

HomeSeer UPB Plug-in Documentation Version 1.0.2.4

The HomeSeer UPB Plug-in allows HomeSeer (Version 2.0 Build 1972 or higher) to communicate with and control UPB (Universal Powerline Bus) devices. HomeSeer communicates to these devices through an interface called a “PIM” or Powerline Interface Module. Currently serial interface PIMs and USB interface PIMs are supported as well as message mode capable PCS and SA “Residential Three Phase Repeaters”.

UPB System Configuration:

UPB system configuration must be completed before using the UPB plug-in and takes place within the UPStart program provided for this purpose from the UPB system vendors. This application can be downloaded from a number of sources including www.pcslighting.com

The UPStart application will allow you to program and test your UPB devices. When you have completed programming your devices you will need to export your UPB system description so that the HomeSeer UPB plug-in can access information about your system. To export your system description use the File/Export command within the UPStart application. Export your file to the HomeSeer config directory as HomeSeer.upe, this location will usually be C:\Program Files\HomeSeer 2\Config\HomeSeer.upe

Plug-in Installation:

Use the HomeSeer updater to download and install the UPB Plug-in installation files. After restarting HomeSeer go to the HomeSeer setup screen and select the Interfaces tab. You should now see a “UPB” interface listed with an “Enable” button on the same row. Press the “Enable” button to enable the plug-in, then press the SAVE button at the bottom of the screen. You should now see an additional “Configure” button on the UPB interface row. If not you may need to restart HomeSeer one more time.

Plug-in Configuration:

Once the UPB plug-in configuration screen appears you will see a number of options. The first option is the selection of the COM Port that the PIM is connected to. Use the drop-list to select the port that you have connected the UPB PIM to on your computer. If you have a USB based PIM then select the USB option in this drop-list.

If you are using a “Residential Three Phase Repeater” or similar as your power line interface rather than a standard PIM, please check mark the “Power Line Interface Device Is a Residential Repeater” option.

If you are using a standard PIM that is to communicate to a remote repeater (the PIM only talks to the repeater, not any actual control devices) then select the “Communicate via PLC to a remote repeater...” option. Please note that this will generally only provide one-way communications (computer to device control).

The next option is the UPStart export file location. In this field you will enter the path to the UPStart export file. This field defaults to the HomeSeer config directory and you should generally not need to change this.

Next is the “Poll UPB devices for their current state at startup” option. When enabled this option will poll all UPB devices so that HomeSeer will be aware of their current state when HomeSeer starts. When disabled HomeSeer will show the last state that HomeSeer was aware of when it was shut down. Devices only need to be polled at startup because the UPB plug-in will track all device changes after it has been started up.

Next is the “LED Tracking is enabled on PCS keypads” option. Since the UPStart application does not export this information there is no way for the UPB Plug-in to know if this option is enabled within UPStart. If you have PCS keypad devices please set this option to reflect how you have the option set within UPStart for your keypads. All keypads must be set similarly. If you have any other brand keypads along with PCS keypads the LED tracking must be set to “On” in both UPStart and in the plug-in.

Next is the “Reset keypad LEDs at startup” option. Since keypads are one of the few devices that do not support UPB status requests, there is no way to know their state when HomeSeer starts. This option forces all the LEDs to off on all the keypads so that HomeSeer can know their state at startup. You won’t need to enable this option if you are managing the LEDs yourself through scripts or events.

The “Resend UPB command if no acknowledgement is received” option will cause the plug-in to request that all transmissions be acknowledged by the receiving device. If the plug-in does not get an acknowledgement then the plug-in will try to resend the command up to 4 additional times before giving up.

The “Number of Transmissions” option tells the plug-in how many copies of a command should be sent out. UPB supports the ability to send multiple copies of a command just in case one might be corrupted by powerline noise. Receiving devices will not see these repeats as additional commands so there is no worry about a command being executed multiple times. Additional transmissions will only add to the overhead of each command and will not speed up or slow down reaction time.

Lastly the “Logging Level” option allows you to fine-tune the amount of information that gets generated by the plug-in and placed into the HomeSeer log. No logging will cause the plug-in to generate nearly no log entries, Normal logging will log startup and error messages, debug logging will add additional information as the plug-in is running, and detailed debug logging will cause the plug-in to generate significant information that can help diagnose any problems that may occur.

Once you have made any changes to the configuration options you must click the “Save Options” button to make your changes. If a COM port or UPStart export file change was made then you will need to restart HomeSeer.

Plug-in Use:

Each time the plug-in starts it reads the UPStart export file and checks for any changes. Devices are automatically created based on the UPStart export file. The plug-in will allocate two (or more if needed) house codes for its use. One house code will be used for the “load controller” devices and the other house code will be used for UPB links.

Load controller devices are things like light switches, appliance modules, and keypad button indicators. The names and locations of these devices are imported from UPStart so properly filling out these fields in UPStart will make your HomeSeer experience more friendly. These devices have a standard HomeSeer user interface with On/Off and (if the device supports it) Dim capabilities. These devices can also be controlled from scripts with the HomeSeer device status functions like TransmitX10, SetDeviceStatus, etc.

UPB Links are a conceptual combination of scenes and groups. Devices can be programmed with UPStart to respond to link commands. The “Activate” link command will cause associated devices to go to their link preset level, again programmed in UPStart. The “Deactivate” link command will cause the associated devices to turn off. On, Off, and Dim commands can also be sent to devices associated with the link.

The link devices in HomeSeer are Status/Value pair devices. They can have any one of a number of different states. To transmit a link command the command just needs to be selected from drop list in the interface. Device value functions like SetDeviceValue are used to send link commands from scripts. Events can also be triggered when a link command is received from another device. Note that whenever a link is received the HomeSeer device will first change to “Unknown” and then to the actual link state. This is so that multiple transmissions of the same link command will each cause an event to trigger.

The following is a list of available link values:

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UNKNOWN = 0
ACTIVATE = 1
DEACTIVATE = 2
FADE ON = 3
FADE OFF = 4
SNAP ON = 5
SNAP OFF = 6
DIM to 10% = 7
DIM to 20% = 8
DIM to 30% = 9
DIM to 40% = 10
DIM to 50% = 11
DIM to 60% = 12
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DIM to 70% = 13
DIM to 80% = 14
DIM to 90% = 15
BLINK = 16
LAST ON LEVEL = 17

Link Best Practices:

There are a number of ways to configure a UPB based system. Smart usage of the UPB link capability will greatly enhance your ability to tap the fully capabilities of UPB. What follows is a good starting point for a well-organized and easy to use system that can easily grow as new UPB devices are added. Starting out with a good system even if you only have a few devices at the onset can make life (and programming HomeSeer) much easier down the road.

Start with a hierarchy to organize your devices into logical areas. Then add scene control as needed. For example:

<u>Link #</u>	<u>Name</u>	<u>Devices</u>
1	Whole House	All Lights
2	Interior Lights	All Lights Inside the House
3	Exterior Lights	All Lights Outside the House
4	First Floor Lights	All Interior Lights on the 1 st Floor
5	Second Floor Lights	All Interior Lights on the 2 nd Floor
6	Living Room Lights	All Living Room Lights
7	Living Room Movie Mode	All Living Room Lights (Scene)
8	Living Room Floor Lamps	The 4 Floor Lamps in the Living Room
9	Master Bedroom Lights	All Master Bedroom Lights
10	Master Bedroom TV Mode	All Master Bedroom Lights (Scene)
...		
100	Master Bed Keypad Btn 1	Master Bed Keypad Button 1
101	Master Bed Keypad Btn 2	Master Bed Keypad Button 2
102	Master Bed Keypad Btn 3	Master Bed Keypad Button 3
103	Master Bed Keypad Btn 4	Master Bed Keypad Button 4

In UPStart you would add link #1 to the receive channel on all your lights. This will allow you to control all your lights at one time by using the “Whole House” group that will be automatically created by the plug-in within HomeSeer. You would add link #2 to the receive channel on all of your interior lights so that they can all be controlled via one command in HomeSeer, and so on.

Since links in UPB are universal (common to all devices) you can program a switch to transmit a link command as well. If you had UPB wall switch for instance that had a local load connected of one outside light, you could add link #3 to it's transmit table so that when you controlled that one light switch all the outside lights would go on and off. Since HomeSeer knows the way all your switches are programmed it would know that you turned on/off all the outside lights with that switch rather than just the one attached.

If you want to control HomeSeer events with your UPB Keypads, just have the keypad transmit a link command when the button is pressed. This will allow HomeSeer to know that you pressed a keypad button. You can even have HomeSeer turn on/off the key indicator to let you know the current condition of something in the home (for instance if the house alarm is set).

All the links but 7 and 10 are primarily there to have group control of a set of lights. However they can each have one "Scene" as a default behavior. Links 7 and 10 are there to add additional scene capability to a room or area.

Sending "Snap On" to "First Floor Lights" (#4) will cause all the lights on the first floor (that are UPB controlled of course) to immediately go on.

Sending "Activate" to "First Floor Lights" (#4) will cause all of the first floor lights to go on/off or dim to their link #4 preset states, all at the exact same time.

The great thing about using links to their fullest is that adding or removing a device from your system requires absolutely no changes to your HomeSeer programming. Just use UPStart to add or remove the device and its link associations as desired.

If you need assistance using the UPB plug-in there is a dedicated HomeSeer UPB support forum located at <http://board.homeseer.com/forumdisplay.php?f=779>

For additional resources please visit the HomeSeer support page at <http://www.homeseer.com/support/index.htm>