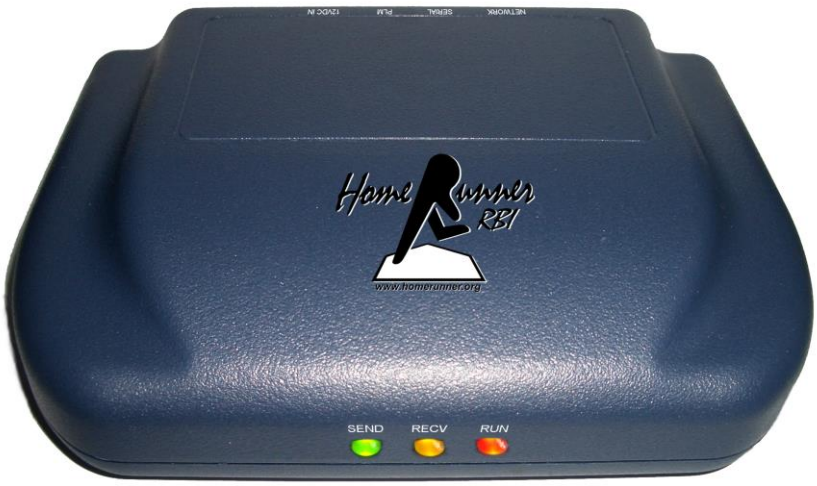

USER MANUAL

JDS THE HOME OF AUTOMATION TECHNOLOGIES
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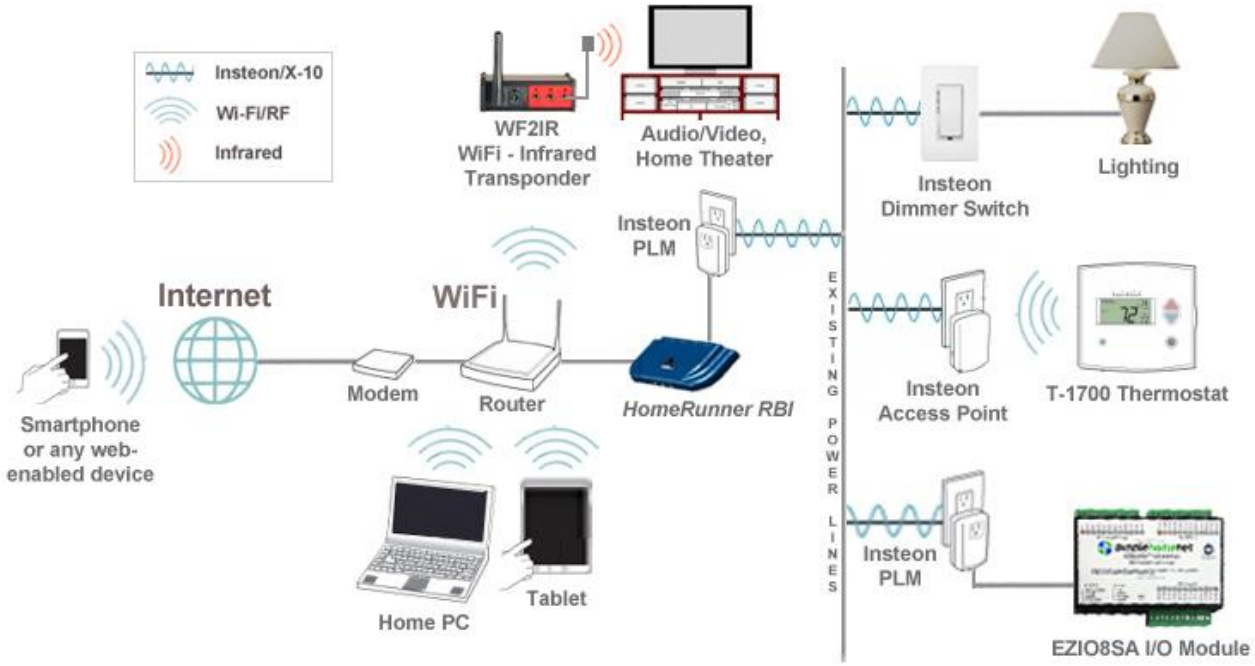
HomeRunner RBI System Layout



Welcome to HomeRunner RBI!

HomeRunner RBI is a stand-alone home automation controller consisting of both hardware and software. Once programmed, your *HomeRunner RBI* runs on its own processor (no computer is required) and serves (broadcasts) your control screens to the internet as a Remote Browser Interface for control from your phone, tablet, computer or any web-enabled device (no "app" is required – just log on).

The controller connects to one of your network router ports and to the included plug-in power line modem with the provided cables. The *HomeRunner RBI* software is a Windows-based application for programming and advanced control of your *HomeRunner RBI* system and will run on 32-bit and 64-bit Windows operating systems (XP, Vista, Windows 7, 8). It provides a platform for configuring the controller, creating and publishing control screens (for your iPhone, iPad, etc.), defining connected devices, programming if-then conditional and time-based events and much more. The *HomeRunner RBI* software also offers advanced graphical and control functions when used as a Graphical User Interface.

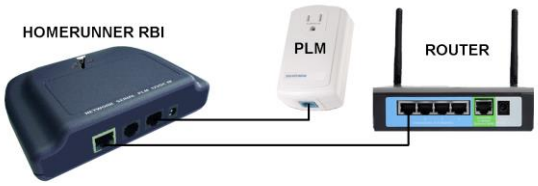
HomeRunner RBI supports both Insteon and X-10 technologies and has an RS-232 serial port for connecting a compatible serial device. A variety of Insteon and X-10 devices are available to enable control of lighting, heating/cooling, audio/video, irrigation, and other household functions without the need for additional wiring. For a list of supported devices, see "Supported Devices." Free software and firmware updates are posted online periodically at http://updates.homerunner.me/updates/ with added features and improvements. It is recommended that you download and install the most recent versions to insure optimum performance.

HomeRunner RBI also includes a "Stargate Link" for interfacing with legacy Stargate-IP or CommStar-IP controllers and all connected peripherals (thermostats, security, IR-Xpander, etc.) via the Web Xpander.

HomeRunner RBI can be controlled from any **computer**, (pc or Mac, desktop, laptop, tablet, netbook, etc.), **smartphone** (iPhone, Droid, etc.), **web-enabled or wi-fi device** (iPad, iTouch) as well as from any **Insteon** or **X-10 controller**, wired and wireless.

With *HomeRunner RBI*, you can transform any picture into a Graphical User Interface in minutes! You can create any number of control screens using image files (jpg, gif, bmp, etc.) for the "backgrounds" and "buttons." Individual objects within each picture (lights, appliances, etc.) can be defined as "virtual buttons" to control the selected object when pressed. (You can also simply select a background color for each screen and select from the library of preset button images.)

You can use any photos, download pictures from the internet, scan pictures from magazines or draw your own. Buttons will reduce in size slightly when clicked or touched using the *HomeRunner RBI* application, giving the appearance of a button being pressed. You can change the background and button images at any time. Once you have created your control screens, you save them all as a "layout" in the *HomeRunner RBI* "Layouts" folder (C:\HomeRunnerRBI\Layouts) and publish (upload) the layout to the *HomeRunner RBI* controller. (Launching the *HomeRunner RBI* application will recall the last layout that was running.)



Initial Set Up and Configuration

The following steps will guide you through the installation and initial configuration:

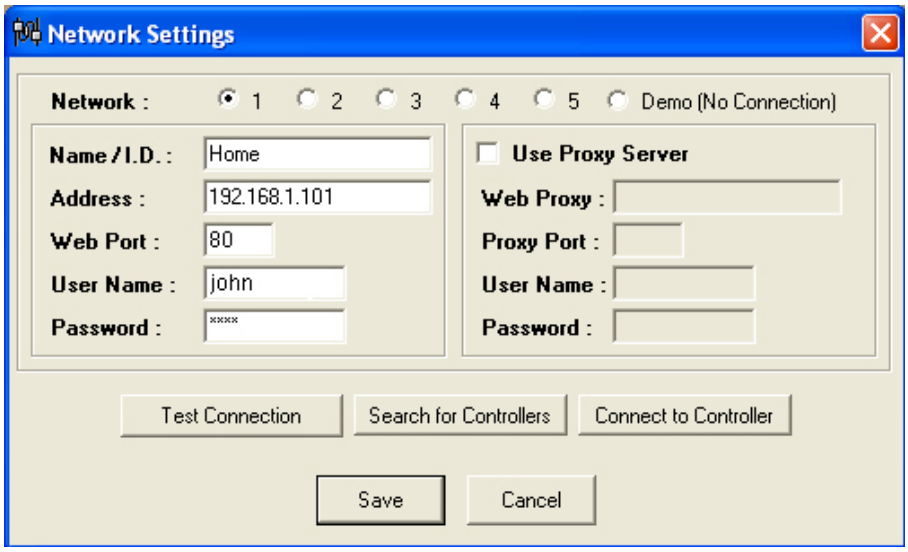
1. Connect the *HomeRunner RBI*'s **"Network"** jack to one of your router ports with the supplied network cable.
2. Connect the *HomeRunner RBI*'s **"PLM"** jack to the Insteon Power Line Modem with the other network cable and plug the PLM into a nearby electrical outlet. For optimum X-10 performance, locate the PLM close to your main electrical panel (use a longer network cable if necessary). (Do NOT plug the PLM directly into an XTB Booster. Use a nearby outlet instead.)
3. Wait approximately 10 seconds for the *HomeRunner RBI's* green and yellow "SEND" and "RECV" LEDs to turn on. (The red "RUN" LED remains off unless a schedule is running.)
4. For applications that don't require the PLM (no Insteon or X-10 are used), plug a 12 VDC @ 300mA power adapter into the "Power In" jack (either polarity will work but it **must be DC**).
5. **Download** and **install** the latest version *HomeRunner RBI* application setup files from our website at http://updates.homerunner.me/updates/ to the default folder (C:\HomeRunnerRBI) or select a different location if you prefer.
6. Double-click the *HomeRunner RBI* icon on your desktop or select it from the Start Menu to launch the *HomeRunner RBI* application.
7. Press **"Ctrl+T"** on your keyboard (or double-click the bottom edge of the *HomeRunner RBI* screen) to display the *HomeRunner RBI* **toolbar**.

8. Click the **Network** button on the toolbar or press **"Ctrl+K"** on your keyboard to access the Network Settings window.
9. Select **Network 1** then click **"Search for Controllers"** to identify the IP address of your *HomeRunner RBI*. Enter a **Name/I.D.** (i.e. Home) for reference. You can also manually enter your *HomeRunner RBI* controller's IP Address, Web port (default = 80), and User Name / Password (default = Home / Runner) if you already know them.
10. Click **"Test Connection"** to confirm that you have entered the correct information and to verify a successful connection.
11. If you cannot obtain your *HomeRunner RBI* controller's IP Address using the Search method above, log onto your router and view the DHCP Client List to determine the IP Address. Enter the IP address in the Network Settings #1 position. Click **"Test Connection"** to confirm then click **"Save."**
12. Click the toolbar **"Controller"** button to log onto the Served Controller Page then click the **"Firmware"** tab. The green banner on top displays the current installed firmware version with the date and time it was created. If the version listed is older than the posted update, install the latest version from http://updates.homerunner.me/updates/.
13. Click the **"Network"** tab and uncheck **"Auto Network Config (DHCP)"** then click **"Save Changes"** at the bottom to retain the current *HomeRunner RBI* controller's IP Address and prevent it from being reassigned by the router.

Download the latest HomeRunner RBI User Manual for complete installation and configuration details:
http://www.jdstechnologies.com/HomeRunnerRBI/HomeRunnerRBIUserManual.pdf

Network Settings

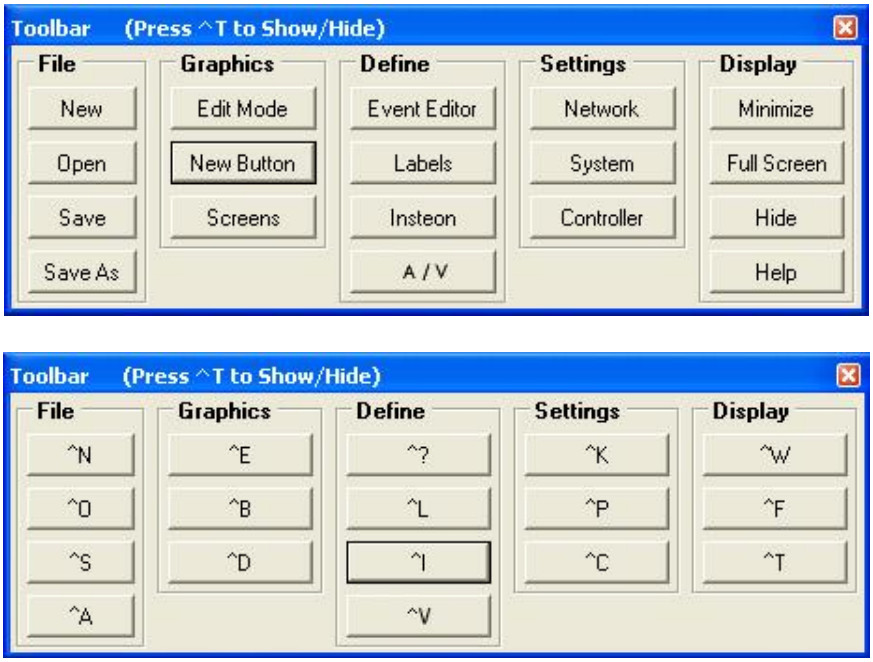
The first thing you will need to set is the IP address of your *HomeRunner RBI* controller. The default IP address setting is 192.168.0.5 with DHCP ON (enabled). Your router will automatically re-assign an available IP address to your *HomeRunner RBI* controller and replace the default setting with a valid one within the range of your network.



14. Click the **Network** button on the toolbar or press **"Ctrl+K"** on your keyboard to access the Network Settings window.
15. Select **Network 1** then click **"Search for Controllers"** to identify the IP address of your *HomeRunner RBI*. Enter a **Name/I.D.** (i.e. Home) for reference. (You can also manually enter your *HomeRunner RBI* controller's IP Address, Web port (default = 80), and User Name / Password (default = Home / Runner) if you already know them.)
16. Click **"Test Connection"** to confirm that you have entered the correct information and to verify a successful connection.
17. If you cannot obtain your *HomeRunner RBI* controller's IP Address using the Search method above, log onto your router and view the DHCP Client List to determine the IP Address.
18. Click the toolbar **"Controller"** button to log onto the Served Controller Page then click the **"Firmware"** tab. The green banner on top displays the current installed firmware version with the date and time it was created. If the version listed is older than the posted update, install the latest new version. See "Updating Software and Firmware" for instructions.

HomeRunner RBI can store up to 5 different network settings (plus one "Demo" setting) which can be selected either through the Network Settings screen or from actions assigned to user created buttons. Each setting can be given an optional name (i.e. Home, Office, etc.) and must contain the IP address of the *HomeRunner RBI*, including the web port (typically port 80) and the User Name and Password. If you are accessing your *HomeRunner RBI* from behind a proxy server, check the "Use Proxy Server" box and enter the appropriate proxy server information. The "Demo" setting can be used to demonstrate the *HomeRunner RBI* software application without actually controlling devices or connecting to the *HomeRunner RBI* controller. *HomeRunner RBI* uses standard HTTP requests (the same way a web browser is used to access the *HomeRunner RBI*) to perform most functions and any settings required for your web browser to connect to the *HomeRunner RBI* would need to be specified here as well.

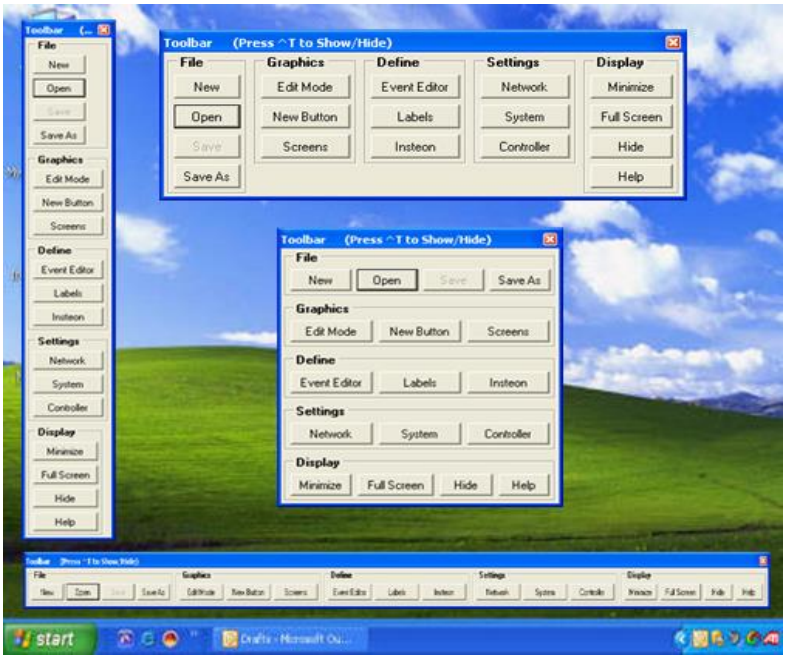
Toolbar



Shortcuts (^ = **Ctrl** key)

Pressing the **Ctrl** key on your keyboard will display the shortcut keys for each button. You can either click with the mouse or hold the Ctrl key down and type the corresponding letter to select a button.

You can adjust the format of the toolbar by simply stretching it horizontally or vertically (drag from corner or side) and place it anywhere on your desktop. Placing any part of the toolbar within 5 pixels of the *HomeRunner RBI* screen will link the two so the toolbar moves together with the *HomeRunner RBI* screen. Double-clicking on the toolbar background returns it to the default setting.



Toolbar Button Legend

New - Starts a new layout with a blank screen.

Open – Selects an existing layout.

Save – Saves the current layout to your computer.

Save As - a) Publishes (uploads) the current layout to the *HomeRunner RBI* controller,
b) Saves the current layout to your computer with a different name,
c) Exports and archives the current layout and schedule as a compressed .zip file.

Edit Mode – Alternates between Edit Mode (for adding/editing buttons to a screen) and Run Mode (for operating the buttons on the screen).

New Button – Launches the "Add New Button" window in Edit Mode for selecting button attributes.

Screens – Launches the "Edit Screens" window for adding/editing screen attributes.

Event Editor – Launches the "Event Editor" for adding/editing Events and Then Macros.

Labels – Defines X-10 devices, Flags, Variables and Timers.

Insteon – Defines Insteon devices, links and scenes.

A/V – Stores and manages IR codes for controlling audio and video components.

Network – Defines the network connection parameters and tests the connection.

System – Displays system information and sets the following parameters: Lock Code Functions, Grid Settings, Screen Scaling/Sizing, Status Refresh, Default Sound, and Button Motion. It also accesses the History/Message Log and Restores Data Files.

Controller – Launches a browser with the served *HomeRunner RBI* pages. The published layout can also be viewed and operated as it appears on the network by clicking "Published GUI."

Minimize – Minimizes both the layout and the toolbar.

Full Screen – Alternates between full screen and the defined screen size.

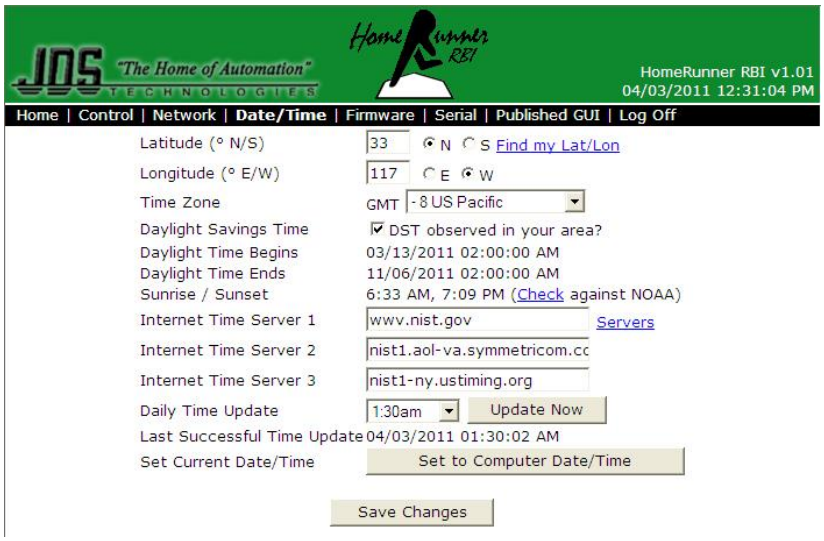
Hide – Hides the toolbar.

Help – Launches the *HomeRunner RBI* User Manual (.pdf file).

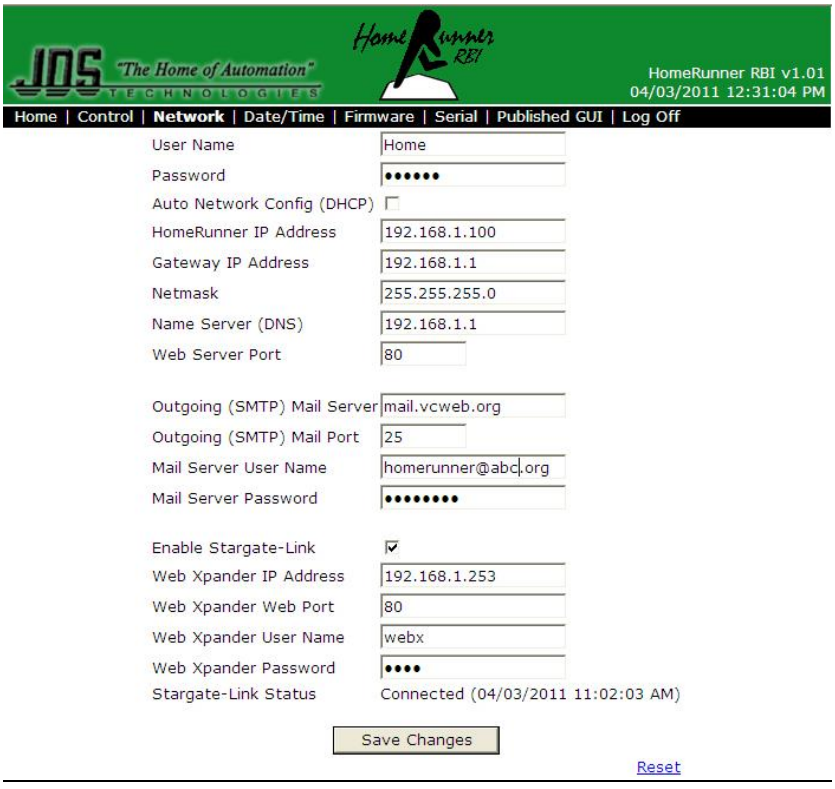
Controller Settings

Once you have established communication with *HomeRunner RBI* you can access the served Controller Settings page to set or edit the latitude, longitude, time zone and other parameters.

1. Click **"Connect to Controller"** in Network Settings (or click the "**Controller"** button in the Settings section of the toolbar) to access the served controller pages.
2. Select the **"Date/Time"** tab and enter the appropriate settings for your location.
3. Click **"Save Changes."**



4. Select the **"Network"** tab to edit User Name, Password and other parameters.
5. **Uncheck** the **"Auto Network Config (DHCP)"** box then click **"Save Changes"** to maintain the current IP address assigned to your *HomeRunner RBI*.



Remote Access over the Internet

Accessing *HomeRunner RBI* from the internet (i.e. outside your home network) requires router specific settings and configuration.
First you need to **port forward** incoming connections on port 80 (or your preferred port number) to the *HomeRunner RBI*'s local IP address.
Next you need to know the IP address of your cable modem or DSL modem to connect to your location from the internet. One easy way to determine your modem's IP address is to start a web browser on an internet enabled PC within your home network and visit: www.WhatIsMyIP.com. If your IP address is static (i.e. it never changes) you'll just use that address to access resources on your home network. If your IP address is dynamic (i.e. it changes periodically) there are a few options available for tracking it. One free service available is www.no-ip.com/. No-IP will allow you to create a domain name (i.e. http://TheSmiths.no-ip.com) which will automatically redirect to your home IP address. If you have a static IP address, you just register that address with No-IP and choose a domain name. If your home IP address changes, No-IP offers a free software utility that runs on an internet connected PC in your home and periodically updates No-IP with your dynamic IP address. Once this is established, you can use your created domain name to access your home from any internet connected PC.

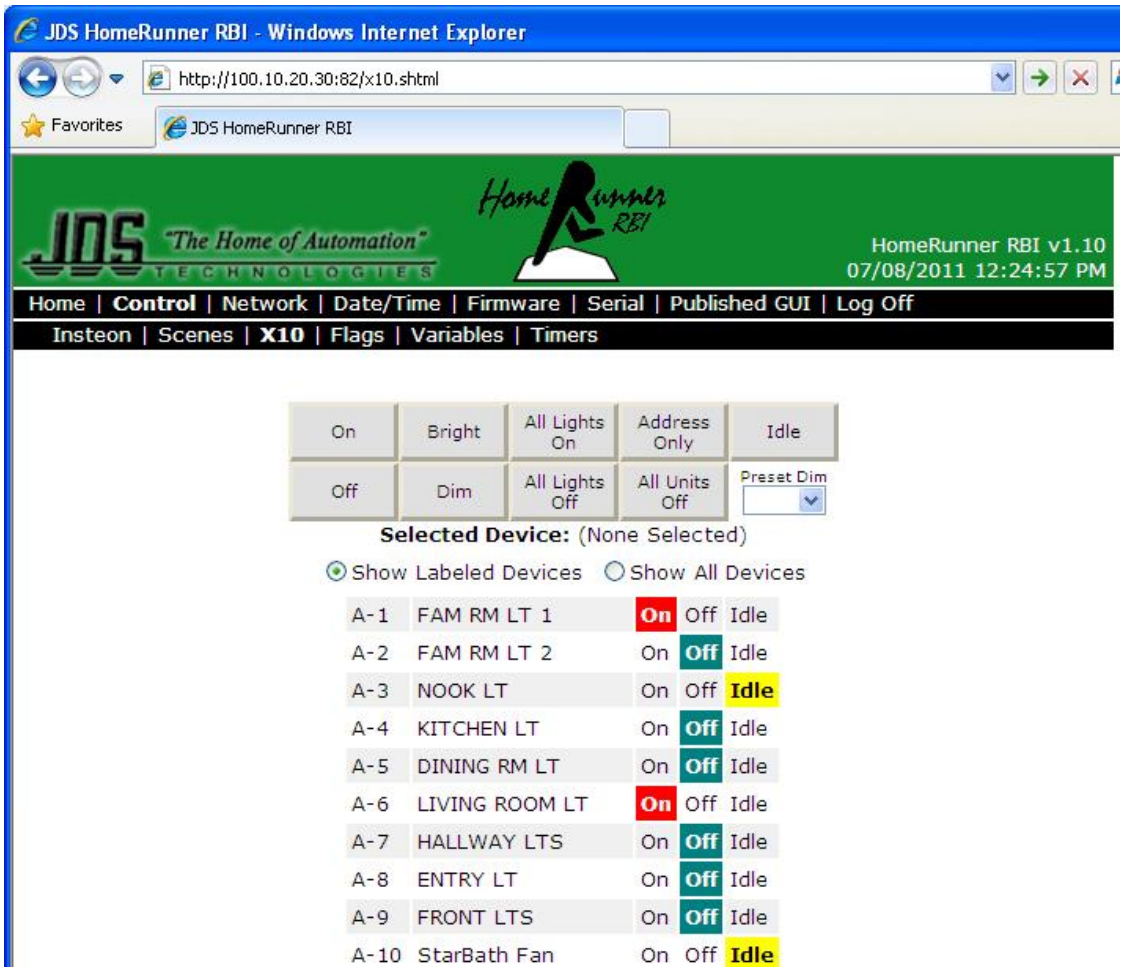
Served Controller Pages

You can access the *HomeRunner RBI's* built-in **Served Controller Pages remotely** from any web browser by simply logging onto your router's IP address followed by a colon and the port number you've assigned to the *HomeRunner RBI* controller (i.e. http://100.10.20.30**:82**). If no port number is specified (i.e. http://100.10.20.30) it will default to port 80. Enter your User Name and Password when prompted. For **local access** to the **Served Controller Pages** (from within the Local Area Network) log onto your *HomeRunner RBI's* local IP address instead (i.e. 192.168.1.10:82). You can also click the **"Controller"** button on the **Toolbar** to access the Served Controller Pages.
*Adding **"/A"** after the IP address will access the Published GUI (i.e. http://100.10.20.30:82/**A**).*

The served Home screen will appear with a green banner on top displaying the current firmware version and the date and time it was created. The schedule name, number of events and status is listed below the banner with "Backup" and "Restore" buttons to save or restore all the Network, Date/Time and Serial Port settings. The green bar on bottom displays the *HomeRunner RBI* Controller's date and time.

Clicking the **"Control"** tab displays a second row of tabs for controlling various *HomeRunner RBI* functions (Insteon, Scenes, X10, Flags, Variables, Timers and HVAC).

Clicking any of the Control tabs launches a corresponding user interface for controlling selected devices. Clicking the "X10" control tab for instance, displays a list of X-10 devices with their current status (On, Off or Idle). Selecting "Show Labeled Devices" will display only the defined devices. Selecting "Show All Devices" will display all devices (i.e. all 256 X10 addresses in this case). The gray buttons at top control whichever device is currently selected.



Access from a Smartphone or Tablet

To access your **Published Layout** (Graphic User Interface) remotely from a web-enabled phone or tablet (i.e. iPhone or iPad), launch the browser and log onto your router's IP address followed by a colon, the port number you've assigned to the *HomeRunner RBI* controller and "**/A**" at the end.
For example: **http://100.10.20.30:82/A**. If no port number is specified it will default to port 80 (i.e. **http://100.10.20.30/A**).

Some default browsers (such as Safari) maintain an address bar at the top regardless of the displayed content (see Fig.1). Several free alternative browsers are available online (such as Atomic Web Browser Lite) which fill the entire display with the intended content for a more professional appearance (see Fig. 2). (A small translucent icon lets you display or hide the address bar.)

Fig. 1

Fig. 2

Launching a Specific Screen in Your Published Layout

Launching your published layout will initially display the screen page you have selected as the **Default Screen** on the **"Edit Screens"** window of the *HomeRunner RBI* application. You can also launch to a different screen page from a browser without changing the Default Screen by simply adding **"?p=6"** to the end of the URL. This can be useful when your layout includes screen pages with different resolutions to accommodate both large and small displays such as an iPad and an iPhone.

Example: If the URL to view your published pages on your iPad is: http://192.168.1.70/A/index.htm, you would use **http://192.168.1.70/A/index.htm?p=6** to start at a lower resolution **page 6** from your iPhone. The easiest way to obtain the page number is to add a "GOTO PAGE" button on a screen from the application and see what page number appears under "Button Action" in the Edit Button window.

http://192.168.1.70/A/index.htm

http://192.168.1.70/A/index.htm?p=6

Updating Software and Firmware

Updates are posted periodically to add new features and/or correct any reported issues. It is best to keep your *HomeRunner RBI* up-to-date with the latest version software and firmware to insure optimum performance. Updates are posted at http://updates.homerunner.me/updates/ (as shown below).

HomeRunner RBI - Windows Software			
File Name	**File Date**	**Version**	**Description**
HomeRunnerRBI_Setup.exe	6/20/2011	v2.03	HomeRunner RBI **Full Installation**
HomeRunnerRBI.exe	6/20/2011	v2.03	Updated .exe for users that **already** have HomeRunnerRBI Installed

HomeRunner RBI - Firmware				
File Name	**Firmware Name**	**Firmware Ver**	**Compile Date**	**Description**
HRRBI_v1.09.bin	HomeRunner RBI	v1.09	6/20/2011 1:59:56 PM	HomeRunner RBI Controller Firmware

WebXpander - Firmware (For use with Stargate-Link)				
File Name	**Firmware Name**	**Firmware Ver**	**Compile Date**	**Description**
webx_v28f.bin	Web Xpander	v28f	5/12/2011	** Web Xpander Firmware ** - This firmware is for updating a Web Xpander using the Web Xpander Network Download Utility to enable Stargate-Link communications with HomeRunner RBI. Do not attempt to install this firmware on a HomeRunner RBI controller.

To update the *HomeRunner RBI* software:

Download the latest software version to your **\HomeRunnerRBI** folder. If you already have the HomeRunner RBI application installed, you only need to replace the "**HomeRunnerRBI.exe"** file with the downloaded version. ***Be sure the HomeRunner RBI application is not currently running*.**

To update the *HomeRunner RBI* firmware:

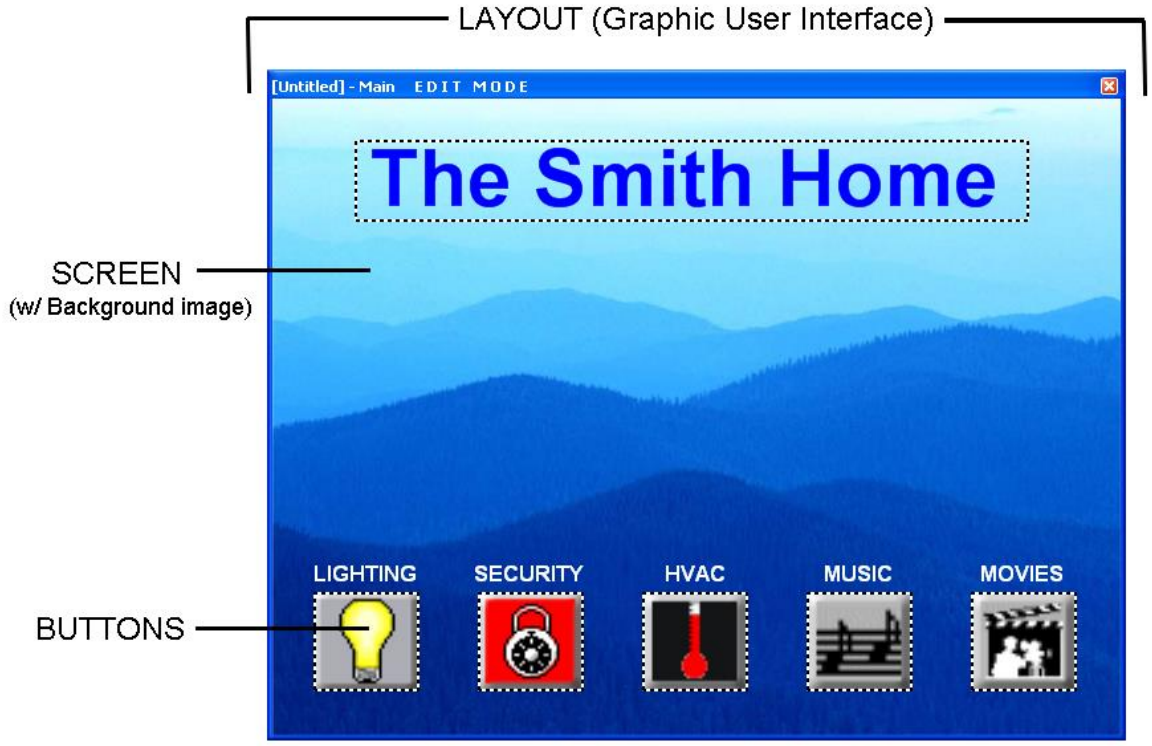
1) Click the toolbar **"Controller"** button to log onto the Served Controller Page then click the **"Firmware"** tab. The green banner on top displays the current installed firmware version with the date and time it was created. The same "Running Firmware" version is listed below the banner (as shown below).

2) Click the **"JDS HomeRunner RBI Website"** link to check for the latest update version.
3) Download the latest firmware version to your **c:\HomeRunnerRBI** folder if it is newer than the current running version.
4) Click **"Browse"** to locate the **".bin"** firmware file in your **\HomeRunnerRBI** folder.
5) Selecting the file will automatically begin uploading the firmware.
6) Once uploaded, the firmware will install automatically.
7) The entire process may take 30 - 45 seconds to complete. A count-down timer displays the installation progress then automatically refreshes the screen after the timer reaches zero and the firmware has been completely installed. (You will be prompted to "click here" on a link to refresh the screen if it doesn't automatically refresh at zero.) The refreshed screen will display the new firmware version.

Creating a Graphical User Interface (GUI)

Edit Mode

The *HomeRunner RBI* application operates in one of two modes, **Edit Mode** and **Run Mode**. **Edit Mode** is for creating and editing the Graphical User Interface (also referred to as the **"GUI"** or **"Layout"**). **Run Mode** is for normal operation and testing the GUI (layout). You can toggle between Edit Mode and Run Mode by pressing **"Ctrl+E"** on your keyboard, clicking the **"Edit Mode"** button on the toolbar or by Right-Clicking on the background of the current screen. Edit Mode is indicated by a dotted outline around each button and "EDIT MODE" in the title bar.



Layouts

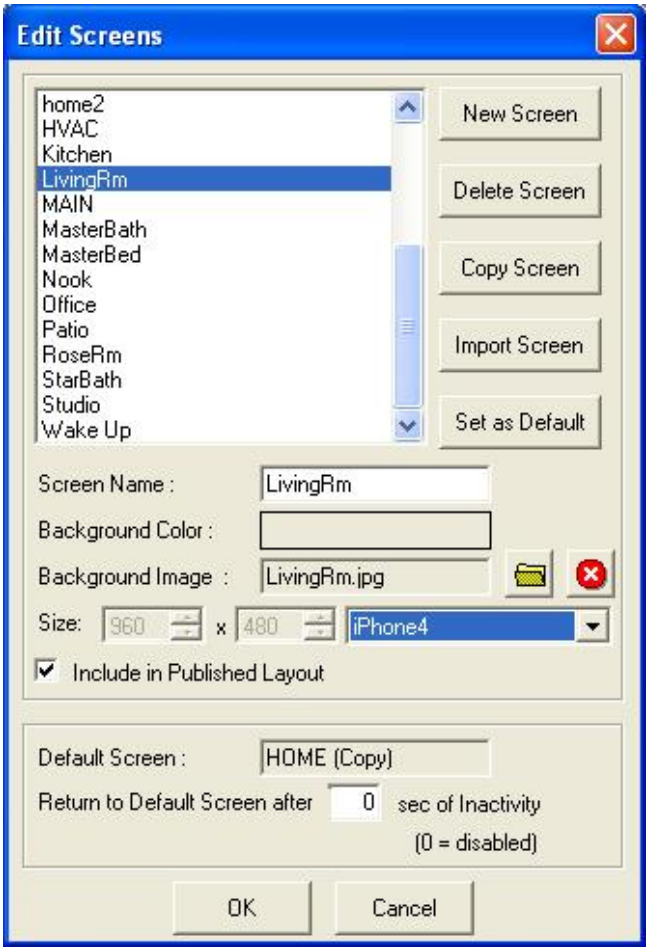
A **Layout** refers to a set of control **Screens** (pages) and the associated **Buttons** that form the graphical user interface (GUI). Using the *HomeRunner RBI* Windows application, each family member can have their own personal layout with their own set of backgrounds and buttons. *Only one layout can be published to the HomeRunner RBI controller for access from any browser.* However, different layouts can still be used from any Windows computers running the *HomeRunner RBI* application. This means you can create a custom "mobile" layout for access from your iPhone (or any browser) and different layouts for your tablet pc, desktop, laptop, etc.

Layouts are stored in the "C:\HomeRunnerRBI\Layouts" folder and can be selected by clicking the **"Open"** button in the toolbar or pressing **"Ctrl+O."**

To create a new layout, click the **"New"** button in the toolbar or press **"Ctrl+N."**
To Save a layout, click the **"Save"** button on the toolbar or press **"Ctrl+S."**
To Save a layout with a new name, click the **"Save As"** button on the toolbar or press **"Ctrl+A."**

Screens

A **Screen** refers to a single page within a layout that contains one or more control buttons. Click the **"Screens"** button on the toolbar or right-click twice on the background and select **Add/Edit Screens** to open the Edit Screens window.



The screen names in the current layout will be displayed with the current screen name highlighted. To view and edit the properties of a screen, select it from the list. When you select a screen, the screen's name, background color and background image will be displayed.

To change the **name of the screen**, click in the **Screen Name** box and make any changes.

To change the **background color** (visible only if you do not choose an image background), click in the **Background Color** box and a color selection dialog will be displayed.

To select a **Background Image**, click the folder button to display a list of files in the \Backgrounds folder. You can select an image from any folder accessible to your computer which will then be copied into the \Backgrounds folder. It is best to use photos scaled to match the resolution of the device that you will most often be using (i.e. 960x640 for an iPhone4, 1024x760 for iPad2) since photos will be scaled to fit the screen. However, when many screens are used, it may be necessary to reduce the resolution to avoid using up too much system memory.

To **remove a background image**, click the **X** button.

Up to three different **sizes** (resolutions) can be user-defined and stored in *HomeRunner RBI* under **System Settings**. Once defined, each screen can be set to the appropriate **size** for the device it will be used on (or a custom size can be assigned). If the same screens are to be shared by various devices (phone, tablet, etc.), using the smallest size resolution can serve them all. Devices with larger displays can automatically resize to fill the screen. Another option is to create different sized screens for the different devices and publish them all in one layout, with a main screen to select which device you are using. *NOTE: This method will use up more memory to store the additional graphics so there could be some limitations depending on the number of the screens and buttons used.*

To include the selected screen in the published layout so it can be accessed from any browser, check the **"Include in Published Layout"** checkbox.

One screen can be set as the Default Screen by clicking the **Set as Default** button. This screen will be the first screen displayed when *HomeRunner RBI* is launched. The **Return to Default Screen after_ sec of Inactivity** feature is used to specify how many seconds to wait before returning to the default screen after periods of inactivity.

The **New Screen** button will create a new screen with a default name of "(New Screen)". The Screen Name text box will be highlighted to allow immediate renaming of this screen.

The **Delete Screen** button will delete the highlighted screen.

The **Copy Screen** button will copy the highlighted screen and will name the new screen with "(Copy)" at the end of the name. As with the New Screen function, the Screen Name text box will be highlighted to allow the immediate renaming of the new copy.

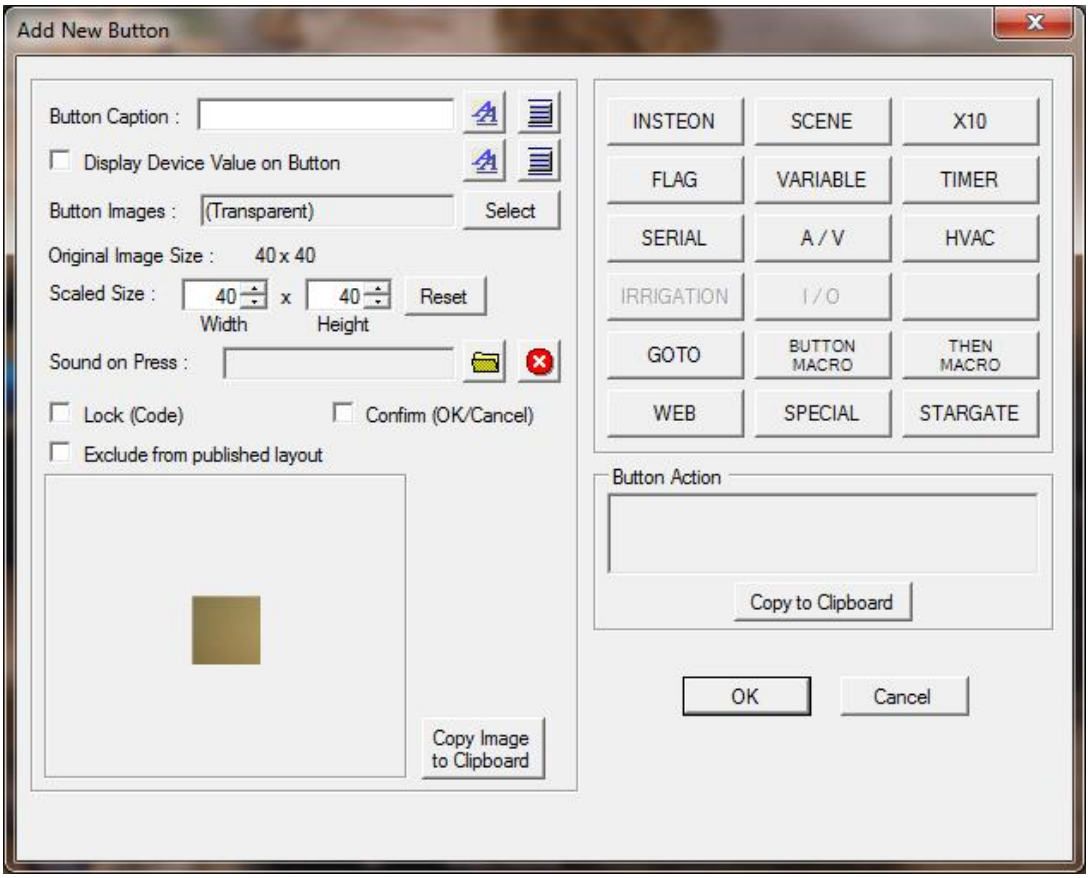
The **Import Screen** button allows you to import a full screen from a *different* layout. Clicking this button will display a list of existing layouts followed by a listing of the selected layout's screens.

Buttons

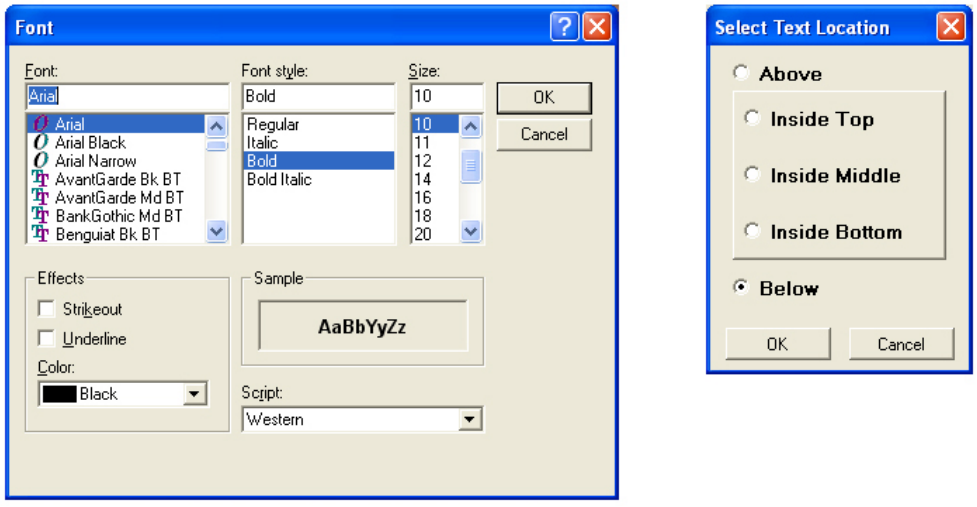
Buttons are control points added to the screen which can be visible icons (.jpeg, .gif, .bmp) or transparent "hot spots" (virtual buttons) placed strategically over objects to be controlled in the background image. (See "Adding Virtual Buttons to a Photo Background" for details.)

For the ultimate in home control convenience, use a floor plan as the background for your main screen, and photos of each room and area of your home as backgrounds for your control screens. Place transparent buttons over each device in the photos you want to control. Add graphical control buttons (icons) to access frequently used functions such as lighting scenes, security, etc. Button icons can be selected from the built-in library, downloaded from the internet or created from scratch.

To create a button, click the **"New Button"** button on the toolbar or press **"Ctrl+B."** If you are not already in Edit mode, clicking this button will switch to Edit mode. You can also **right-click on the background** of the screen and select **"New Button"** to insert a new button.

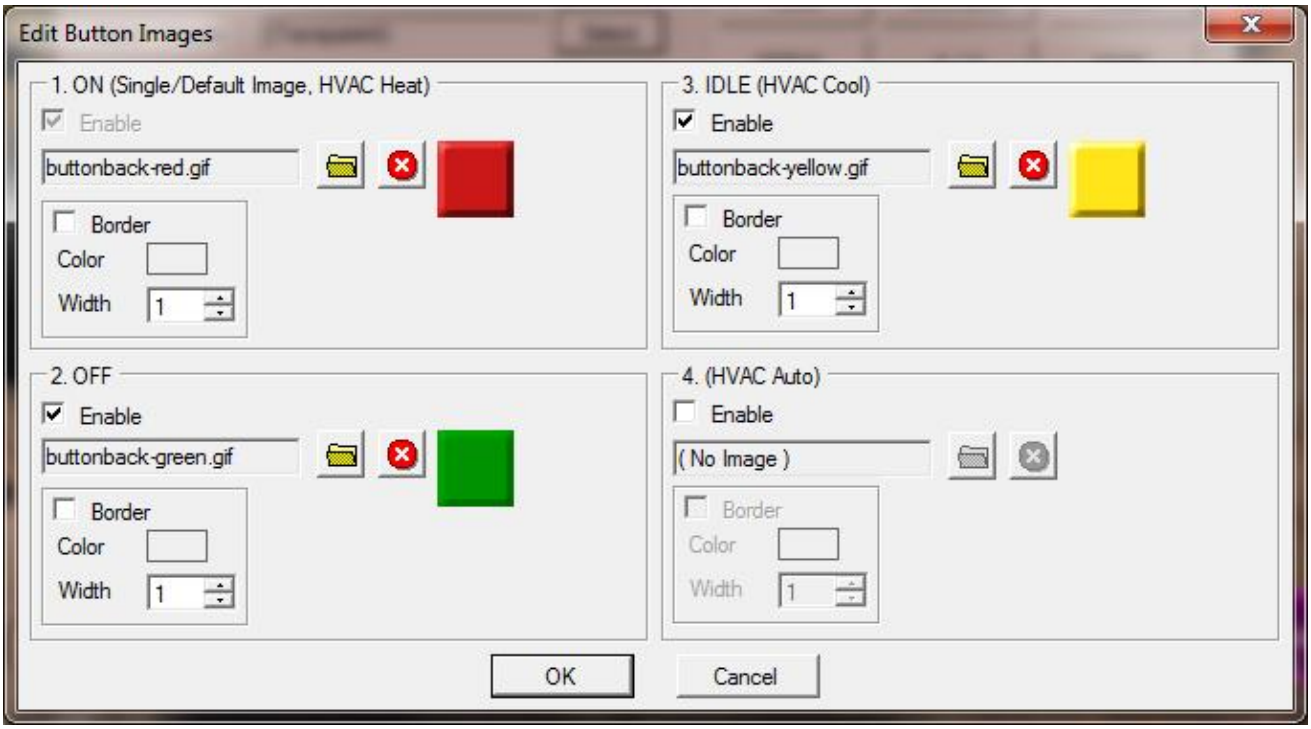


The **Button Caption** is optional text that can be displayed along with a button. Type the text you want to appear with the button in the Button Caption field. Next to the Button Caption field you select the font for the caption (including font name, size and color). The font size specified will be used when *HomeRunner RBI* is running full screen. When the window is scaled, the font size will be scaled proportionately. The button next to the Font selection button allows you to specify the vertical position of the button caption (Above, Inside Top, Inside Middle, Inside Bottom, or Below).



Checking the **Display Device Value on Button** box will display the device value with the button (if applicable for the specified device type). This is especially useful for displaying variable values but can also display On/Off status. Font and vertical position can also be specified for the device value.

Click the **Button Images "Select"** button to select an image for the button.



For single button images, click the top "**ON (Single Image)"** folder icon to select a button.
For Multi-State Button Images (ON/OFF or ON/OFF/IDLE), click the top "**ON (Single Image)"** folder icon to select an **ON** image, click the middle "**OFF"** folder icon to select an **OFF** image and check **"Enable."** If applicable, click the bottom "**IDLE"** folder icon to select an **IDLE** image and check **"Enable." For buttons that control HVAC modes (Heat/Cool/Auto/Off), a fourth HVAC image can be used for Auto.**
You can select an image from any folder accessible to your computer. HomeRunner RBI will prompt you to click OK to automatically copy it into the \Buttons folder.

As an alternative to using different images to indicate On/Off/Idle status, you can have a colored **border** around the button's perimeter indicate its status. For example, a red border could indicate On and green (or no border at all) could indicate off. You can assign a border to any or all of the three states and each can have a different color and thickness. Check the **"Border"** checkbox for the state you want (On, Off or Idle), click the **"Color"** box to select the border color, set **"Width"** as desired. Click **OK** when you have completed selecting button images and borders.

The **original image size** (the native resolution of the selected image) is shown along with the scaled, or displayed, image size. The size can be set manually by typing numbers in the width and height boxes or the button can be dynamically sized on the screen (after you click OK) by clicking and dragging with the mouse (n Edit Mode).

A default sound that will play on all button presses can be configured in the "System Settings" screen. The **Sound on Press** field specifies a sound specific to the current button and will override the default sound. The sound only applies to the *HomeRunner RBI* application and not the published pages.

Clicking **Lock (Code)** will prompt you for a numeric password on a keypad. When the button is pressed in Run Mode, the keypad will appear and the user must enter the password to execute the button action. Use this feature for security functions or to protect any device from unauthorized use.

Clicking **Confirm (OK/Cancel)** will prevent inadvertent button presses on touch screen devices. With **Confirm** selected, when the button is pressed, the user will be prompted with: **"Are you sure? OK/Cancel"** and must press **"OK"** to execute the button action. Pressing **"Cancel"** causes no action and clears the prompt.

The **Copy Image to Clipboard** function is used for transparent buttons and will copy the section of the background image under the transparent button to the clipboard. This feature is useful for creating an alternate image to indicate on/off states using an external photo editor (i.e. PhotoShop, Paint, etc.) Modify the copied image as desired, then Save As a different name to your "Buttons" folder. Then select the new button image as one of the multistate button images.

Each of the **Button Actions** on the right half of the Edit Button screen selects the action(s) that will be executed when the button is pressed.

Button Actions

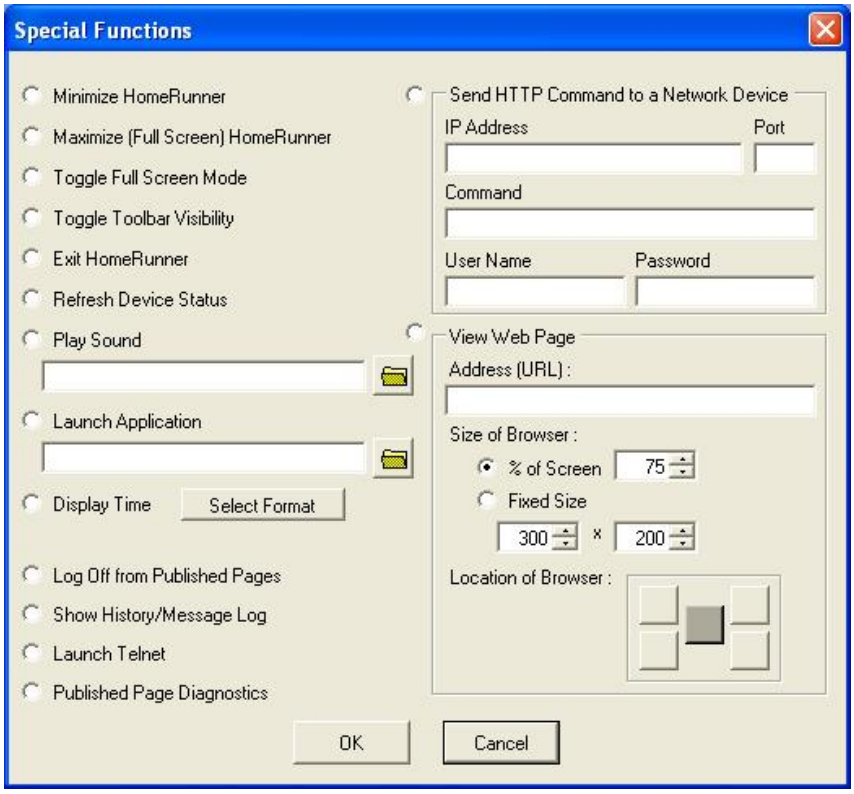
INSTEON is for executing Insteon actions for all Insteon devices (wall switches, lamp & appliance modules, keypads and supported peripheral Insteon devices).
SCENE is for executing Insteon scenes.
X10 is for executing X-10 actions.
FLAG is for controlling flag functions - Set, Clear, Idle, Toggle, Wizard, Do Nothing (display only).
VARIABLE is for controlling variable functions - Increment, Decrement, Load with value, Clear, Wizard, Do Nothing (display only).
TIMER is for controlling timer functions - Stop, Start, Clear, Load with value, Wizard, Do Nothing (display only).
SERIAL is for sending ASCII data via the serial port.
A/V is for sending IR (infrared) commands via the network (requires WF2IR or IP2IR infrared transponder).
HVAC is for controlling thermostat(s) via Insteon signals (requires T1700 thermostat).
GOTO is for switching to a different screen, layout, network connection or screen size. Selecting **Broadcast** will cause all connected devices to display the same GOTO screen (for notifications, camera views, etc.).
BUTTON MACRO is for executing multiple commands from a single button press. A Button Macro assigned to a button can only be triggered by that button. The first command of the macro governs the button image and is independent of the commands that follow. A button can display a "temperature" variable, for instance, and pressing it can switch you to (GOTO) the thermostat screen.
THEN MACRO is for triggering a Then Macro you created in the Event Editor and uploaded to the *HomeRunner RBI* controller.
WEB is for launching a web page embedded within a *HomeRunner RBI* screen.
SPECIAL is for a number of special button functions (see **"Special Functions").**
STARGATE is for triggering Stargate (or CommStar) actions from a *HomeRunner RBI* button.

Selected button actions are displayed below in the **Button Action** box. Grayed out button actions are not currently supported and will be added in future updates.

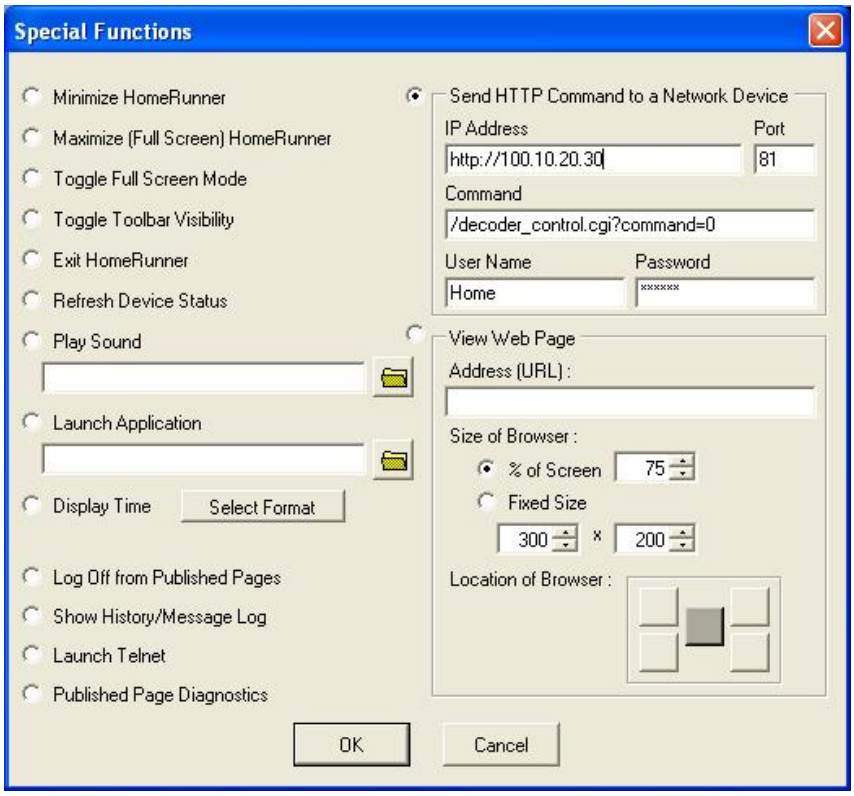
Click "**OK**" to accept all changes and return to the current screen. Click "**Cancel"** to discard any changes made to the current button.

Special Functions

The "**SPECIAL"** button action contains a number of advanced button functions and display parameters.



Minimize HomeRunner is for minimizing the *HomeRunner RBI* application.
Maximize (Full Screen) HomeRunner is for filling the screen with the *HomeRunner RBI* application.
Toggle Full Screen Mode is for switching between full screen view and scaled view.
Toggle Toolbar Visibility is for switching between displaying and hiding the toolbar.
Exit HomeRunner is for closing the *HomeRunner RBI* application.
Refresh Device Status is for updating the status of all buttons on the current screen.
Play Sound is for selecting a sound file to play when the button is pressed.
Launch Application is for selecting another application to launch from the *HomeRunner RBI* button.
Display Time is for displaying the System Date/Time, Sunrise Time, Sunset Time, Daylight Saving Begin Date/Time or Standard Time Begin Date/Time.
Log Off from Published Pages is for exiting the Published Pages (GUI) to view the controller's served pages.
Show History/Message Log is for displaying the History Log from a button press.
Launch Telnet is for displaying a Telnet Session from a button press.
Published Page Diagnostics is for displaying a diagnostic 4-LED button array to monitor system activity. See "Diagnostic Display" for details.



Send HTTP Command to a Network Device is for controlling a network-connected device. Most network-connected devices have user interfaces allowing the user to configure and control the device with a web browser. Many of these devices also allow commands to be sent over the network from another device, such as a PC or other device capable of generating an HTTP request very similar to the way a web browser requests pages from the device. This type of interface is often called a REST interface. The "Send HTTP Command" can be used to send commands to devices that support this type of interface.

For example, a Foscam Wireless IP Camera can be manually controlled from a set of web pages served by the camera, but Foscam also has a published API which lists commands that can be sent over the network to perform functions such as retrieving the status of the camera, grabbing a snapshot, and pan/tilt control. To control the pan/tilt of the camera, the command for **"up"** is **/decoder_control.cgi?command=0** and **"stop up"** is **/decoder_control.cgi?command=1**. These commands can be manually sent through a web browser but the same commands can also be sent through the "Send HTTP Command" of *HomeRunner RBI*. You can assign the "up" function to a button by selecting **"SPECIAL"** as the button type, and then selecting **"Send HTTP Command to a Network Device"** from the **Special Functions** window. Enter the **IP address** and **Port** of your IP Camera in the appropriate boxes and **/decoder_control.cgi?command=0** in the command box. Enter the **user name** and **password** you've configured in your camera for a user with operator access.

View Web Page is for launching a web page from a button press. The displayed web page browser can be set to a fixed sized or a percentage of the screen and positioned in the center or any of the four corners of the screen (not embedded in the *HomeRunner RBI* screen). For an embedded browser, use the "WEB" button action.

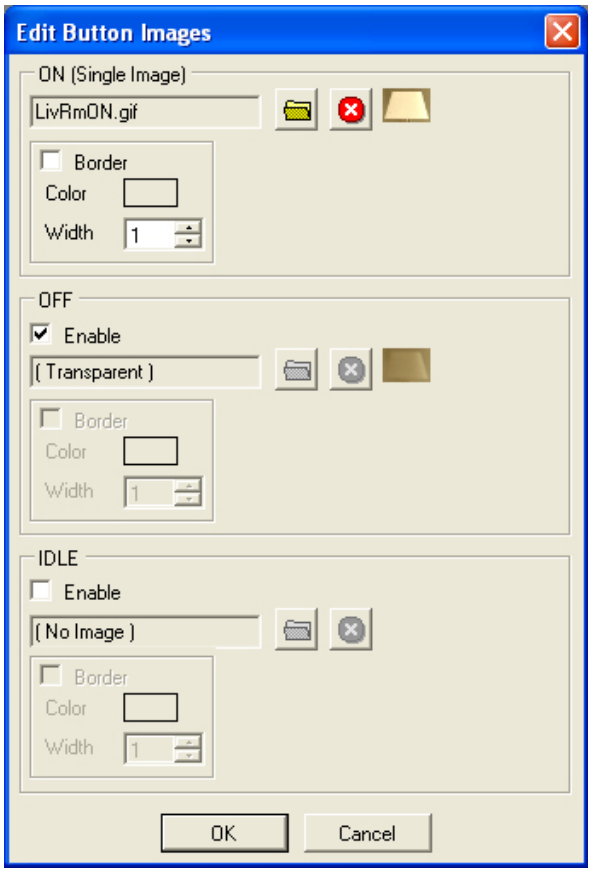
Advanced Editing

Button positions can be adjusted in 1 pixel increments using the **arrow keys** while in Edit Mode. Holding down an arrow key will continue to move the button until released. For coarse adjustments, holding the **Ctrl** key will cause each press of an arrow key to move the selected button 5 pixels.

Clicking **Ctrl+G** will display a grid for visual aid. Grid spacing and color can be adjusted under **System Settings**.

Multiple buttons can be edited simultaneously for changing font characteristics, button size, etc. First select the various buttons to be edited by holding down the Ctrl key and clicking each button or by dragging the mouse over the desired buttons (the dotted line bordering the selected buttons will move). Then right click one of the selected buttons and click **"edit"** to access the Multi-Edit field. The title bar of the Multi-Edit field will indicate the number of buttons selected. Any changes made will affect all selected buttons.

Transparent button images can also be copied to the clipboard and edited in a graphics program (Photoshop, Paint, etc.) to create alternate images to indicate on/off states. First select the button in Edit Mode, then click the **"Copy Image to Clipboard"** button in the Edit Button field. Next, open your graphics program, click File - New and paste the clipboard image. Modify the pasted image as desired, then Save As a different name to your "Buttons" folder. Then select the new button image as one of the multi-state button images. The image shown below is a lamp shade that is part of a background image defined as a transparent button. The photo was taken with the lamp off. The transparent button image was then copied to the clipboard, edited to appear on by increasing contrast and brightness, then saved as "LivRmON.gif" in the \Buttons folder and selected for the ON image. See "Adding Virtual Buttons on a Photo Background" for step-by-step instructions.



Adding Virtual Buttons to a Photo Background

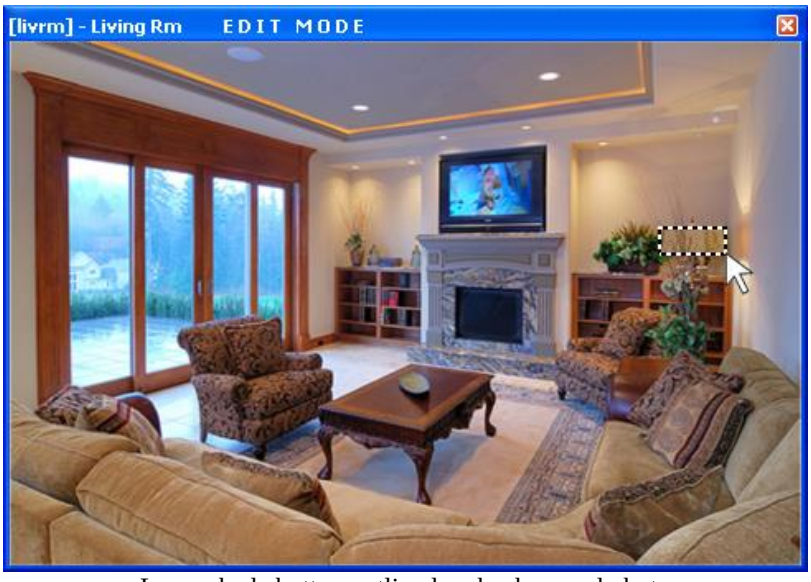
For the ultimate home control convenience, you can use photos of each room and area of your home as backgrounds for your control screens. Lights and appliances in each photo can then be defined as control buttons with different on and off button images to indicate status. You can then simply press or click any device in the photo to control it and see it change from off to on or vice versa.

As an example, let's set up the living room screen with a control button to control the floor lamp.

1) First take a photo of the living room with the floor lamp OFF and save it as a jpeg file ("LivingRm.jpg" or any name you prefer) to your **HomeRunnerRBI\Backgrounds** folder.
2) From the toolbar, select **"Screens"** to access the **"Edit Screens"** window.
3) Click **"New Screen"** and type in a screen name (i.e.: LivingRm).
4) Select **"LivingRm.jpg"** for the "**Background Image"** and click **OK**.

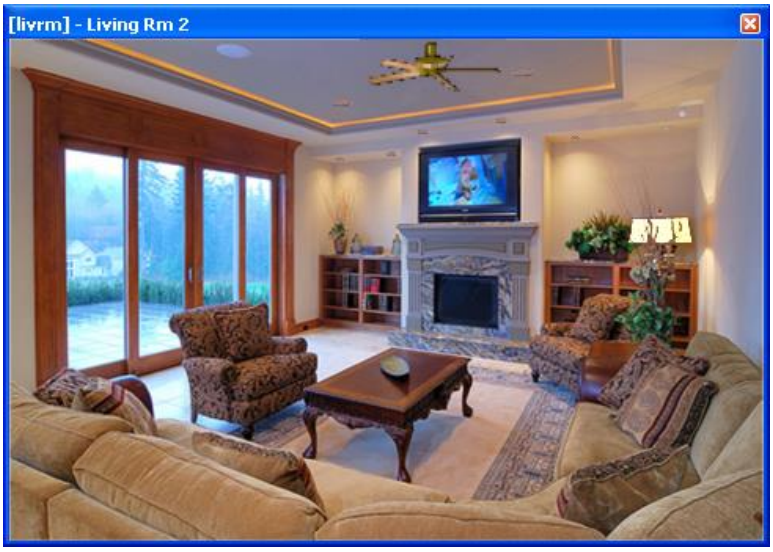
background photo with floor lamp off

5) **Right click twice** on the floor lamp's lamp shade and select **"New Button."** This will place a small dotted transparent button over the image.
6) Drag the top, bottom and/or sides of the button to fit the shape of the lamp shade (as shown).



Lamp shade button outlined on background photo

7) **Double-click** on the button (or right click on the button and select "Edit") to access the **"Edit Button"** screen.
8) Click **"Copy Image to Clipboard"** (near the bottom) then click **OK**.
9) Launch Photoshop or another photo editor program.
10) Click **"File - New"** then **OK**. Click **"Edit - Paste"** (or type Ctrl+V) to paste the copied button image into the photo editor.
11) Change the brightness (and/or other attributes) to make the image look like it is **on**.
12) Click **"Save As"** and save the edited image as a **.gif** file **"LivingRm Floor Lamp ON.gif"** to your **HomeRunnerRBI\Buttons** folder.
13) In the **"Edit Button"** window, click the Button Images **"Select"** button to bring up the **"Edit Button Images"** window.
14) In the **"ON (Single Image)"** section, click the yellow folder icon and select **"LivingRm Floor Lamp ON.gif"**
15) In the **"OFF"** section, check the **"Enable"** box, leaving **"(Transparent)"** as the selected image then click **OK** to return to the **"Edit Button"** window.
16) Click **"Insteon"** or **"X10"** (whichever is applicable) then choose **"LivingRm Floor Lamp"** from the device list, select **"Toggle"** then click **OK**.
17) Click **"Edit mode"** on the toolbar (or type Ctrl+E) to **exit** out of Edit Mode.
18) Click the lamp button on and off to verify the lamp responds properly and displays the corresponding on and off image.

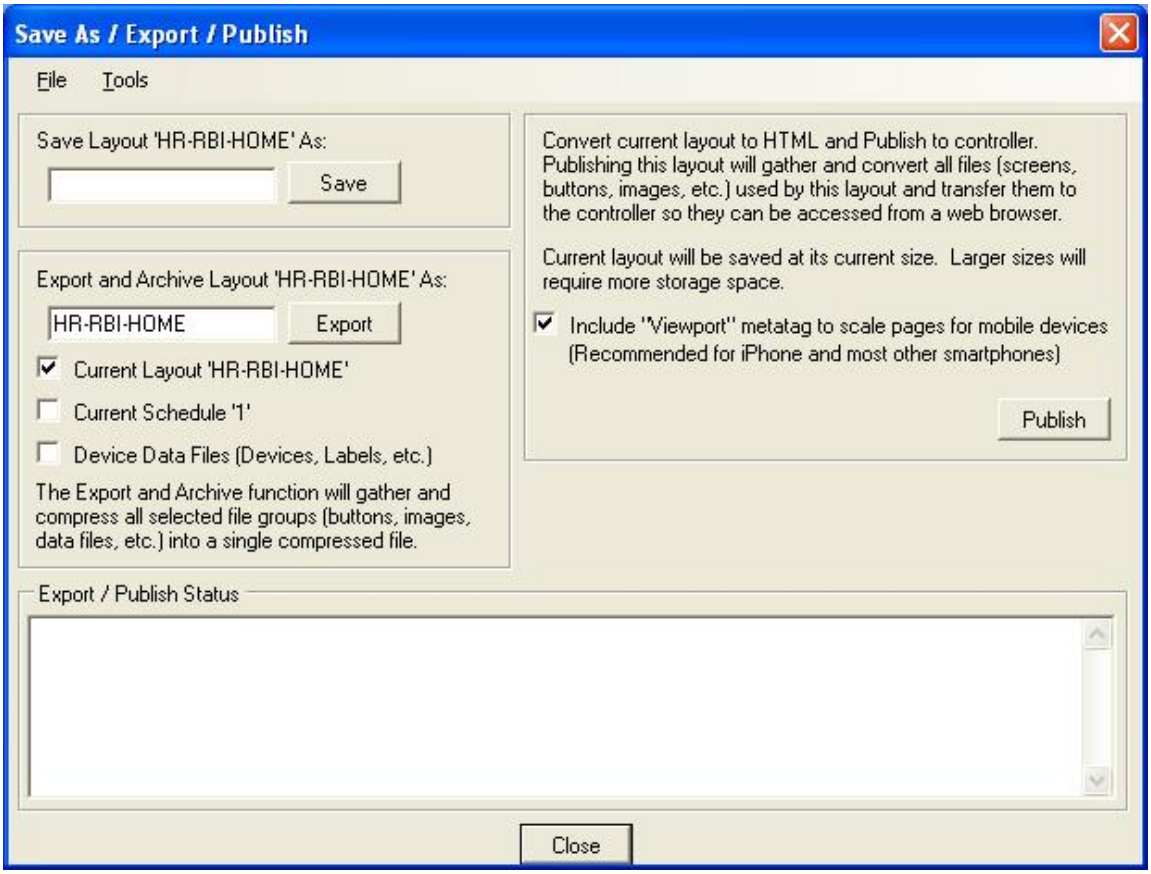


background photo with floor lamp button on

19) **Repeat steps 5 – 18** for other lights and appliances in your layout.
20) **Save** and **Publish** your new layout for access from any web browser.

Publishing Layouts

Once you have completed creating your layout, you "Publish" (upload) it to the *HomeRunner RBI* controller so it can serve (broadcast) the layout to the network for access from any web browser. To publish, click the **Save As** button on the toolbar or press **Ctrl+A** then click the **Publish** button. When publishing a layout for use on mobile devices, select **"Include Viewport metatag to scale for mobile devices."**



Until you publish your layout, the only pages visible from a browser are the built-in served pages for configuration settings and "Control" pages which provide basic control of defined devices.

In the event of a computer crash or similar disaster, your current *HomeRunner RBI* schedule and database files can all be extracted (downloaded) from the *HomeRunner RBI* controller; however**, the graphics files (backgrounds, buttons, layout) cannot be extracted**! It is recommended that you **back up your entire HomeRunnerRBI folder** and all its sub-folders after making any important edits or additions. At the very least, you should **Export and Archive** your layout and save it on a flash drive, email it to yourself and/or upload it to a data storage center as these files cannot be retrieved from the controller.

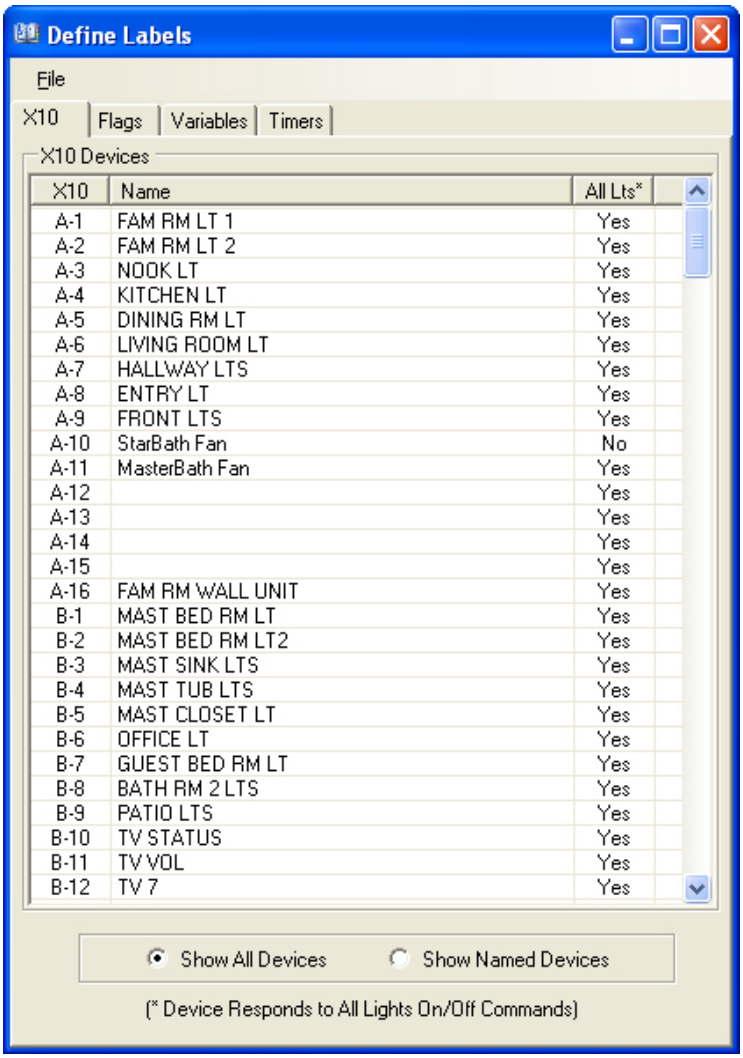
To **Export and Archive** your layout, click the **"Save As"** toolbar button (or press **Ctrl+A**), type a name in the "Export and Archive Layout As" text box ("backup 03-17-11"), then click **"Export"** to save the layout as a **.zip file** in your **HomeRunnerRBI\Archives** folder. Select **"Current Schedule"** and **"Device Data Files"** to include copies of your current running schedule and defined devices. Copy the .zip file to a flash drive, email it to yourself and/or upload it to a data storage center for safe keeping.

Defining Connected Devices

HomeRunner RBI's Device Database consists of two sections. The **Define Labels** section is used to label all your X-10 devices, Flags, Variables and Timers. The **Define Insteon** section is used to configure your Insteon network, Insteon lighting scenes and label all your Insteon devices.
If you are interfacing your *HomeRunner RBI* with a Stargate-IP or CommStar-IP, see **"****Importing Defined Labels From Stargate-IP or CommStar-IP****."**

Define Labels (X-10, Flags, Variables, Timers)

To access the Define Labels window, click the **Define - Labels** button on the toolbar (or press **Ctrl+L**) or from within the Event Editor click **"Define"** then **"Define Labels."** Select **"Show All Devices"** toward the bottom of the window to list all 256 X-10 addresses. In the **"Name"** column, type the name or location of each X-10 device you plan to use next to the corresponding address. When finished, click "Show Named Devices" to display only the X-10 addresses you have named.



For X-10 devices that respond to All Lights On and All Lights Off commands, select **Yes** in the **All Lts** column. When an All Lights On or All Lights Off command occurs, *HomeRunner RBI* will display the proper X-10 status for those devices.

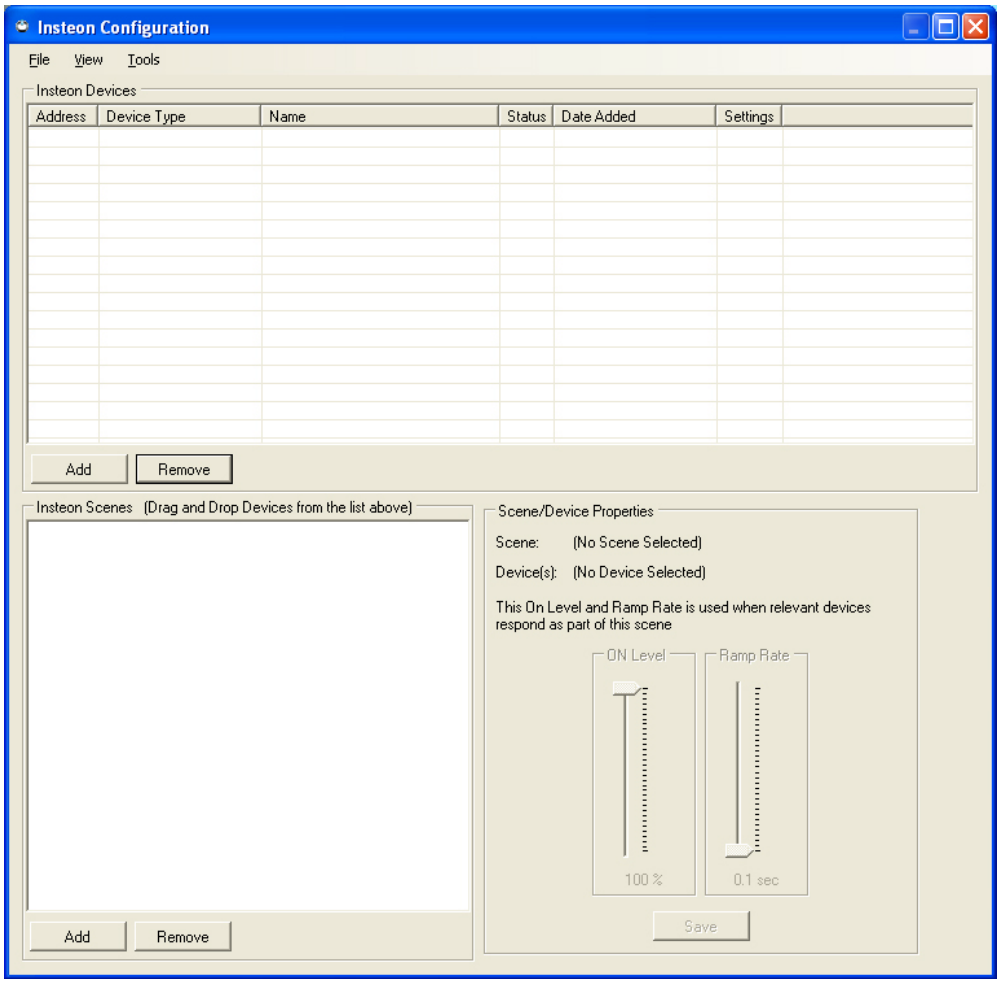
Insteon Configuration

Unlike X-10 devices, each Insteon device comes factory preset with an address I.D. that cannot be changed. The six-digit address is printed on a sticker on every Insteon device**. It is recommended that you keep a list of all your Insteon devices' addresses and their locations for reference. You can write down each address as you unpack each device or save/print your Insteon Configuration Device List and Scene List after you have installed them all.**

Click here for a list of Supported Devices

First make sure the Insteon Power Line Modem (PLM) is connected to the *HomeRunner RBI's* "PLM" jack using the provided network cable and that the green and yellow LEDs are on steady.

To access the **Insteon Configuration** window, click the **Define – Insteon** button on the toolbar (or press **Ctrl+I**), or from within the Event Editor click **"Define"** then **"Configure Insteon."** Here is where you install and label all your Insteon devices, create Insteon lighting scenes and link controllers with responders. The **"Insteon Devices"** section at the top is for adding, removing or replacing your Insteon devices. The **"Insteon Scenes"** section at the bottom is for adding, removing or editing Insteon scenes and device links.



Adding an Insteon Device

To add an Insteon device (wall switch, plug-in module, keypad, etc.) you enter its address, assign it a name, program its links (if applicable) and lighting scenes. **Make sure every device you are adding is installed or plugged in.** There are three methods for adding Insteon devices:

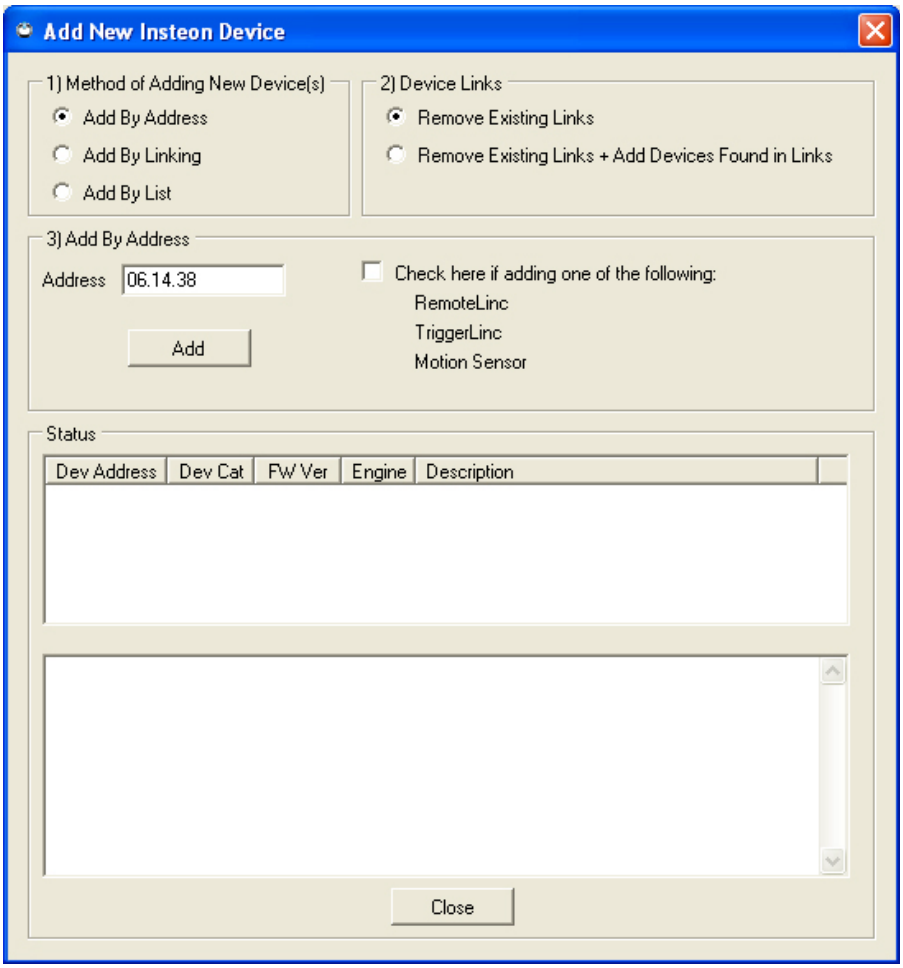
1) **"Add By Address"** where you type in each Insteon device address and install them one by one,
2) **"Add By Linking"** where HomeRunner RBI captures the Insteon address electronically as you press the "SET" button on the installed Insteon device and
3) **"Add By List"** where you type in the addresses and names of multiple Insteon devices in a list and *HomeRunner RBI* installs them all automatically.

Use **"Add By Address"** when you're only adding a few devices.
Use **"Add By Linking"** when you do not know the Insteon device's address.
Use **"Add By List"** when installing a number of Insteon devices. For large numbers of devices, install 5 or 6 at a time rather than all at once. It is best to prevent any unnecessary Insteon or X-10 traffic or noise to guarantee data is properly transferred.
(You can create and save the list of Insteon device names and addresses and install them later.)

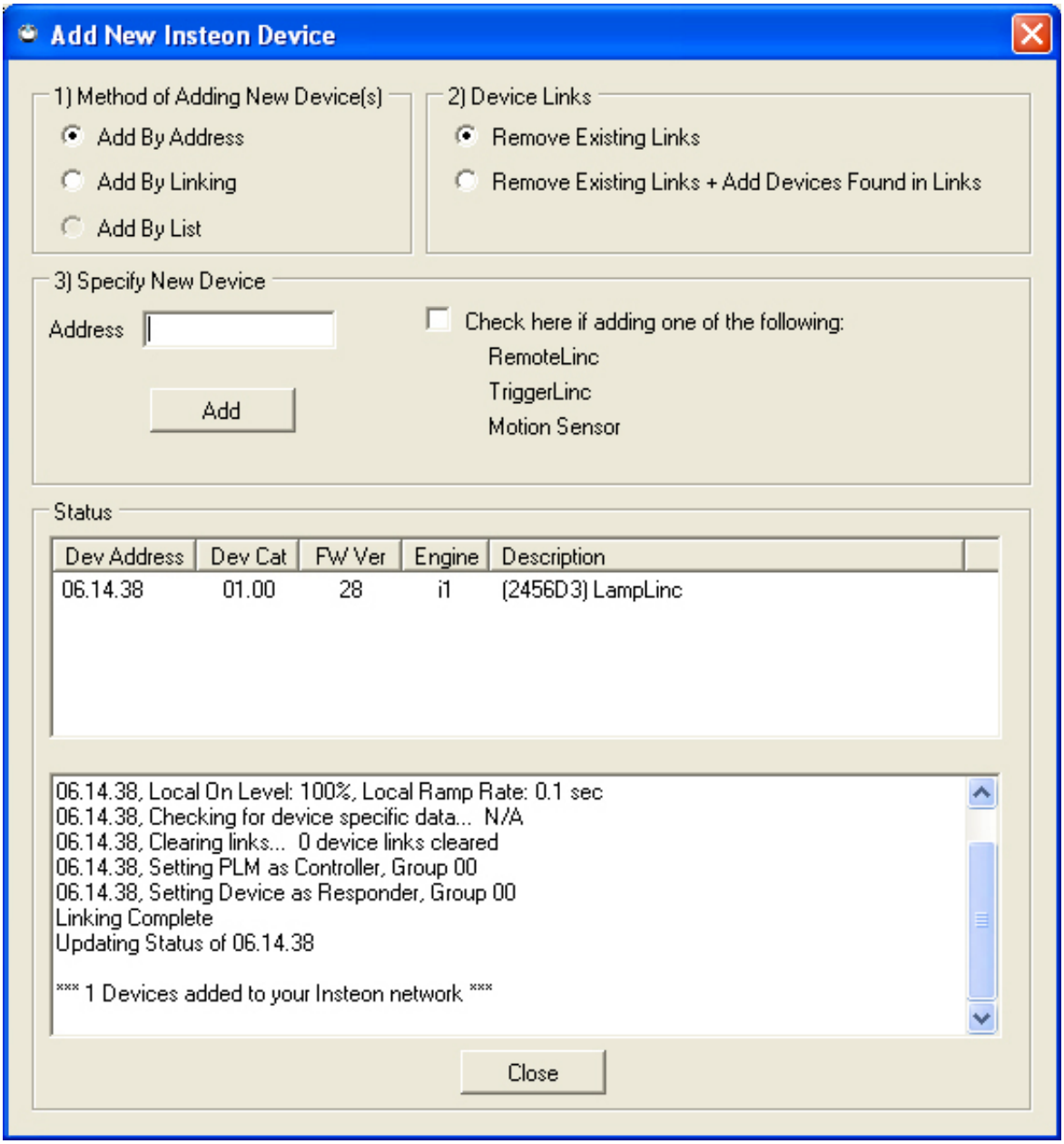
To begin, click the **"Add"** button in the **"Insteon Devices"** section to bring up the **"Add New Insteon Device"** window.

Add By Address

1) Select **"Add By Address"**
2) Select **"Remove Existing Links."**
3) Type **the 6-digit Insteon Address** of the device you are adding in the **"Address"** box.
(You can type the numbers without the periods – HomeRunner RBI will add them in automatically).

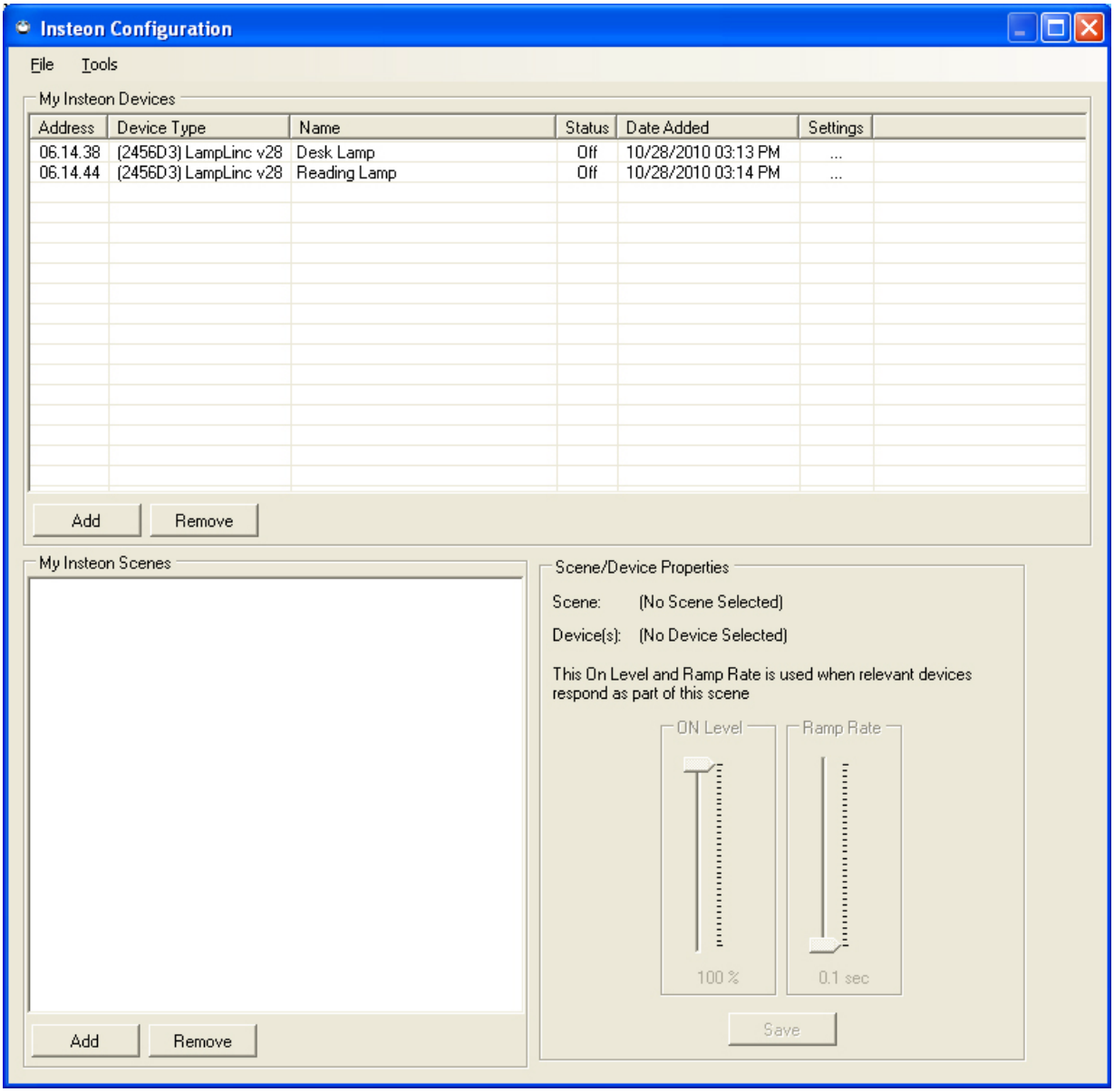


If you are adding a **RemoteLinc, TriggerLinc** or **Motion Sensor**, check the **"Check here if adding one of the following"** box then click **"Add"** and follow the prompts.
4) Press the **ENTER** key or click the **"Add**" button to add the new device.
5) Once a device has been added, it will appear in the middle **"Status"** section and the cursor will revert back to a blank **"Specify New Device"** box so you can enter the next Insteon Device Address. Press the **ENTER** key or click **"Add"** after typing in each new Insteon address.



6) After you have completed entering all your Insteon Devices click **"Close"** to return to the Insteon Configuration window.

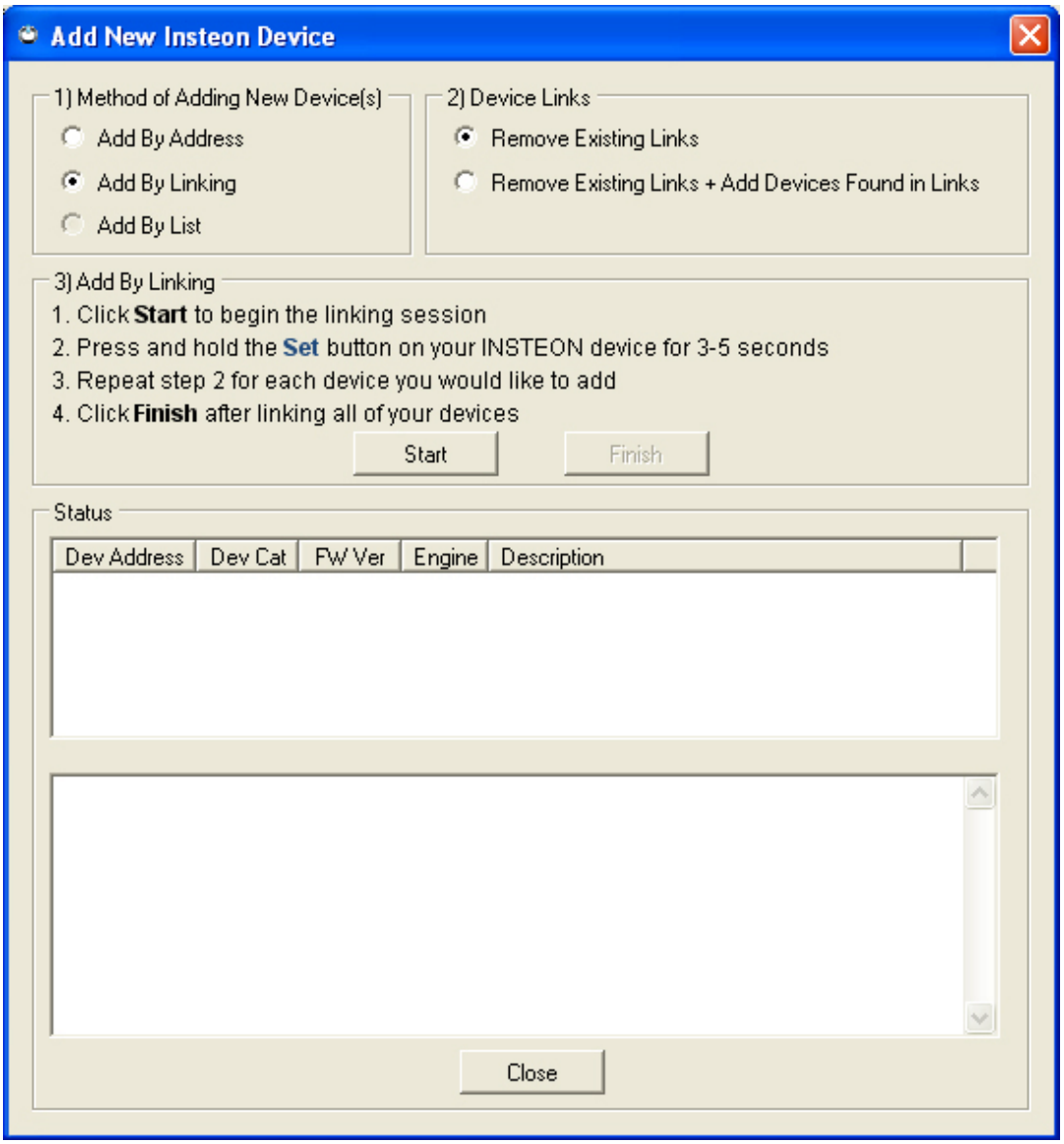
7) Type a name for each device in the “Name” column.



You can now control your Insteon devices from *HomeRunner RBI.*

Add By Linking

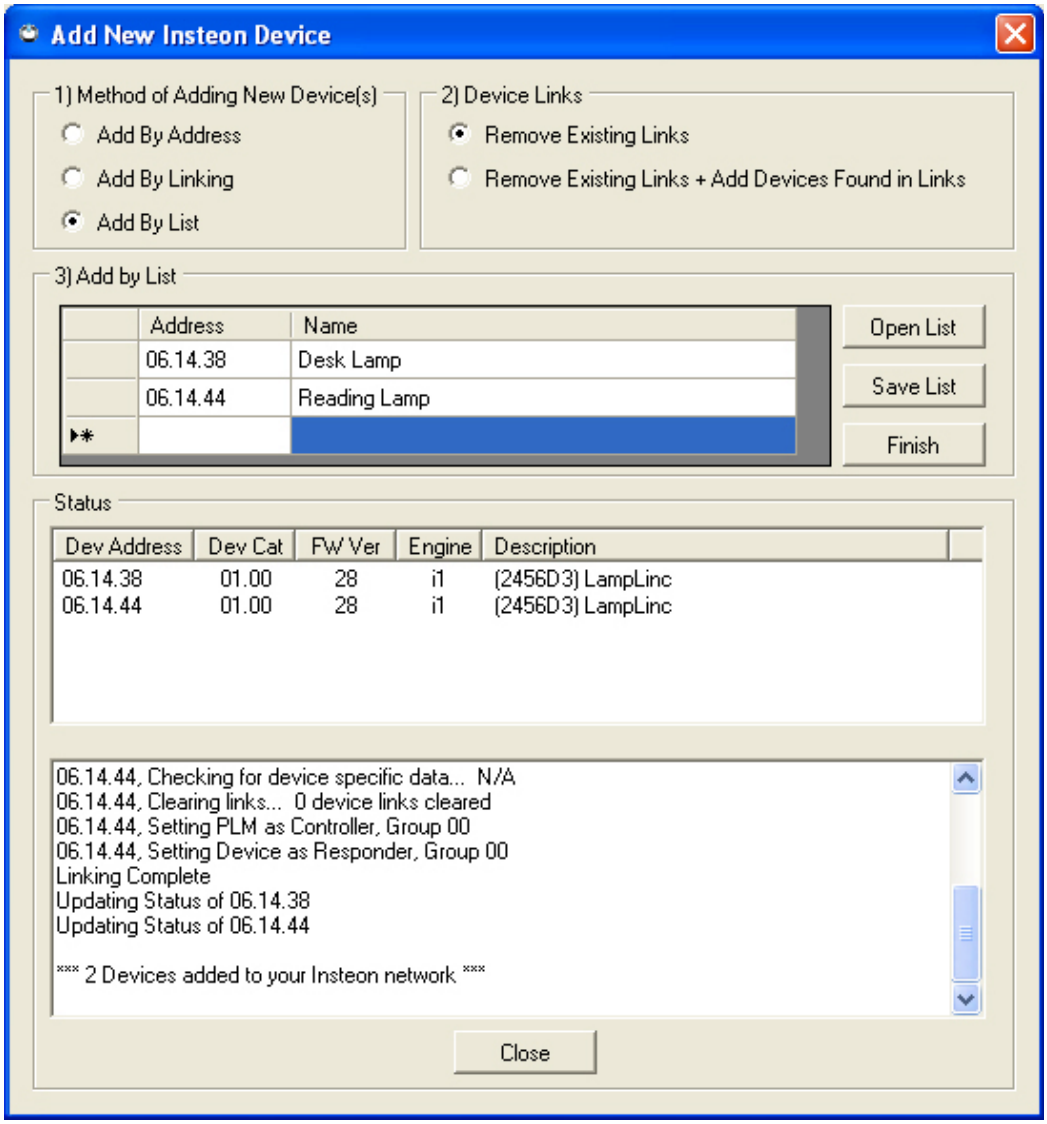
1) Select **"Add By Linking"** in the **"Add New Insteon Device"** window.



2) Select **"Remove Existing Links."**
3) Click the **"Start"** button in the **"Add By Linking**" section to begin linking.
4) **Press and hold** the **"Set"** button (on the Insteon Device you are adding) for **3 – 5 seconds**.
5) **Repeat** the above step for each device you wish to add.
6) Click the **"Finish"** button when you have completed linking all your devices.

Add By List

1) Select **"Add By List"** in the **"Add New Insteon Device"** window.
2) Select **"Remove Existing Links."**
3) Type the **Address** and **Name** of the first Insteon device in the **"Add By List**" section.
4) **Repeat step 3** for the remaining Insteon addresses and names then click the **"Finish"** button.
5) The **"Status"** section will list each device address as they get added to your Insteon network.
6) After all devices have been added and ***** Devices added to your Insteon network ***** appears at the bottom of the Status section, click **"Close"** to return to the Insteon Configuration window.

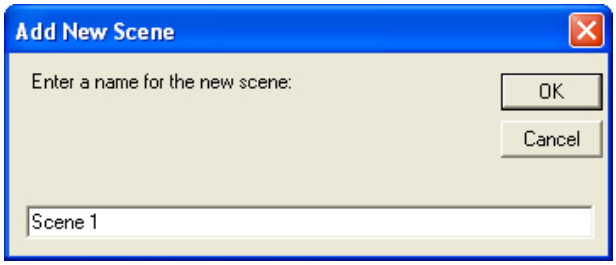


Adding an Insteon Scene

Insteon devices can be programmed to respond to **Group** commands we refer to as **"Scenes."** A scene can control a single Insteon device or a number of Insteon devices simultaneously, with specific dim levels and ramp rates. Scenes are especially useful for creating various lighting moods such as "Movie Time" to dim all the home theater lights for comfortable viewing or "Goodnight" to turn off all the main lights while leaving pathway lights dimly lit. *HomeRunner RBI* supports up to 500 scenes. Any device that is part of an Insteon scene will respond accordingly when that Scene command is issued. Once an Insteon Scene has been created, it can be triggered by a *HomeRunner RBI* button, scheduled event or any Insteon controller button linked to the scene.

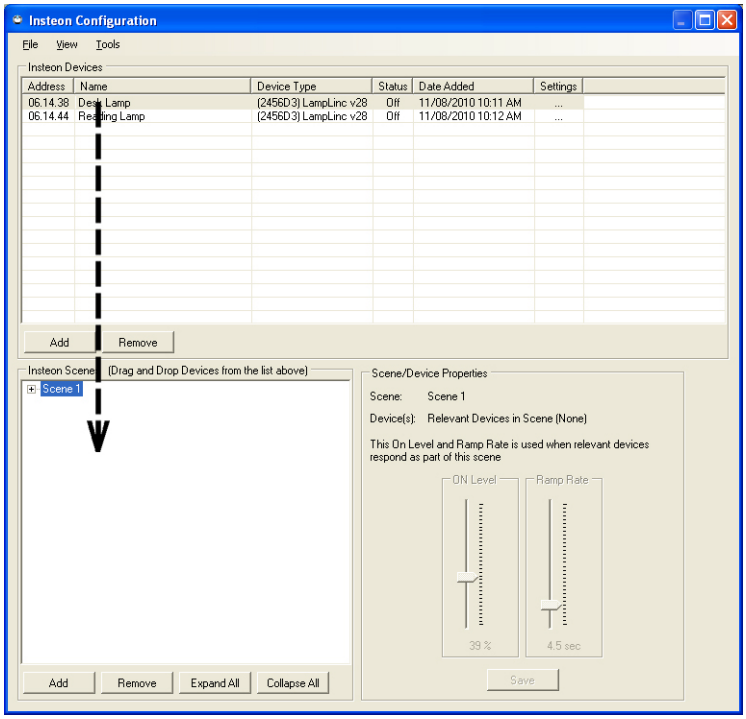
Although Insteon devices can support scenes directly (with or without *HomeRunner RBI* running), ***always use HomeRunner RBI Insteon Scenes to establish links between all your Insteon devices***. ***Every Insteon "controller" (switch, keypad, etc.) that controls an Insteon "responder" (dimmer switch, lamp module, appliance module, etc.) must be linked in an Insteon Scene in order for HomeRunner RBI to keep track of the status.***

To begin, click the **"Add"** button at the bottom of the **"Insteon Scenes"** section of the **"Insteon Configuration"** window.

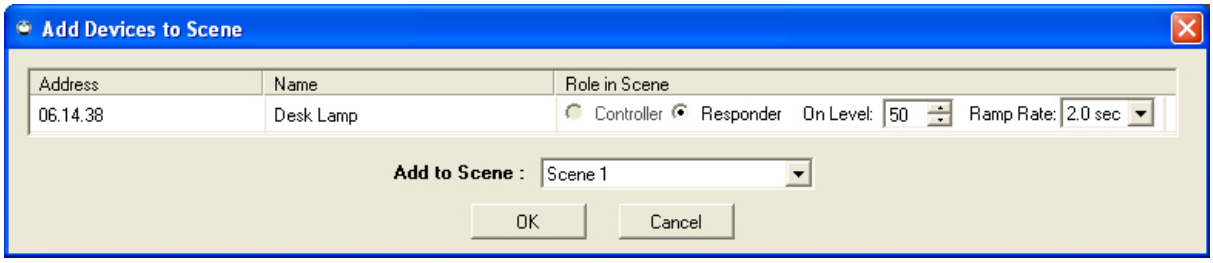


1) **Type a name** for the new scene then click **"OK"** to place it in the "**Insteon Scenes"** list.
2) **Drag and Drop** each device you want to include in the scene from the Insteon Device list or **right-click** on the device in the list and select **"Add Selected Device(s) to Scene."**

You can select multiple devices using the "Ctrl" or "Shift" key to add them all to a scene.



When you release the mouse button, the **"Add Devices to Scene"** window will appear.

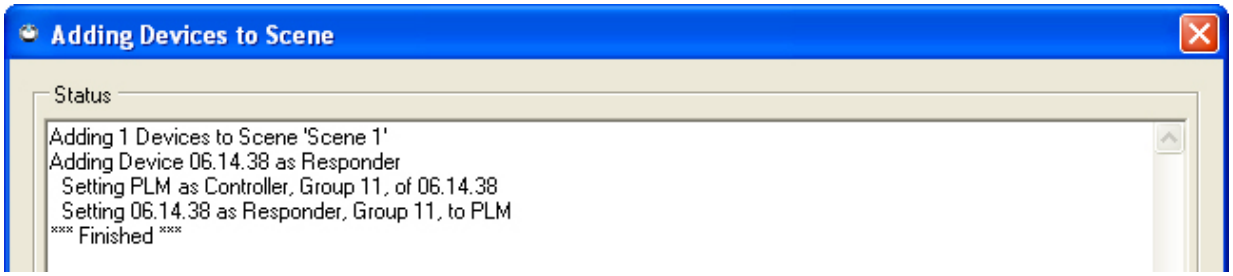


3) Select the scene you want the device added to from the **"Add to Scene"** drop down box.

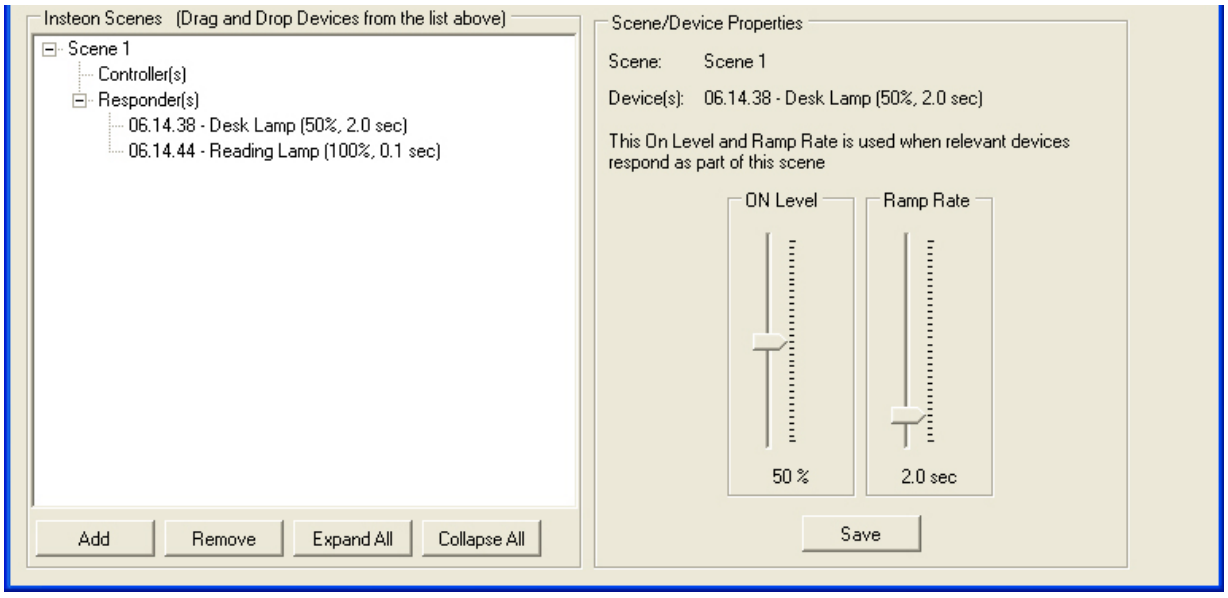
4) In the **"Role in Scene"** box, select **"Controller"** if the device you are adding to the scene will be used to **execute** the scene. Select **"Responder"** if the device you are adding to the scene will be **responding** to the Scene command.

5) Select the **"On Level"** and **"Ramp Rate**" (if applicable) for each device in the scene.

6) Click "**OK"** to complete adding the device to the scene. A status screen will display the details and indicate *****Finished***** when completed. Click **"Close"** to return to the Insteon Configuration window.

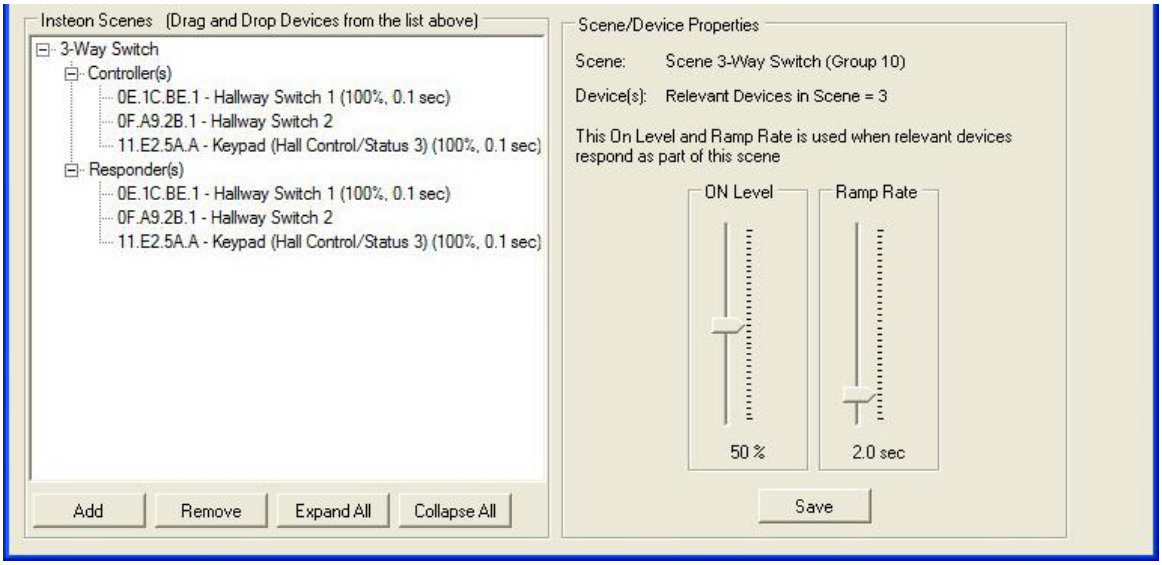


The complete details of the scene will now appear in the bottom "Insteon Scenes" section.



Creating 3-Way, 4-Way… N-Way Switch Configurations

It is common practice to have multiple switch locations control a common load (or multiple loads) such as hallways, stairways, etc. To accomplish this, all related Insteon controllers and receivers must be linked together in a Scene.



Controlling KeypadLinc Buttons

To communicate directly to a KeypadLinc that has 6 buttons (On, Off plus A-D) or 8 buttons (On/Off plus B-H), only the attached load (On/Off buttons) can be controlled by direct Insteon commands. To control the remaining buttons you must send a Scene command. Once a KeypadLinc has been added to the **Insteon Device List**, you can create IF statements to **respond** to those buttons being pressed and the states of the KeypadLinc buttons can be displayed on a layout. However, **to control the indicator lights** on the "A-D" or "B-H" buttons, they each have to be added to a **scene** as a **responder**. For control over the "B" KeypadLinc button for example, you would create a scene and drag the "B" device from the **Insteon Device List** into that scene as a **Responder**. (The scene can consist of just the single "B" button as a responder with no controllers listed. *HomeRunner RBI* is always assumed to be a controller of every scene.) Then add the Scene On or Scene Off command to a *HomeRunner RBI* Event, Then Macro or Button to turn the "B" button On or Off.

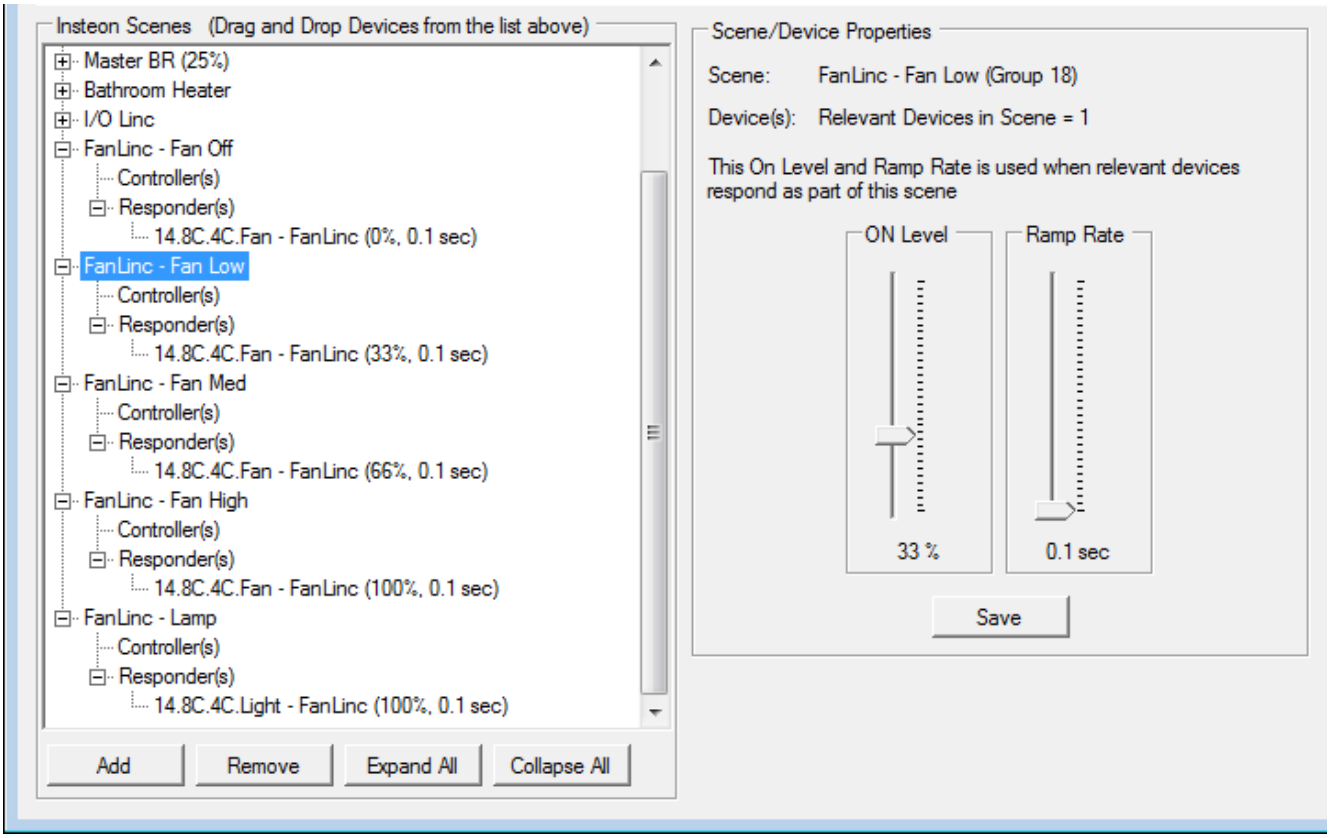
Scene "Group" Numbers

In general, scenes are referred to by name and their numbers are seldom used. However, in some cases such as Stargate-Link commands, scene **numbers** are used. When triggering a scene from Stargate or CommStar controller, the scene number is included in an ASCII command. For example, the first scene listed is Group number 10. So, to turn on that scene from Stargate you would send: ASCII Out: **:rbi=s10=on**. Scenes in the Insteon Configuration list are numbered in hexadecimal, beginning with number 10 (0x10). Subsequent scenes are numbered 11, 12, 13, etc. The scene number appears as a "Group" number in the **"Scene/Device Properties"** section when you highlight the scene name (see above). For complete details see "Controlling HomeRunner RBI from a Stargate-IP or CommStar-IP"

Adding FanLinc to HomeRunner RBI

14.66.F2.Heat SP	HVAC Family Room	(2491TxE) Insteon Thermostat v93
14.66.F2.Cool SP	HVAC Family Room	(2491TxE) Insteon Thermostat v93
14.66.F2.Mode	HVAC Family Room	(2491TxE) Insteon Thermostat v93
14.8C.4C.Light	FanLinc	(2475F) FanLinc vBA
14.8C.4C.Fan	FanLinc	(2475F) FanLinc vBA
17.21.3C.1	Master Bedroom	(2476D) SwitchLinc 600W v38
17.6A.90.1	Bathroom Heater	(2475SDB) In-LineLinc Switch Dual-Band vB3

When a FanLinc (2475F) is added to HomeRunner RBI, it appears in the Insteon Configuration window on two lines, one for the Light and the other for the Fan. The Light is controlled exactly the same as any other dimmer module and can be controlled directly or through a scene. To set the fan speed (Off, Slow, Medium, or Fast), the Fan must be added to one or more scenes as a Responder.



The image above shows the FanLinc (14.8C.4C in this example) added to multiple scenes to control the fan speed. The fan speed is determined by the "On Level" of the FanLinc as a responder in a scene. Set the On Level to 0% to turn the fan off (or simply send an Off command to any scene where the FanLinc is a responder). Setting the On Level to 33% will set the fan to low speed when an On command is sent to the scene. Setting the On Level to 66% will set the fan to medium speed when an On command is sent to the scene. And setting the On Level to 100% will set the fan to high speed when that scene is turned on.

Creating If-Then-Else Conditional Events

HomeRunner RBI's Event Editor lets you create a **Schedule** (list) of **Events** and **Macros** triggered by changes in conditions and/or based on time, date, month, year, sunrise or sunset. An **Event** consists of an **IF** condition (or set of conditions) that triggers a **THEN** action (or set of actions) when all the IF conditions become true. An **ELSE** action can also be used which gets triggered when all the IF conditions become false. Example:
"**IF** Time is after 6:00 PM and before 11:30 PM, **THEN** Porch Light On, **ELSE** Porch Light Off"

IF Conditions include: Time, Date, Insteon, X10, Flag, Variable, Timer, System and Serial.

Transition

A **"Transition"** option is available for Flags, Variables and Timers which, when selected, causes the **If Condition** to be considered true **only for the brief moment**, as the flag/variable/timer changes to the state selected. This feature can be used to prevent events from triggering during the first schedule pass after a schedule upload or after a firmware update.
NOTE: Do not use "Transition" with IF-THEN-ELSE events since Transition only affects the If Condition, not the ELSE. (The ELSE would always execute after a schedule upload.)
For a Transition response only when a flag, variable or timer changes state/value, create separate IF-THEN events for each state.

Example:

```
//EMAIL WHEN GARAGE OPENS
IF
FLAG: Flag 1 "Garage" Is Set [Transition]
THEN
EMAIL: Garage OPEN!!!

//EMAIL WHEN GARAGE CLOSES
IF
FLAG: Flag 1 "Garage" Is Clear [Transition]
THEN
EMAIL: Garage CLOSED!!!
```

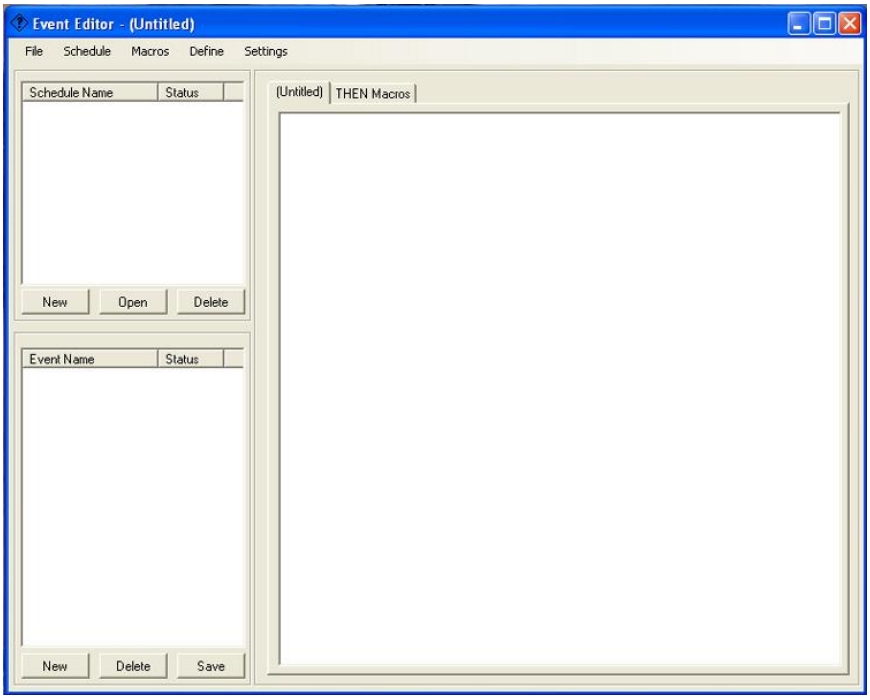
In the above events, the Garage Flag becoming SET triggers the email "Garage OPEN!!!" and the Garage Flag becoming CLEAR triggers the email "Garage CLOSED!!!" Even if the Garage Flag remains SET or CLEAR for a long period of time, these "Transition" If Conditions are only true for the short instant as they change (transition) from one state to the other.

THEN/ELSE Actions include: Insteon Device, Insteon Scene, X10, Flag, Variable, Timer, Delay, Email, Then Macro, Message Log, Serial, Stargate, Broadcast and Send HTTP.

Events can include any combination of IF conditions and THEN actions.

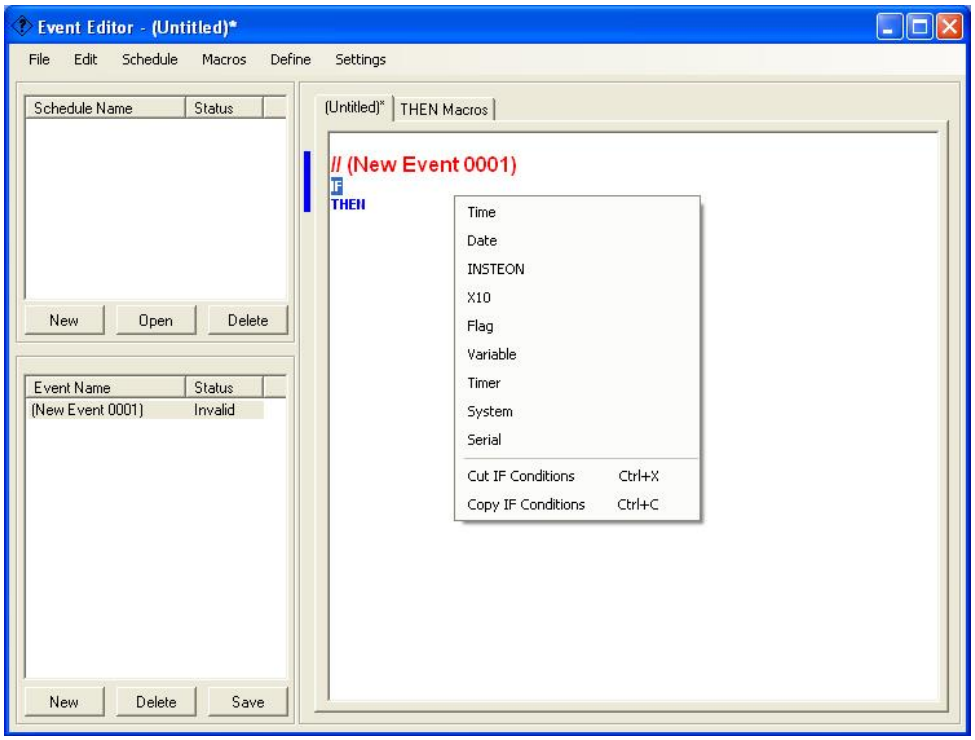
Then/Else actions can also be combined into **Then Macros** which can be named and triggered from an event. Example:
"**IF** Time is 11:30 PM, **THEN Then Macro:** Goodnight"
Each schedule can have its own unique set of Then Macros or they can be copied/pasted and shared with other schedules.
To access the Event Editor window, click the **Event Editor** button on the toolbar or press **Ctrl+?**.

Events are entered into the schedule on the right side of the Event Editor then uploaded to the *HomeRunner RBI*. Once uploaded, the schedule of events runs as programmed.

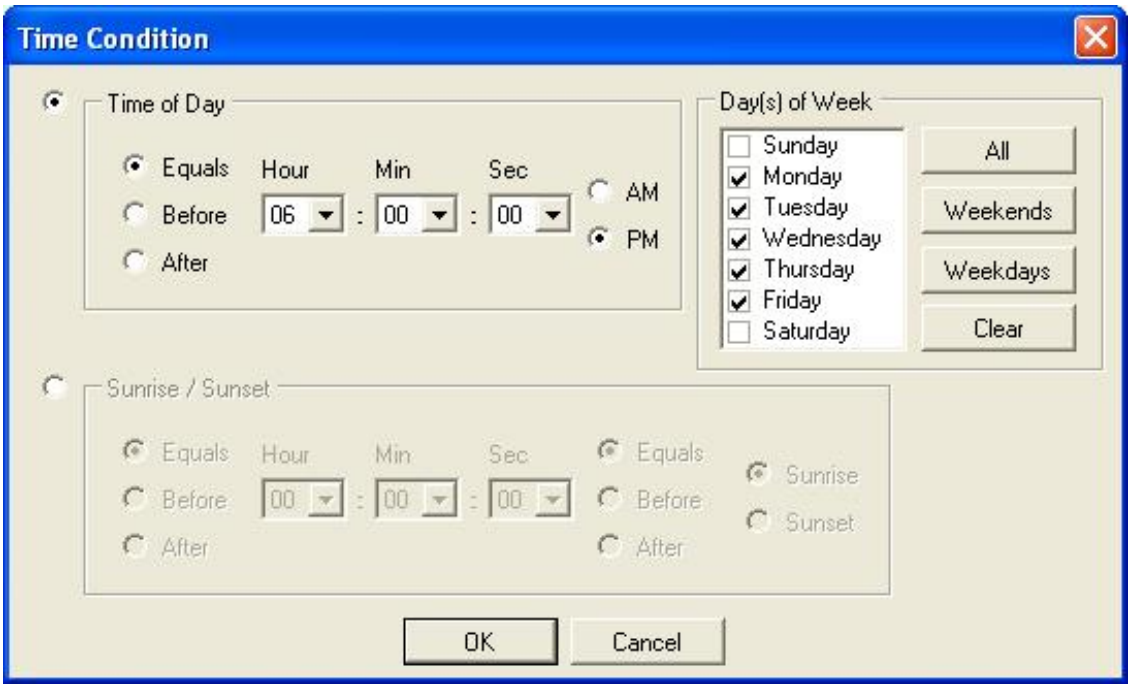


As an example, let's create events to turn a desk lamp on at 6:00 PM and off at 11:30 PM on weekdays only. The desk lamp in this example is plugged into an Insteon lamp module.

1) Click anywhere in the right side workspace. This will place **"//(New Event 0001):"** at the top with **"IF"** and **"THEN"** below it.
2) Click on the word **"IF**" (or anywhere on that line) to view the choices of IF conditions.

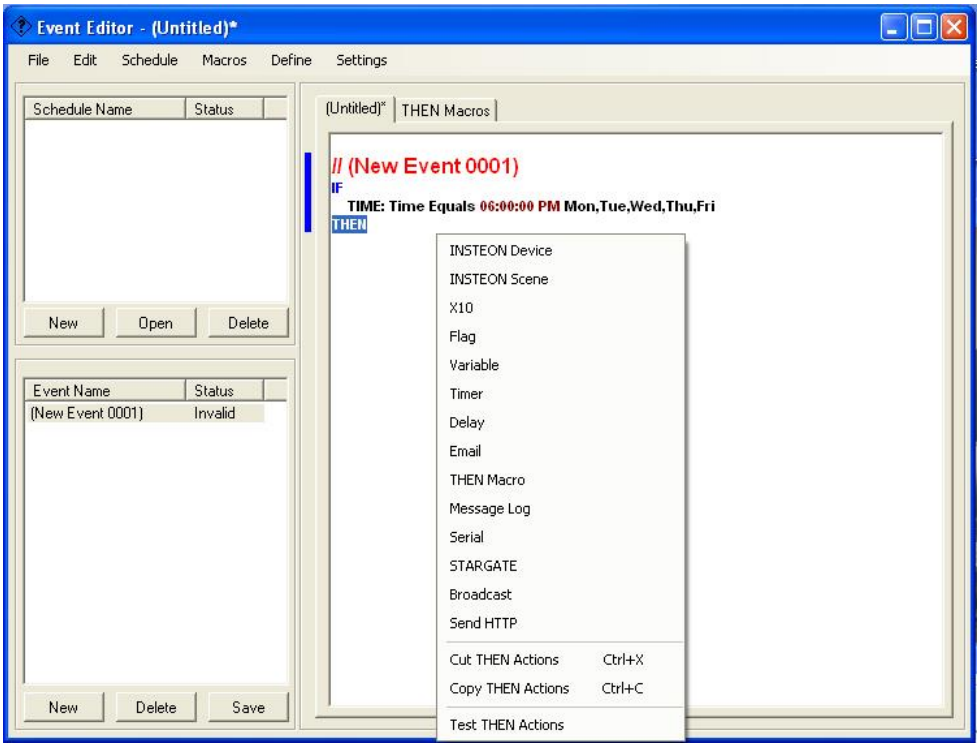


3) Select **"Time**" to access the "Time Condition" window.

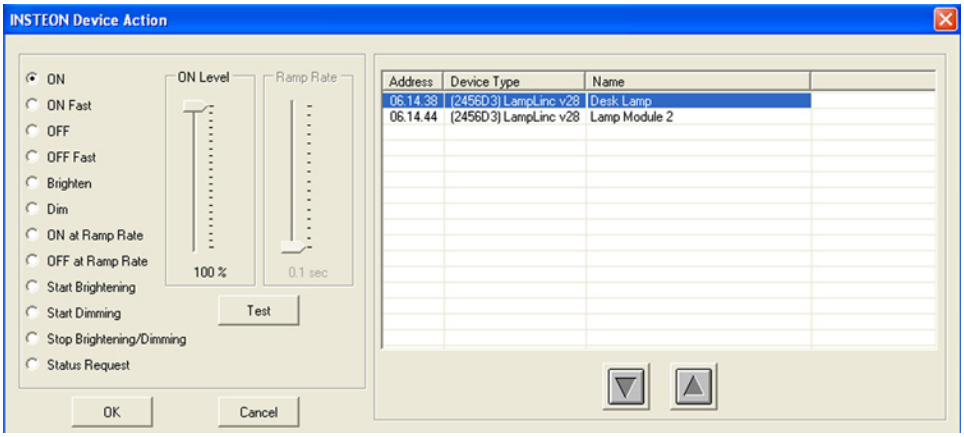


4) In the "Time of Day" field, select **"Equals"** then set the Hour/Min/Sec boxes to **"06:00:00"** then select **"PM."**
5) In the "Day(s) of Week" field, select **"Weekdays"** then click "**OK."** Your selected If condition statement will appear under the IF line.

6) Click on the word **"THEN**" to view the choices of THEN actions.

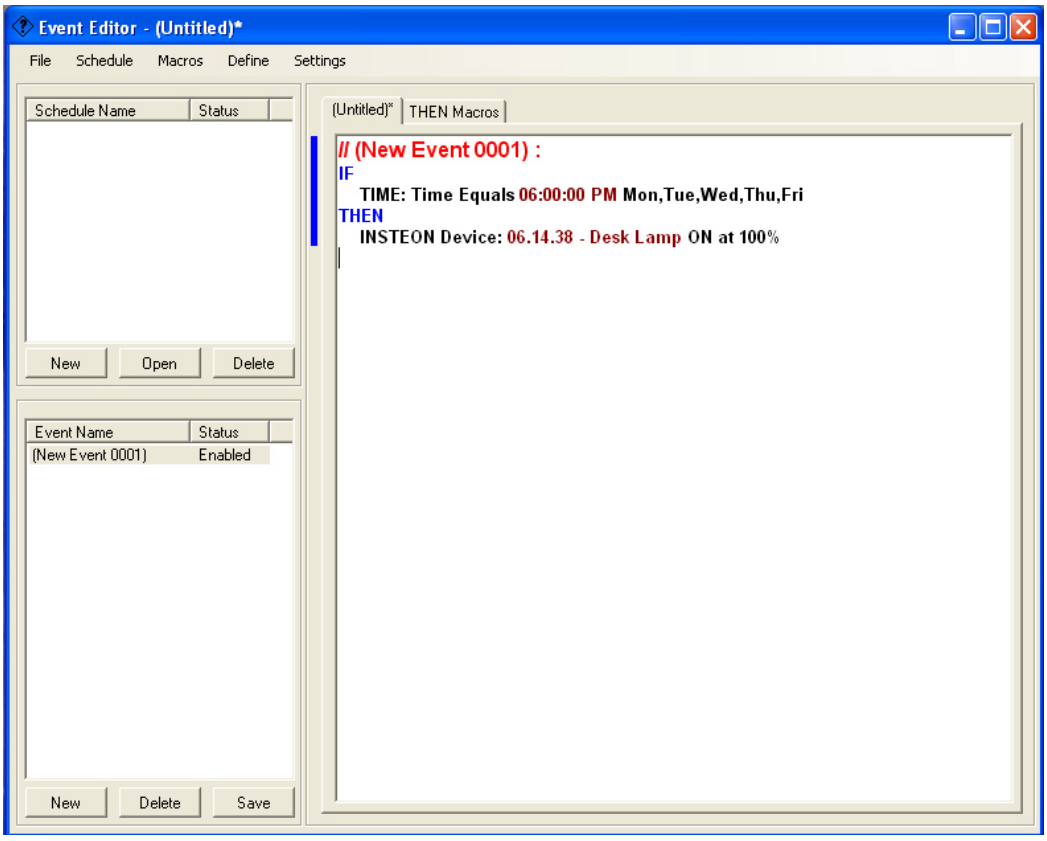


7) Select **"INSTEON Device"** to access the "INSTEON Device Action" window.



8) Select (highlight) the "Desk Lamp" in the right side device list.
9) Select **"ON**" (left side) for the device action then click **"OK."**
Use the "ON Level" slider to set the dim level (default = 100%).

Your selected Then action statement will appear under the THEN line.



So far we have created an event to turn the desk lamp on at 6:00 PM on weekdays. We now need an event to turn the desk lamp off at 11:30 PM on weekdays. Before we continue, let's name the first event "Desk Lamp ON" so we can easily refer to it later.

To **name** the event, click on the default event name and select **"Edit Event Name."** This will highlight the existing name (New Event 0001) in the left side Event Name list. Type the name you

want to replace it with (**Desk Lamp ON**), then click anywhere or press **"Enter."** You can also double-click on the name in the left side Event Name list or right-click and select **"Edit Event Name"** to edit the name. The new name will then appear in the left side Event Name list as well as at the top of the event in the schedule to the right.

Rather than create the second event from scratch, we can simply copy and paste the first event, then edit the pasted copy with the correct values.

To **Copy and Paste** the first event, click on the event name (**Desk Lamp ON**), then select **"Copy Event"** (or type **"Ctrl C"**). Then click in the workspace above or below and select **"Paste Event(s)" (**or type **"Ctrl V"**).

Next, click on the **name** of the pasted event ("**Desk Lamp ON (1**)") and select **"Edit Event Name."** Change the name "**Desk Lamp ON (1**)" to "**Desk Lamp OFF**" then click anywhere or press **"Enter."**

Next, click on the If statement (**TIME equals 06:00:00 PM Mon,Tue,Wed,Thu,Fri**) and select **"Edit."** Change the time setting to **"Equals 11:30:00 PM Weekdays"** then click **OK.** The If statement now reads: "**TIME: Equals 11:30:00 PM Mon,Tue,Wed,Thu,Fri**."

Next, click on the Then statement (**INSTEON Device: Desk Lamp ON at 100%"**) and select **"Edit."** Change the Device action from **"ON"** to **"OFF"** then click **OK.** The Then statement now reads: "**INSTEON Device: Desk Lamp OFF.**"

Your two-event schedule is now ready to be uploaded to the HomeRunner RBI controller, but first let's name it. Click **"Schedule"** then click **"Save Schedule As"** then type a name in the "File name" box (for example: "**Home**") and then click **"Save."**

UPLOAD your schedule by clicking **"Schedule"** then **"Upload to Controller."** See **"Uploading Event Schedules"** for more details.

Testing an Event's Then Actions

Once you have saved and uploaded an event, you can manually trigger the Then Actions to confirm they do what you want them to. To test the Then Actions, click the THEN line and select **"Test THEN Actions"** at the bottom of the pop-up menu.

Special Cases: Crossing Over Midnight and New Year

When creating events based on a range of times that cross over midnight or dates that cross over the New Year, care must be taken to use the correct logic type. To *HomeRunner RBI*, a "**Time is After**" condition is considered true from one second past the specified time up to and including 11:59:59 PM. A "**Time is Before**" condition is considered true from 12:00:00 AM (midnight) up to and including one second before the specified time. Since it can never be before midnight AND after midnight, **you must use OR logic when crossing over midnight**.

Example:

//**Cross Over Midnight**
If
Time is After 6:00:00 PM Sun,Mon,Tue,Wed,Thu,Fri,Sat
or Time is Before 1:00:00 AM Sun,Mon,Tue,Wed,Thu,Fri,Sat
Then
X10: [A-1] Porch light ON
Else
X10: [A-1] Porch light OFF

In the above event, the Porch light will be ON from 6:00:01 PM through 12:59:59 AM and OFF from 1:00:00 AM through 6:00:00 PM.

When specifying a date (with **"Ignore Year"** checked), an **"After Date"** condition is considered true from 12:00:00 AM the day after the specified date through the end of the year (11:59:59 PM, December 31). A "**Before Date"** condition is considered true from 12:00:00 AM (midnight), January 1 up to and including one second before the specified date. Since it can never be before January 1 AND after January 1, **you must use OR logic when crossing over the New Year.** In the first example below, the Holiday Lights will be ON from 12:00:00 AM, December 16 through 11:59:59 PM, January 4 and OFF from 12:00:00 AM, January 5 through 11:59:59 PM, December 15.

Example:

//**Holiday Lights**
If
Date is After Dec 15
or Date is Before Jan 5
Then
X10: [A-2] Holiday lights ON
Else
X10: [A-2] Holiday lights OFF

If **"Ignore Year"** is not checked, the year will appear after the date and you must use **"and"** type logic.

Example:

//**Holiday Lights**
If
Date is After Dec 15, **2011**
and Date is Before Jan 5, **2012**
Then
X10: [A-2] Holiday lights ON
Else
X10: [A-2] Holiday lights OFF

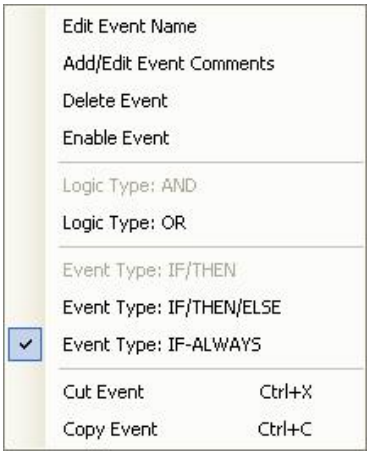
If-Always

HomeRunner RBI includes an optional **"If-Always"** function which causes the event to execute repeatedly as long as the If condition(s) remains true. This is useful for creating counters, blinking lights and other special applications. When using the If-Always function, care must be taken to avoid creating an endless loop whereby the event keeps repeating indefinitely, leaving no room for other events to be processed. ***Always place a delay in the Then section to give other events a chance to be processed.***

Example:

// Blink Porch Light during Alarm Condition
If-Always
  FLAG: Flag 1 "Alarm" is Set
Then
  X10: [P-1] Porch Light On
  DELAY: 00:00:01
  X10: [P-1] Porch Light Off
  DELAY: 00:00:01

In the above example, as long as Flag 1 "Alarm" remains set, P-1 Porch Light will turn on and off repeatedly at one-second intervals. (Without "IF-ALWAYS" selected as the Event Type, the P-1 Porch Light will only turn on and off once.)



To select the **If-Always** option:
Click on the Event Name above the IF and select **"Event Type: IF-ALWAYS"** from the pop-up menu (shown above).

To remove the **If-Always** option (return to a normal IF condition):
Click on the Event Name above the IF and select **"Event Type: IF-ALWAYS"** again.

Combining AND with OR Logic

If necessary, you can combine AND logic with OR logic to create events that are triggered by complex sets of If Conditions. When the event's **Logic Type** is set to "**AND**" (default), a lower case "**and**" will appear at the beginning of each additional If Condition. To add an "**OR**" statement to the AND type logic, click on the last If condition and select "**OR**" from the pop-up menu. This will add a line with an upper case "**-OR-**" as a separator below the If Conditions. You can then add more If Conditions as needed.

In the following example, the Hallway Lights will only turn on if A-1 **and** A-2 are both on **OR** A-3 **and** A-4 are both on.

//**Hallway Lights**
If
X10: [A-1] Family Room Lights On
and X10: [A-2] Holiday Lights On
-OR-
X10: [A-3] Living Room Lights On
and X10: [A-4] Dining Room Lights On
Then
X10: [A-7] Hallway Lights On
Else
X10: [A-7] Hallway Lights Off

Likewise, you can separate sets of "**or**" conditions with an "**-AND-"** statement. In this case, **both sets of If Conditions must be true** in order to trigger the Then Action.

In the example below, the Holiday Lights turn ON at sunset and OFF at sunrise from Dec. 16 – Jan. 4.

//**Holiday Lights**
If
Date is After Dec 15
or Date is Before Jan 5
-AND-
TIME: Time After Sunset Sun,Mon,Tue,Wed,Thu,Fri,Sat
or TIME: Time Before Sunrise Sun,Mon,Tue,Wed,Thu,Fri,Sat
Then
X10: [A-2] Holiday Lights On
Else
X10: [A-2] Holiday Lights Off

Random Delay

HomeRunner RBI includes a **"Random"** feature for executing actions at random times or varying intervals. The Random feature is part of the "THEN – Delay" function. With "Random" checked, each time the event executes, the delay assumes a random number of hours, minutes and/or seconds between 0 (no delay) and the number you select.

If you select "**15**" in the minutes column and check "**Random**," (as shown above), the event line will read "DELAY: [Random] 00:15:00" and will delay anywhere from 0 to 15 minutes. Each time the event executes, the delay will have a different (random) value within that range. So if you want a delay of **15 minutes +/- 5 minutes** you need 2 delays - one for 10 minutes (not Random) followed by one for 10 minutes - Random (so you get a delay between 10 and 20 minutes).
A common application for the Random delay is to turn on the outside lights around dusk, but at a different time each day so they don't appear to be on a timer (a signal to would-be burglars that you might be away on vacation). Example:

// Front Lts On at Dusk (Random)
IF
TIME: Time Equals 00:30:00 Before Sunset Sun,Mon,Tue,Wed,Thu,Fri,Sat
THEN
DELAY: [Random] 00:10:00
X10: [A-9] FRONT LTS On

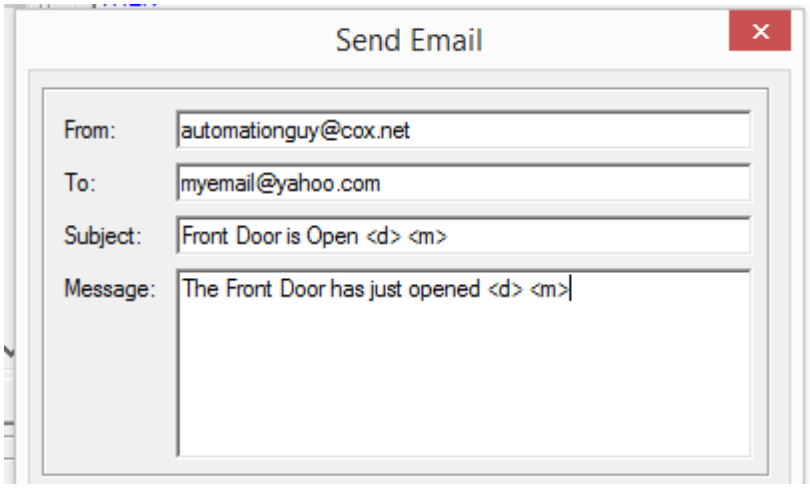
In the above example, the FRONT LTS will turn on at a different time each day, sometime between 30 minutes before sunset and 20 minutes before Sunset.

Sending Email or Text Messages

HomeRunner RBI can send email or text messages automatically from an Event or Then Macro based on time or any set of conditions. Messages can be sent to individual or multiple recipients. This can be used to notify recipient(s) of security status, temperature changes, etc. and/or to send reminders for appointments, medication, etc. *HomeRunner RBI* sends email using SMTP (Simple Mail Transfer Protocol), an internet standard for communication between the *HomeRunner RBI* controller and an internet mail server. It is usually best to use your own ISP (Internet Service Provider) and configuration details (mail server, port, and often username and password) provided by your ISP. The traditional SMTP port is 25, but often 587 and 465. An example setup (entered in your *HomeRunner RBI* controller's Network page) using Cox.net might be:

Outgoing (SMTP) Mail Server	smtp.cox.net
Outgoing (SMTP) Mail Port	25
Mail Server User Name	automationguy@cox.net
Mail Server Password	••••••••••••

Then, from within the *HomeRunner RBI* application, you can create an Email event action similar to this:



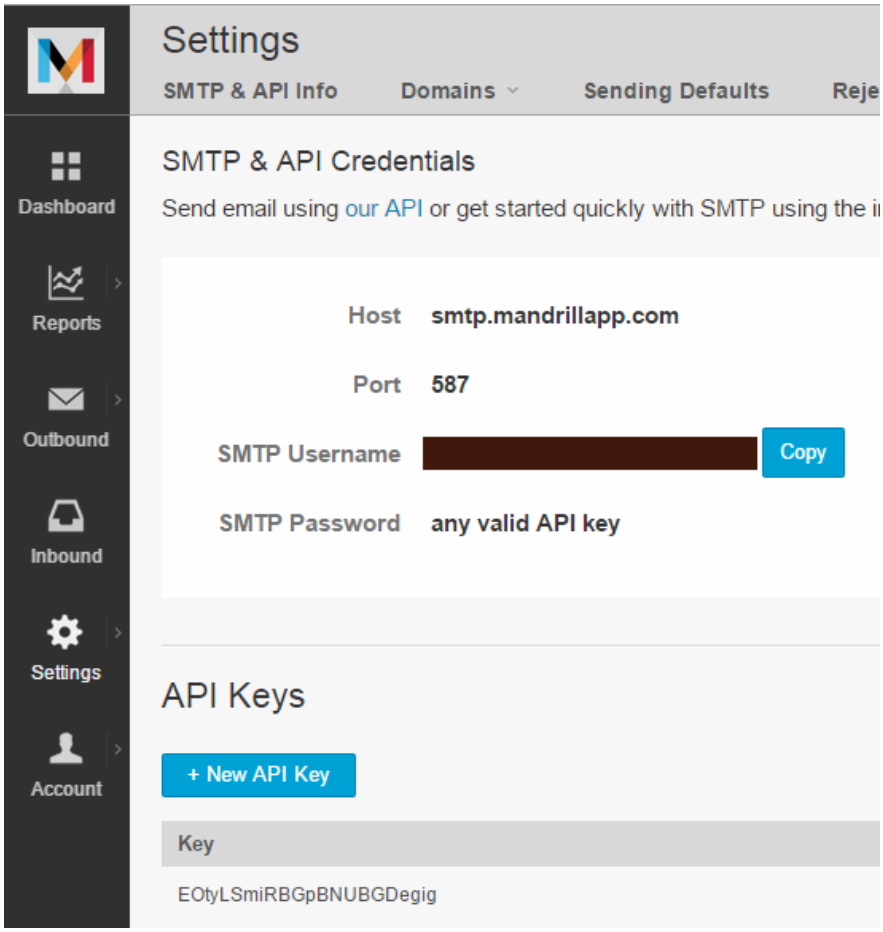
HomeRunner RBI supports only username/password authentication to the SMTP server and does not support SSL or TLS. To help reduce spam and improve security, many ISPs now require the use of an encrypted SSL connection. If you are unable to send mail through your own mail server (first try to send a test email), you can use a free email service called "Mandrill" to send outgoing email.

Using Mandrill to Send Email

Mandrill (http://mandrill.com/) offers a service with up to 12,000 free emails per month (400/day), only requires username/password authentication (which *HomeRunner RBI* supports) and doesn't require SSL. It allows you to use port 25, 587, or 2525.

To use Mandrill:

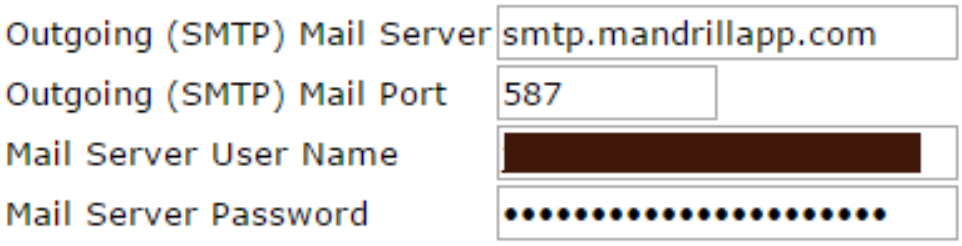
Go to http://www.mandrill.com in a web browser
Click "Sign Up" to create a free account
Register for a free account using your existing email address
After you have created your account, you'll need to generate an API key and copy/paste the SMTP host, port, username and password from Mandrill to *HomeRunner RBI*.
Click "Settings" on the left navigation to access the "SMTP & API Credentials" page.



Start by clicking "New API Key" to generate a custom API Key.
The SMTP username will be the email address you used to register for your Mandrill account.

SMTP port 587 is shown, but you can try both 587 and 25 to see which one works better.

Copy that information to the Network page of your *HomeRunner RBI* controller (from the toolbar, click the "Controller" button then the "Network" tab).



* In the Send Email dialog (in the *HomeRunner RBI* Application), use no-reply@mandrillapp.com as the "From" email address. Most email providers (i.e. Yahoo, Gmail, etc.) check to see that the "From" email matches the server that send the email. Since the email is being sent from Mandrill, using an email address @MandrillApp.com provides the verification needed to allow your email to be delivered in most cases.

To send an **Email** message, create an event with the desired If Condition(s).
For the Then Action, select **"Email"** to bring up the **"Send Email"** window (as shown above).
Type your **originating email address** in the **"From"** box (no-reply@mandrillapp.com for Mandrill).
Type the **recipient's email address** in the **"To"** box.
To send to **multiple email addresses**, place a **comma** between each address in the **"To"** box.
Type the **subject** in the **"Subject"** box and your **message** in the **"Message"** box, then click **OK**.

// Garage Door Open
IF
FLAG: Flag 1 "Garage Door" Is Set
THEN
EMAIL: Garage Door Open

To send a **Text** message, type the **recipient's 10-digit cell phone number** in the **"To"** box followed by **"@"** and the required **Gateway** for the recipient's service provider. Each service provider has their own gateway format. The 4 most popular providers are listed below. A complete list is available online at http://en.wikipedia.org/wiki/List_of_SMS_gateways.

AT&T Wireless: 1234567890@txt.att.net
Sprint (PCS): 1234567890@messaging.sprintpcs.com
T-Mobile: 1234567890@tmomail.net
Verizon Wireless: 1234567890@vtext.com

The Message and/or Subject can include Binary or Hex values (for special applications capable of receiving data via email or text messages) as well as current values of Flags, Variables, Timers, Date and Time.

Pre-programmed Email or Text messages can also be sent manually from a button press by placing the email actions in a Then Macro and defining the button to trigger the macro.

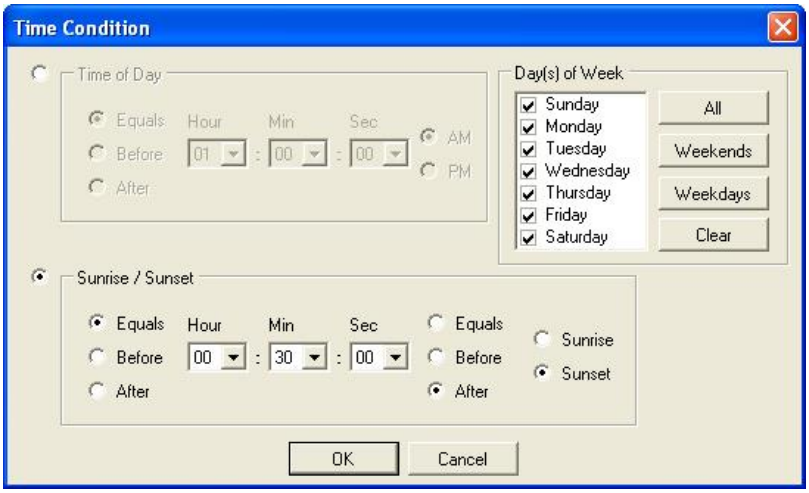
Email Troubleshooting

Most email errors can be resolved by examining the Console log after an email attempt has been made. To view the Console, click "System" then the "Log" button. From the Event Log window, select "Tools" then "Show Console." Next select "Tools" then "Clear Console" to start with a clean log. Now do something to cause an email to be sent (Click “Then” and select "Test THEN Actions"). From the Event Log window, click "Refresh" to see the current log entries. Copy the Console log and paste it in an email to support@jdstechnologies.com if you're not able to see or recognize the issue. (Please include the name of the email service so we can investigate/confirm the proper SMTP settings.)

Here is an example log of a successful email:
Console log cleared.
SMTP: Read: 220 fed1rmimpo109 cox ESMTP server ready
SMTP: Wrote EHLO 192.168.1.70
SMTP: Read: 250-fed1rmimpo109 hello [70.187.166.136], pleased to meet you
SMTP: Read: 250-HELP
SMTP: Read: 250-SIZE 28672000
SMTP: Read: 250-ENHANCEDSTATUSCODES
SMTP: Read: 250-8BITMIME
SMTP: Read: 250-STARTTLS
SMTP: Read: 250 OK
SMTP: Wrote MAIL FROM: <xxx@yahoo.com>
SMTP: Read: 250 2.1.0 <xxx@yahoo.com> sender ok
SMTP: Wrote RCPT TO: <xxx@yahoo.com>
SMTP: Read: 250 2.1.5 <xxx@yahoo.com> recipient ok
SMTP: Wrote DATA
SMTP: Read: 354 enter mail, end with "." on a line by itself
SMTP: Wrote From: <xxx@yahoo.com>
To: <xxx@yahoo.com>
Subject: SMTP: Wrote
SMTP: Wrote
.
SMTP: Read: 250 2.0.0 MxPG1l0012wu1Ba01xPG5h mail accepted for delivery
SMTP: Wrote QUIT
SMTP: Read: 221 2.0.0 fed1rmimpo109 cox closing connection
Msg sent to xxx@yahoo.com

Programming Events Based on Sunrise/Sunset

Events can be programmed to execute **at**, **before** or **after Sunrise** or **Sunset**. This is useful for turning on or off lights when it gets dark or light outside, adjusting watering schedules, etc. Since it actually starts getting light out sometime before sunrise and dark out sometime after sunset, a time field is included for offsetting the time condition relative to sunrise or sunset.



First, select **"Sunrise/Sunset"** to highlight the **Sunrise/Sunset** section.
Next, select the **"Day(s) of Week"** you want the event to execute.

To execute an event **exactly at** sunrise or sunset, select **"Equals"** on **both** the **left** and **right** side of the **"Hour:Min:Sec"** field and select **"Sunrise"** or **"Sunset"** on the **far right** and click **OK**.

To execute an event **a specific amount of time before** sunrise or sunset, select **"Equals"** on the **left** and **"Before"** on the **right** side of the **"Hour:Min:Sec"** field. This will make the **"Hour:Min:Sec"** field active. Click the drop-down arrows to select the desired number of hours, minutes and/or seconds then select **"Sunrise"** or **"Sunset"** on the **far right** and click **OK**.

To execute an event **a specific amount of time after** sunrise or sunset, select **"Equals"** on the **left** and **"After"** on the **right** side of the **"Hour:Min:Sec"** field. This will make the **"Hour:Min:Sec"** field active. Click the drop-down arrows to select the desired number of hours, minutes and/or seconds then select **"Sunrise"** or **"Sunset"** on the **far right** and click **OK**.

Selecting **"Before"** on the **left** side of the **"Hour:Min:Sec"** field and **"Equals"** on the **right** creates an If condition that is true from **12:00:00 AM** up to and including **1 second before** Sunrise or Sunset.

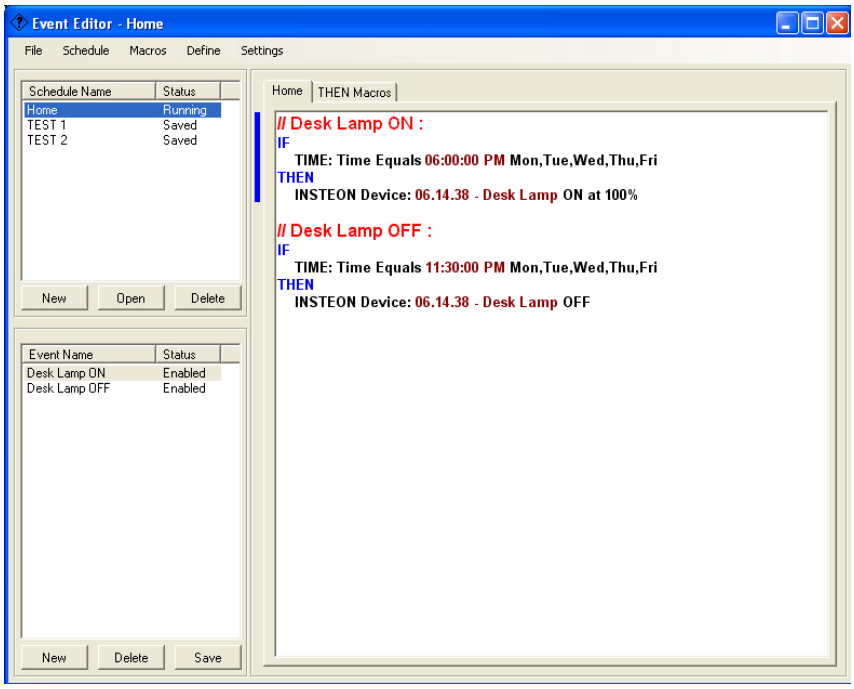
Selecting **"After"** on the **left** side of the **"Hour:Min:Sec"** field and **"Equals"** on the **right** creates an If condition that is true from **1 second after** Sunrise or Sunset up to and including 11:59:59 PM.

To create an event that is true from **Sunrise to Sunset** (when it is light outside) use two If conditions: If **"Time After Sunrise" and "If Time Before Sunset"** with the default **AND** type logic.

To create an event that is true from **Sunset to Sunrise** (when it is dark outside) use two If conditions: If **"If Time After Sunset"** **or** **"Time Before Sunrise"** using **OR** type logic since the statement crosses over midnight. (See Special Cases: Crossing Over Midnight And New Year.)

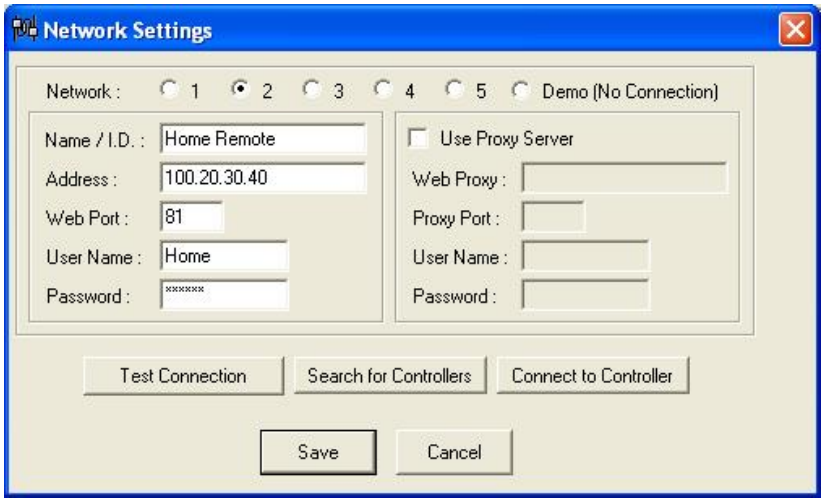
Uploading Event Schedules

Once you have completed creating and naming a schedule of events, you UPLOAD the schedule to the *HomeRunner RBI* controller to execute the programmed events. To upload, click **"Schedule"** then click **"Upload to Controller"** (or press **"Ctrl+F5"**). When uploading has completed, the Schedule Status will change to "Running" and your events will be executed as programmed.



Programming/Editing Events Remotely Over the Internet

Event schedules can be programmed remotely from any computer with internet access. First download and install the *HomeRunner RBI* application from http://updates.homerunner.me/updates/. From the toolbar, click **"Network"** to bring up **Network Settings**. Select Network #2 and enter your **router's outside IP Address** and the **Port Number**, **User Name** and **Password** assigned to your *HomeRunner RBI*. Click **"Test Connection**" to verify then **"Save"** to load these settings. (See "Remote Access Over the Internet" for more details).



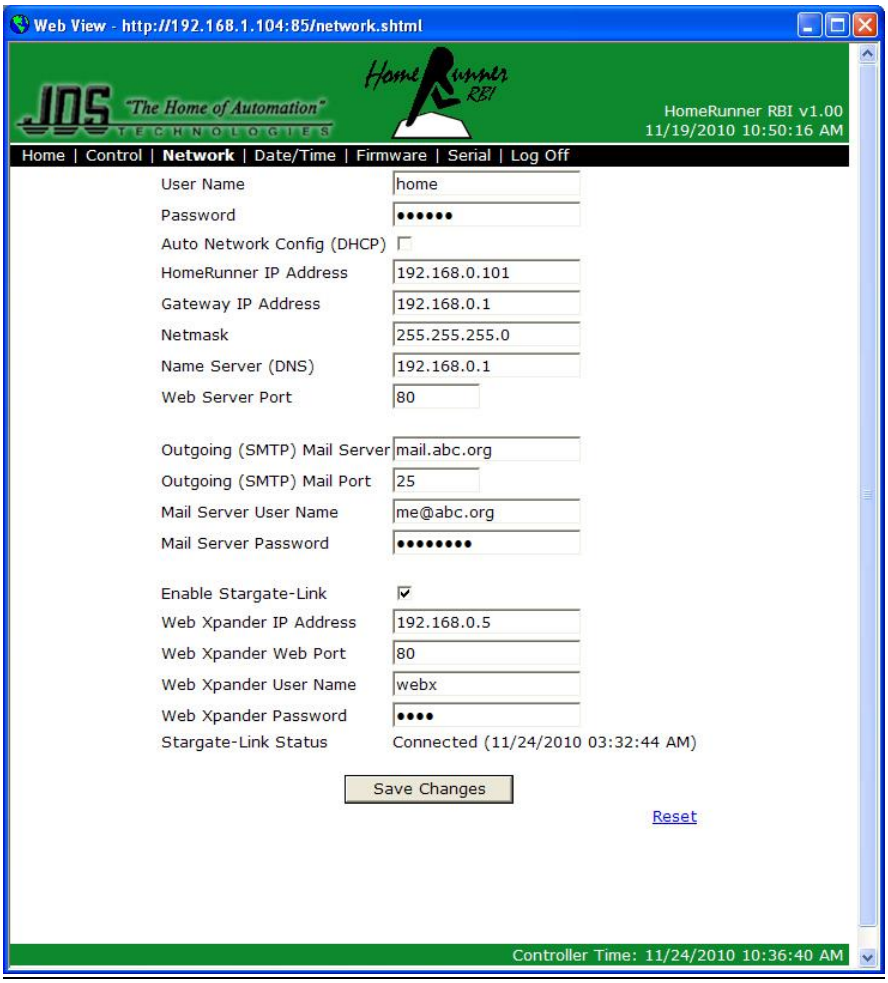
Then click "Event Editor" from the toolbar and select (double-click) the "Running" Schedule listed in the upper left. If the schedule in the *HomeRunner RBI* controller is newer than the local one, you will be prompted to update the local schedule with the one in the controller. You can then edit and upload changes to your event schedule.

Interfacing HomeRunner RBI with Other Controllers

HomeRunner RBI can control and be controlled from another system such as a Stargate-IP, CommStar-IP or any system capable of sending/receiving ASCII commands to/from an IP address. A built-in "**Stargate-Link**" enables control of a Stargate-IP (or CommStar-IP) from an iPhone, iPad, or any device with web access. This also provides a means for controlling Insteon devices and Insteon scenes from a Stargate-IP or CommStar-IP using simple ASCII commands. A "**SG-Link Synchronize**" setting has also been added to the Web Xpander settings page to automatically synchronize Lighting (X-10 or UPB), Flags and Variable values from Stargate to *HomeRunner RBI*, eliminating the need for most ASCII commands (see Synchronizing Stargate with *HomeRunner RBI*). (ASCII commands are still required for Insteon control from Stargate).

1. Check **"Enable Stargate-Link"** on the served "Network" page.
2. Click **"Save Changes."**
3. Update your Web Xpander firmware to version 3.0 or higher (required for Stargate-Link) at: http://updates.homerunner.me/updates.

The Web Xpander on Stargate-IP (or CommStar-IP) listens for a telnet-like connection on port 24. The Stargate-Link status is monitored from both HomeRunner RBI and the linked Web Xpander. If the link is interrupted or lost for any reason, both sides will attempt to re-establish a connection. If the link cannot be re-established after repeated attempts, the link will be disabled. The **"Enable Stargate-Link"** (on the served "Network" page) must be turned off (unchecked) and then back on (checked) to clear the failure counter and re-attempt the link. Rebooting *HomeRunner RBI* will also clear the failure counter and re-attempt the link. *HomeRunner RBI* always initiates the connection if enabled.

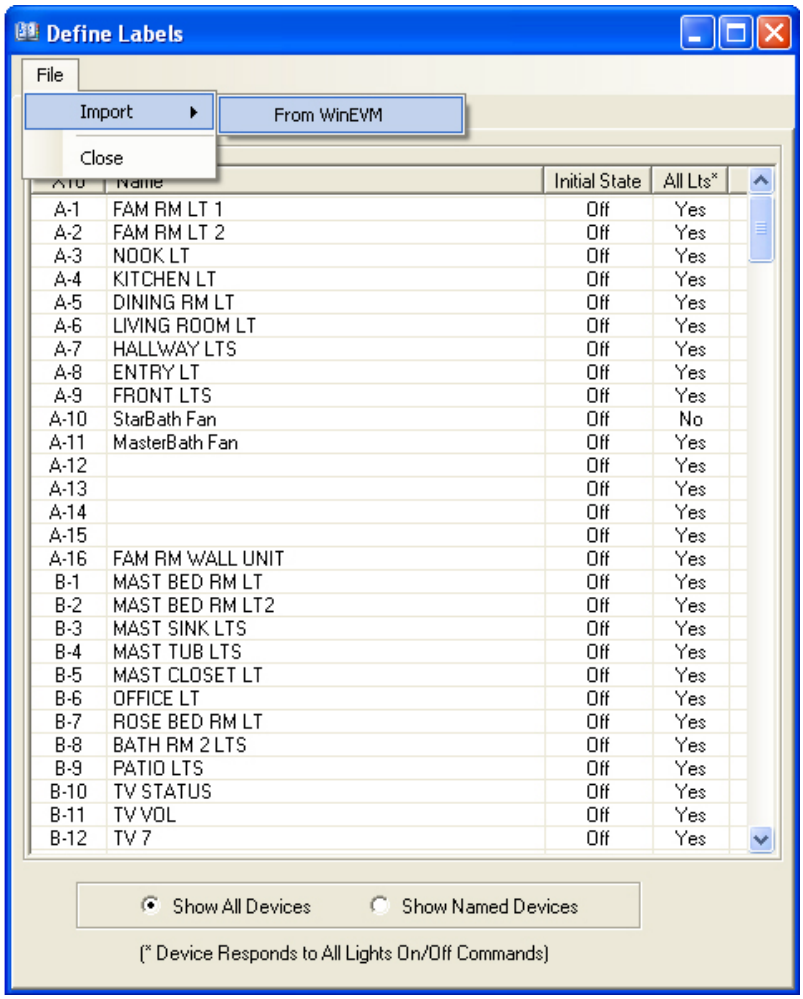


Importing Defined Labels from Stargate-IP or CommStar-IP

HomeRunner RBI uses some similar control functions as Stargate-IP and CommStar-IP (X-10, Flags, Variables and Timers). You can import the defined names database (device.dbf) from your Stargate-IP or CommStar-IP folder into your *HomeRunner RBI* for use in your *HomeRunner RBI* schedule. (You can also type or edit them manually.) Using the same labels for these functions can be helpful when creating events that talk back and forth between *HomeRunner RBI* and a Stargate-IP or CommStar-IP (see Synchronizing Stargate with *HomeRunner RBI*).

To import labels:

1) Click **Define – Labels** on the *HomeRunner RBI* toolbar.
2) Select the tab at the top you want to import (X-10, Flags, Variables or Timers).
3) Click **File – Import – From WinEVM**.
The imported labels will replace any blank lines in the list. Pre-existing labels will not be replaced.
Repeat steps 2 and 3 for each tab you want to import.

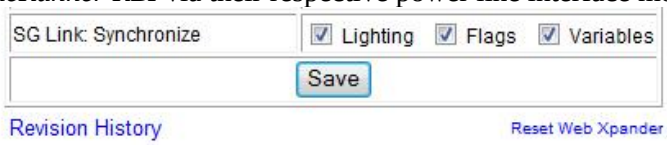


SG-Link (Synchronizing Stargate with HomeRunner RBI)

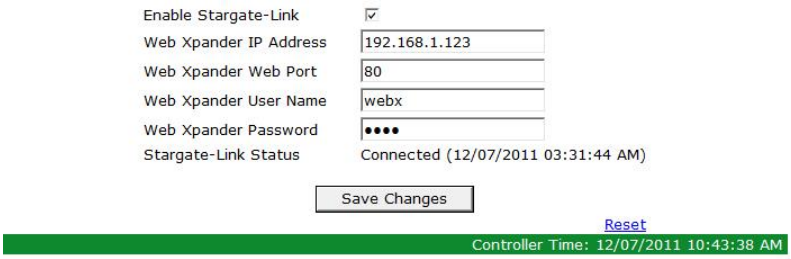
Once you have imported the Stargate's Lighting, Flags and Variables into *HomeRunner RBI*, you can set them to automatically synchronize (update *HomeRunner RBI's* status to match those of Stargate/Commstar). You can choose to synchronize ALL 256 of Stargate's Lighting, Flags and Variables or select a specific range to synchronize, leaving the remainder of *HomeRunner RBI's* Lighting, Flags and Variables independent of Stargate/Commstar. ***NOTE: Flag and Variable changes made from Stargate's Megacontroller screen are not automatically synchronized. Only changes made from Stargate's scheduled events or Web Xpander activity are updated automatically in HomeRunner RBI.***

To automatically synchronize Lighting, Flags and/or Variables:
(Requires Web Xpander firmware version 3.0 or higher.)

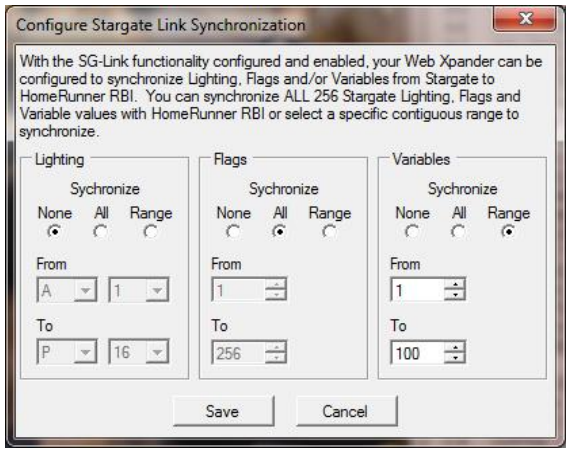
1) Log onto the **Web Xpander** "**Settings**" page and check "**Lighting**," "**Flags**," and/or "**Variables**" next to "**SG Link Synchronize**" (near the bottom of the page), then click **"Save"** at the bottom. In general, to reduce traffic over the SG-Link, it is best **not** to select "Lighting" since X-10 status is already updated by both Stargate and *HomeRunner RBI* via their respective power line interface modules.



2) Log onto the ***HomeRunner RBI*** served "**Network**" page (or click "Controller" on the toolbar then select the **Network** tab) and make sure the "**Enable Stargate-Link**" box is checked. If it is not, check it and then click "**Save Changes**" at the bottom, then close the served Network page.



3) Click the "**Labels**" button on the toolbar and select "**Options**" – "**Stargate Link**" at the top to access the "**Configure Stargate Link Synchronization**" window.



4) For each of the sections (Lighting, Flags, Variables) select "**None**" (default) to disable synchronization, select "**ALL**" if you want all 256 Stargate/Commstar devices to synchronize with *HomeRunner RBI,* or select "**Range**" and select "**From**" and "**To**" points to limit the automatic synchronization to the selected range, then click "**Save**." All *HomeRunner RBI* devices within the selected ranges will automatically update when a Stargate (or Commstar) event causes a change and will be highlighted in the *HomeRunner RBI* device list. All other devices remain independent of Stargate/Commstar.

Controlling *HomeRunner RBI* from a Stargate-IP or CommStar-IP

ASCII-Out command strings can be sent from a Stargate-IP or CommStar-IP to *HomeRunner RBI* to trigger specific commands and/or update status. Examples:
ASCII-Out: **:rbi=i112233=on [COM1]** (Insteon device 11.22.33 On)
ASCII-Out: **:rbi=t3=clear [COM1]** (Timer 3 Clear)
ASCII-Out: **:rbi=f1=idle [COM1]** (Flag 1 Idle)
ASCII-Out: **:rbi=v5=255 [COM1]** (Variable 5 load with 255)
All ASCII-Out commands begin with **:rbi=** *followed by one of the following command formats:*

Insteon
All Insteon commands start with lower case "**i**" followed by **6 hex digits** (Insteon device address) followed by "**=**" and then the command. If the specified command requires any parameters (i.e. on level, ramp rate, etc.) the parameters are separated by commas (no spaces).
Example: **ASCII-Out: :rbi=i112233=onr,75,4 [COM1]** (Ramp On to 75% in 6.5 seconds)

Set lamp to 100% On (on)
ASCII Out: :rbi=i112233=on [COM1] or **:rbi=i112233=on,100 [COM1]**

Set lamp to specified On level (on,Level%)
ASCII Out: :rbi=i112233=on,50 [COM1]

Set device Off (off)
ASCII Out: :rbi=i112233=off [COM1]

On Fast (to default on level) (onf)
ASCII Out: :rbi=i112233=onf [COM1]

Off Fast (offf)
ASCII Out: :rbi=i112233=offf [COM1]

On at Ramp Rate (onr,Level%,Rate)
ASCII Out: :rbi=i112233=onr,75,4 [COM1] (Ramp On to 75% in 6.5 seconds)

Rate is a value from 1 to 16
1=0.1 sec
2=0.3 sec
3=2.0 sec
4=6.5 sec
5=19 sec
6=23.5 sec
7=28 sec
8=32 sec
9=38.5 sec
10=47 sec
11=1.5 min
12=2.5 min
13=3.5 min
14=4.5 min
15=6 min
16=8 min

Off at Ramp Rate (offr,Rate)
ASCII Out: :rbi=i112233=offr,3 [COM1] (Ramp Off in 2.0 seconds)

Insteon (cont'd)

Bright – Send single bright command (Approx 3% increase) (bright)
ASCII Out: :rbi=i112233=bright [COM1]

Dim – Send single dim command (Approx 3% decrease) (dim)
ASCII Out: :rbi=i112233=dim [COM1]

Start Bright (sbright)
ASCII Out: :rbi=i112233=sbright [COM1]

Start Dim (sdim)
ASCII Out: :rbi=i112233=sdim [COM1]

Stop Bright/Dim (stop)
ASCII Out: :rbi=i112233=stop [COM1]

Refresh Status (refresh)
ASCII Out: :rbi=i112233=refresh [COM1]

Scenes

Send a command to trigger an Insteon Scene
(The scene "Group" number appears in the "Scene/Device Properties" section of Insteon Configuration when you highlight the scene name.)

s{scene id}=command

Commands are

- on
- off
- onf
- offf
- bright
- dim

Examples:
ASCII Out: :rbi=s10=on [COM1] (Scene 10 On)
ASCII Out: :rbi=s13=onf [COM1] (Scene 10 On Fast)

X10

x{house}{unit}=command

Commands are

- on
- off
- bright
- dim
- pdim,level%
- alon (all lights on)
- aloff (all lights off)
- auoff (all units off)
- addr (address only)
- idle

Examples
ASCII Out: :rbi=xa5=on [COM1] (A5 On)
ASCII Out: :rbi=xh10=pdim,35% [COM1] (H10 Preset Dim 35%)

Flags

f{flag index}=value

values
set
clear
idle

Examples

ASCII Out: :rbi=f5=set [COM1] (Flag 5 Set)
ASCII Out: :rbi=f93=idle [COM1] (Flag 93 Idle)
ASCII Out: :rbi=f7=clear [COM1] (Flag 7 Clear)

Variables

Set a variable to a specified value from 0 to 255 **or** to the value of a Stargate variable
v{variable index}=value **or** v{variable index}=<Stargate variable name>
Examples
ASCII Out: :rbi=v1=0 [COM1] (Load Variable 1 with 0)
ASCII Out: :rbi=v3=<InsideTemp> [COM1 (Load Variable 3 w/ Stargate variable "InsideTemp")

Timers

t{timer index}=Command
Commands are

start
stop
clear
load,hh:mm:ss

Examples
ASCII Out: :rbi=t1=start [COM1] (Timer 1 Start)
ASCII Out: :rbi=t6=load,00:05:00 [COM1] (Load Timer 6 with 5 minutes)

THEN Macros

Executes an uploaded THEN Macro

m{macro id}

Examples
ASCII Out: :rbi=m1 [COM1] (Execute Macro 1)
ASCII Out: :rbi=m27 [COM1] (Execute Macro 27)

A/V (Global Cache IR Command)

Executes an IR command in the defined A/V command library

g{Device ID}={Command ID},{Output},{Repeat}

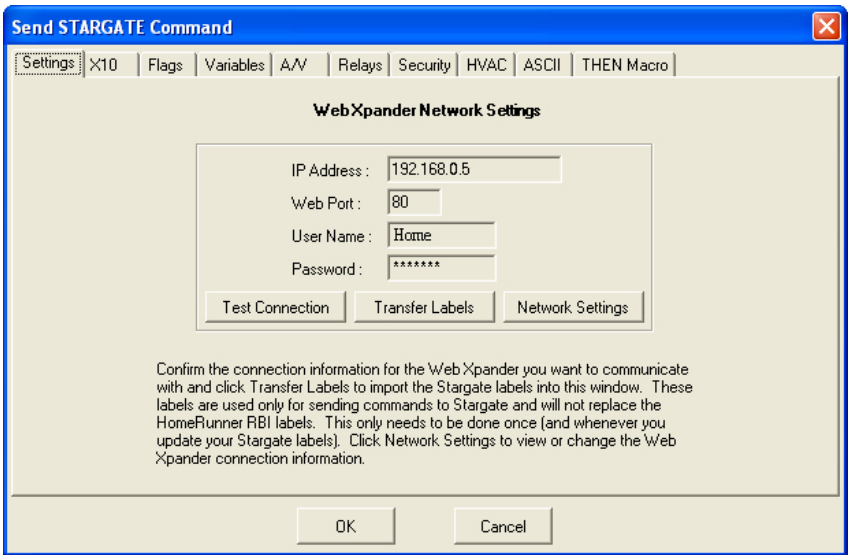
(The **Device ID** and **Command ID** are listed in the **"Define and Configure A/V"** window of the *HomeRunner RBI* application.)
Examples
ASCII Out: :rbi=g1=1,1,1 (send IR command 1 to output 1 of device 1 one time)
ASCII Out: :rbi=g1=2,3,4 (send IR command 2 to output 3 of device 1 four times)

Controlling a Stargate-IP or CommStar-IP from *HomeRunner RBI*

HomeRunner RBI has built-in support for controlling a Stargate-IP (or CommStar-IP) via the Web Xpander. Stargate commands can be triggered by a *HomeRunner RBI* button, scheduled event or Then Macro. The labels for the Send STARGATE Commands are used only when communicating from *HomeRunner RBI* via WebX to tell Stargate to issue a command.

Those labels are imported into the Web Xpander using the WebX Labeler Utility (WebX_Label.exe):
1) From your Stargate computer, close (exit) WinEVM
2) Launch WebX_Label.exe
3) Select "Import from WinEVM"
4) Select DEVICE.DBF in the Stargate folder
5) Click "Send To Web Xpander"

The next step after running the WebX Labeler, is to transfer them to *HomeRunner RBI*:
1) Launch HomeRunnerRBI.exe
2) Click Event Editor
3) Add a new THEN Action (click on a THEN line)
4) Select STARGATE
5) Click the Settings tab
6) Confirm the Web Xpander Network Settings (IP address, username, etc.) are all correct
7) Click "Transfer Labels"



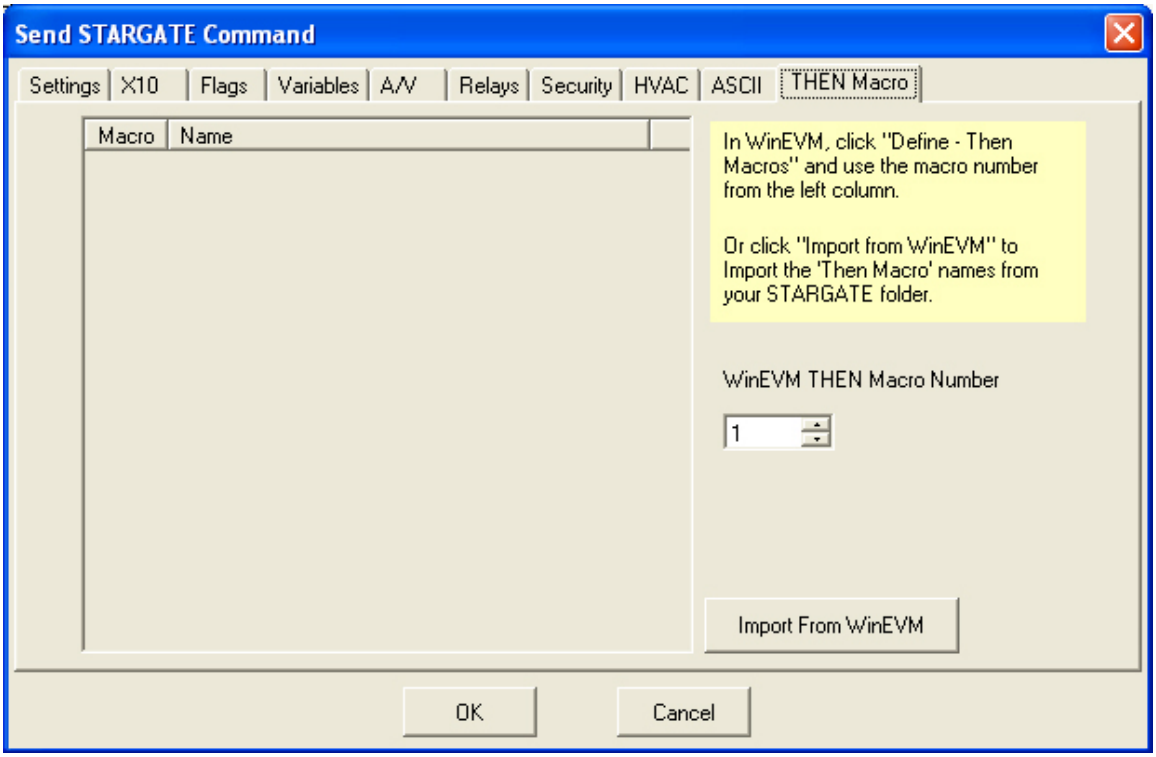
Once completed, the labels will appear in the RBI application when you select a STARGATE then action.

To select a Stargate (or CommStar) command, click the **STARGATE** 'Then' button action. First check the **Web Xpander Network Settings** then click **"Test Connection"** to confirm the information is correct for the Stargate's Web Xpander you want to communicate with. Click **"Transfer Labels"** to import the Stargate labels into this window. These labels are only used as a reference for sending commands to Stargate and will not replace your *HomeRunner RBI* labels. This only needs to be done once (and whenever you update Stargate labels in WinEVM).
If you want your *HomeRunner RBI* to share the same defined labels as your Stargate for X-10 devices, Flags, Variables, and/or Timers, see **Importing Defined Labels From Stargate-IP or CommStar-IP**.

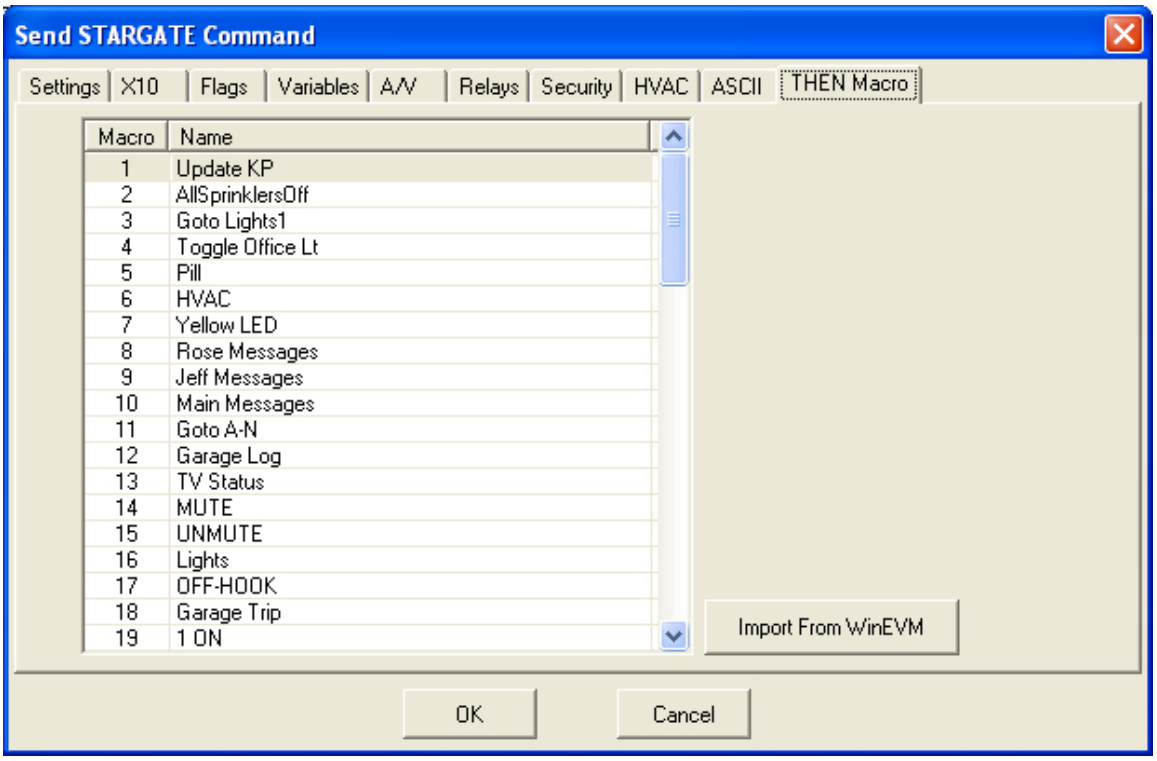
Select the tab at the top for the type of command you want executed (X10, Flags, Variables, etc.). Then select the specific device and command you want and click **OK**.

Importing Then Macros from Stargate-IP or CommStar-IP

When selecting a Stargate Then Macro, you can either enter the Then Macro number that appears in the WinEVM Define – Then Macro database …

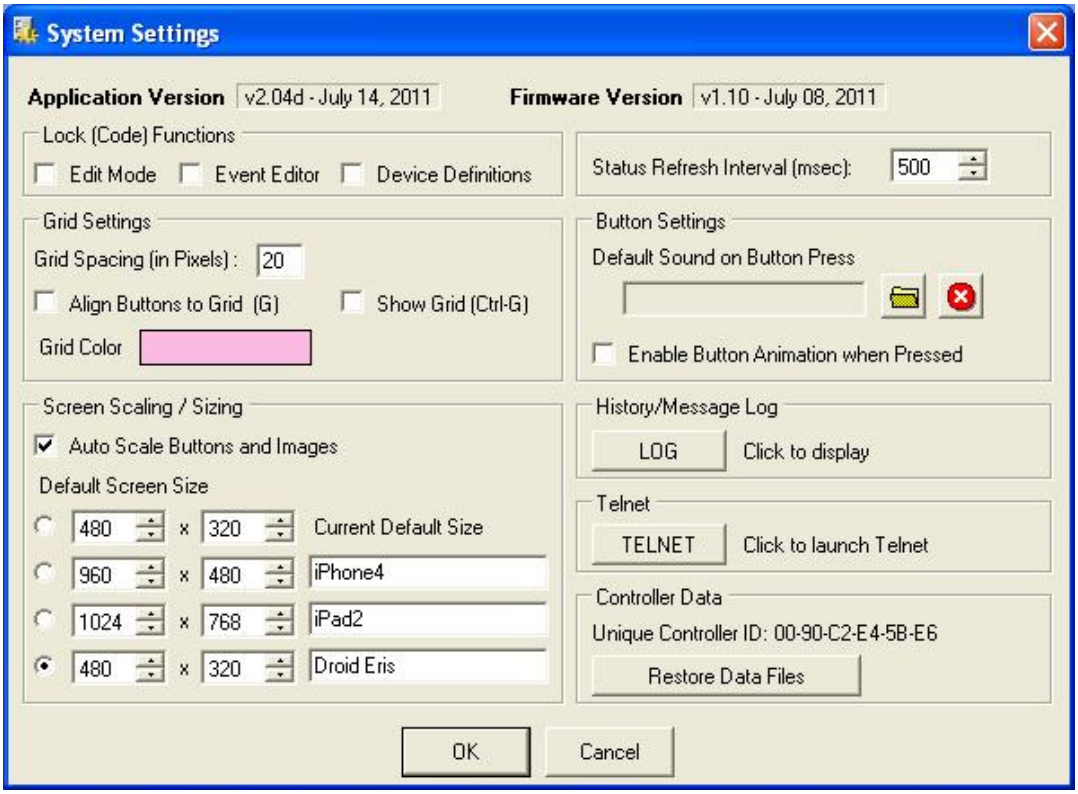


or click **"Import From WinEVM"** to import the Then Macro names for easy selection…



System Settings

The *HomeRunner RBI* application's **System Settings** page includes special functions for editing and securing the Graphic User Interface (preventing unauthorized access) and several diagnostic utilities.
From the toolbar, click **"System"** to access the **"System Settings"** window.
The current *HomeRunner RBI* **Application Version** and **Firmware Version** appear at the top.



Lock (Code) Functions is for preventing unauthorized access to Edit Mode, Event Editor and/or Device Definitions to protect the Graphic User Interface, Event Schedule and/or Defined Device List.
Checking any or all boxes will display a keypad for assigning a **Code** that will be required for access to any or all of these functions. They can each have a different code or share a common code.

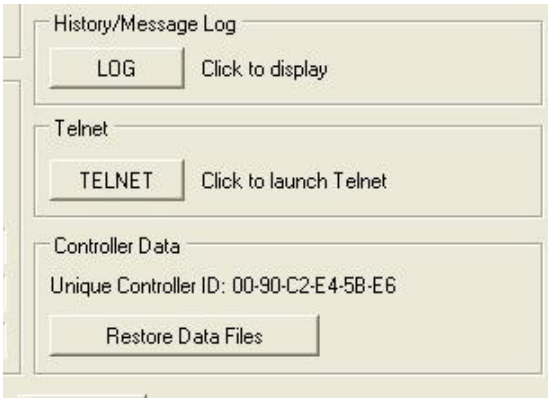
Grid Settings is for adjusting the reference grid to aid in aligning buttons on a screen in Edit Mode. **"Grid Spacing (in Pixels)"** defines the space between each grid line. Checking **"Align Buttons to Grid"** aligns a button to the nearest grid line. Checking **"Show Grid"** will display the grid when in Edit Mode. **"Grid Color"** selects the color of the grid lines.

Screen Scaling/Sizing is for selecting the screen resolution of the Graphic User Interface for both the *HomeRunner RBI* application and published GUI. Checking "Auto Scale Buttons and Images" causes all buttons and backgrounds to resize proportional to the overall screen size. If unchecked, all buttons and backgrounds will maintain their dimensions regardless of screen size (resolution).

Status Refresh Interval (msec) is for selecting the polling rate for screen updates on both the *HomeRunner RBI* application and all connected browsers. The default setting is 500 ms (1/2 second). Faster refresh rates may limit the number of allowable connected browsers.

Diagnostic Utilities

The *HomeRunner RBI* application includes several diagnostic utilities for monitoring system activity and restoring data files. On the right side of the **System Settings** page there are buttons labeled "**LOG**," "**TELNET**" and "**Restore Data Files**."



Viewing the History Log, Messages, Console and Files

Clicking the **"LOG**" button launches the **"Event Log"** which displays a history of each command previously sent or received by *HomeRunner RBI* including the **date**, **time**, command **type** and **description**. (***Good for reviewing activity or troubleshooting after the fact)***

Selecting the **"Messages"** tab displays a log of **programmed messages** and important **system activity** such as **schedule uploads, firmware changes, power failure, power recovery, soft resets and watchdog timeouts**.

From the **"Tools"** tab at top, select **"Show Console"** to display **Event Status** and **SG Link activity** or select **"Show Files"** to display the **"System Files"** and **"Web Files"** stored in the HomeRunner RBI memory and their sizes along with a **"Total File Count"** and **"Free Space"** remaining.

Clicking **"Refresh"** at the bottom refreshes the display with the most recent data appearing last.

Click the **"File"** tab at top to **Save** the **History**, **Messages** or **Console** data as a text file in the **"Logs"** folder.

Viewing the Telnet Log

Clicking the **"TELNET**" button launches a **Telnet Session** which displays *HomeRunner RBI* **Event Status (True or False)** and all **SG Link activity** in **real time**. Listed data can be saved as a text file in the **"Logs"** folder by clicking **"File – Save Telnet Session"** or copied to the clipboard by clicking **"Edit – Copy"** and pasted to an email message or another file. (***Good for reviewing activity or troubleshooting in real time)***

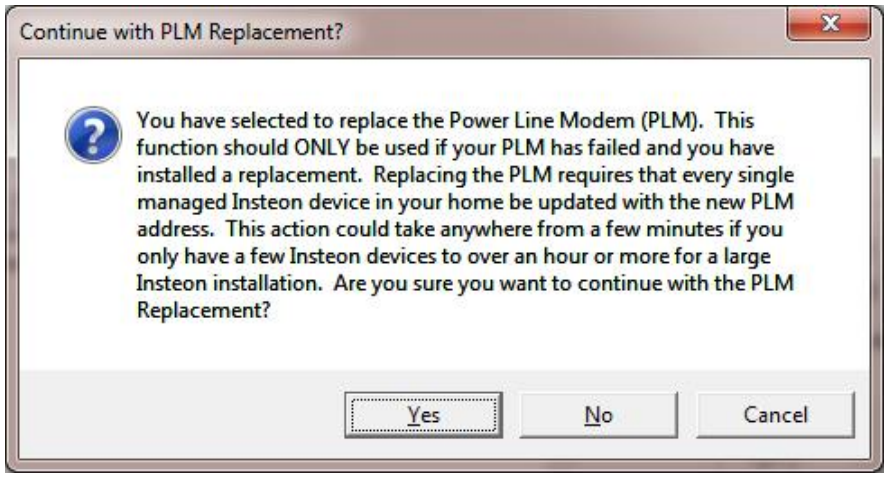
Restoring Data Files

Clicking **"Restore Data Files"** will replace all settings including definitions for all Insteon devices, links, scenes, flags, variables, timers and X10 devices stored in the *HomeRunner RBI* controller. ***This procedure should only be used when restoring a backup copy of your own Insteon network or after you have replaced your controller.***

Replacing the PLM

If the PLM (Power Line Modem) should ever fail and need to be replaced, do the following:

1) Close the *HomeRunner RBI* application.
2) Power down the *HomeRunner RBI* controller (remove the PLM (and power adapter if applicable)).
3) Replace the PLM. **If replacing with the newer model 2413S PLM, you also need to plug a 12VDC (300 mA or higher) power adapter into the *HomeRunner RBI* "12VDC IN" power jack.**
4) Run the *HomeRunner RBI* application. The application will automatically detect the changed PLM and instruct you to go to the **Insteon Configuration** and select the "**Tools"** tab then **"Replace PLM."**
   A pop-up warning will ask **"Continue with PLM Replacement?"** (as shown below).



5) Click **"Yes"** to continue with the PLM replacement process. (Click **"No**" or **"Cancel"** to escape.)

Restoring Factory Defaults

NOTE! THE FOLLOWING PROCEDURES WILL ERASE ALL LINKS AND RESTORE ALL SETTINGS TO THEIR FACTORY DEFAULT VALUES. ALL NETWORK AND TIME SETTINGS, SCHEDULED EVENTS AND GRAPHICS WILL NEED TO BE UPLOADED AFTER COMPLETING THIS PROCEDURE.

SOFT RESET:

1) From the Toolbar, click "System" – "Telnet."
2) Type **factory** in the bottom text box then click "Send."

HARD RESET:

1) Unplug the PLM from *HomeRunner RBI*. (All LEDs turn off.)
2) Remove the four screws from the bottom of the blue case and remove cover.
3) Place a jumper (or screwdriver) across the two RESET pins located next to the red "RUN" LED.
4) Plug in the PLM while maintaining the connection across the RESET pins.
5) Wait until all 3 LEDs blink in unison then remove the connection across the RESET pins.
   (Green and Yellow LEDs will come on steady and red LED will go off (no schedule loaded).
6) Replace the cover.

Diagnostic Display

HomeRunner RBI has a diagnostic indicator button that can assist in troubleshooting communication issues or other system functions. The indicator contains 4 LEDs, each indicating the status of a different system function. To view the Diagnostic Display, create a new button and define it as **"SPECIAL" - "Published Page Diagnostics"** and place it on a published page.

LEDs 1, 2, 3 and 4 are defined as follows:

1) **Heart Beat** - Within the published pages, there's a main "heartbeat" that keeps everything alive. The heartbeat status is represented by a Green LED that toggles between Green (on) and Gray (off) approximately every second when the main heartbeat timer is functioning.

2) **Status** - At regular intervals ("Status Refresh Interval" under System Settings), the published pages query the controller to see if any status changes have occurred (lights on/off, etc.). The controller responds with either "No Changes" or "New Data". The Check Status LED has 4 states:
Gray - When a check status request is initiated by the published page
Yellow - Controller returned no new changes
Green - Controller returned new device status
Red - Command did not complete successfully

3) **Send Command** - Button presses are placed into a queue which is processed sequentially. The Send Command LED has 4 states:
Gray - Nothing in the queue to send
Yellow – Send Command process started
Green - Controller acknowledged command
Red – Send Command failed

4) **SG Link** - Every 10 seconds, the controller pings the WebX to verify connectivity (as well as every time a command is sent or received). The Stargate Link LED has 4 states:
Red - Not Connected
Yellow - Connected but not yet authenticated
Green - Connected and confirmed
Purple - Sent Ping to WebX but waiting for response

The "Normal" status of the LEDs should be:
Heart Beat - Flashes between Gray and Green every second
Status - Flashes between Gray and Yellow rapidly, with a Green flash when something has changed (turn something on or off from outside HR and you'll see it flash green)
Send Command - This will mostly be off (Gray) and will show Yellow then Green as it sends a command in response to a button press on the page
SG Link - This should always be Green (if Stargate-Link is enabled) but will indicate the current SG Link status. The Yellow and Purple states are usually only present for milliseconds so you may never see those colors.

Note: If the Heartbeat (1st LED) isn't blinking then you can't trust any of the remaining 3 LEDs. If the Status (2nd LED) isn't blinking Gray/Yellow you can't trust the SG Link LED.

Supported Devices

INSTEON

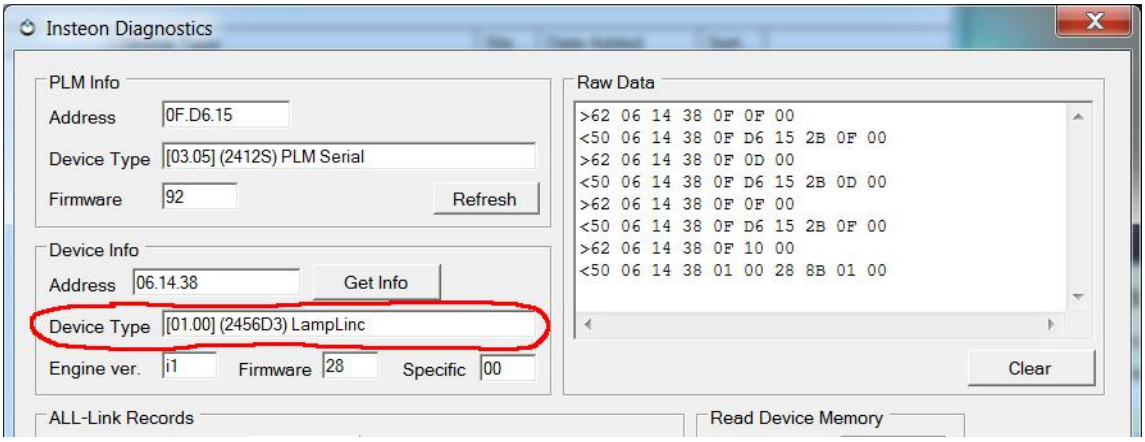
Model	Description
EZSwitch 30	EZSwitch 30
EZFlora	Smartenit EZFlora
EZIO8T	Compacta EZIO8T
EZIO2X4	Compacta EZIO2X4
EZIO8SA	SimpleHomeNet EZIO8SA
EZIO6I	SimpleHomeNet EZIO6I
EZIO4O	SimpleHomeNet EZIO4O
GarageHawk	Garage Module
GarageHawk	Remote Module
B2674-222	LED Bulb PAR38
2342-242	Mini-Remote Switch
2334-232	KeypadLinc Dimmer
2342-232	Mini-Remote (4 Scene)
2334-222	KeypadLinc Dimmer
2342-222	Mini-Remote (8 Scene)
2442-222	Micro Dimmer
2443-222	Micro On/Off Switch
2444-222	Micro Open/Close
2452-222	DIN Rail Dimmer
2411T	IRLinc Transmitter
2634-222	On/Off Outdoor Module
2412S	PLM Serial
2412U	PLM USB
2635-222	Dual-Band On/Off Module
2413S	PLM Dual-Band Serial
2414S	PowerLinc Serial
2414U	PowerLinc USB
2420M	Motion Sensor
2430	ControLinc
2440	RemoteLinc
2663-222	On/Off Outlet
2441V	Thermostat Adapter
2441ZTH	Insteon Wireless Thermostat
2441TH	Insteon Thermostat
2443	Access Point (native support, no need to define)
2444A2WH4	RemoteLinc 2 (4 Scene)
2444A2WH4	RemoteLinc 2 (8 Scene)
2444A3WH	RemoteLinc 2 Switch
2444A2WH8	RemoteLinc 2 (4 Scene)
2444A2WH8	RemoteLinc 2 (8 Scene)
2672-222	LED Bulb 8W
2450	I/O Linc
2454D	SocketLinc

2456D3	LampLinc
2456D2	LampLinc 2-Pin
2456S3E	Outdoor ApplianceLinc
2456ST3	TimerLinc
2456S3	ApplianceLinc
2457D2	LampLinc Dimmer Dual-Band
2457D2X	LampLinc Dimmer 2-Pin
2457D2EZ	LampLinc Dual-Band EZ
2457D2X	LampLinc 2-Pin
2458A1	MorningLinc
2466D	ToggleLinc Dimmer
2466DX	ToggleLinc Dimmer
2466S	ToggleLinc Relay
2466Sx	ToggleLinc Relay
2472D	OutletLinc Dimmer Dual-Band
2473S	OutletLinc
2474DWH	SwitchLinc 2WireDimmer Dual-Band
2474 S/D	SwitchLinc Relay Inline Companion
2475D	In-LineLinc Dimmer
2475D	In-LincLinc Dimmer
2475F	FanLinc
2475DA1	In-LineLinc Dimmer Dual-Band
2475S	In-LineLinc Relay
2475S2	In-LineLinc Relay w/ Sense
2475SDB	In-LineLinc Switch Dual-Band
2476D	SwitchLinc Dimmer
2476DH	SwitchLinc Dimmer
2476DT	SwitchLinc Countdown Timer
2476D	SwitchLinc 600W
2476DH	SwitchLinc Dimmer
2476D	SwitchLinc Dimmer
2476S	SwitchLinc Relay
2476ST	SwitchLinc Relay Countdown Timer
2476SS	SwitchLinc Switch w/ Sense
2476S	SwitchLinc Relay 3-Wire
2477D	SwitchLinc Dimmer Dual-Band
2477DH	SwitchLinc Dimmer Dual-Band (HW)
2477S	SwitchLinc Switch Dual-Band
2477SA1	220/240V 30A Load Controller NO
2477SA2	220/240V 30A Load Controller NC
2484D	KeypadLinc Countdown Timer
2486D	KeypadLinc Dimmer
2486D	KeypadLinc Dimmer
2486D	KeypadLinc Dimmer
2486D	KeypadLinc Dimmer
2486D	KeypadLinc Dimmer
2486D	KeypadLinc Dimmer
2486D	KeypadLinc Dimmer

2486D	KeypadLinc Dimmer
2486S	KeypadLinc Relay
2486S	KeypadLinc Relay
2486S	KeypadLinc On/Off Switch
2486S	KeypadLinc On/Off Switch
2487S	KeypadLinc On/Off Dual-Band
2487S	KeypadLinc On/Off Dual-Band
2487S	KeypadLinc On/Off Dual-Band
2487S	KeypadLinc On/Off Dual-Band
2487S	KeypadLinc On/Off Dual-Band
2491TxE	Insteon Thermostat
2494S220	SwitchLinc 220V
2494S220	SwitchLinc 220V
2842-222	Motion Sensor
2843-222	Open/Close Sensor
2852-222	Insteon Leak Sensor
2676D-B	ICON SwitchLinc Dimmer
2676R-B	ICON SwitchLinc Relay
2982-222	Insteon Smoke Bridge
2814S	ICON PowerLinc Serial
2814U	ICON PowerLinc USB
2856D2	Icon LampLinc 2-Pin
2856S3	ICON Appliance Adapter
2856S3	ICON Appliance Module
2876D	Icon Switch Dimmer
2876DB	ICON Dimmer
2876S	ICON On/Off Switch
2876S	ICON On/Off Switch

If you can't find a specific Insteon device when adding a device to the Insteon Configuration, do the following:

1) From the RBI toolbar, click INSTEON - TOOLS - ADVANCED - INSTEON DIAGNOSTICS.
2) In the **"Device Info"** section, type the Insteon address of the new device into the **"Address"** box then click **"Get Info."**
3) Email the results that appear in the **"Device Type"** box (circled in red below) to: support@jdstechnologies.com.



X-10

Supports all 256 addresses (A1 – P16),
Supports all Standard Commands (On/Off/Dim/Bright/All Lights On/All Units Off/Preset Dim)
Does NOT support Extended Codes (i.e. Leviton Preset Dim and Scene commands)

SERIAL

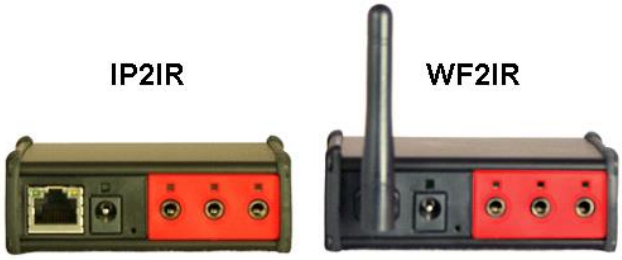
ASCII Output (up to 115,200 bps, asynchronous)
<b__> Binary value from 0 to 255 (i.e. <b5> or <b203>)
<h__> Hex value from 0 to ff (i.e. <h0f> or <h3c>)
<f__> Flag from 1 to 256 (i.e. <f5> or <f204>)
<v__> Variable from 1 to 256 (i.e. <v5> or <v204>)
<t__> Timer from 1 to 32 (i.e. <t3> or <t10)
<d> Current Date
<m> Current Time

NETWORK

Global Cache: IP2IR and WF2IR

Audio/Video Control with HomeRunner RBI

HomeRunner RBI supports the Global Cache IP2IR and WF2IR infrared transponders for control of all your audio and video components via infrared (IR). The **IP**2IR connects to your network router with a standard network cable. The **WF**2IR is wireless and connects via Wi-Fi. *HomeRunner RBI* communicates to them over the same network (requires *HomeRunner RBI* application **version 2.06 or higher**).

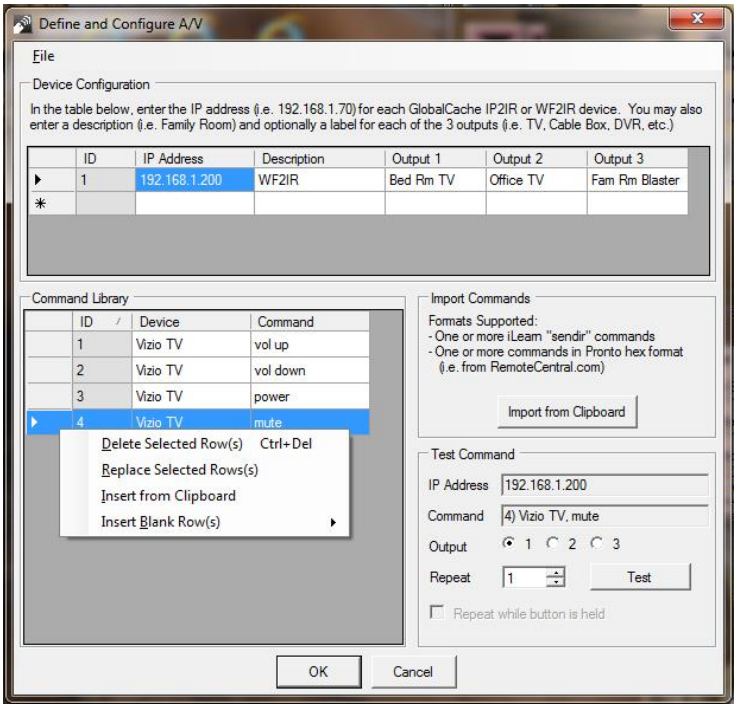


Both models provide multiple outputs (2 standard, 1 blaster) and come with 3 standard emitters, one IR blaster and the required power adapter. The IP2IR and WF2IR do not store IR commands. They convert the IR command data from *HomeRunner RBI* into corresponding infrared signals. All IR commands get stored in the *HomeRunner RBI* controller and backed up on your computer in your *HomeRunner RBI\Data* folder.

IR codes for all your A/V devices (TV, receiver, DVD, CD player, etc.) can either be downloaded from www.RemoteCentral.com or "learned" using Global Cache's **"iLearn"** software to capture commands with the remote control pointed at the unit's IR sensor (http://www.globalcache.com/files/software/iLearn.exe). All codes (downloaded or learned) get copied then imported into the *HomeRunner RBI* Command Library.

Click the **"A/V"** toolbar button to access the **"Define and Configure A/V**" window (shown below).
In the **"Device Configuration"** section, enter the IP address of the IP2IR or WF2IR. You can also type a description and name the outputs (optional).

After copying a command or group of commands to the clipboard (instructions on next page), click **"Import from Clipboard"** to place the command(s) in the **"Command Library."**

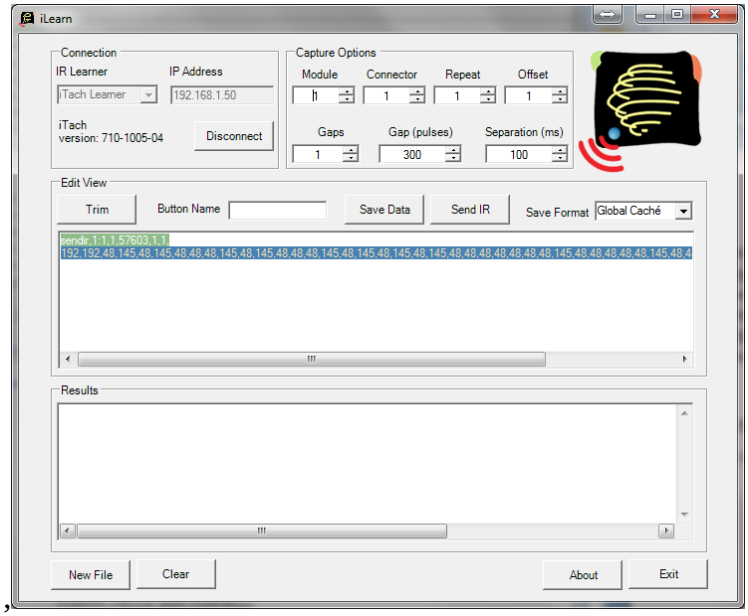


Right-click the **left box** of any row to pop-up a menu of options (Delete or Replace Selected Row(s), Insert from Clipboard (above the selected row) or Insert Blank Row(s) above or below the selected row).

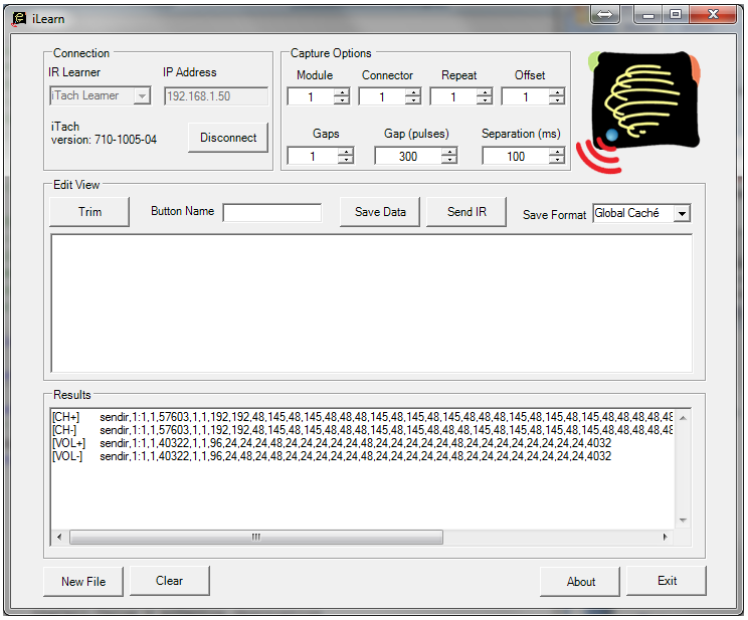
Copying IR Commands to the Command Library

There are 4 ways to copy IR commands into *HomeRunner RBI*'s Command Library:
1) Single Learned command, 2) Multiple Learned commands, 3) Single Downloaded command, 4) Multiple Downloaded commands.

1) **Single Learned Command (using iLearn software)**
   Set "IR Learner" to **Itach Learner,** enter the device's **IP address** and press **"Connect."**
   Aim the remote at the device's IR sensor and press the button to learn. Click **"Trim"** then select <u>all</u> the remaining text in the **"Edit View"** section with the mouse and press Ctrl-C to copy that command to the clipboard.

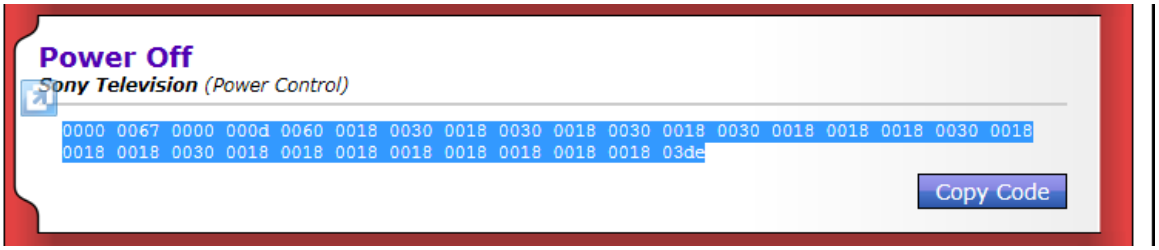


2) **Multiple Learned Commands (using iLearn software)**
   Set "IR Learner" to **Itach Learner,** enter the device's **IP address** and press **"Connect."**
   For each command, type a **"Button Name,"** aim the remote at the device's IR sensor and press the button to learn, then click **"Trim,"** then **"Save Data**" to place the data into the **"Results"** section.
   After all commands are learned, select <u>all</u> the text in the Results section with the mouse and then press **Ctrl-C** to copy the data to the clipboard. Command names are automatically imported with IR data.



3) **Single Downloaded Command (hex format from RemoteCentral.com)**
Select the series of 4 digit hex values with the mouse and then press **Ctrl-C** to copy the data to the clipboard. (RemoteCentral.com also offers a "Copy Code" button that works on some browsers.)

Example: (http://files.remotecentral.com/library/3-1/sony/television/power_control/index.html)



4) **Multiple Downloaded Commands (hex format from RemoteCentral.com)**
Select the command names (i.e. TV Power, Mute, System Off, etc.) along with the corresponding hex data and then press Ctrl-C to copy it all to the clipboard. *HomeRunner RBI* will parse the data and import the command names along with the IR data.

Example: http://www.remotecentral.com/cgi-bin/codes/sony/kp-53xbr200/

After copying a command or group of commands to the clipboard, click **"Import from Clipboard"** in the *HRRBI* **"Define and Configure A/V**" window to place the command(s) in the **"Command Library."**

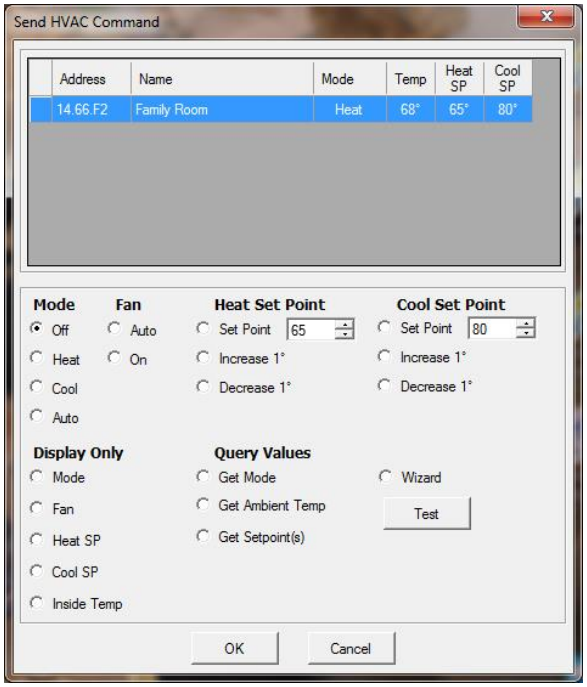
HVAC Control with HomeRunner RBI

HomeRunner RBI supports the Venstar T1700 thermostat for automated and manual control of heating, ventilation and air conditioning (HVAC). The T1700 communicates to/from *HomeRunner RBI* via Insteon signals carried over the existing electrical wiring. It directly replaces most thermostats using the existing low-voltage thermostat wiring. No additional wiring is required. For details on installing the Venstar 1700, see**:** http://venstar.com/Support/Installation/T1700ManualInstallRev1.pdf.

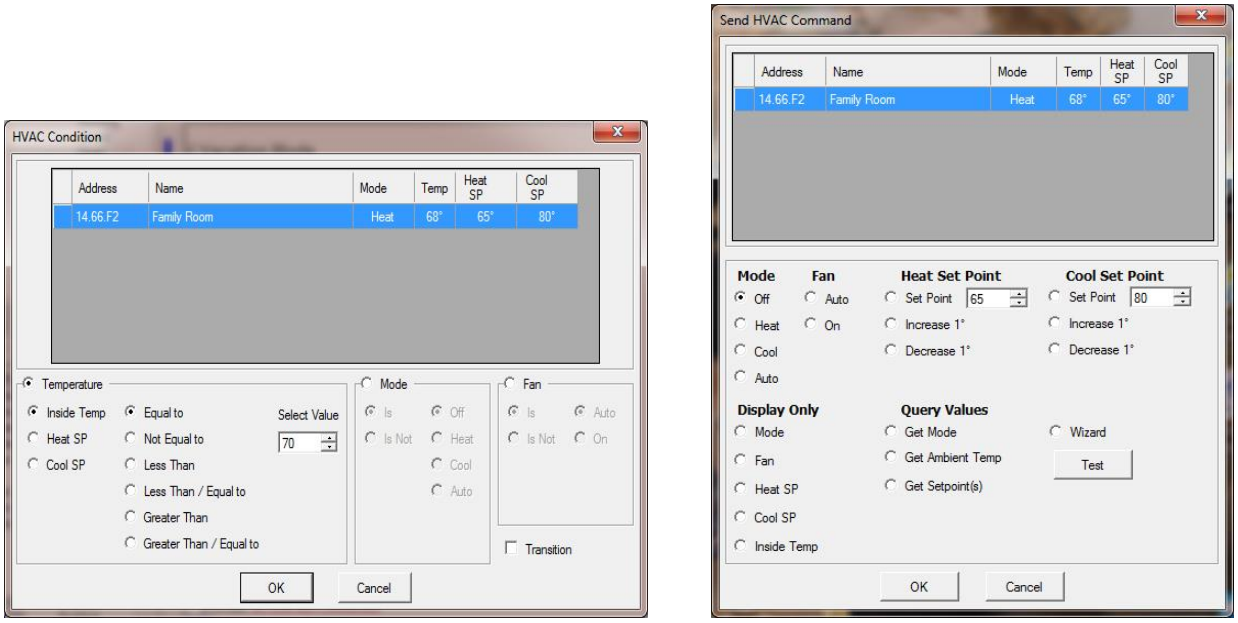
The T1700 thermostat can be operated from the front panel buttons, remotely via *HomeRunner RBI* or from any Insteon controller to control set point temperatures, mode (heat, cool, auto or off) and fan mode (on, auto). It automatically reports status changes to keep *HomeRunner RBI* up to date with the current settings.

To add a T1700 thermostat to your Insteon Configuration, follow the instructions for Add By Address in the "Adding an Insteon Device" section on page 28. Thermostats install in the same manner as other Insteon devices.

For manual control from *HomeRunner RBI*, you can add buttons to perform and/or display any of the HVAC functions or simply use the built-in HVAC Wizard. Once you have added the T1700 thermostat to your Insteon Configuration, click **"New Button"** then **"HVAC"** to access the "Send HVAC Command" window (as shown below). From there you can assign any HVAC function to a button. If multiple thermostats are used, first select the thermostat at the top, and then assign the function.



For automated control of HVAC, you can create If/Then events to trigger any HVAC action based on time or any set of conditions.



HVAC If Conditions and Then Actions

Example:

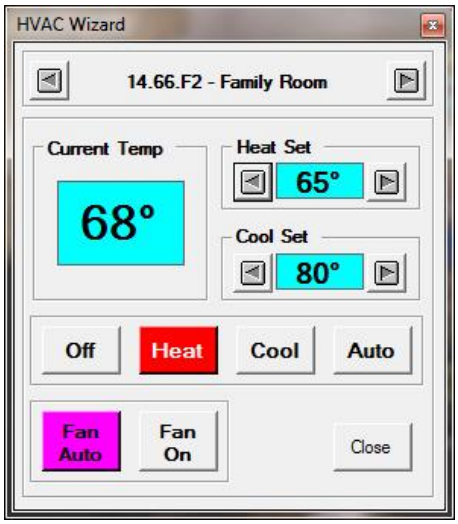
// Away Mode

IF

FLAG: Away Mode is Set

THEN

HVAC: 12.34.56 – Family Room Heat SP: 65°



HVAC Wizard

I/O Control with HomeRunner RBI

HomeRunner RBI supports the SimpleHomeNet EZIO series of Input and Output modules for applications requiring hardwired inputs and/or relay outputs (garage doors, motion sensors, sprinklers, etc.). *HomeRunner RBI* communicates with the EZIO modules via Insteon signals carried over the existing electrical wiring. I/O modules can be placed where needed eliminating the need for long wire runs to a central location. (Requires *HomeRunner RBI* software version 2.09 or higher and firmware version 1.15 or higher.)

The EZIO8SA provides 4 opto-isolated inputs and 8 relay outputs and requires its own PLM and AC adapter (as shown below). All other EZIO devices plug directly into an AC receptacle and have screw terminal connections at the bottom. For details on all SimpleHomeNet EZIO modules see: http://www.simplehomenet.com/cats.asp?id=12.

HomeRunner RBI supports **only opto-isolated inputs** and **all relay outputs** on the following EZIO devices:
EZIO2X4: 2 opto-isolated inputs (3-30VDC) / 2 relay outputs (normally open)
EZIO8SA: 4 opto-isolated inputs (3-30VDC) / 8 relay outputs (normally open/normally closed)
EZIO4O: 4 relay outputs (normally open/normally closed)
EZIO6I: 4 opto-isolated inputs (3-30VDC)
(HomeRunner RBI does not currently support analog or one-wire inputs.)

To add an EZIO module to your Insteon Configuration, follow the instructions for Add By Address in the "Adding an Insteon Device" section on page 28. EZIO devices install in the same manner as other Insteon devices. Each input and output will appear as a separate line in the Insteon Device list. (Requires *HomeRunner RBI* software version 2.09 or higher and firmware version 1.15 or higher.)

When installing an EZIO8SA, before adding it to the Insteon Device List, make sure its PLM is new or reset to the factory default settings. To reset the PLM to factory defaults, press and hold the "Set" button as you apply power, wait 5 – 10 seconds then release the button. The LED will glow dim after several seconds**.**
Do not confuse the EZIO8SA's PLM with the one connected to the HomeRunner RBI!
Only reset the EZIO8SA's PLM!

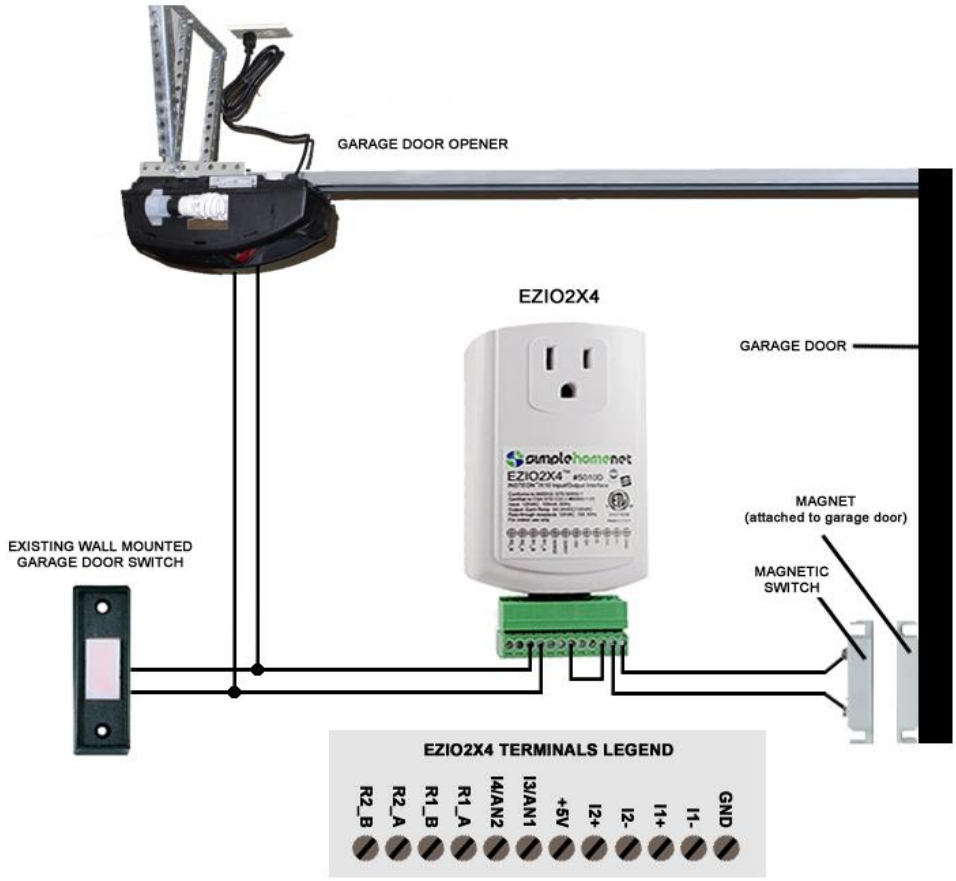
Although EZIO Inputs can be used as Controllers in scenes and Relay Outputs can be used as Responders, it is best to **use events rather than scenes to control relays and respond to input status changes.** *(Only one relay can be included as a Responder in a given scene, whereas multiple relays can be included in the Then section of an event.)*

Controlling and Monitoring Garage Doors

The EZIO2X4 can be used to provide independent monitoring and control of up to 2 garage doors.

To monitor the status, each door requires a magnetic contact switch which connects to one of the two opto-isolated inputs of the EZIO2X4. Since the inputs require a low voltage, add a small jumper from the **"+5V"** terminal to the **"I1+"** terminal for door #1 and to the **"I2+"** terminal for door #2. Then connect the **"I1-"** and **"GND"** terminals to the magnetic contact switch of door #1 (see diagram below). For door #2's magnetic contact switch, use the **"I2-"** and **"GND"** terminals.

To control (open/close) the door(s), connect a pair of wires from the EZIO2X4 relay terminals to the two wires of the existing wall mounted pushbutton switch. Use **"R1_A"** and **"R1_B"** relay terminals for garage door #1 and **R2_A"** and **"R2_B"** relay terminals for garage door #2.



Once the EZIO2X4 has been added to the Insteon Configuration device database and connected as shown, you can add buttons to the layout and/or events to the schedule to monitor and control the garage door as desired. Different images can be used to indicate a door is open or closed. You can define a Garage Door button as a **Button Macro** so the button image displays the open/closed status of garage door and pressing the same button triggers the relay to open or close it. The **"Confirm (OK/Cancel)"** option should also be selected to prevent inadvertent operation of the garage door from a smartphone or any other device. For more security, you can use the **"Lock (Code)"** option and assign a code (up to 16 digits) required to open or close the garage.

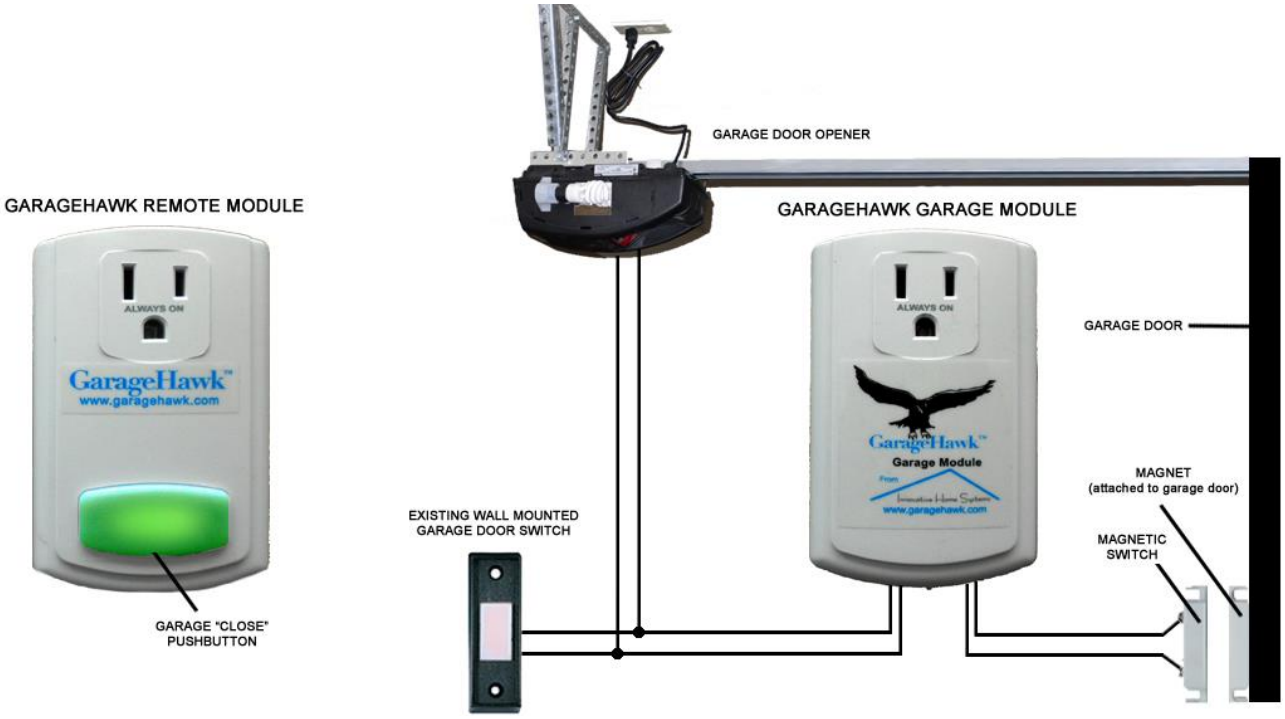
// Garage Status Email

```
IF
   INSTEON: 0F.D6.15 Garage Door Is On
THEN
   EMAIL: Garage Open
ELSE
   EMAIL: Garage Closed
```

Closing and Monitoring Garage Doors with GarageHawk

The GarageHawk Garage Monitor System can be used to provide monitoring and control of garage doors (close only) with or without a central controller (i.e. HomeRunner RBI). The GarageHawk system consists of two different modules, a Garage Module and a Remote Module. Your system may have one or more of each type of module depending on your needs.

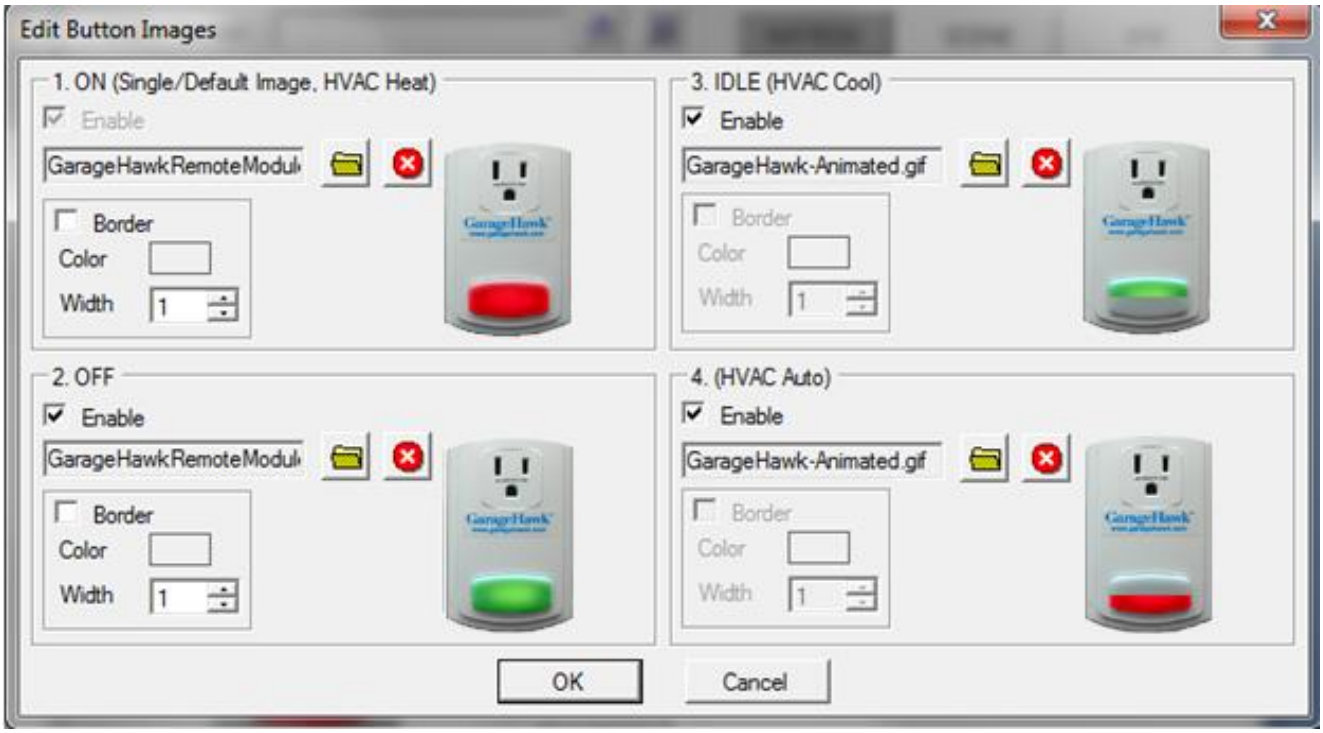
The Garage Module connects to your existing wall mounted push button switch to enable a door close request. The Garage Module also connects to the included magnetic contact switch to detect the closed position of the garage door (see below). One Garage Module is required for each garage door that is to be monitored or controlled. The Remote Module plugs into any outlet in the house and has a large illuminated pushbutton that indicates garage door status (red = open, green = closed) and closes the door when pressed. Remote Modules are paired with one or more Garage Modules and will display the combined status of all Garage Modules they are paired with. One or more Remote Modules can be used to monitor the overall status of multiple garage doors (red = one or more doors open, green = all doors closed). Pressing the large illuminated (red) button on any Remote Module will attempt to close all garage door(s) that are reported as open and will illuminate Green when all doors are closed.



For integration, monitoring and control by HomeRunner RBI, all Garage Modules and Remote Modules must be added to your HomeRunner RBI Insteon Configuration. Garage monitoring and control is accomplished through one or more Remote Modules and/or from HomeRunner RBI. While it is possible to send a "Request Garage Close" command directly to a Garage Module, the preferred method is to send a "Request Garage Close" command **only to a Remote Module**. This will keep the entire GarageHawk system in-sync and will not interfere with the normal GarageHawk module-to-module communications. Garage Modules automatically send status changes (door open, door closed, door closing, error) to HomeRunner RBI whereas the Remote Module needs to be polled to keep track of Remote Module status.

When incorporating the GarageHawk into scheduled events or scenes, treat the Garage Module as an Insteon "Controller" and the Remote Module as an Insteon "Receiver."

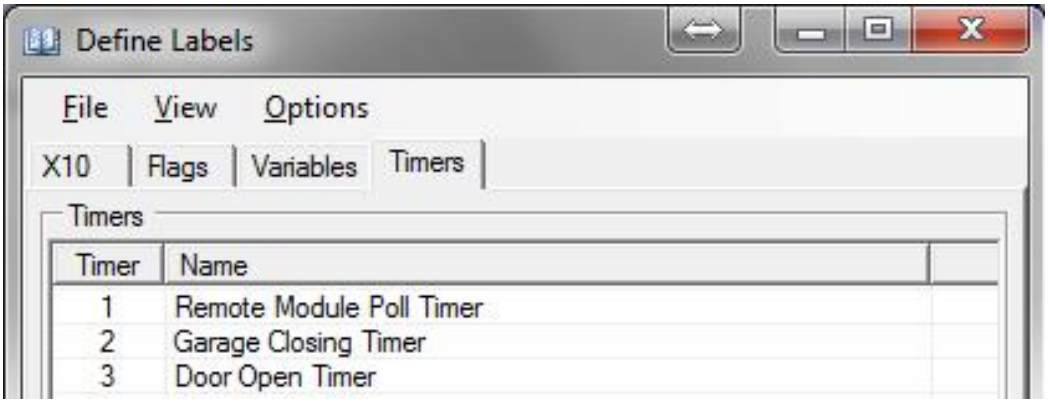
For monitoring garage door status from HomeRunner RBI, an Insteon button can be created with 4 images. The first image represents the Remote Module in the "ON" state with a Red button indicating an Open garage condition. The second image represents the Remote Module in the "OFF" state with a Green button indicating a Closed garage condition. The third image (animated blinking Green button) gets displayed while the garage is closing. The fourth image (animated blinking Red button) gets displayed if there is a communication error or if the garage door fails to close (i.e., due to an obstruction).



The button action is simply an INSTEON "Request Garage Close" command to the Remote Module.
Note: It is best to send the "Request Garage Close" to a Remote Module and not directly to a Garage Module.

The "Confirm (OK/Cancel)" option should also be selected to prevent inadvertent closing of the garage door from a smartphone or tablet.

To keep the HomeRunner RBI status in sync with the Remote Module, several Events need to be added to the HomeRunner RBI schedule and some Timers defined (as shown below).



Timer 1 (Remote Module Poll Timer) is used to poll the Remote Module's status every 1 minute.
Timer 2 (Garage Closing Timer) loads with 1 minute when a "Request Garage Close" is detected.
(This increases the polling of the Remote Module to every 10 seconds while the door is closing.)
Timer 3 (optional) sends an email notification if the garage remains open for more than 5 minutes.

EVENTS:

// Remote Module Poll (Poll Remote Module every minute)
IF
TIMER: Timer 1 "Remote Module Poll Timer" Is Not Running
THEN
INSTEON Device: 0F.63.E4 - Remote Module Refresh Status
TIMER: Timer 1 "Remote Module Poll Timer" Load w/ 00:01:00

// Update Remote Module (When Garage Module sends an update, poll Remote Module)
IF
INSTEON: 0F.66.BE - Garage Module Received/Sent On
or INSTEON: 0F.66.BE - Garage Module Received/Sent Off
THEN
DELAY: 00:00:05
INSTEON Device: 0F.63.E4 - Remote Module Refresh Status
DELAY: 00:00:05
INSTEON Device: 0F.63.E4 - Remote Module Refresh Status

// Garage Request Close (Start 1 minute "Closing Timer")
IF
INSTEON: 0F.63.E4 - Remote Module Received/Sent Fade Down
THEN
TIMER: Timer 2 "Garage Closing Timer" Load w/ 00:01:00

// Garage Closing (Poll every 10 seconds while "Closing Timer" is running)
IF-ALWAYS
TIMER: Timer 2 "Garage Closing Timer" Is Running
THEN
INSTEON Device: 0F.63.E4 - Remote Module Refresh Status
DELAY: 00:00:10

// Garage Opened (When garage is opened, set 5 minute timer)
IF
INSTEON: 0F.63.E4 - Remote Module Is On
THEN
TIMER: Timer 3 "Door Open Timer" Load w/ 00:05:00

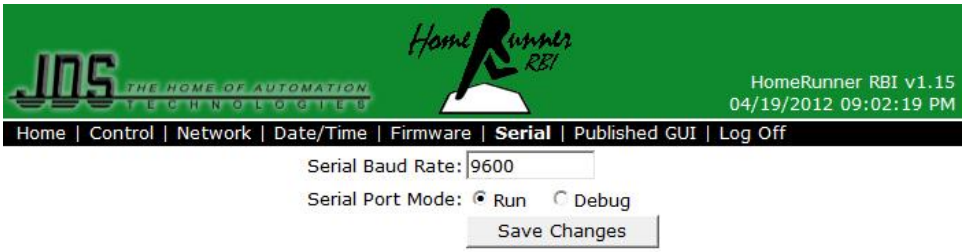
// Garage Left Open (5 minute timer expired, send “garage left open” email)
IF
TIMER: Timer 3 "Door Open Timer" Is Expiring
and INSTEON: 0F.63.E4 - Remote Module Is On
THEN
EMAIL: Garage Left Open <d> <m>

// Garage Closed (Reset timers when garage is closed)
IF
INSTEON: 0F.63.E4 - Remote Module Received/Sent Off
THEN
TIMER: Timer 2 "Garage Closing Timer" Clear
TIMER: Timer 3 "Door Open Timer" Clear
EMAIL: Garage Closed <d> <m>

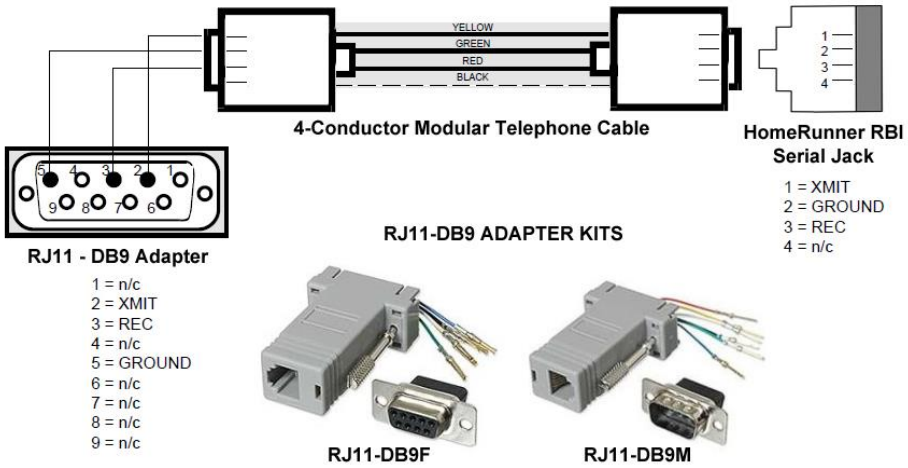
Serial Port Configuration and Connections

HomeRunner RBI has a serial port on the rear panel that can be connected to an alarm panel, audio/video component or any serial device capable of communicating via ASCII text over an RS-232 connection. The Data Format is: 8 Data Bits, No Parity, One Stop Bit, Baud Rates up to 115200 bps (default = 9600 bps), Asynchronous. The serial port can be set to **"Run"** mode or **"Debug"** mode. When set to "Run" mode, the RS-232 serial port sends and receives ASCII text. "Debug" mode (default) is reserved for special diagnostics only and will not send or receive ASCII text when selected.

To set the serial port to **Run** mode, click the **"Controller"** toolbar button then select the **"Serial"** tab. Type the **"Serial Baud Rate"** desired (in bps) using numbers only with no comma, select **"Run"** then click **"Save Changes."**

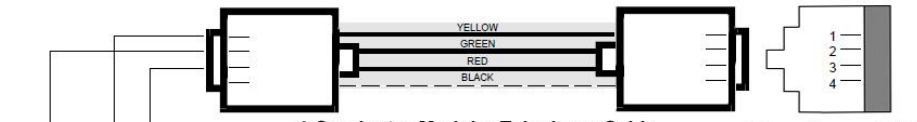


The pin out of the Rear Panel Serial Jack is as follows: **Pin 1 = Transmit, Pin 2 = Ground, Pin 3 = Receive, Pin 4 = No Connection.** To connect to a computer com port, use a standard 4-conductor modular telephone cable (reversed, not straight-through) and an **RJ-11 to DB-9 adapter** configured as shown in the diagram below. Since adapter pin configurations are not standardized, you will need an adapter kit to manually insert the three wire pins into the correct positions (unused wires should be cut or taped and stored). **"RJ11-DB9 Adapter Kits"** are available from a variety of sources with either male or female ends, depending on your requirement. To connect to a computer **USB port**, use an **RJ11-DB9F** (female end) adapter and add a **USB-to-Serial Adapter** with a male (DB9M) connector (http://sewelldirect.com/usbtoserial.asp).



Preconfigured and tested RJ11-DB9F adapter cables are available on special order.

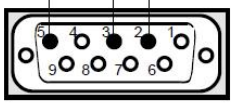
When connecting to a device whose serial port is configured for a computer (such as an alarm panel or audio/video component), you need to reverse (swap) the wires going to pins 2 and 3 on the *HomeRunner RBI's* DB-9 adapter to establish proper communication (or add an in-line null adapter). The "Transmit" (Pin 1) of the *HomeRunner RBI* Serial Jack must connect to the "Receive" (Pin 3) of the RJ11-DB9 Adapter and the "Receive" (Pin 3) of the *HomeRunner RBI* Serial Jack must connect to the "Transmit" (Pin 2) of the RJ11-DB9 Adapter. The "Ground" (Pin 2) of the *HomeRunner RBI* Serial Jack connects to "Ground" (Pin 5) of the RJ11-DB9 Adapter.



4-Conductor Modular Telephone Cable

HomeRunner RBI Serial Jack

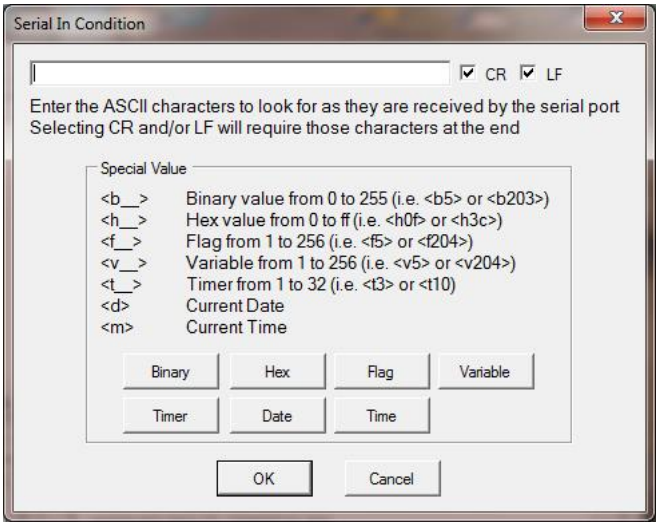
1 = XMIT
2 = GROUND
3 = REC
4 = n/c



RJ11 - DB9 Adapter (to Serial Device)

1 = n/c
2 = REC
3 = XMIT
4 = n/c
5 = GROUND
6 = n/c
7 = n/c
8 = n/c
9 = n/c

HomeRunner RBI events can respond to Serial input up to 32 ASCII characters in length. Event Then statements can send up to 150 ASCII characters in length. Selecting Carriage Return (CR) and/or Line Feed (LF) will require those characters at the end of the Serial ASCII string.



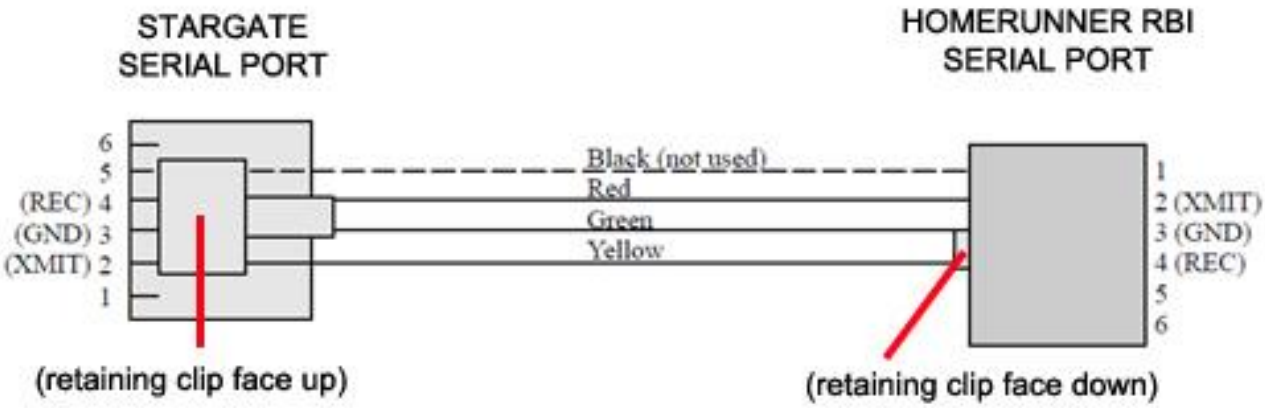
Example:

```
// HEAT SET PT = 68
IF
   SERIAL: HeatSP=68
THEN
   HVAC: 00.00.00 Heat SP: 68°

// Armed AWAY
IF
   FLAG: Flag 103 "Armed AWAY" Is Set
THEN
   SERIAL: Arm Partition 1
```

Connecting HomeRunner RBI's Serial Port to a Stargate Serial Port

To connect HomeRunner RBI's serial port directly to a Stargate (or CommStar) serial port, you need to construct a null data cable to connect the transmit pin of Stargate to the receive pin of HomeRunner RBI and vice versa.



For the STARGATE end you can use a 4 or a 6 pin modular plug. If a 6 pin plug is used, be sure to insert the 4 wires as shown, leaving the outer two pin positions (1 & 6) empty.

For the HomeRunner RBI end you must use a 6 pin modular plug and offset the wires as shown, leaving the last two pin positions (5 & 6) empty.

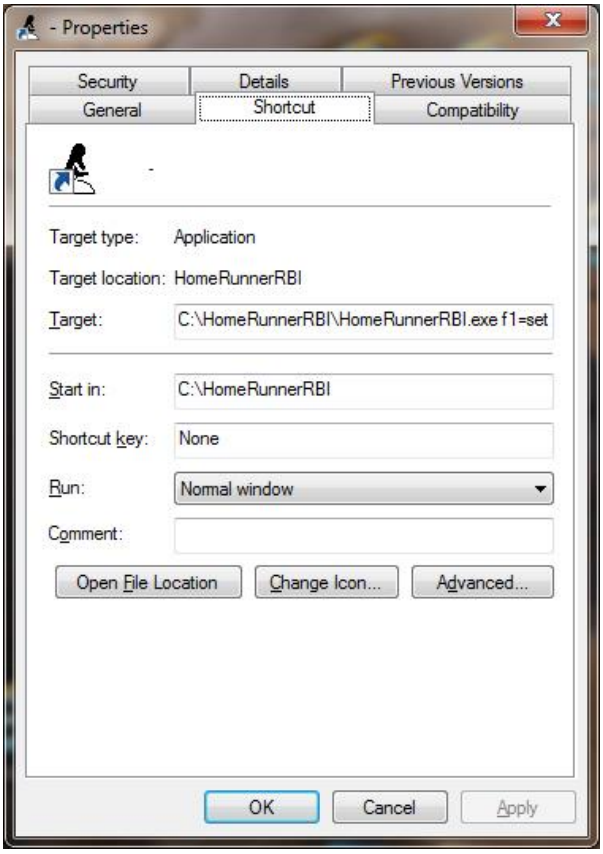
Hint: Take a standard 4-conductor modular phone cable, cut off one plug end and replace it with a 6-pin plug as shown for the HomeRunner RBI side.

Using Windows Desktop Shortcuts to Control HomeRunner RBI

You can use shortcuts on your Windows desktop to manually trigger *HomeRunner RBI* commands without having to first launch the *HomeRunner RBI* application. These shortcuts can also be pinned to the taskbar for convenient access while using the computer for other purposes.

To create a shortcut:
1) From Windows Explorer navigate to the folder where your **HomeRunnerRBI.exe** file is located.
2) Using the right mouse button, click on the **HomeRunnerRBI.exe** file and drag it to the desktop.
3) Release the right mouse button and select the **"Create Shortcut Here"** option.
4) **Right-click** on the new shortcut icon and select **"Properties"** to edit the shortcut properties.
5) In the **"Target"** box, **add a space** at the end of the displayed path **followed by the command**.
(The format for the command is the same as described in the section **"Controlling *HomeRunner RBI* from a Stargate-IP or CommStar-IP"** except **without** the "**ASCII Out: :rbi=**" portion.)
6) Click "**Apply**" then "**OK**" to save the changes and close the Properties window.

Example:
Target: C:\HomeRunnerRBI\HomeRunnerRBI.exe f1=set



7) Right-click again on the new shortcut and select **"Rename"** and type a name for the shortcut.

Drag the new shortcut into the taskbar.

iPad Wall Mounting Options

Here are some third-party accessories for wall mounting your iPad. The ones shown below provide a hidden power connection for a clean, professional installation.

http://www.theipadframe.com/

http://www.vidabox.com/products_ipadmount.php

http://www.firebox.com/product/2910/Wallee-iPad-Case?aff=512&awc=550_1302496609_71554019e6ab139acd570b373296fd36

SPECIFICATIONS

Power Input: 9 - 12VDC @ 300mA (not required with model 2412S PLM)
Front LEDs: “SEND” (Green), “RECV” (Yellow), “RUN” (Red)
Rear Connections: “NETWORK” (Ethernet, RJ45),
“SERIAL” (RS232, RJ21),
“PLM” (Power Line Modem, RJ45),
“12VDC IN” (9 - 12 VDC @300mA, 2.1mm coax (positive or negative center)
Serial Port Pin Out: 1=Transmit, 2=Ground, 3=Receive, 4=Not Used
Serial Port Baud Rate: up to 115,200 bps, asynchronous
Data Format: 8 Data Bits, No Parity, One Stop Bit
Delay Timers: 16 simultaneous (shared)
Dynamic Timers: 32
Variables: 256
Flags: 256
X-10: 256
Insteon Devices: 1024
Total System Links: 5000
Insteon Scenes: 500 max.
History Log: 512 lines (FIFO)
Message Log: 128 lines, 32 characters/line (FIFO)
Total User Memory: 2.9 MB
Maximum Events: 1024 or 50,000 bytes maximum compiled
Maximum Then Macros: 256 or 20,000 bytes maximum compiled
Dimensions: 5.5" x 4" x 1.5"
Net Weight (controller only): 0.5 lbs.
Required Operating System: Windows XP, Vista or 7 (32- or 64-bit)
Required Available Disk Space: 3 MB
Default Network Settings:
User Name: Home
Password: Runner
DHCP: ON
IP Address: 192.168.0.5
Gateway: 192.168.0.1
Netmask: 255.255.255.0
DNS: 192.168.0.1
Web Port: 80
SMTP Port: 25

Updates to this manual are available at:
http://www.jdstechnologies.com/HomeRunnerRBI/HomeRunnerRBIUserManual.pdf