the Advanced Setup, point the mouse over the "Click Here" and click the link once.



Available Commands
On
Off
Bright
Dim
All Lights Off
All Units Off
All Lights On
Hail Request
Hail Acknowledge
Status=On
Status=Off
Status Request

The Advanced Setup Window has four lines with drop-down boxes for house codes and addresses/commands. The Housecode drop down menu contains choices for letter codes A through P. The right most drop-down box for each line contains the address numbers (1 through 16) and commands (ON, OFF, Dim, etc.).

In the example on the right, the triggering address has been entered on the first two lines. It is important to note the order in which the commands and addresses are entered. The top line, "If Last X10 Received is" represents the last portion of the signal, in this case, M (for the housecode) and OFF (for the command). The second line contains the address, M (for the housecode) and 2 (for the address). Since nearly all transmitters send the address then the command, **the triggering sequence needs to be entered from the bottom up.**

Using "Keypress" Commands to Speed Up triggers

X10/PLC signals are relatively slow to transmit over the powerline compared to even the slowest computer communications. Normally, a command like A1- ON takes .78 seconds to transmit. A broken down signal is composed of A1-Aon-A1-Aon. These signals are actually sent twice to improve reliability. In some cases, there is a noticeable delay between the time the command is sent and observing the results. It is not uncommon for a user to question this delay and sometimes classify it as "unacceptable"!



PowerLinc Controller can start a trigger on just the address portion of the signal, commonly called a "keypress". A Keypress is an X10/PLC signals that contains only the address portion of the signal, like "A1". Using the advanced setup feature in Event Triggered Actions, a trigger signal can be defined as a single address. Anytime the controller detects "A1", it will start the sequence. Sending only a keypress signal (without the command) will start the event noticeable sooner. The image above shows an example of a keypress being used to start an event triggered action. Please note that if the transmitter sends the whole signal, the address and command, the action will not start any sooner since the PowerLinc Controller will wait for the AC line to clear of signals before sending its response. Smarthome's line of KeypadLinc Wall Mounted Transmitters can be programmed to only send keypress signals. For more technical information on X10/PLC signals, please see:

www.smarthome.com/manuals/MAN-1136.pdf

Setting up and Editing Sequences *(only available in Smarthome Manager Plus)*

Overview

Sequences in Smarthome Manager allow the user to create a group of commands that can be used over and over in programming Event and Time Triggered Actions. For HouseLinc Controller and Plato for Windows users, Sequences were called Scenes and Command Groups. By setting up a sequence of events, the user can save time and frustration trying to replicate duplicate programming in multiple places within Smarthome Manager.

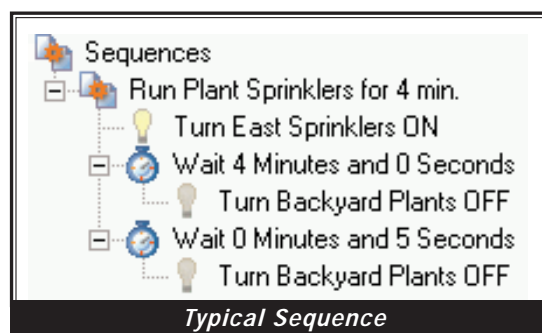
Some Examples of Sequences:

- Adjusting the lights, setting the security system, and setting back the thermostat when leaving the house (event triggered) or at 10pm nightly (time triggered).
- Turning on multiple lights in a specific order at sundown (time triggered) or when a vehicle is detected (event triggered).
- Running the all the sprinklers in sequence for a fixed amount of time at 8 am (a timer event) or if the temperature exceeds 95 degrees (event triggered), or if the homeowner wants to water the lawn because it is looking a little brown (event triggered).

Rather than setting up identical event steps, delays, or any other conditions user in Timer and Event Triggered Actions, a sequence can be programmed once in the Sequences folder. Later, if the sequence needs modification, like increasing the time that the sprinklers need to run, one change to the programming here (in the Sequences folder), will automatically be applied to all other events that use the sequence. Those familiar with computer programming might relate sequences to sub-routines.

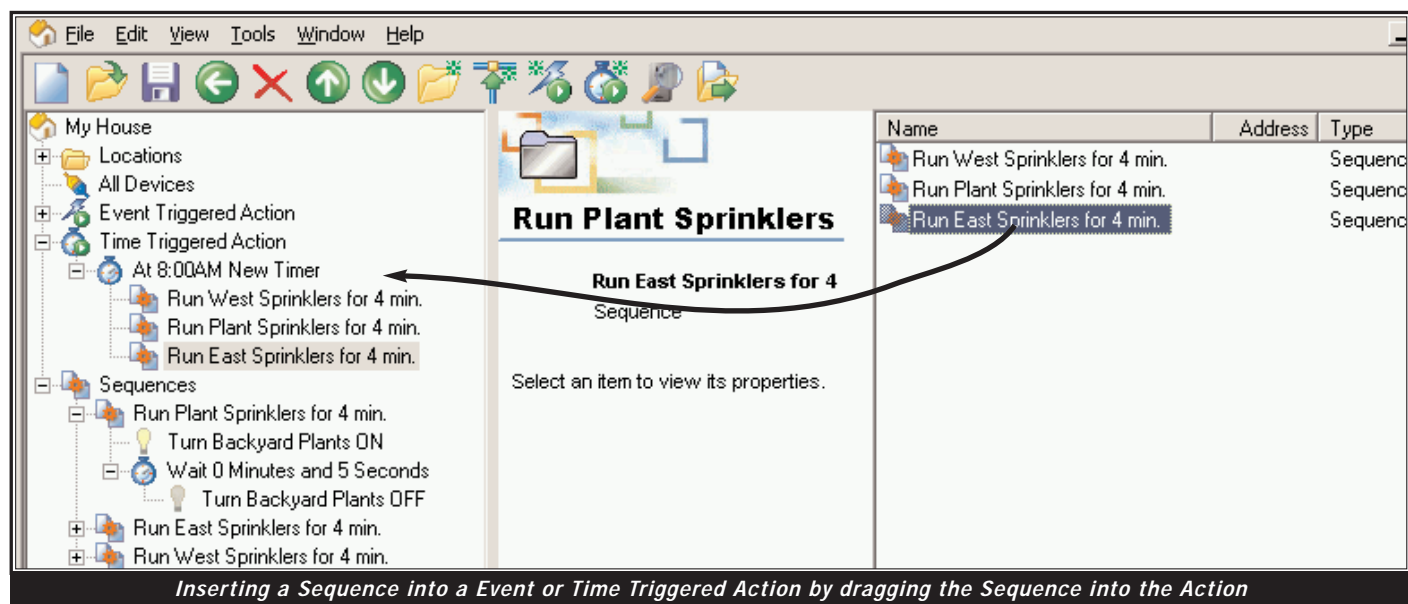
To make a new Sequence for these steps:

1. Right click on Sequences and select "Add Sequence" or select "Add a new Sequence" from the center window.
2. The beginning of the new sequence will appear in the left window with a temporary name highlighted. Enter your name for the sequence, i.e "Run Plant Sprinklers for 4 min."
3. Enter the event steps and if necessary, any delays or conditional. These steps are exactly like the ones from Timer and Event Triggered Actions.
4. When completed, the sequence will look something like the example on the right.



Using Sequences (example below)

1. Click "Sequences" in the left window so that all the sequences appear in the right window.
2. From the right window, click and drag the sequence to the action in the left window.
3. If necessary, move the sequence to the proper spot within the action.



How Powerline Signals Travel Around A Home and How To Improve Reliability

Most homes in North America have two lines of 120 volts coming into the home from the utility company. This split-single phase electricity is divided out at the home's breaker box into the circuits that feed light switches, plug-in outlets, and appliances. Half of the electricity outlets and wall switches are fed by one of the 120-volt lines and the second 120-volt line feeds the other half. The intermittent operation of PLC/X10 modules usually happens when the transmitter is sending signals on one line and the receiver module is plugged into an outlet on the other line. For the signals to get to the receiver, it must leave the home, travel to the utility company transformer then come back in on the other AC line. By the time the signal gets back to the home, travels through the electrical meter and circuit breaker box, there may not be enough signal left to trigger the module.

The first order of business will be to install a coupler-repeater, also known as amplifier. A coupler-repeater will 'see' the incoming signal, re-generate it, and blast it out over both lines of the 120 volts. We recommend that any home larger than 3000 square feet install a coupler-repeater. In smaller homes, a passive phase coupler also known as a signal bridge may give satisfactory results.

Once the signal has been amplified, it's time to preserve it. Since PLC signals go everywhere in the home, some electrical devices will have more of an effect on the signal strength than other devices. PLC signals are like water pressure in pipes, it actually goes everywhere it can, not just to the receiving module. In the last 20 years, an explosion of electrical devices has invaded our homes. Computers, video gear, and fancy high-end electronics are more present than in years past. The more complicated the electrical power supply is in a device, the more likely it is to absorb PLC signals. Engineers who design power supplies build in traps to filter out and kill electrical noise. Unfortunately, the PLC signals looks like electrical noise to these devices. The result is that a large percent of the transmitted signal is lost to these devices leaving less for the receivers. The most common sources of signal loss are:

- Televisions
- Computer systems
- Audio/Video gear
- Computer UPS's and power strips
- Power supplies for laptops and cell phones

Testing for the problem is simple. If a device is suspected of causing signal absorption, unplug the device and then re-transmit the signal. It is very important that the device is unplugged and not just turned off! If the controlled product begins working after the appliance is unplugged, then a filter will be needed on that device to keep PLC signals from being absorbed and raise the signal strength of the entire home. Smarthome has many filters that will fix the problem. An average home will need between three and five filters. If you are in the business of installing automation systems and not in the 'call-back' business, include some of these in your bid as part of the standard package.



Smarthome's BoosterLinc™ can solve localized problems



SignalLinc Repeater is ideal for improving the home automation signal strength throughout all the outlets in a home. But, as the PLC signals travel down a circuit and away from the repeater, it will weaken by the same factors listed above. Additionally, the signal will get weaker as it passes installed PLC transmitters. Each PLC transmitter contains a tuned circuit that when it's not sending signals it's absorbing them! In addition to plug-in transmitters, LampLinc™ 2-Ways, SwitchLinc™ 2-Ways, ToggleLinc™ 2-Ways, ApplianceLinc™ 2-Ways, KeypadLinc™ Controllers, or any module with 2-way abilities will load down the available signal. With so many transmitters installed, the signal is loaded down to a point where some modules will be unable to receive a signal. Installing multiple 2-way devices on one branch circuit may necessitate the use of local amplifier like Smarthome's BoosterLinc.

About PowerLinc Controller's Certification

PowerLinc Controller has been thoroughly tested by ITS ETL SEMKO, a nationally recognized independent third-party testing laboratory. Products bearing North American ETL Listed mark signifies that the product has been tested to and has met the requirements of a widely recognized consensus of U.S. and Canadian product safety standards, that the manufacturing site has been audited, and that the manufacturer has agreed to a program of quarterly factory follow-up inspections to verify continued conformance.



Smarthome Limited Warranty

Smarthome warrants to the original consumer purchaser of this product that, for a period of two years from the date of purchase, this product will be free from defects in material and workmanship and will perform in substantial conformity to the description of the product in this Owner's Manual. This warranty shall not apply to defects or errors caused by misuse or neglect.

If the product is found to be defective in material or workmanship or if the product does not perform as warranted above during the warranty period, Smarthome will either repair it, replace it or refund the purchase price, at its option, upon receipt of the product at the address below, postage prepaid, with proof of the date of purchase and an explanation of the defect or error. The repair, replacement, or refund that is provided for above shall be the full extent of Smarthome's liability with respect to this product.

For repair or replacement during the warranty period, call Smarthome customer service to receive an RA# (return authorization number), properly package the product (with the RA# clearly printed on the outside of the package) and send the product, along with all other required materials to:

Smarthome
ATTN: Receiving Dept.
16542 Millikan Ave
Irvine, CA 92606-5027



Limitations:

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Some states do not allow limitations on how long an implied warranty lasts and/or the exclusion or limitation of damages, in which case the above limitations and/or exclusions may not apply to you. You may also have other legal rights, which may vary from state to state.

SwitchLinc, KeypadLinc, SignalLinc, LampLinc, PowerLinc, ToggleLinc, BoosterLinc, ApplianceLinc, ControLinc, TesterLinc, FilterLinc, ProbeLinc, TempLinc, TouchLinc, IR Linc, Insteon, SignalLinc RF, & SmarthomeLive are trademarked by Smarthome, Inc.

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