CONVERGING SYSTEMS

TechNotes

Revision 7/1/2024

Lutron RadioRA3/QSX/Athena Support for Modern Form Fans

Options available from Abicus A1G20-DMX to control Modern Form Fans

Table Of Contents

Background

Currently, Lutron LEAP protocol devices (RadioRA3, QSX, and Athena) do not have native control for ceiling fans. Recent versions of the Abicus A1G20-DMX Gateway (hereinafter "Gateway"), however, now provide for native support of both fan and lighting operations using familiar lighting User Interface (UIs) available within the Lutron App. In addition, direct control of specific fan speeds and light levels can be programmed to react to simple button presses from Lutron Seetouch™, Palladiom™, Sunnata ™ and other supported keypads as well as occupancy sensory and timeclock events. Modern Form fans have the capability of forward speeds (for summer cooling) and reverse speeds (for winter heating). Common to both operations is the normal operation of the built-in LED element for lighting.

This document assumes that you have already set up your device as per the **Aispire documentatioon** (see separate documents)

Functionality available with the Gateway combined with Athena/QXS/RadioRA3 and Modern Form fans includes the following:

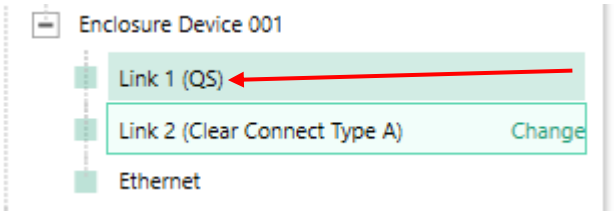
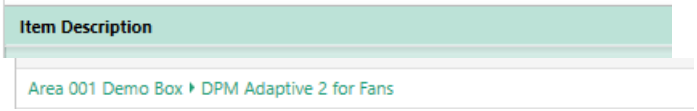
-Selection of Summer speeds (continuously variable) from OFF to ON.
-Selection of Winter speeds (continuously variable) from OFF to ON.
-Selection of any brightness level from the integrated LED light from OFF to ON.

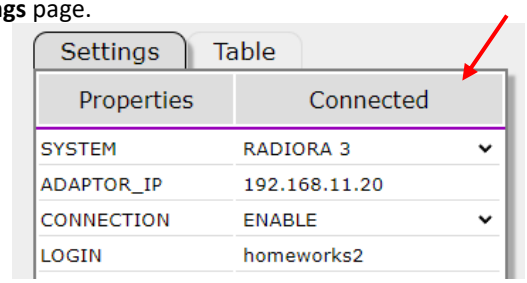
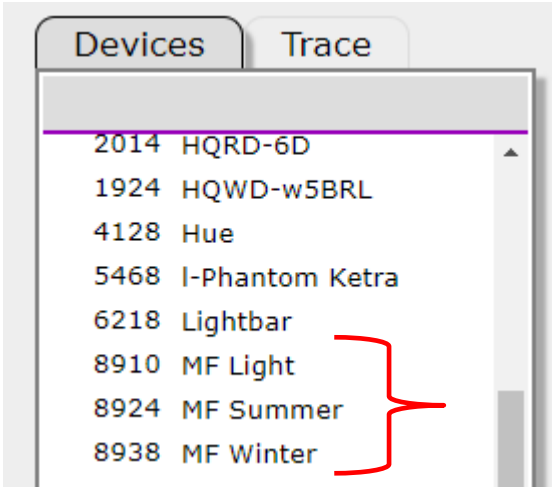
Lutron Platform support/non-support matrix with RadioRA3/Homeworks™ QSX and Athena processors

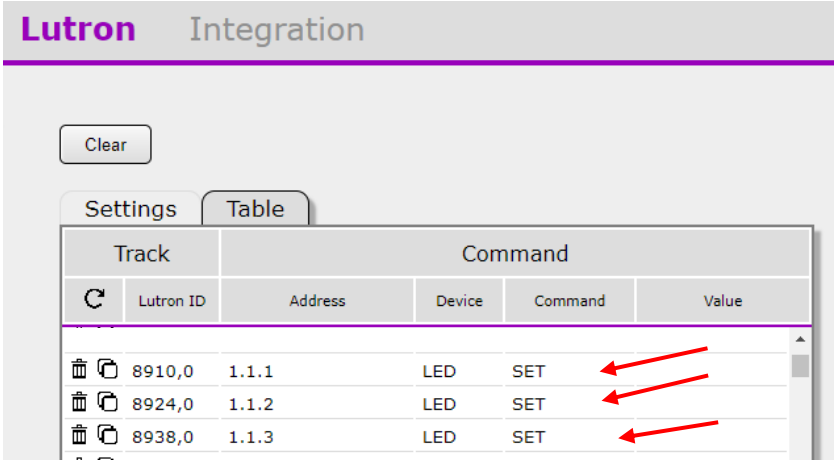
Supported Features	Non-supported/non-tested features
Fan speeds (Summer cooling as well as Winter heating) including on/off using Phantom Load dimmers within the Lutron App.	
Timeclock output can be tracked, if needed, by tracking a real or phantom load linked to those triggers (in Lutron Designer) with SLIM	Native Timeclock tracking is not possible
Button presses from Switches and Dimmers (real and phantom) can be tracked, if needed, by tracking a real or phantom load linked to those devices (in Lutron Designer) with SLIM	Tracking of connected loads to switches and dimmers is supported

User interfaces Available within Athena/ QSX/RadioRA3 for the control off Moden Form Fans

Moden Form Built-In Light	Moden Form Summer Operation	Modern Form Winter Operation
		

B1-3 Case 1	Add an applicable phantom equipment type within Designer to which at minimum 3 **Phantom Loads** can be assigned (for each fan that needs to be individually controlled). **Note:** There are various ways to perform this operation, but the described example below can be easily implemented to accomplish the goal here.	Step C1-1. Add the ***DPM Adaptive 4 Output*** (or similar) to your Lutron project within Designer,  Step C1-2. Under **Design Equipment** find the phantom device created in Step A1-1 and assign a linkage to each Phantom Load within the **Zone Name** column below.  Step C1-3. Under **Design/Link Assignment**, execute a Link Assignment from this piece of hardware to your Lutron processor  
B1-3 Case 2	Locate a suitable piece of *already programmed* Lutron equipment to which 3 or more Phantom Loads can be assigned.	Step C2-1. Within Designer, locate an existing piece of Lutron hardware already programemed within your system.

		 Step C2-2. Under **Design Equipment** find the device located in Step C2-1 and assign a linkage to each Phantom Load under **Zone Name** below. 
B1-4	Within the Gateway's built-in web interface's **Lutron tab**, discover those three Phantom Loads. **Note**: Recent versions of the Gateway will auto-discover any newly added Lutron devices after a reboot of the e-node/Abicus.	-Verify that there is a connection to the Lutron processor within the **Lutron/Settings** page.  -Open the Gateway's **Lutron/Devices** window table to automatically discover Lutron devices after a secure connection is obtained (and "Connected" is seen above). You should see those three Phantom Loads previously created and uploaded through Designer. 

B1-5	Program those three phantom sliders to control applicable functions on the discovered Fan	Open the Gateway's Lutron Table and associate each Phantom Load with associations to a particular Modern Form fan feature available. -On an unprogrammed line in the Data Table, select first the applicable Lutron device that will control the particular feature on a Fan. Here the MF Summer feature is selected. -**ID.** Select the MF Summer (phantom dimmer)  (Verify that **Dimmer** and **Level** are set as shown above and hit the **Upload** button to program -Next complete the programming that the first Phantom Load (MF Summer or 8910) by providing the applicable **ZGN** (**Z**one/Group/Node) addressing, as well as **Device Type** and C**ommand** as shown below.  -**Address.** From the scroll list (right click within **Address**) , select the applicable load (**ZGN**) address for the device to be controlled. -**Device**. From the scroll list (right click within **Device**), select the Device type (**LED** for lighting, **Motor** for motor) -**Command**. From the scroll list (right click within **Command**), select the applicable command shown above to track the slider. -Duplicate the above step for (ii) MF Winter (8924) and (iii) MF Light (8938)

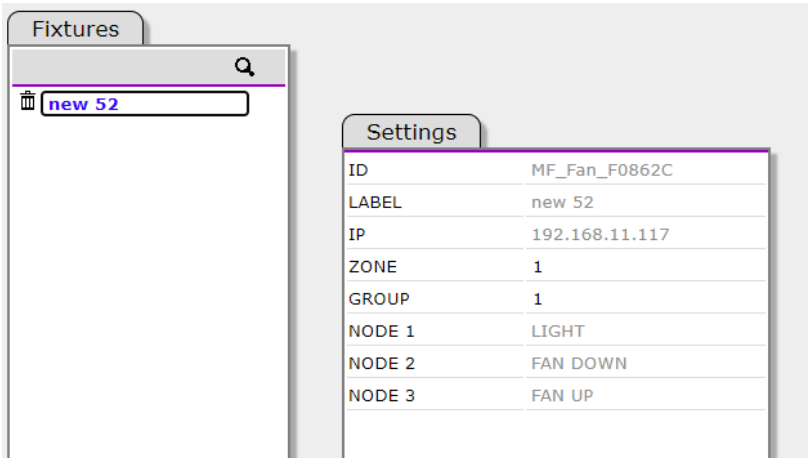
Lutron Button (real and phantom) button press operation

In addition to Lutron App control of various features, keypads and other User Interfaces can be programmed as well.

The following is an example that can be used to program a real or phantom keypad with the below Fan and LED operations to control a Moden Form Fan with the following ZGN (**Z**one/**G**roup/**N**ode) addresses.

-**ZGN** address of 1.1.1 for LED (illumination)
-**ZGN** address of 1.1.2 for Fan_Down or Summer
-**ZGN** address of 1.1.3 for Ran_Up for Winter

MF Fan Discovery 1



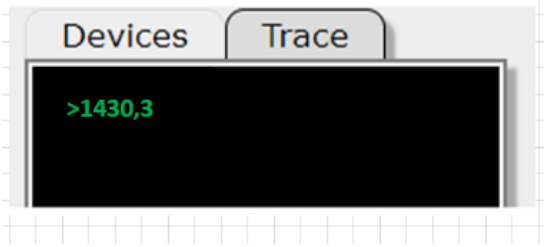
Fan Operations (mapped to a keypad)	
Button #*	**Operation**
1	Summer 100% (full) speed
2	Summer 50% speed
3	Winter 100% (full) speed
4	Summer 50% speed
16	FAN OFF

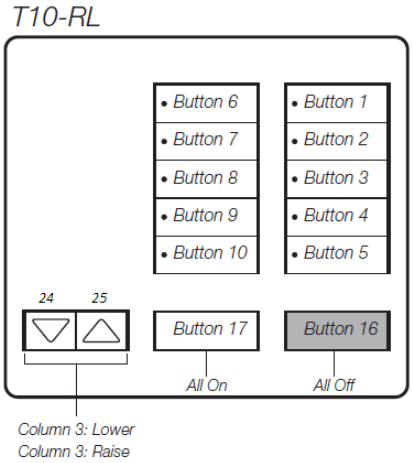
Light Operations (mapped to a keypad)	
Button #*	**Operation**
6	LED 100% (full) brightness
7	LED 75% brightness
8	LED 50% brightness
9	LED 25% brightness
17	LED Off

*Button numbers are described below. They can also be found here.

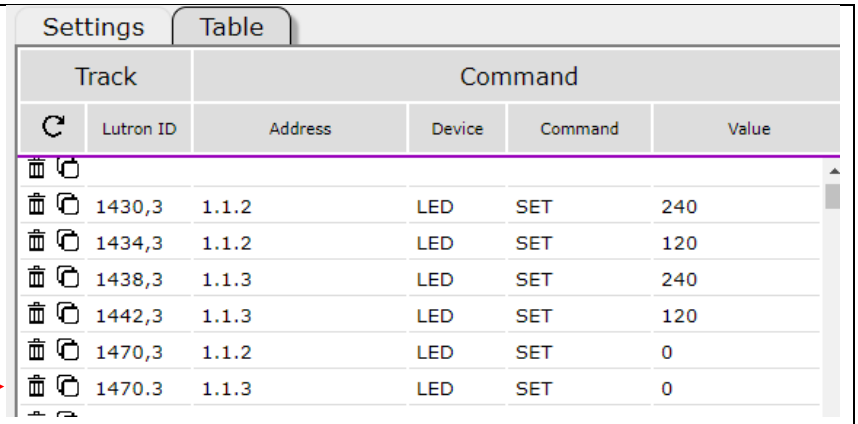
Steps to make this happen

Note: We will assume that you have programmed the below Lutron keypad to respond to single action button presses (i.e., a PRESS which we shall refer to as "3") below. Other types of operations are permitted, but that level of detail is beyond the scope of this document. Therefore, make sure your keypad is transmitting a "3" after the Lutron ID that can be seen through the TRACE function under the Lutron Tab (after that physical button is depressed with a "Connected" system.

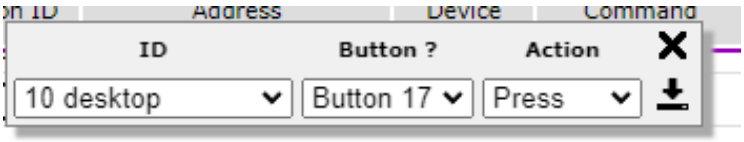


Step	Overview	Detail
1	Identify a keypad that you will use to control various fan operations	Let's assume that you will be using a 10-button desktop keypad  **Note**: if you do not have a real keypad that will be purposed to perform this operation, simply create a phantom keypad with Lutron Designer and upload the new program which includes that new keypad to the processor t (but don't activate that keypad if it is Phantom keypad).
2	Reboot the Gateway after the Lutron processor has finished it program upload	-This allows the Gateway to automatically discover new Lutron programmed keypads
3	Within the Gateway/**Lutron/Table** view perform the following programming for the FAN (as per the example above).	-Program each element for fan operation (listed in the example table above) by selecting a new/empty line and program as per the directions below.

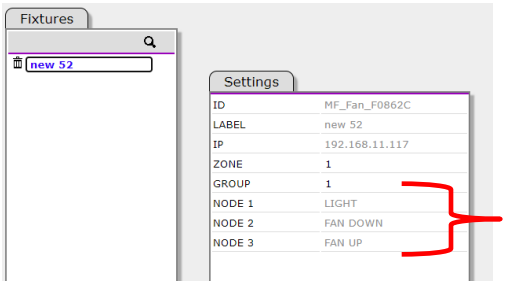
Button 1
Button 2
Button 3
Button 4
Button 16
2nd prog for Button 16



Lutron ID*—right click and discovered the Lutron imported name for all keypads imported from Lutron. Select keypad and select the button number and select Press (typical) and hit the arrow to program.



Address (for MF_FAN) --The address (ZGN) for each Fan operation (Summer, Winter and Light) are found within the MF_FAN tab for each discovered fan



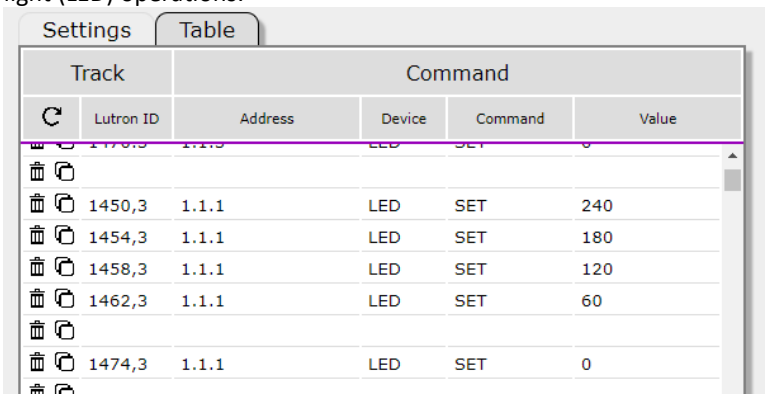
(in this case the discovered Modern Fan has the following ZGN addresses
-the Light has a ZGN of 1.1.1
-the Summer Fan operation has a ZGN of 1.1.2
-the Winter Fan operation has a ZGN of 1.1.3)

Device: Select LED (since we are using the UI-type of a light here—do not pick MOTOR)

Command. Many commands are available but for this example, use "**SET.**"

Value. The range is 0 for OFF to 240 for full on.

*Note Luton ID shown to within the screen shot will vary from project to project but your customized Lutron ID can be found by right clicking on the column and finding your particular keypad and then selecting from the next pulldown the button # for your particular keypad with the pulldown menu

4	Within the Abicus/Lutron Table perform the following programming for the LIGHT Button 6 Button 7 Button 8 Button 9 Button 16	Follow the above directions in Step 3 but refer to the screen shot below for light (LED) operations. 

Please see separate documentation on how to program button presses to control color on e-Node/xxx connected devices (as well as monitoring timeclock and occupancy sensor triggers).