Adding Lutron Caséta to Compass Control

Lutron Caséta and Compass Control

Caséta is the smallest yet powerful wireless home system provided by Lutron. It uses the same protocol as Lutron HomeWorks (HW) and RadioRa2 (RR2), which is the ClearConnect Protocol. Unfortunately, the Caséta JSON export is not compatible as the XML export that HW and RR2 would provide. This guide will go through the steps on how to integrate Lutron Caséta into Compass Control with bi-directional control. The guide must be followed step by step to ensure proper function.

Before Getting Started

Before going into Compass Navigator, please configure the Lutron Caséta environment using the "Lutron App for Caséta Wireless" available for iOS iPhone **(iPhone app may install into an iPad if needed).** Please add all devices, such as lights and shades, and make sure that the Lutron Caséta app has total control of the Lutron system. **The Lutron Caséta environment must be setup 100% before proceeding with this guide**. Here is the general outline that will be done by following this guide.

- Obtaining the Lutron Integration IDs and Network Information
- Adding/Editing the Lutron Module and Editing the Driver
- Configuring the Lutron module in the Modular Project

Obtaining the Lutron Integration ID Information and Network Information

After completing the Caséta setup, please follow these steps to get the Lutron ID info. Every Light/Shade is identified by an ID number that is unique to all other devices. **This ID is mandatory for 1-way and 2-way control.**

1. In the Lutron Caséta App, please navigate to the Settings, which is the small gear icon located on the top left side of the app (Figure 1).

Figure 1- Settings Icon

2. Inside of Settings, scroll down and select the "Advanced" tab (Figure 2).

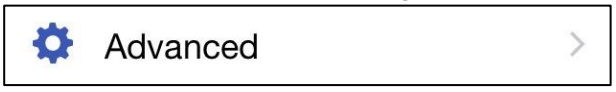

Figure 2 – Advanced

3. Inside of “Advanced”, scroll down and select the “Integration” tab (Figure 3).

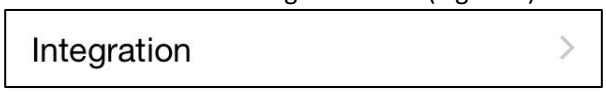

Figure 3 – Integration Tab

4. Inside of “Integration”, Toggle “Telnet Support” to enabled. It will highlight with dark blue to confirm (Figure 4).

Figure 4 – Telnet Support On

5. Inside of “Integration”, scroll down and select the “Network Settings” tab (Figure 5).

Figure 5 – Network Settings

6. Inside of “Network Settings”, disable DHCP to configure the Caséta Bridge as static (Figure 6). Record the IP Address and keep it nearby for this is the IP Address used in Compass Control. Select “Save” on the top right to configure the bridge. A pop up will ask to confirm the changes. Select “I Understand” and the menu will return to the “Integration” tab.

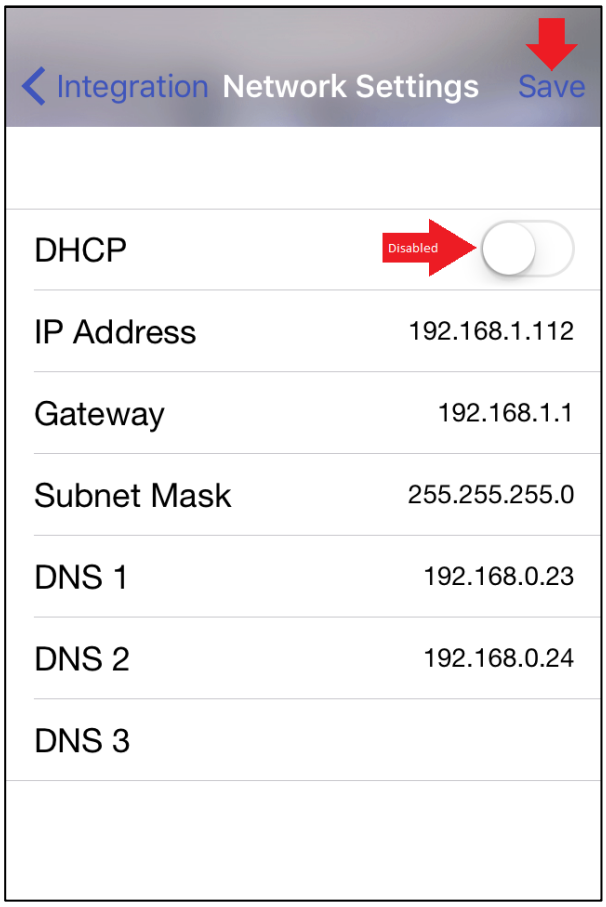

Figure 6 – Network Properties

7. Back inside of the “Integration” tab, select “Send Integration Report” to email the Lutron Integration IDs to an email address. Please print out the Lutron IDs for record purposes and convenience (Figure 7).

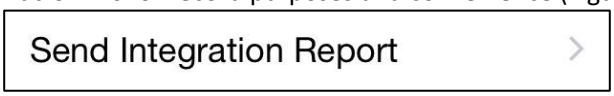

Figure 7 – Advanced

8. After emailing the Lutron Integration Report, open up the email and glance at the JSON code. It should start with "LIPIdList" (Figure 8.1):

```
{
 "LIPIdList" : {
  "Devices" : [
   {
    "ID" : 1,
    "Name" : "Smart Bridge",
...
```

Figure 8.1 - Integration Report Header

After confirming that the Integration Report is valid, skip to the very bottom of the code and record all IDs that belong to the "Zones" container. Here is an example of a 5 device system (Figure 8.2). A larger system would contain all IDs here for all Lights and Shades. Please record all IDs and names to ensure proper configuration when programming in Compass Navigator. This code will be used in the upcoming examples.

```
  "Zones" : [
   {
    "ID" : 2,
    "Name" : "Living Room"
   },
   {
    "ID" : 3,
    "Name" : "Kitchen"
   },
   {
    "ID" : 4,
    "Name" : "Dining Room"
   },
   {
    "ID" : 5,
    "Name" : "Hallway"
   },
   {
    "ID" : 6,
    "Name" : "Front Door"
   }
  ]
```

Figure 8.2 - Device IDs

9. The Lutron Caséta Bridge is now configured with a static IP Address and all Lutron IDs are acquired for each device. Please proceed to Compass Navigator.

Adding the Lutron Module

In Compass Navigator, open the desired modular project. At this point, the Lutron module **should not be** included into the project. If it is, please delete any Lutron modules from the project and also delete any Lutron module files from "_res" folder.

1. In Navigator, under the "Program" tab, please click the "Add Modules" button. Once the menu shows up, select "User Module" and File Explorer will open asking to navigate to the directory of a module (Figure 9).

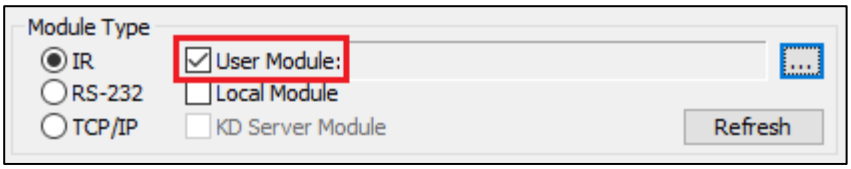

Figure 9 - Select User Module

2. Locate the "Lutron_IP.mod" module found in the Key Digital directory on the (C:) Drive Programs Folder. Please navigate to: **Key Digital Folder → Compass Control Folder → Library Folder → Drivers Folder → Lutron Folder → Select "Lutron_IP.mod"**

   The directory should look similar to this:

   C:\Program Files (x86)\Key Digital\Compass Control\Library\Drivers\Lutron

   Do Not Select "LutronEXT_IP.mod"

3. Once opened, select these properties in the Control Library:
   - Brand Name: Lutron
   - Device Type: ControlSys
   - Model: Lutron

4. Click "Add Device" to add it to the project. This is the correct Lutron module to add. Adding this Lutron module will create a copy into the "_res" folder of the project. The original Lutron module file will be left untouched. **Please do not modify or edit the original Lutron Module**. Only edit the added Lutron module present in the modular project's "_res" folder.

5. Finally, in Navigator, under the "Program" tab, please click the "Controlling Flow" button. Drag and drop the Lutron module into the project name, located in System Designer on the left. Lutron is now successfully added into Navigator without importing an XML document. Please continue to the next section to edit the module.

Editing the Lutron Module

After the Lutron module has been added to the project, now it's time to edit the module and customize it for the Caséta system.

Note: When Navigator opens up a module, all controller types will appear (Figure 10). Please select the controller type that is required for the module project. These next few steps will show how to configure the first controller type that is desired. All other controller screens may be added **after** the first one is completed.

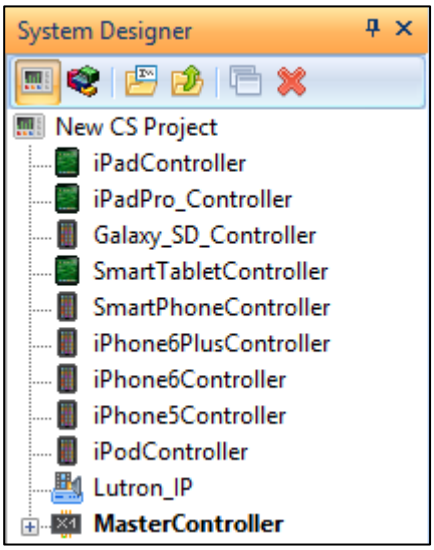

Figure 10 - Controller Types

For this example, the iPad Controller will be used. **Please follow these steps in order:**

1. In the modular project, locate the Lutron module in System Designer. Once found, right-click on "Lutron_IP" and select "Edit Module". Navigator will change environment to Module Editor Mode.

2. In Modular Editor, under the "Program" tab, please click the "Edit System" button. Once the layout changes, select "iPadController" under System Designer.

3. A page is required for every device found in the system. Under Controller Designer, **first click on "Main_Page"** and then click on the blue plus button to add a page for each device (Figure 11). Press the blue button as many times as devices there are in the Lutron System. **Make sure to click "Main_Page" first before proceeding to add pages.**

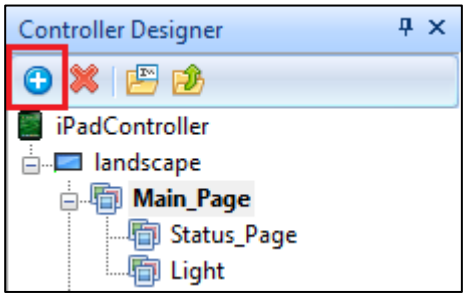

Figure 11 - Adding Pages

4. After adding the pages, refer to Figure 12. All newly created pages should be on the same layer as “Status_Page”.

5. Rename the pages in order, with respect to the JSON Integration Report (Figure 8.2 for these examples). To keep it programmer friendly for the Modular Project, please rename the pages to the Name followed by ID (Figure 13).

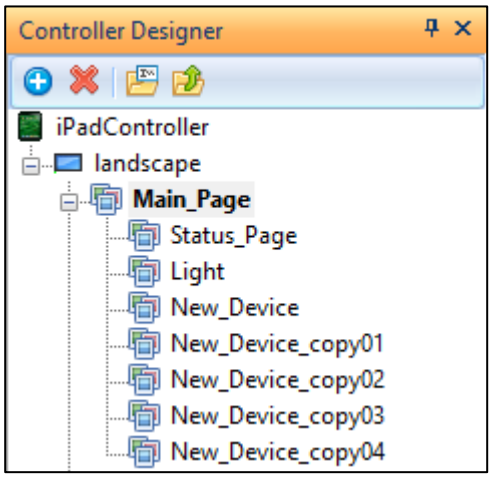

Figure 12 - Create Pages

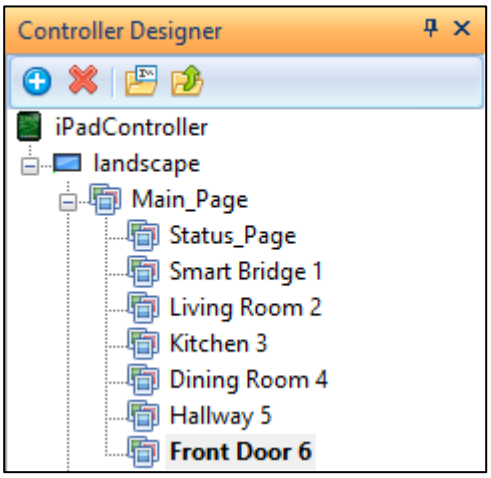

Figure 13 – Change to Name and ID

6. To lock in these major module changes, **please save the project and exit back to the modular project** by clicking “File” tab and the “Exit” button. Navigator will ask to save again. Save project and it will return Navigator to the modular project. **It is necessary to do this, do not skip this step.**

7. Back in the modular project, check to see if the pages imported correctly with Names and IDs.

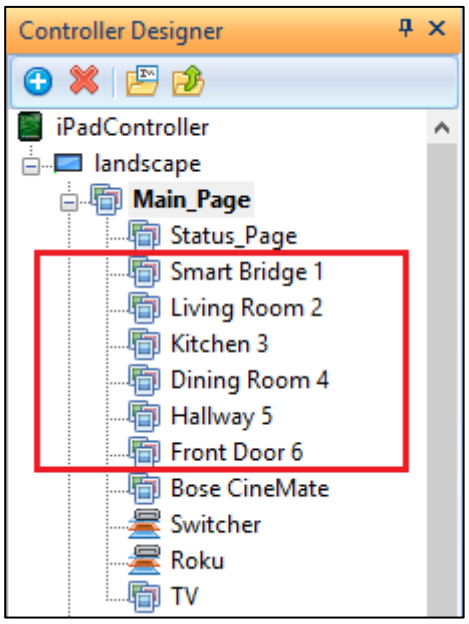

Figure 14 - Check for the pages to populate correctly in actual Modular Project

8. Once it is confirmed that the pages are correct, go back into Modular Editor. Right-click on “Lutron_IP” and select “Edit Module”. Navigator will change environment to Module Editor Mode once again.

9. Now that module editor is back up, under the "Program" tab, please click the "Edit System" button and select "iPadController" under System Designer. Under Controller Designer, select the page that needs to be configured.

From this point on, please complete each page one at a time. Make sure to save periodically.

- **If adding a Light Dimmer, please refer to Step 10.**
- **If adding a Light Switch, please refer to Step 11.**
- **If adding a Shade, please refer to Step 12.**
- **Repeat these steps until all pages are configured and completed**

(Please note that the smart bridge may not be controlled, the "Smart Bridge 1" page may be ignored).

Light Dimmer

10. Configuring a page to be a Light Dimmer.

    a. With the page selected, under Properties located on the far right side, change the Category to "Lights" and the Device Module Icon to "Lutron_icon_Light_Dimmer_112x60.png" (found in the "res" of the Compass Control directory: "**C:\Program Files (x86)\Key Digital\Compass Control\res").**

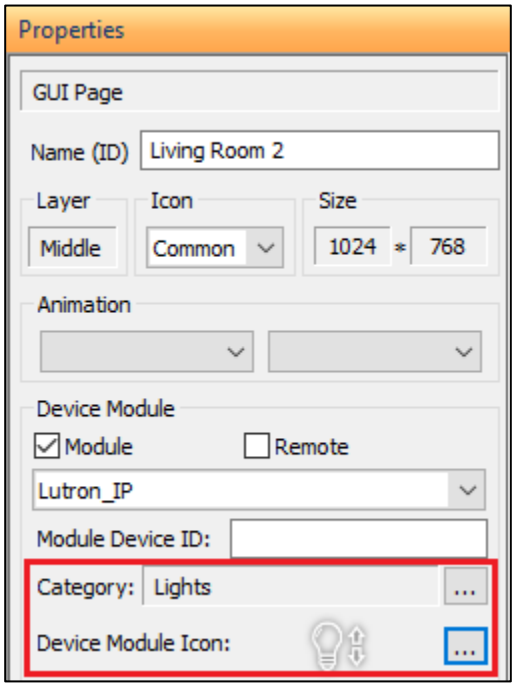

Figure 15 - Page Properties

b. For the new page, under Events and Actions, create a “show” event and add these three actions in this order: GUI Action, Link Action, and Page Jump Over Action (Figure 16).

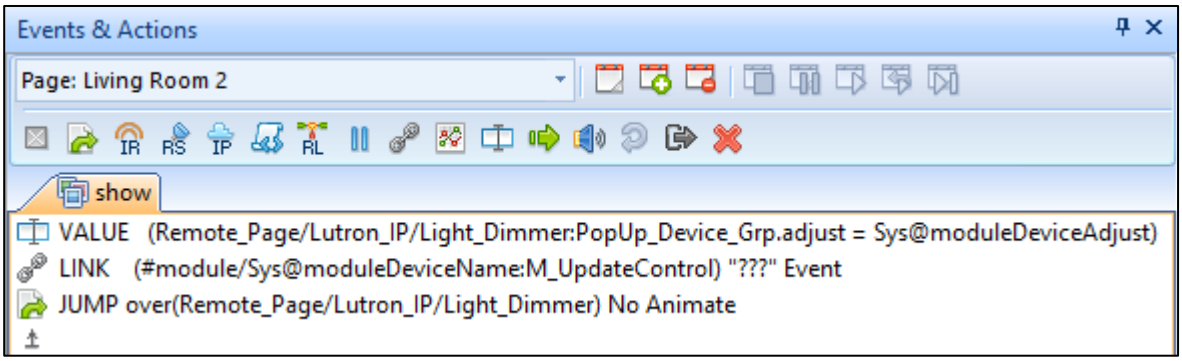

Figure 16 - Page's "Show" Event

Make sure that the actions match the properties seen below.

GUI Action Properties

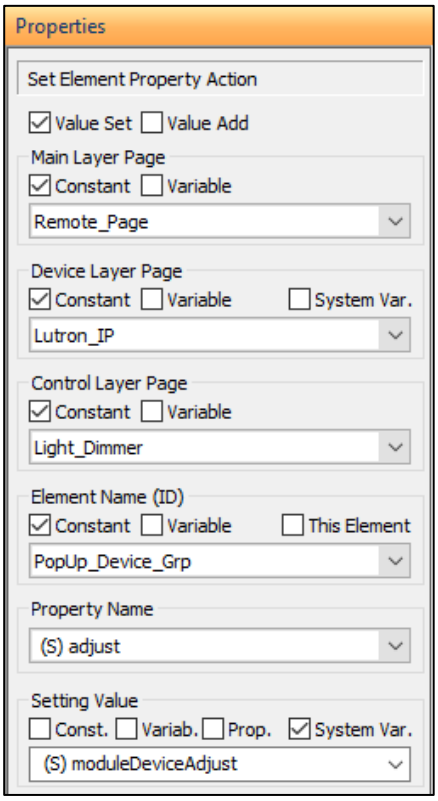

Figure 17 - GUI Properties

Link Action Properties

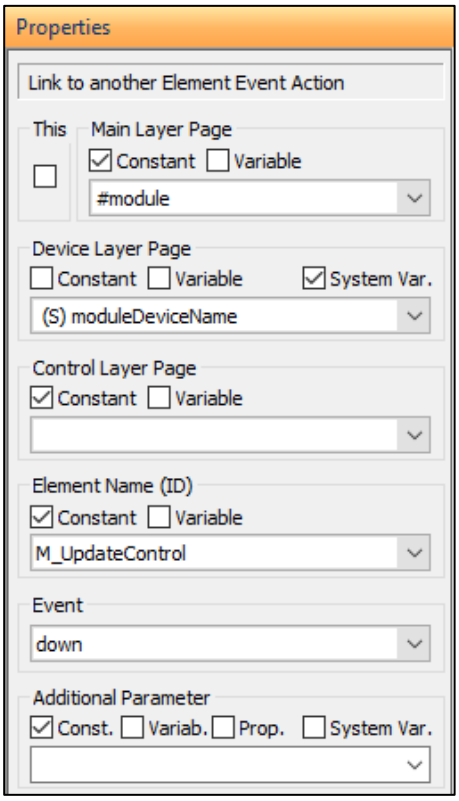

Figure 18 -Link Properties

Page Jump Over Properties

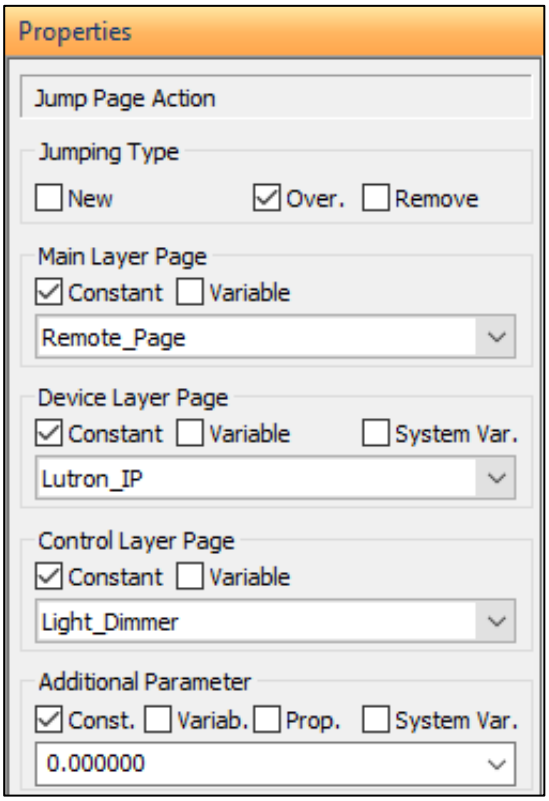

Figure 19 – Page Jump Over Properties

c. In Page Designer, create a new button. **It must be named "M_UpdateControl" and visible must be '0'.**

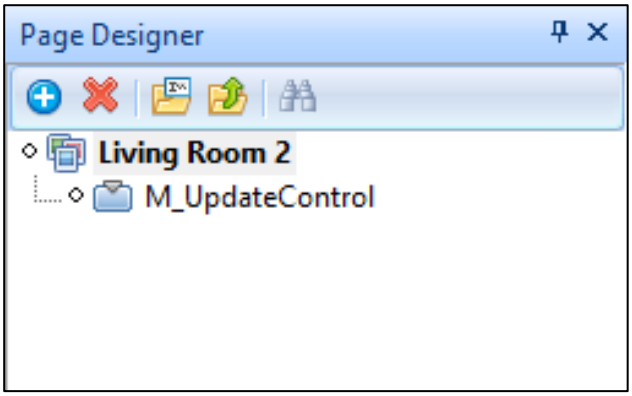

Figure 20 – M_UpdateControl Button

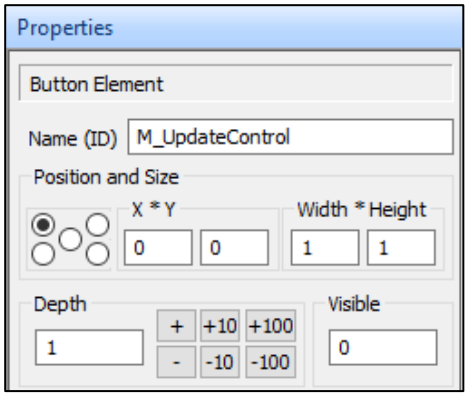

Figure 21 – M_UpdateControl Button Invisible

d. For the newly created button, "M_UpdateControl", create a "down" event and add these three actions in this order: Variable Change, GUI Action, and Bi-Directional Macro Action (Figure 22).

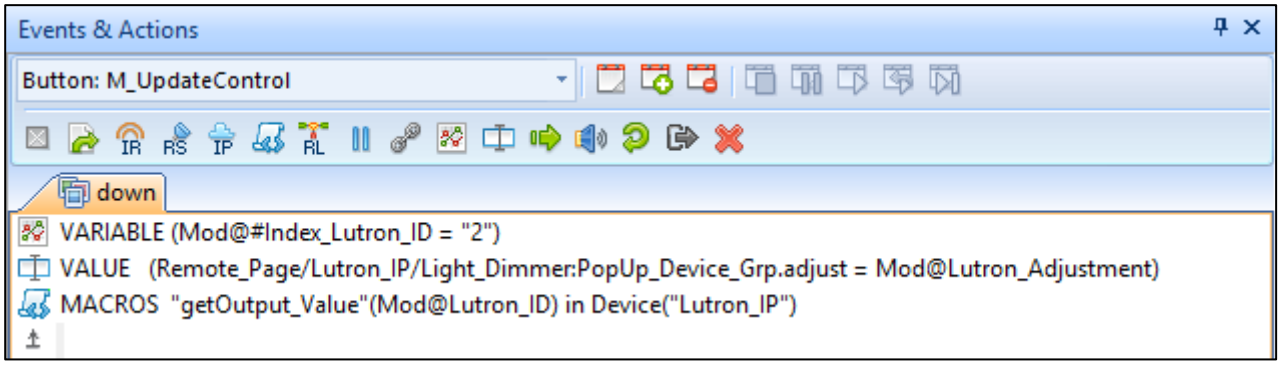

Figure 22 - M_UpdateControl Events and Actions, "down" state

e. Please Note! For the Variable Change, it will be different for every page! Please use the Number associated to the Page Name and ID. For example, the room is called "Living Room 2". Please use '2' in the "#Index_Lutron_ID = 2" statement.

Make sure that the actions match the properties seen below. **Make sure the "#Index_Lutron_ID" equals the page number.**

Variable Properties

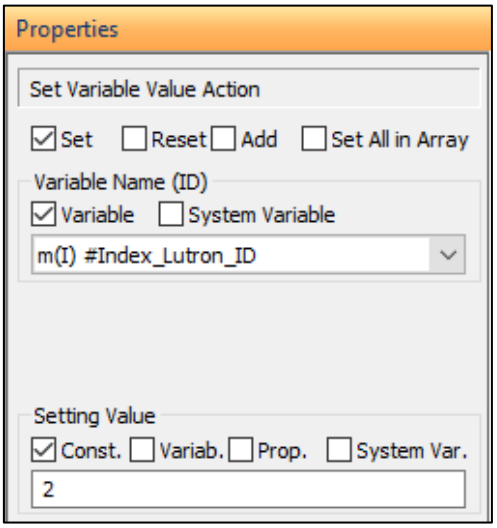

Figure 23 – Variable Properties for Lutron

GUI Properties

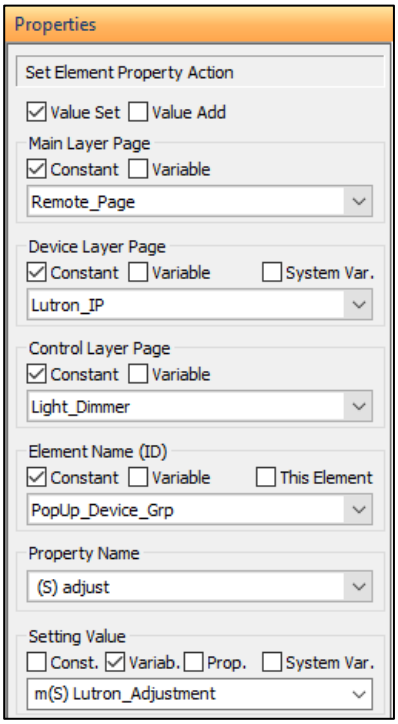

Figure 24 – GUI Properties

Bi-Directional Macro Properties

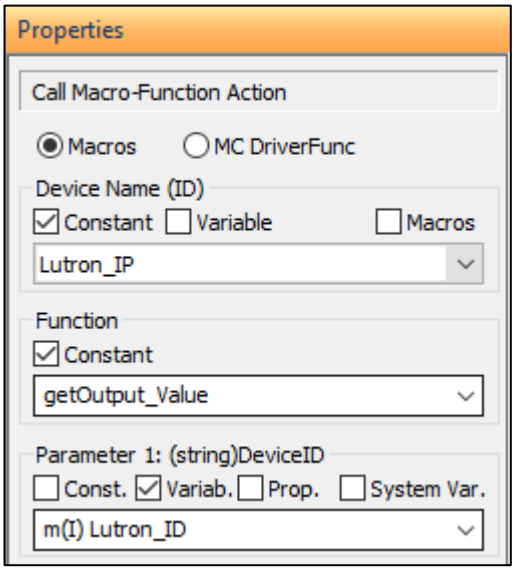

Figure 25 – Bi-Directional Macro Properties

f. Please save the module. **This page is complete!** Please repeat step 10 when configuring another page to be a Dimmer. If the next page is a Switch, go to step 11. If the next page is a Shade, go to step 12. If all pages are configured, go to step 13.

Light Switch

11. Configuring a page to be a Light Switch.

    a. With the page selected, under Properties located on the far right side, change the Category to “Lights” and the Device Module Icon to “lutron_icon_light_switch_112x60.png” (found in the “res” of the Compass Control directory: “**C:\Program Files (x86)\Key Digital\Compass Control\res”).**

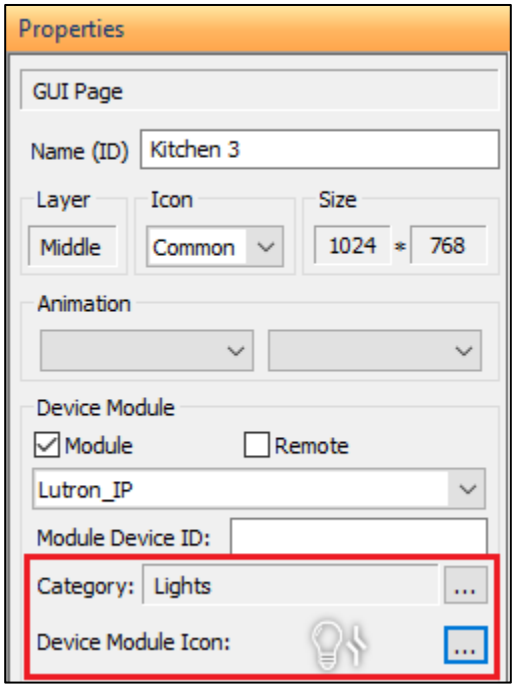

Figure 26 - Page Properties

    b. For the new page, under Events and Actions, create a “show” event and add these three actions in this order: GUI Action, Link Action, and Page Jump Over Action (Figure 27).

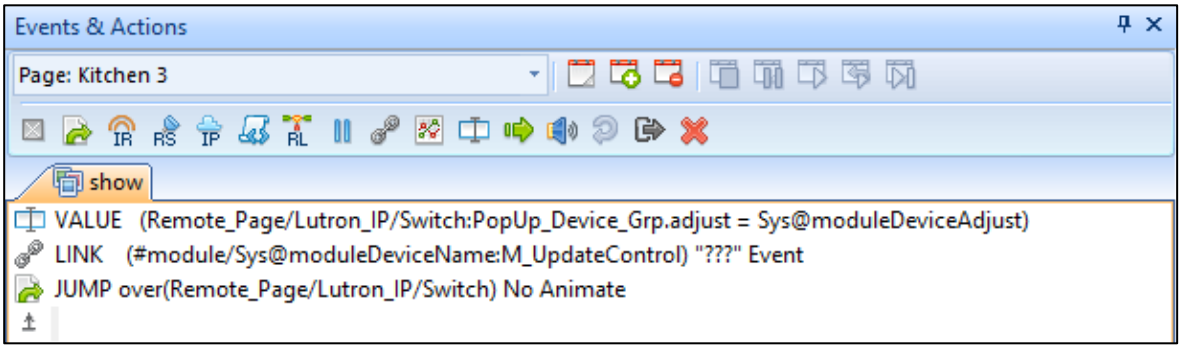

Figure 27 - Page's "Show" Event

Make sure that the actions match the properties seen below.

GUI Action Properties

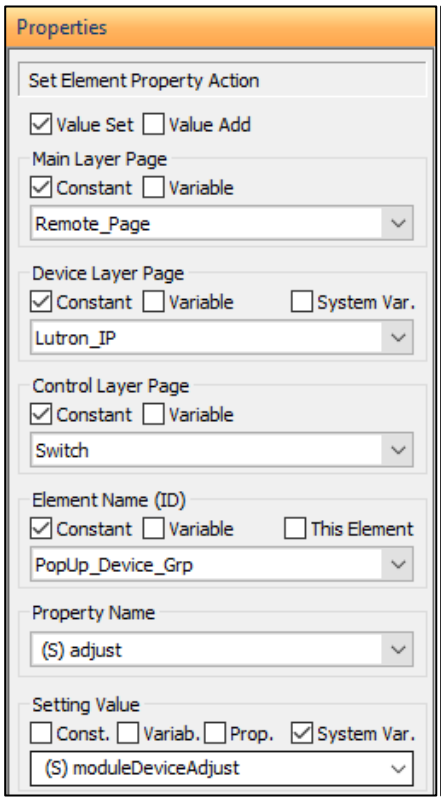

Figure 28 - GUI Properties

Link Action Properties

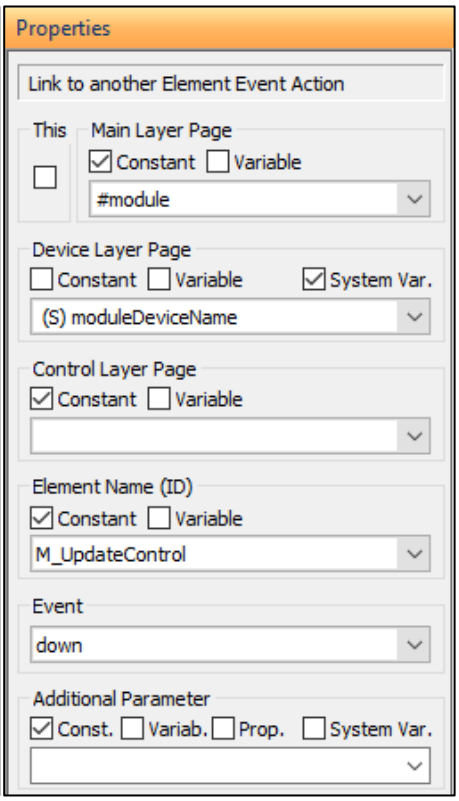

Figure 29 – Link Properties

Page Jump Over Properties

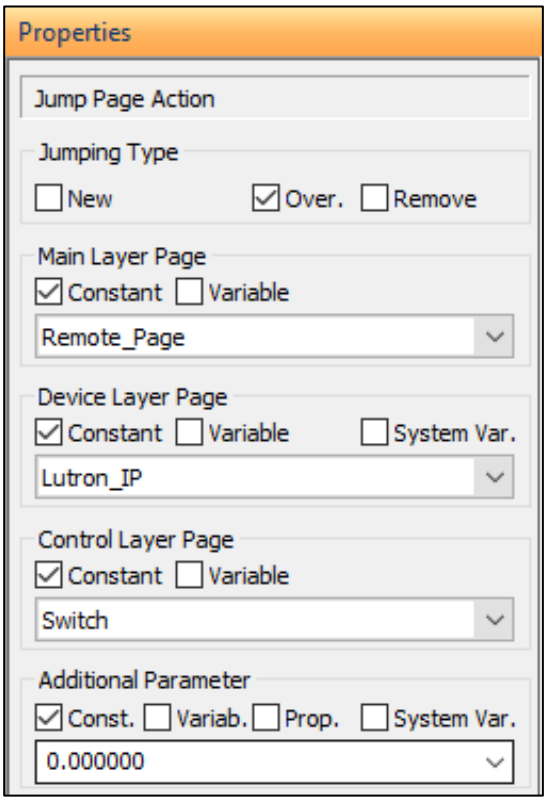

Figure 30 – Page Jump Over Properties

c. In Page Designer, create a new button. **It must be named "M_UpdateControl" and visible must be '0'.**

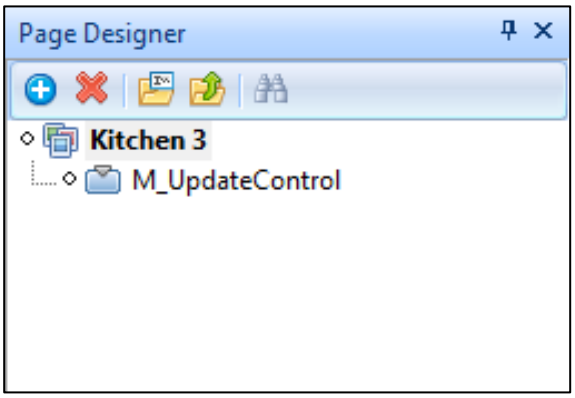

Figure 31 – M_UpdateControl Button

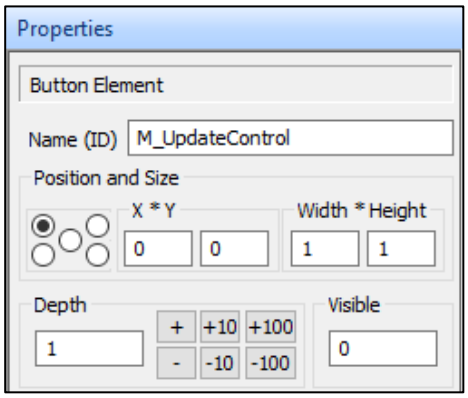

Figure 32 – M_UpdateControl Button Invisible

d. For the newly created button, “M_UpdateControl”, create a “down” event and add these three actions in this order: Variable Change, GUI Action, and Bi-Directional Macro Action (Figure 33).

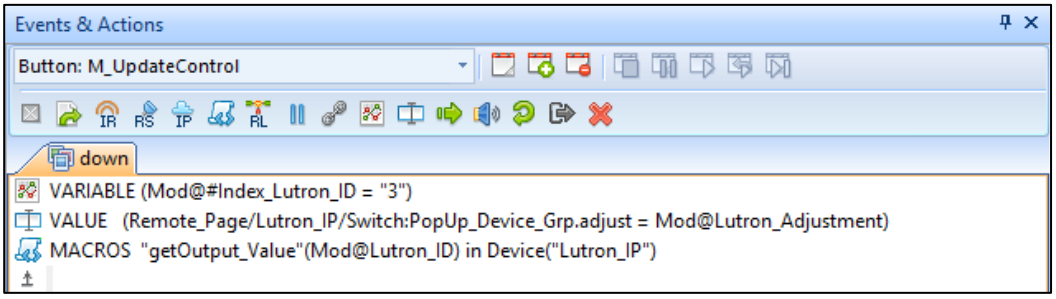

Figure 33 - M_UpdateControl Events and Actions, “down” state

e. **Please Note! For the Variable Change, it will be different for every page! Please use the Number associated to the Page Name and ID. For example, the room is called “Kitchen 3”. Please use ‘3’ in the “#Index_Lutron_ID = 3” statement.**

Make sure that the actions match the properties seen below. **Make sure the “#Index_Lutron_ID” equals the page number.**

Variable Properties

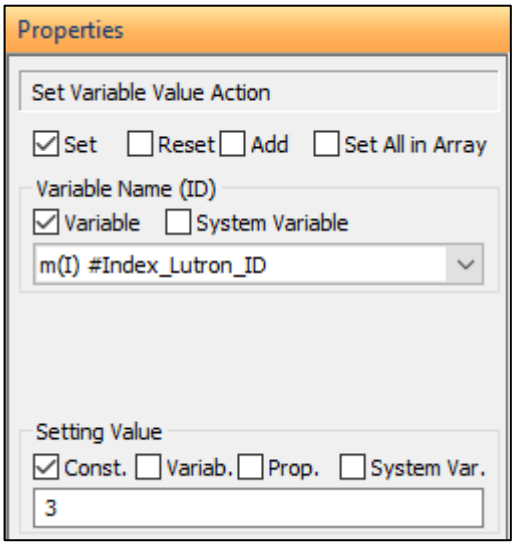

Figure 34 – Variable Properties for Lutron

GUI Properties

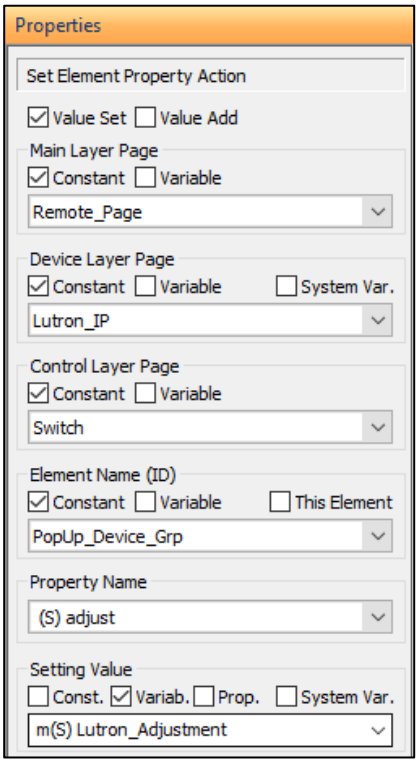

Figure 35 – GUI Properties

Bi-Directional Macro Properties

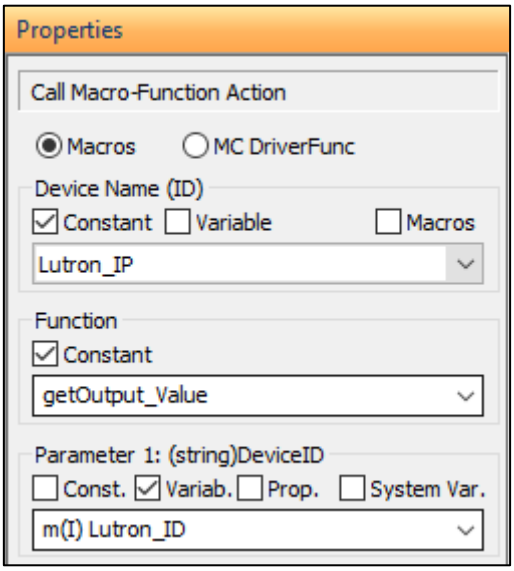

Figure 36 – Bi-Directional Macro Properties

f. Please save the module. **This page is complete!** Please repeat step 11 when configuring another page to be a Switch. If the next page is a Dimmer, go to step 10. If the next page is a Shade, go to step 12. If all pages are configured, go to step 13.

Shade

12. Configuring a page to be a Shade.

    a. With the page selected, under Properties located on the far right side, change the Category to “Shades” and the Device Module Icon to “lutron_icon_shades_112x60.png” (found in the “res” of the Compass Control directory: “**C:\Program Files (x86)\Key Digital\Compass Control\res”).**

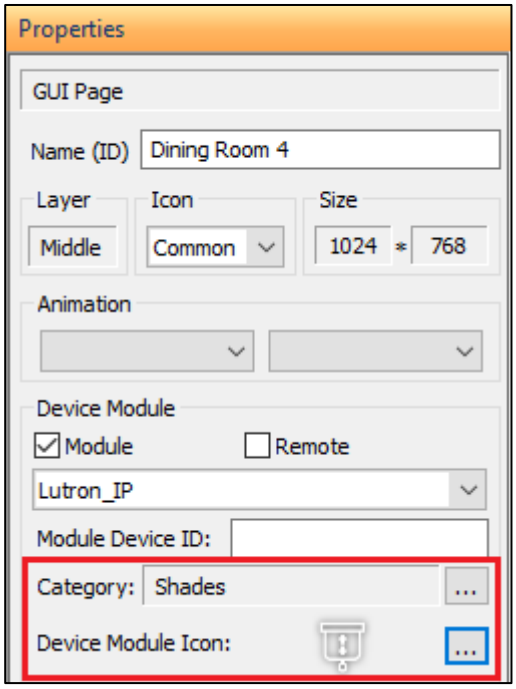

Figure 37 - Page Properties

    b. For the new page, under Events and Actions, create a “show” event and add these three actions in this order: GUI Action, Link Action, and Page Jump Over Action (Figure 38).

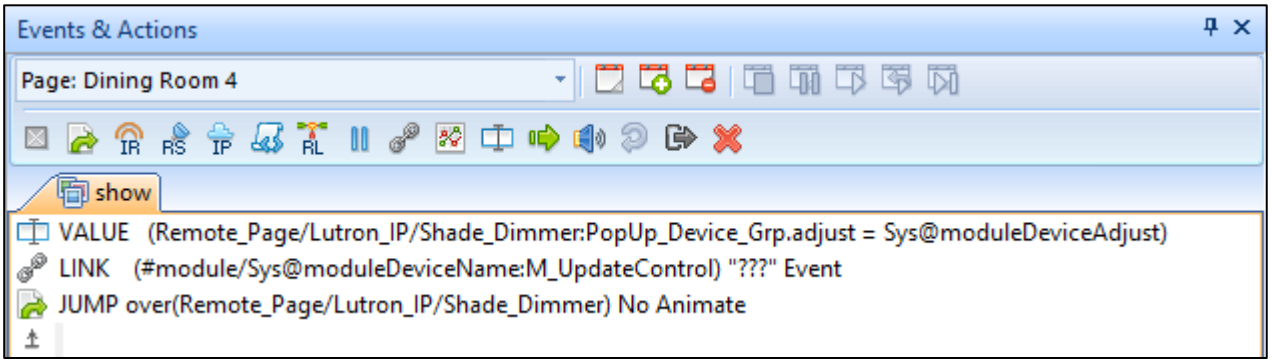

Figure 38 - Page's "Show" Event

Make sure that the actions match the properties seen below.

GUI Action Properties

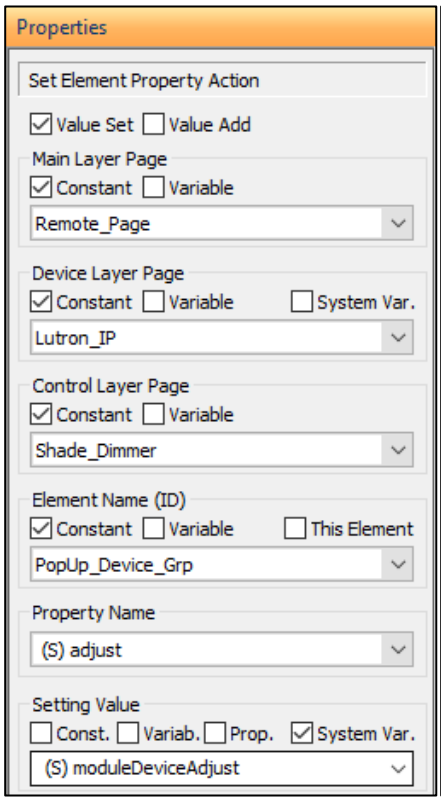

Figure 39 - GUI Properties

Link Action Properties

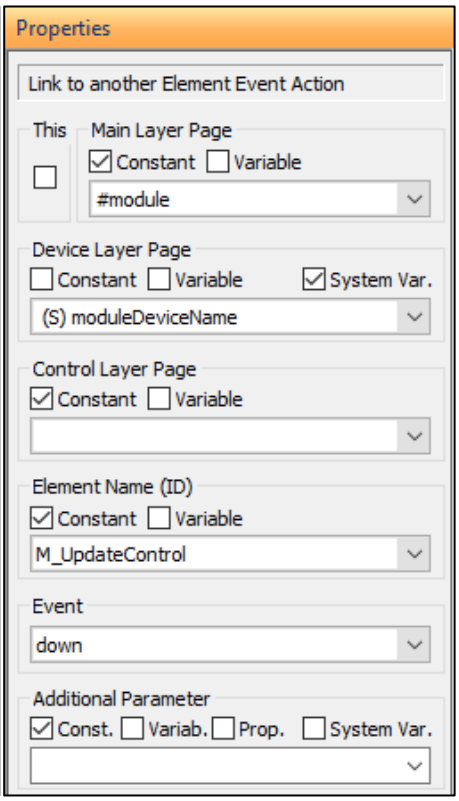

Figure 40 - Link Properties

Page Jump Over Properties

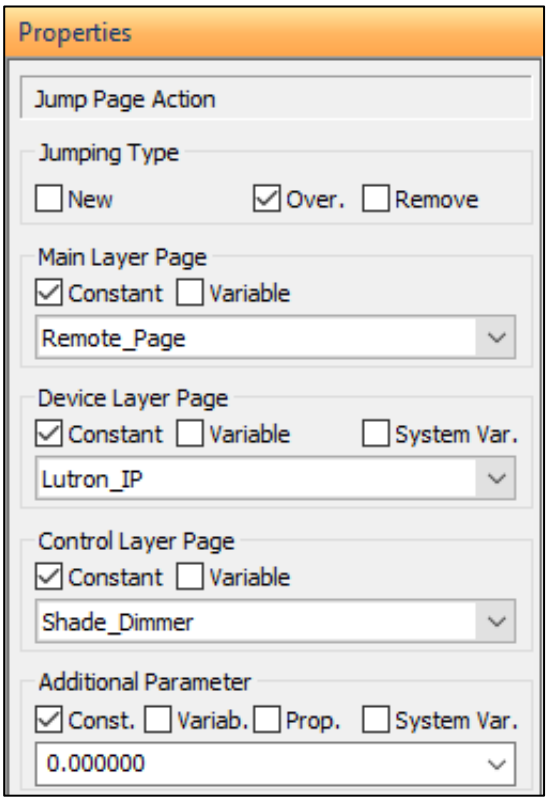

Figure 41 – Page Jump Over Properties

c. In Page Designer, create a new button. **It must be named "M_UpdateControl" and visible must be '0'.**

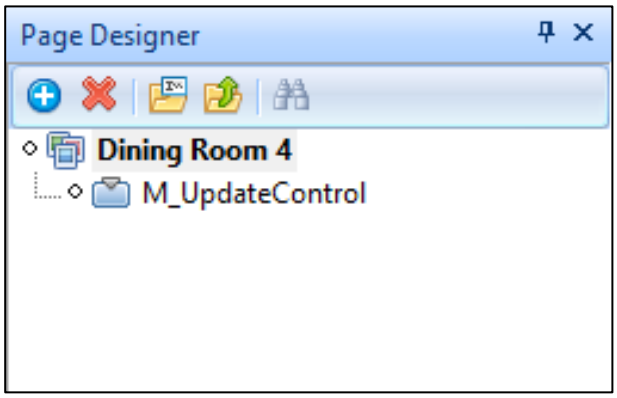

Figure 42 - M_UpdateControl Button

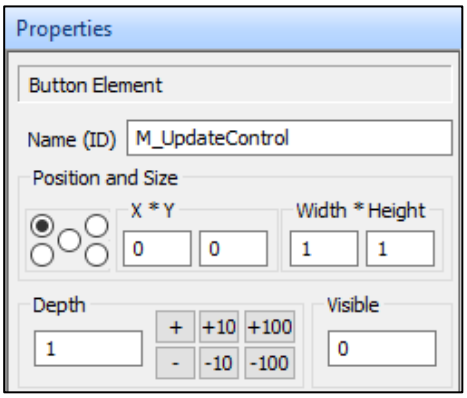

Figure 43 - M_UpdateControl Button Invisible

d. For the newly created button, “M_UpdateControl”, create a “down” event and add these three actions in this order: Variable Change, GUI Action, and Bi-Directional Macro Action (Figure 44).

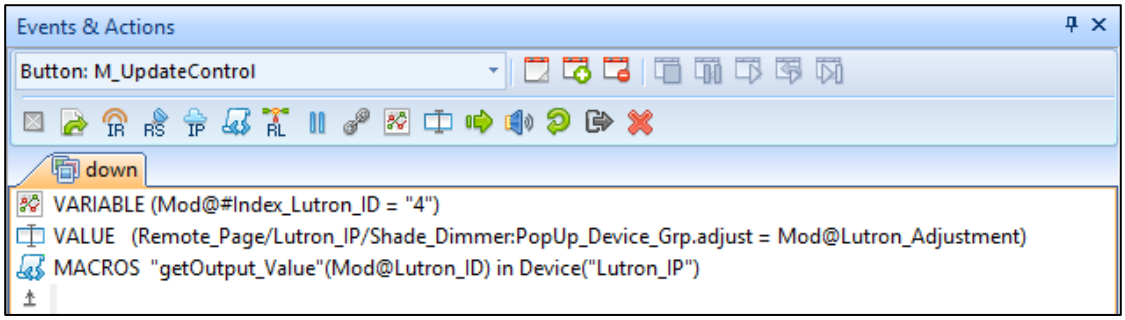

Figure 44 - M_UpdateControl Events and Actions, “down” state

e. **Please Note! For the Variable Change, it will be different for every page! Please use the Number associated to the Page Name and ID. For example, the room is called “Dining Room 4”. Please use ‘4’ in the “#Index_Lutron_ID = 4” statement.**

Make sure that the actions match the properties seen below. **Make sure the “#Index_Lutron_ID” equals the page number.**

Variable Properties

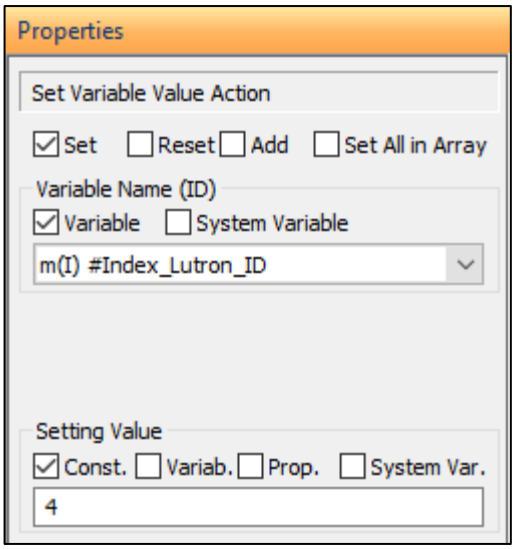

Figure 45 – Variable Properties for Lutron

GUI Properties

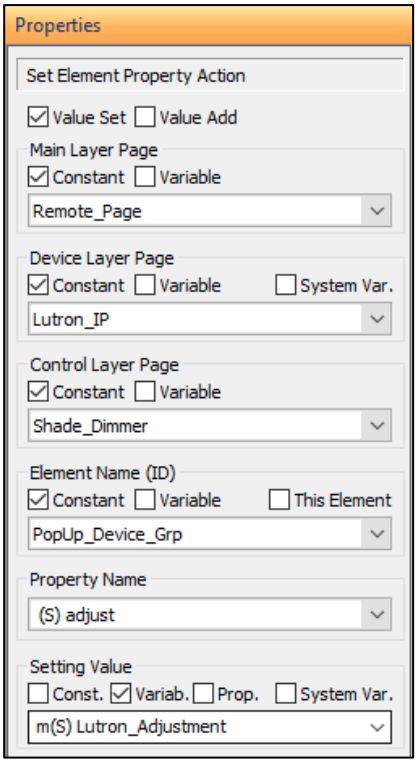

Figure 46 – GUI Properties

Bi-Directional Macro Properties

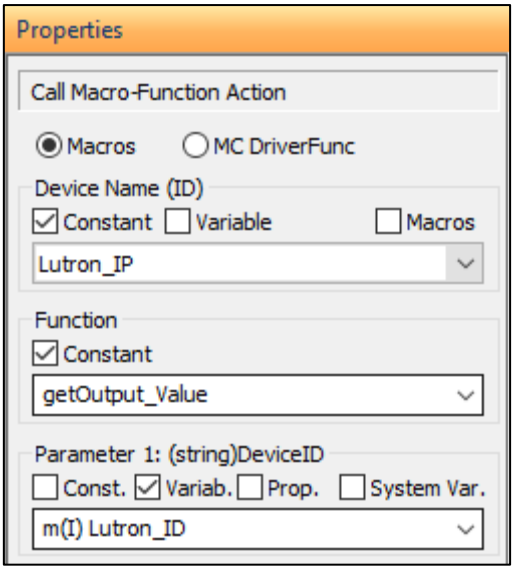

Figure 47 – Bi-Directional Macro Properties

f. Please save the module. **This page is complete!** Please repeat step 12 when configuring another page to be a Shade. If the next page is a Dimmer, go to step 10. If the next page is a Switch, go to step 11. If all pages are configured, go to step 13.

Please note: If more Controllers screens are required, then please repeats steps 10, 11, or 12 on the other iOS or Android screens. No need to re-add pages. Page additions reflect on all Controller types.

13. **Do not proceed to this step without configuring all pages first!** Once all pages are configured, it is time to edit the driver. Under System Designer, click "Lutron_IP". Then under Properties on the far right side, click on the blue cube in the "Bi-Directional Driver" field (Figure 48).

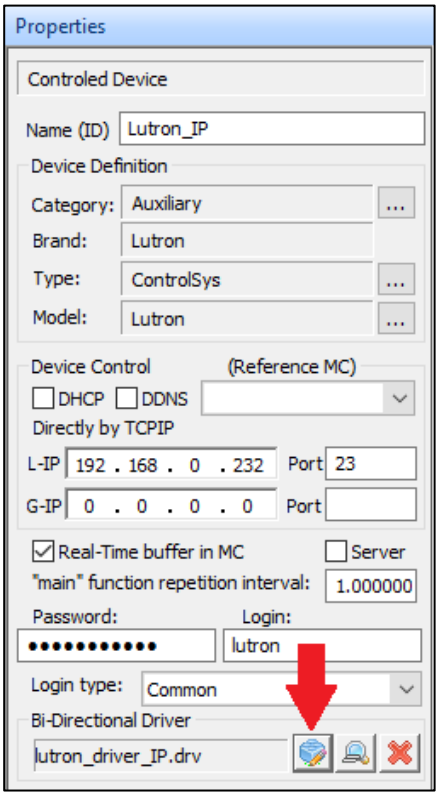

Figure 48 – Edit Driver Button

14. With the Driver Editor open, proceed to the "/*================== Init ======================*/" section of the driver, about one tenth of the way down. In between "wakeup();" and "LockStop();", there is a "//@i" (Figure 49). Please replace "//@i" with this code for every device in the system (Figure 50).

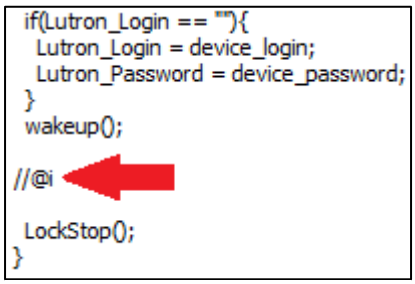

Figure 49 – Replace this code

```
#Index_Lutron_ID = 1;
Lutron_ID = 1;
Lutron_Adjustment = "";
#Index_Lutron_Output = 1;
Lutron_OutputName = "Smart Bridge 1";
Lutron_OutputID = 1;
Lutron_OutputType = 0;
Lutron_OutputValue = 0;
Lutron_OutputValue2 = 0;
```

Figure 50 – Use this code for each device

Please replace the "Lutron_OutputName" to the name of the page corresponding to that ID number. Please note that "#Index_Lutron_ID", "Lutron_ID", "#Index_Lutron_Output", and "Lutron_OutputID" will equal the page number for page that was added. Example is shown below (Figure 51):

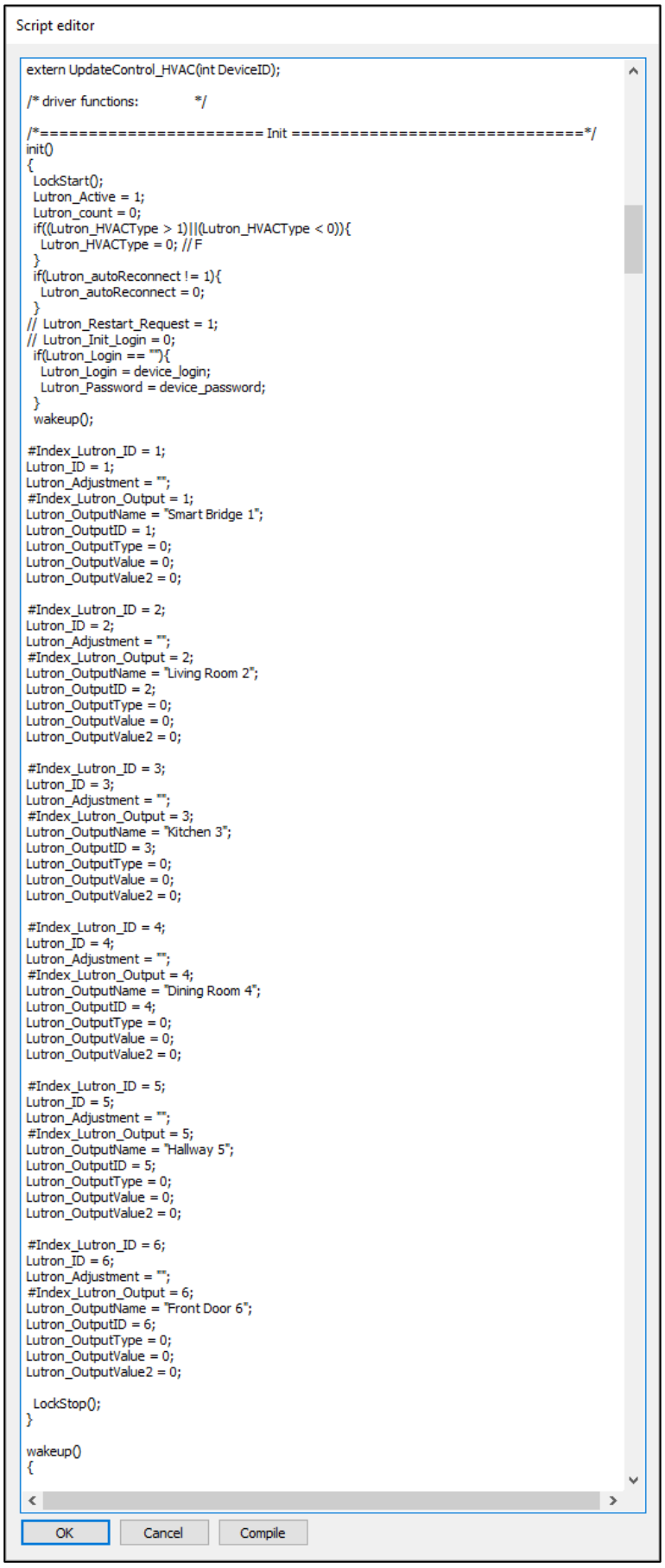

Figure 51 – Example code

15. **When all code is inserted and edited for each page, please click "Compile" and the popup "Ok" and then the "Ok" button to save and exit the driver. Please note that the driver MUST display, "Driver Successfully Compiled!". The module will not function properly if the driver does not compile. Please delete the code and retry if compile fails.**

    Please save the project. All editing is done in the module! Now, it's time to return to the project!

Final Steps – Configuring the Lutron Module in Modular Project

1. On the top left corner, select "File" and "Exit" to return to the modular project. Navigator will ask to save and please save the module when exiting.

2. In Modular Project - Please go to System Designer and select the desired edited controller screen.

3. In Modular Project - Click on the newly added Lutron Pages in Controller Designer. All pages should be added.

4. In Modular Project - Final step: Click on each Lutron Page and enter the Lutron ID into the "moduleDeviceID" field in the properties for each page (Figures 52, 53, 54).

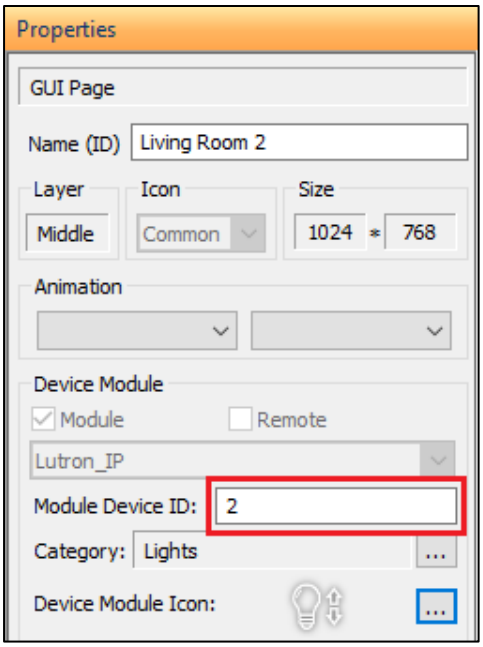

Figure 52 – Dimmer Page with ID

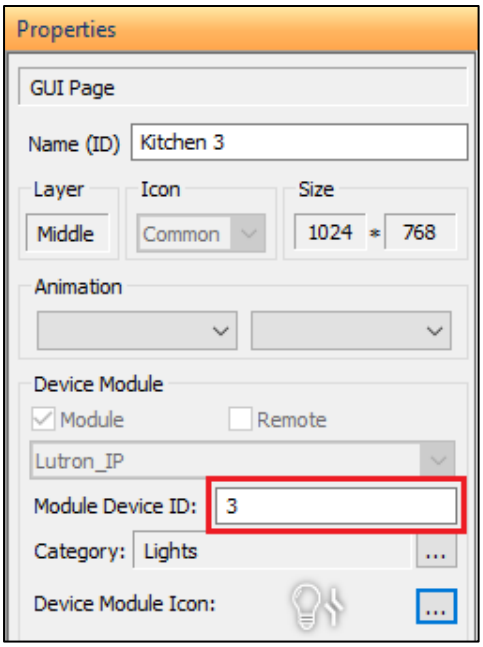

Figure 53 – Switch Page with ID

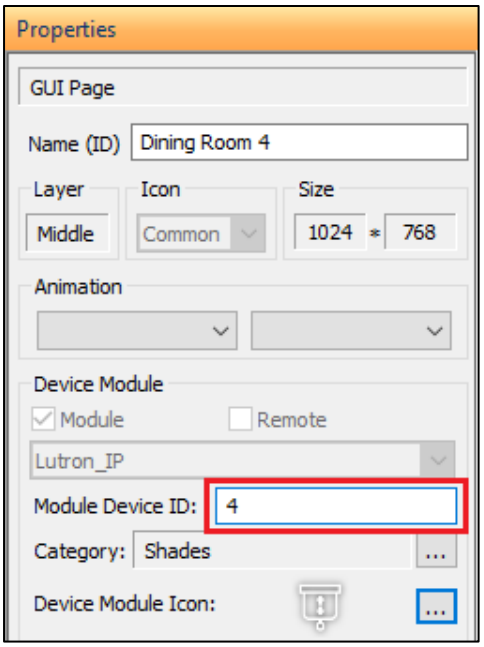

Figure 54 – Shade Page with ID

5. The Caséta Module is complete with setup! Please continue to "Zone Construction" to drag and drop Lutron Devices into Zones and Categories as a normal modular project would be programmed.

   *Change the IP Address of the Lutron device to the static IP Address that was configured in the network settings.

   *Page Names may now be changed in Modular Programming, just make sure to Compile the Project and save!

   *Lutron Login may also be disabled for ease of use. Please refer to the Disabling Lutron Login Page guide on the Tech Guides Portal at http://www.keydigital.com/compass/techguide.htm