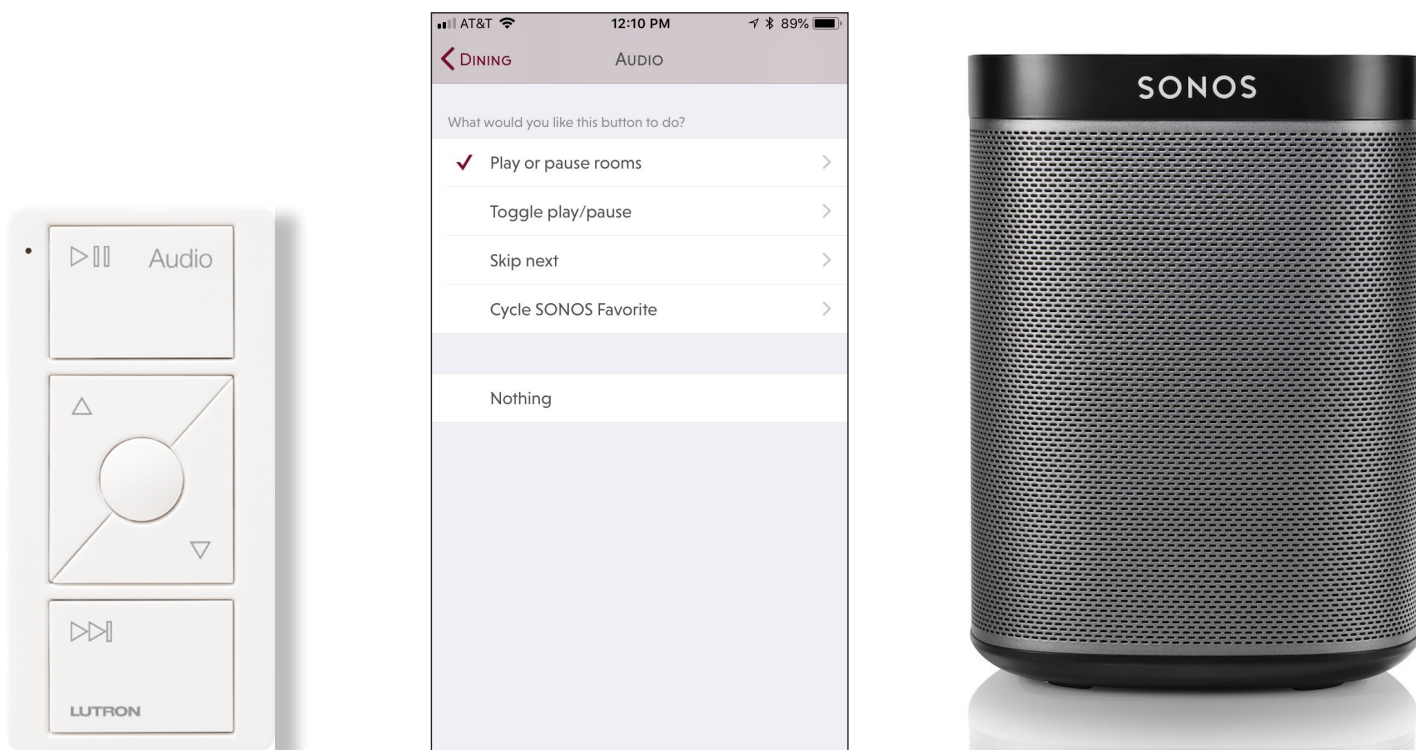


## Integrating a Sonos® System with RadioRA 2 and HomeWorks QS Systems

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### Overview

The Lutron Connect platform integrates with Sonos® systems allowing the Lutron system to seamlessly blend light, shade, temperature, and audio control from any system keypad. This can also be accomplished from the Lutron Connect mobile app for iOS® and Android® devices. The following document provides instruction on how to connect system components, basic setup, and best practices to ensure that the system is configured in a manner that meets customer expectations.



For more information on configuring and using the Lutron Connect App, refer to the [Lutron Connect Mobile App Guide and FAQs](#) available in the Application Notes section of [www.lutron.com](http://www.lutron.com) (requires a myLutron login).

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## Minimum Hardware and Software Requirements

### Hardware

- HomeWorks QS or RadioRA 2 system
- Lutron Connect Bridge (one per system)
- iOS® or Android® mobile device
- Router or switch ports (to connect the Bridge and Lutron system processors to the same local area network [LAN] as the Sonos system)
- At least one Sonos Room (refer to **Networking Best Practices** for directions on how to connect the Sonos Room to the network)

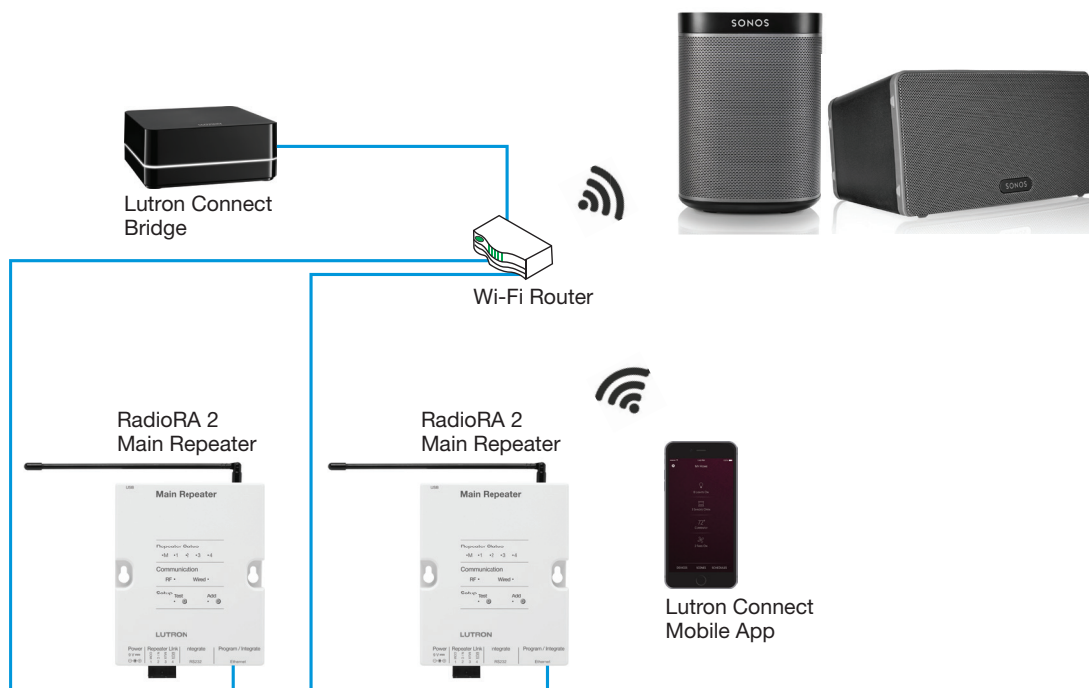
### Software

- HomeWorks QS or RadioRA 2 (Essentials and Inclusive) programming software version 10.4 or newer
- Lutron Connect Mobile app version 2.0 or newer
- iOS version 8.0 or newer; Android OS version 4.1(Jellybean) or newer
- Sonos Player(s) running OS version 6.3 or newer

## Lutron and Sonos Integration System Diagrams

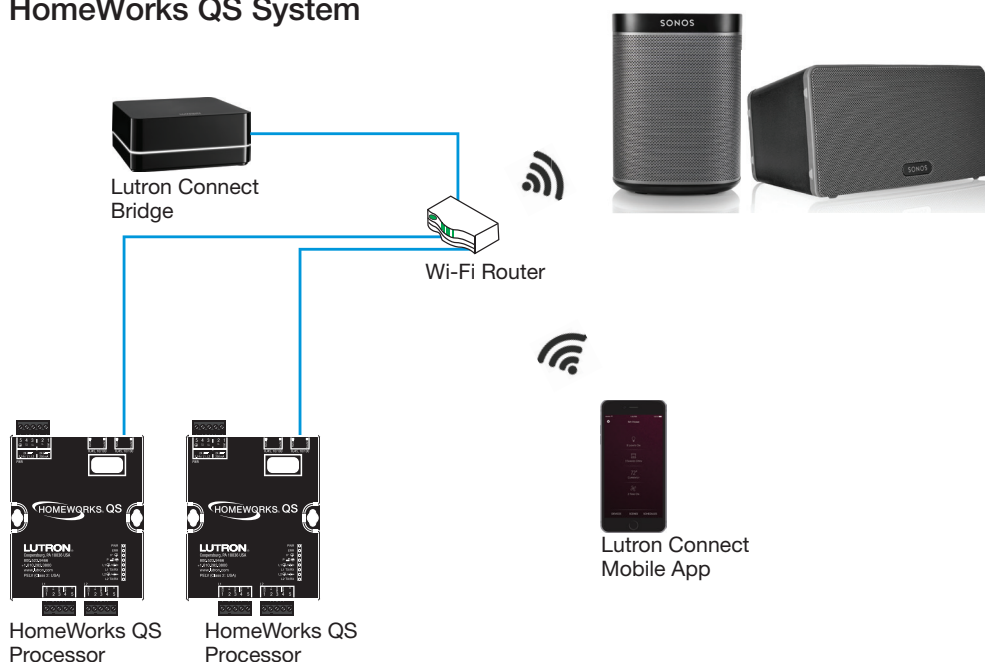
A typical connection within a home includes the Lutron Connect mobile app establishing a Wi-Fi® connection to a Wi-Fi® router and the Lutron processor(s). All Sonos components should be connected to the same LAN either wired or wirelessly. No devices should be plugged into the internet port on the router as that port is dedicated to a wired connection from the internet service provider.

### RadioRA 2 System



## Lutron and Sonos Integration System Diagrams *(continued)*

### HomeWorks QS System



### Sonos System Configuration

Prior to integrating the Lutron and Sonos systems, it is important to properly configure the Sonos system. The Sonos system configuration is completed using the Sonos mobile app. Once the initial Sonos setup is complete, it is important to create Sonos Favorites. This is one of the requirements for successful integration between the two systems. It allows control of Sonos favorites from a Pico Remote Control for Audio or the ability to add a Sonos Favorite to a scene (e.g. Morning). Download the Sonos mobile app from the app store to begin configuration of the Sonos components.

### Lutron Programming

Prior to adding Sonos Rooms to the Lutron programming using the Lutron Connect app, there are some general guidelines to follow. The following section will explore programming using 3 different examples of keypads: Pico Remote Control for Audio, in-wall and tabletop keypads (seeTouch, GRAFIK T, Palladiom, etc.), and Connect app only keypads (Homeowner and virtual keypads).

In general, Sonos Rooms can be added only to buttons set as the following button types:

#### RadioRA 2 System

- Single/Multi-Room Scene
- Raise Programmed Devices
- Lower Programmed Devices

**Note:** Keypads with “Save changes on button hold” (Advanced Settings) enabled cannot have Sonos programming added.

#### HomeWorks QS System

- Single Action (set LED Logic to “Momentary On When Pressed” when possible)
- Raise – Single Scene Raise
- Lower – Single Scene Lower

**Note:** Buttons with Cycle Dim enabled cannot have Sonos programming added.

The Pico Remote Control for Audio is based upon the 3-button with raise and lower style of Pico wireless control.



The Pico Remote Control for Audio is only available in RadioRA 2 programming software version 10.6 or newer. To design the audio engraved Pico Remote Control for Audio into a database, it must be added as a 3 button with raise and lower configuration with the engraving style set to **Audio**.

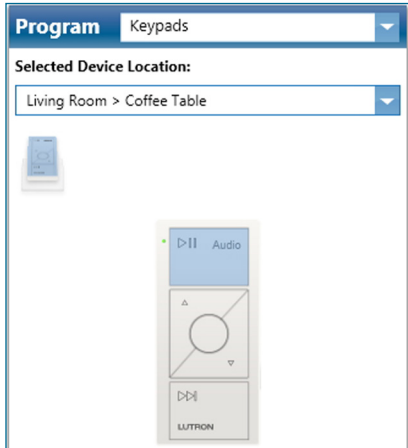
# LUTRON

## Lutron Programming Best Practices *(continued)*

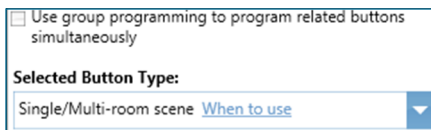
### Pico Remote Control for Audio *(continued)*

#### Adding/Configuring a Pico Remote Control for Audio in the RadioRA 2 Software *(continued)*

After the Pico Remote Control for Audio has been added to the database, proceed to the **Program** tab of the software and select the Pico Remote Control for Audio from the **Selected Device Location** drop-down list.



When programming a Pico Remote Control for Audio, ensure that the favorite button is set to **Single/Multi-room Scene**. All other buttons will already be set to the appropriate button type.



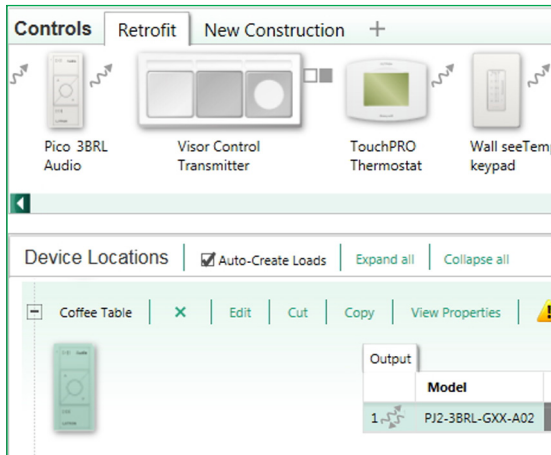
Do not program any other load to the Pico Remote Control for Audio. The Pico Remote Control for Audio must have nothing programmed to it in order to allow it to be programmed to control the Sonos system, using the Lutron Connect App.

## Lutron Programming Best Practices *(continued)*

### Pico Remote Control for Audio *(continued)*

#### Adding/Configuring a Pico Remote Control for Audio in the HomeWorks QS Software

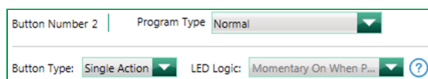
The Pico Remote Control for Audio is only available in HomeWorks QS programming software version 10.6 or newer. To design the audio engraved Pico Remote Control for Audio into a database, it must be added as a 3 button with raise and lower configuration. The image below shows the selection of the standard lights icon engraved option with the model number changed, in the Model field, to the Audio Pico model. The Audio Pico can also be selected into the toolbox directly.



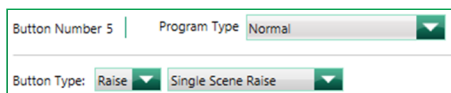
After the Pico Remote Control for Audio has been added to the database, proceed to the **Program** tab of the software and select the Pico Remote Control for Audio from the **Device Location** drop-down list.



When programming a Pico Remote Control for Audio, ensure that the **On**, **Favorite**, and **Off** buttons are set to **Single Action** button type with **Momentary On When Pressed** LED logic.



Keep the raise and lower buttons set as **Single Scene Raise** and **Single Scene Lower**.



Do not program any other load to the Pico Remote Control for Audio. The Pico Remote Control for Audio must have nothing programmed to it in order to allow it to be programmed to control the Sonos system, using the Lutron Connect App.



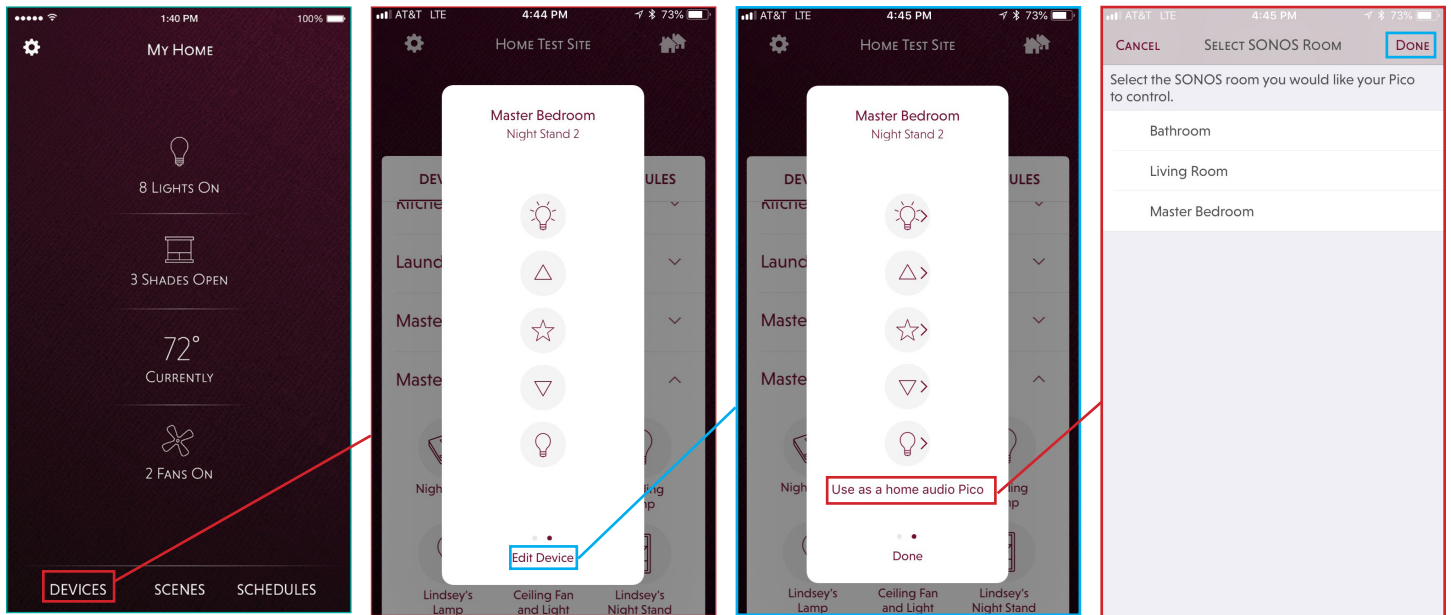
## Lutron Programming Best Practices *(continued)*

### Pico Remote Control for Audio *(continued)*

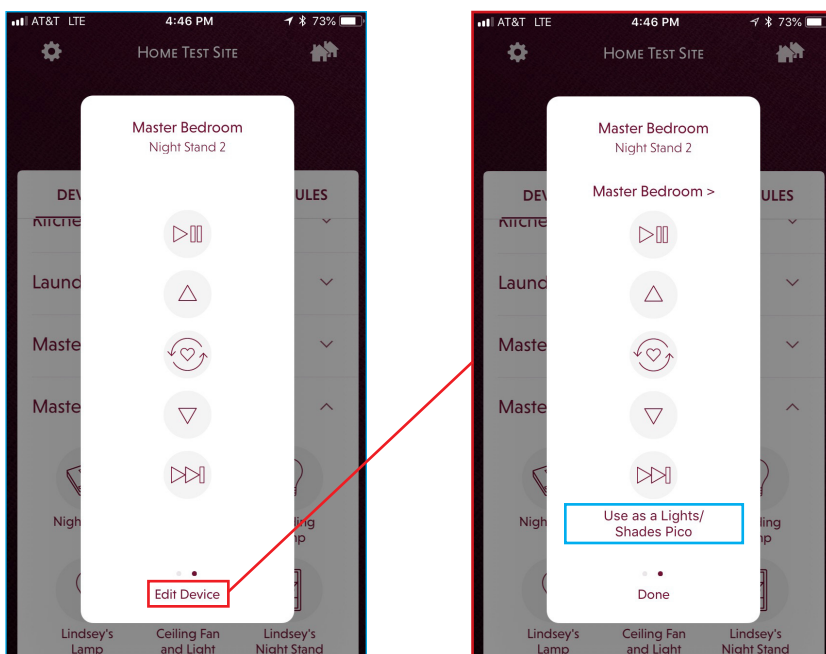
#### Using the Lutron Connect App to Program the Pico Remote Control for Audio

In the Lutron Connect app, navigate to the area tree using the **Devices** selection from the HomeGlance screen. Use the area tree to navigate to the Pico Remote Control for Audio engraving that you would like to add the Sonos Room(s) to.

Tap **Edit Device** at the bottom of the Pico Remote Control for Audio pop-up and then tap **Use as a home audio Pico**. Select the Sonos Room that you would like to control and then tap **Done**.



The app representation of the Pico wireless control will now show the appropriate symbols to match up to the actual Pico Remote Control for Audio. To change back to a standard lights/shades Pico wireless control, tap **Edit Device** and then tap the option **Use as a Lights/Shades Pico**.





## Lutron Programming Best Practices *(continued)*

### Keypad Programming Best Practices

Sonos Rooms can be controlled from a single action button, on a physical keypad in the living space, in a HomeWorks QS or RadioRA 2 system. Only keypads that appear in the Lutron Connect app can have Sonos Room control added to the buttons. Compatible keypads that can control Sonos Rooms include:

#### RadioRA 2 Keypads

- Pico Remote Control for Audio Engraving
- Pico wireless control
- seeTouch wall-mount, tabletop, and hybrid keypads
- GRAFIK T hybrid keypads
- Homeowner keypad

#### HomeWorks QS Keypads

- Pico Remote Control for Audio Engraving
- Pico wireless control
- seeTouch wall-mount, tabletop, and hybrid keypads
- GRAFIK T hybrid keypads
- Palladiom keypads
- Architrave keypads
- Signature Series keypads
- Homeowner keypad

Devices that are **NOT** compatible, because they are not shown in the Lutron Connect app, include:

- HomeWorks QS phantom keypads and RadioRA 2 phantom buttons
- HomeWorks QS and RadioRA 2 visor control receiver

Sonos Rooms can be controlled by RadioRA 2 and HomeWorks QS single action button presses as follows:

- **Toggle Play/Pause** – a single action press that plays or pauses an individual Sonos Room; if the room is currently grouped with other rooms, all rooms will follow
- **Skip Next** - a single action press that advances to the next track in whatever source is currently active on an individual Sonos Room; if the room is currently grouped with other rooms, all rooms will follow
- **Cycle Sonos Favorite** – advances to the next Sonos Favorite (configured in the Sonos app) ; if the room is currently grouped with other rooms, all rooms will follow
- **Volume Up/Down** – increase or decrease the volume of an individual Sonos Room using raise and lower buttons on compatible keypads
- **Play or Pause Rooms**<sup>1</sup> – blend in an audio preset to an existing scene controlling lights, shades, and temperature (ex. Welcome, Away, Morning, Goodnight); user sets the Sonos Rooms to play or pause, which Favorite to play, and the volume for all selected rooms

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<sup>1</sup> Play or pause rooms may experience a slight delay in activation, coming on after lights and shades have moved to their levels, due to the amount of information being sent and the responsiveness of the audio streaming service. Each instance sends play/pause commands to Rooms, chooses a Favorite, and sets the volume for all Sonos Rooms which are playing

## Lutron Programming Best Practices *(continued)*

### Keypad Programming Best Practices *(continued)*

#### RadioRA 2 Keypad Programming

Prior to having the ability to add Sonos Rooms to buttons in the app, it is important to properly set the keypad buttons up in the RadioRA 2 programming software.

First, proceed to the **Program** tab of the software and select the keypad to be assigned to control Sonos Rooms as part of a scene. After the keypad has been selected from the **Device Location** drop-down menu, select the appropriate button. Be sure to provide engraving text as this will not only show on the actual keypad but also in the Lutron Connect App.



Once the button has been selected and engraved, change the button type (in the lower-left corner of the screen) to **Single/Multi-Room Scene**.

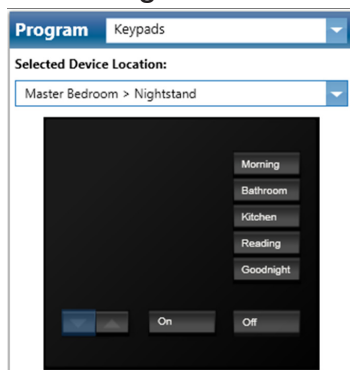
#### Selected Button Type:

Single/Multi-room scene [When to use](#)

Single action is a best practice because a RadioRA 2 system will not be able to utilize the Sonos Room status in its determination of the LED feedback for the keypad button. If only Sonos Rooms were applied to a toggle button, for example, the toggle off portion of the button function would never execute since the LED would never stay on. Also, when editing buttons using the Connect App, it is the Press On function of a button which is able to be edited.

Raise and lower buttons can be programmed to control volume for a Sonos Room. Controlling the volume in this way only affects the particular Sonos Room not the group that it is in. Using a raise and lower for volume control is possible on all of the compatible RadioRA 2 keypad styles listed on previous page.

In order to utilize the raise and lower buttons of a keypad for volume control, the button type must be set as **Raise Programmed Devices** or **Lower Programmed Devices** instead of using the default Master setting.



#### Selected Button Type:

Lower programmed devices [When to use](#)

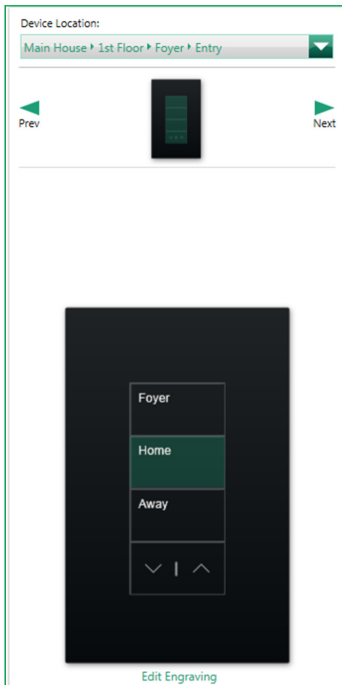
## Lutron Programming Best Practices *(continued)*

### Keypad Programming Best Practices *(continued)*

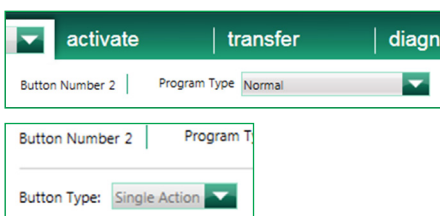
#### HomeWorks QS Keypad Programming

Prior to the end-user having the ability to add Sonos Rooms to buttons in the app, it is important to properly set the keypad buttons up in the HomeWorks QS programming software.

First, proceed to the **Program** tab of the software and select the keypad to be assigned to control Sonos Rooms as part of a scene. After the keypad has been selected from the **Device Location** drop-down menu, select the appropriate button. Be sure to provide engraving text as this will not only show on the actual keypad but also in the Lutron Connect App.



Once the button has been selected and engraved, make sure that the **Program Type** is set to **Normal** and change the **Button Type** (in the upper-middle of the screen) to **Single Action**. **Single Variable** and **Conditional** button types are considered advanced button types and cannot be edited from within the Connect App, preventing the end user from being able to apply Sonos Room control.



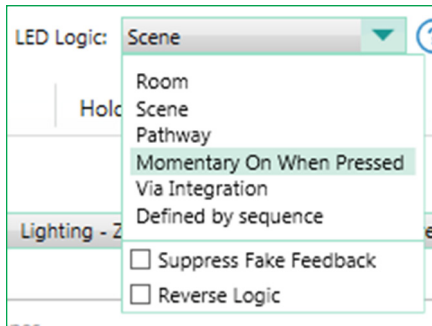
**Single action** is a best practice because the HomeWorks QS software will not be able to utilize the Sonos Room status in its determination of the LED feedback for the keypad button. If only Sonos Rooms were applied to a toggle button, for example, the Toggle Off portion of the button function would never execute since the LED would never stay on. Also, when editing buttons using the Connect App, it is the Press On function of a button which is able to be edited.

## Lutron Programming Best Practices *(continued)*

### Keypad Programming Best Practices *(continued)*

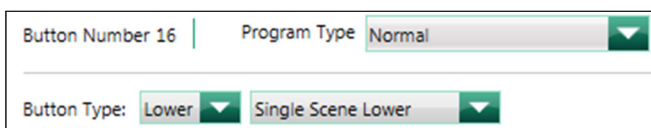
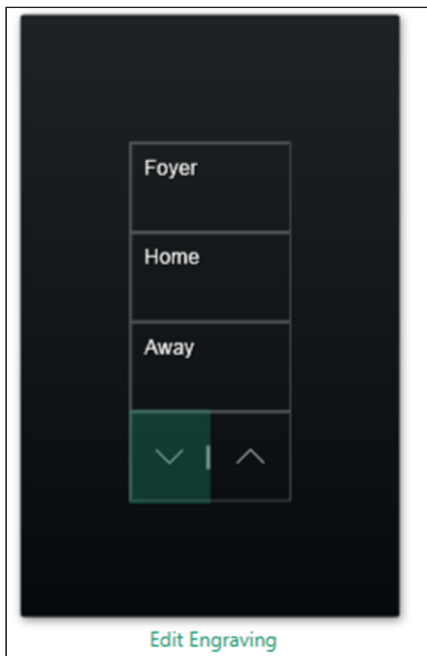
#### HomeWorks QS Keypad Programming *(continued)*

If the button is only going to control Sonos Rooms (no control of any other output in the HomeWorks QS system such as a light or shade), it is a best practice to also set the LED status to **Momentary On When Pressed**.



Raise and lower buttons can be programmed to control volume for a Sonos Room. Controlling the volume in this way only affects the particular Sonos Room not the group that it is in. Using a raise and lower for volume control is possible on all of the compatible HomeWorks QS keypad styles listed on Page 9.

In order to utilize the raise and lower buttons of a keypad for volume control, the button type must be set as **Single Scene Raise** or **Single Scene Lower** instead of using the default Master setting.



## Lutron Programming Best Practices *(continued)*

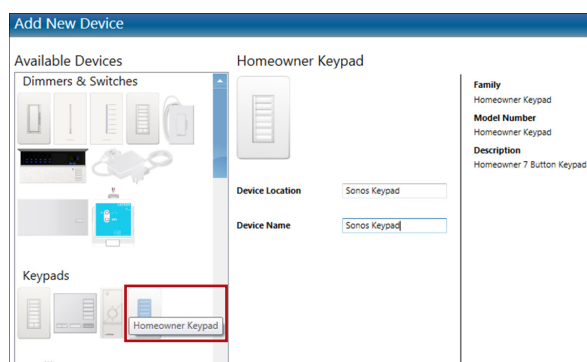
### Homeowner Keypads

A Homeowner keypad is a 7 button, app-only keypad that uses single action button logic with scene LED status. The Homeowner keypad gets assigned to a wireless link (RadioRA 2 Main Repeater or HomeWorks QS RF Link) or QS wired link (available in HomeWorks QS system only) in the system. This will take up one device address out of the 100 total device addresses on the link.

The Homeowner keypad provides a way to have additional music presets without the need for an actual keypad. The scenes created can then be set as **Favorites** on the Connect App HomeGlance screen (handset only) and as one of the 10 available widgets in the Connect App, providing a quick and easy way to control Sonos Rooms.

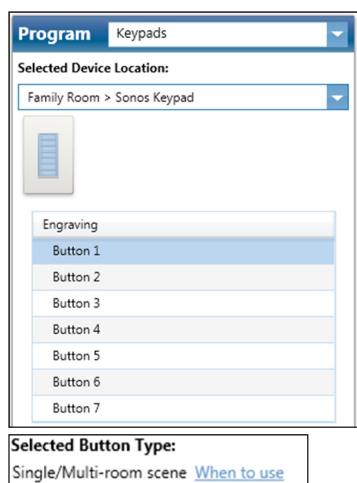
### RadioRA 2 Software

Proceed to the **Design** tab of the software and click on the “+” to add a new device location. Select the image of the Homeowner keypad in the **Add New Device** window and provide a **Device Location** and **Device Name**.



Click on **Done** to complete the addition of the Homeowner keypad into the database. No physical keypad will get activated to this software keypad. Keep in mind that the Homeowner keypad will still consume one of the available 95 device addresses on the Main Repeater that it was added to. The Main Repeater and 4 Auxiliary repeaters each consume an address, leaving 95 out of 100 addresses for devices.

The Homeowner keypad will show up on the list of keypads that can be programmed in the **Program** tab of the software. Each button is locked into being a **Single/Multi-Room Scene** which is ideal for Sonos control. The homeowner can edit the names of the buttons and assign Sonos control using the Connect app, as shown on Page 16.



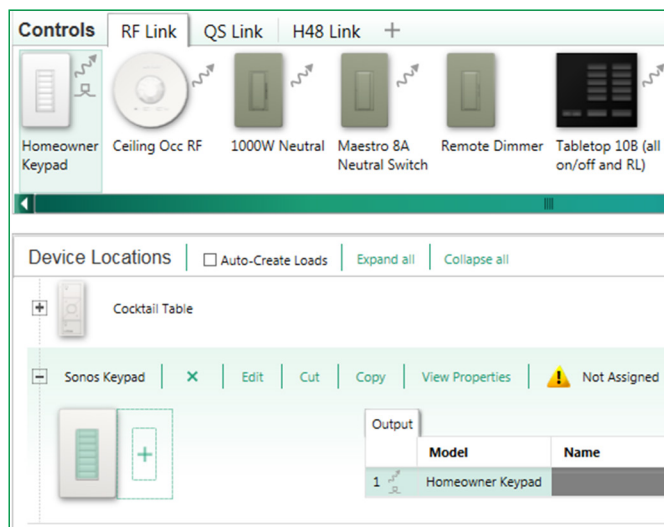
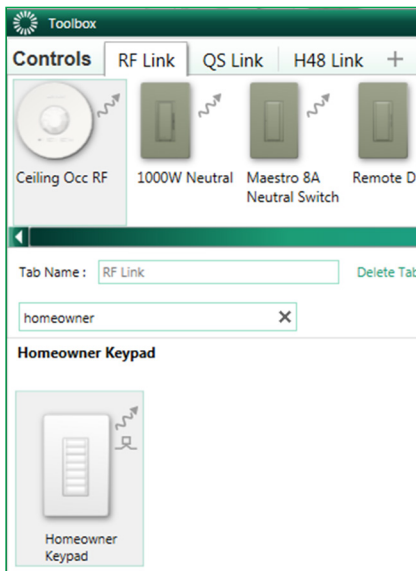
A database transfer must be performed after adding the Homeowner keypad into the system in order for it to be accessible via the Connect app.

## Lutron Programming Best Practices *(continued)*

### Homeowner Keypads *(continued)*

#### HomeWorks QS Software

Proceed to the **Design** tab of the software. Select the image of the **Homeowner Keypad** from the toolbox and provide a **Device Location** name. If the Homeowner keypad is not in the toolbox, first add it to the toolbox by clicking on **Edit Toolbox** in the upper-right corner of the screen and then searching for **Homeowner** in the search field.

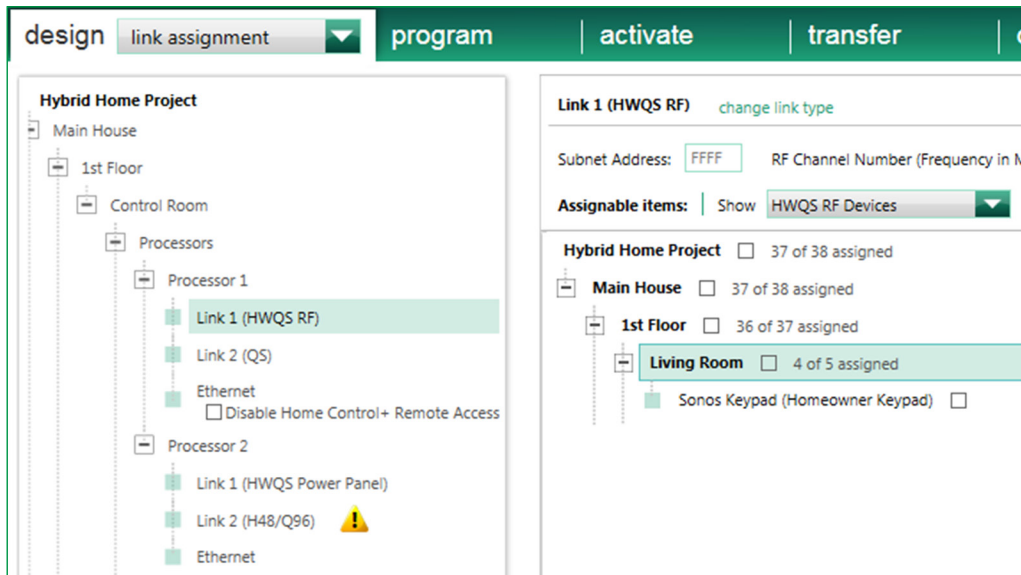


## Lutron Programming Best Practices *(continued)*

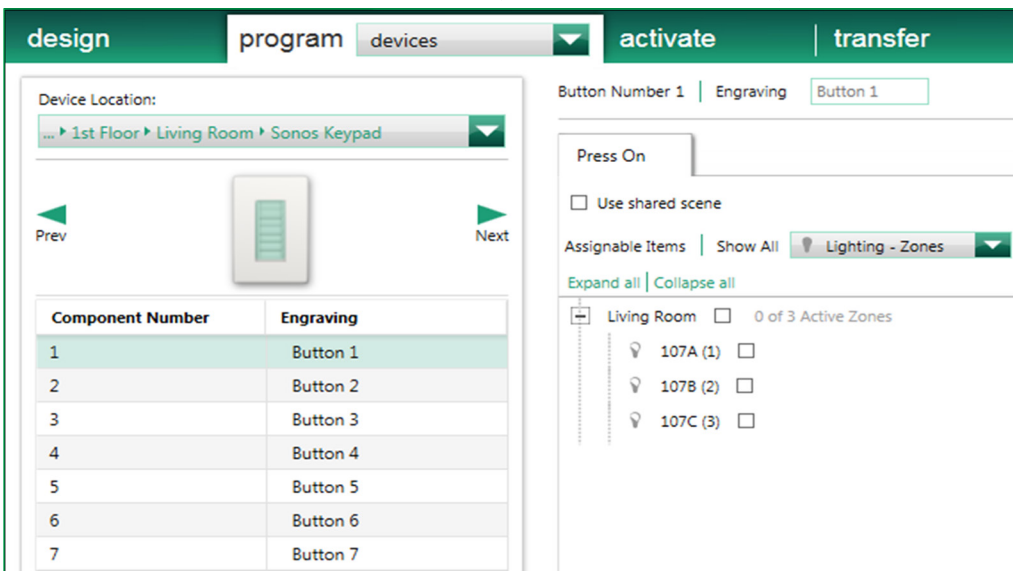
### Homeowner Keypads *(continued)*

#### HomeWorks QS Software *(continued)*

After the Homeowner keypad has been added to the database, it must be linked by going to **Design > Link Assignment**. The Homeowner keypad can be linked to either a QS or RF link and will consume one of the available device addresses on the link.



The Homeowner keypad will show up on the list of keypads that can be programmed in the **Program** tab of the software. Each button is locked into being Single-Action which is ideal for Sonos control. The homeowner can edit the names of the buttons and assign Sonos control using the Connect app, as shown on Page 16.

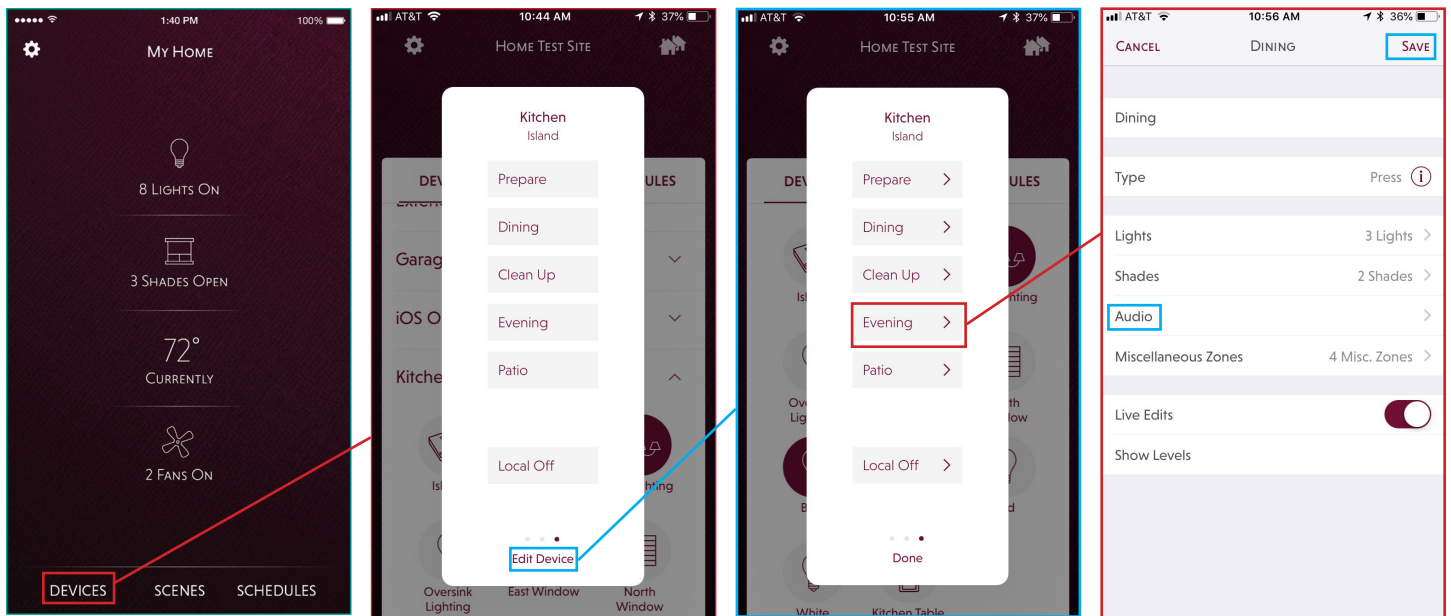


A database transfer must be performed after adding the Homeowner keypad into the system in order for it to be accessible via the Connect app.

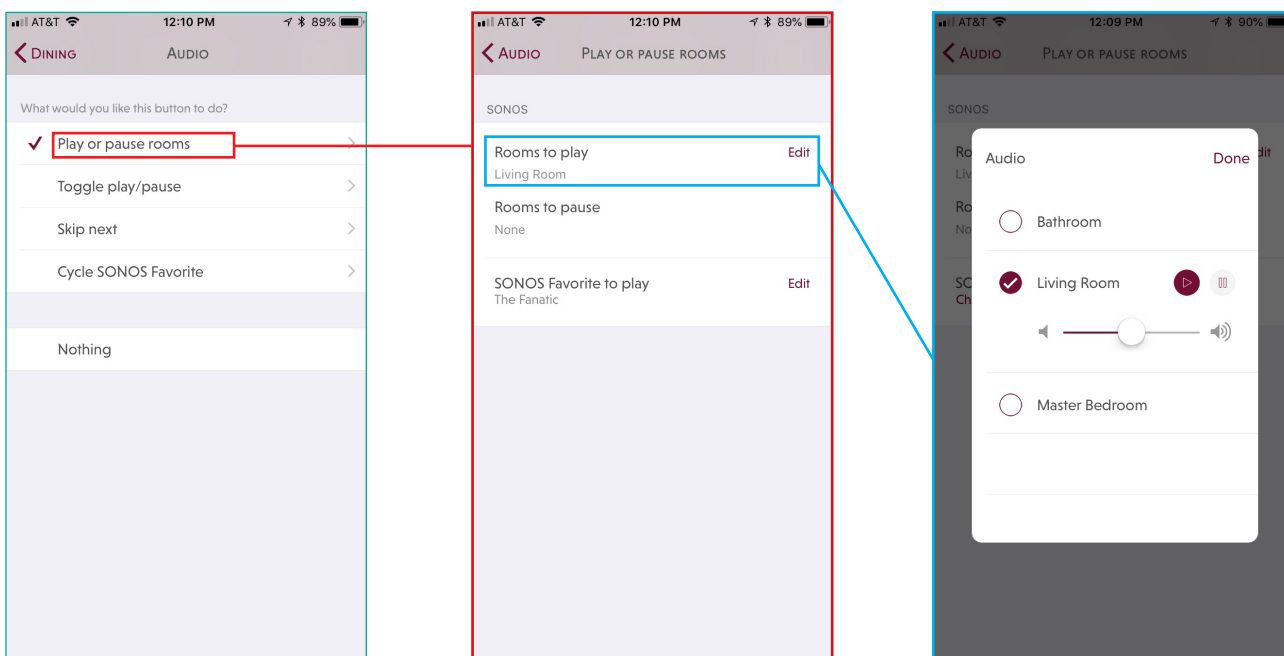


## Using the Lutron Connect App to Add Sonos Room Control

From the **HomeGlance** screen of the Connect App on the phone, proceed to **Devices** and navigate to the keypad that is to have Sonos Room control added to it. Once the keypad has been selected, tap **Edit Device** and tap the chevron to edit the desired button. Tap **Audio** to begin adding Sonos Room control to the button.

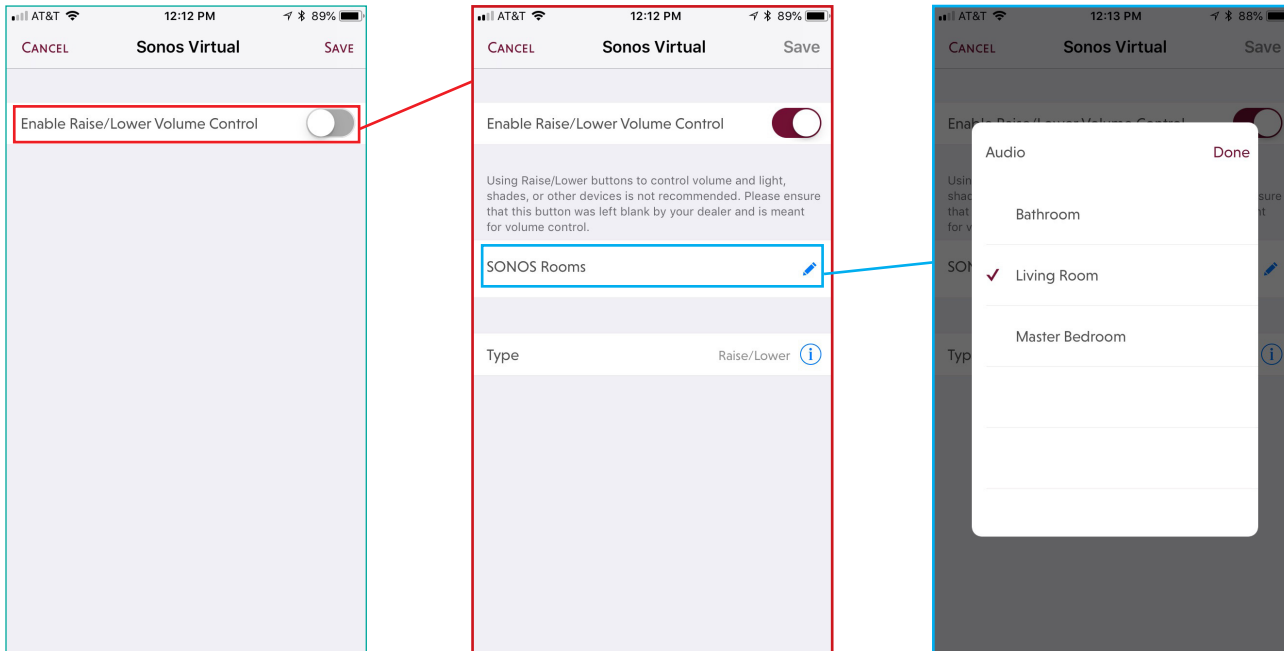


**Play or pause rooms, Toggle play/pause, Skip next, or Cycle SONOS Favorite** capability can be added to the Single Action button. To add Sonos Rooms to a scene, tap on **Play or pause rooms**. **Play or pause rooms** requires a **Favorite** to be selected as well as **Rooms to played** and **Rooms to pause**. For each one being played as part of the preset, the volume must be set.



## Using the Lutron Connect App to Add Sonos Room Control (*continued*)

For raise and lower buttons on keypads, an **Enable Raise/Lower Volume** option will appear. The raise and lower buttons have been set to **Single Scene Raise/Lower** for HomeWorks QS software or **Raise/Lower Programmed Devices** for RadioRA 2 software. No other loads have been assigned to them. After enabling the feature, select the Room to be affected.



## Networking Best Practices

Sonos Room can be set up in one of two ways:

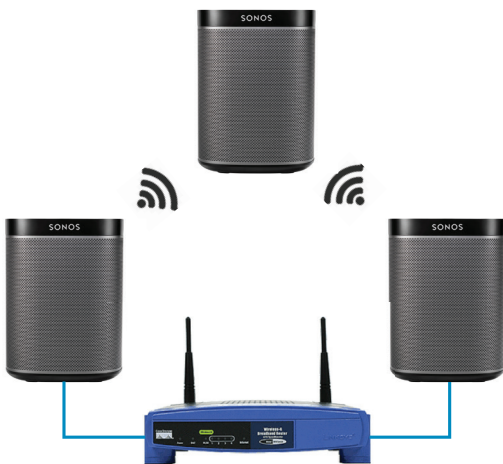
1. Standard – All Rooms connected wirelessly through the LAN



2. Boost Mode – One Room connected via wire into a router or switch and all others connected wirelessly



When using Boost Mode, where one Room is wired into the physical network, it is important to limit the number of hard-wired Rooms to one network. Connecting more than one Room to the network using a wired connection could cause a network loop.



The network loop will cause broadcast and multicast commands to be repeated to all devices on the network. As network traffic builds, it will become increasingly difficult for other devices to communicate over the same network causing disruptions to all network devices.

## Networking Best Practices (*continued*)

Sonos Rooms will attempt to mitigate the issue using spanning tree protocol (STP) but some prosumer and commercial grade routers block STP by default thus allowing the network loop to continue in these instances.

Some network devices are capable of weathering the loop such as:

### PCs/Tablets/Phones

- Internet browsers stop working, any internet reliant service is not functional

### Sonos Rooms

- Playback will fail and app control will no longer work

Caséta/Connect Bridge/HomeWorks QS Processor

- Cannot use your smart phone to control your lights anymore
- Network based integrations will not work
- Cross-processor actions no longer work in the HomeWorks QS processor

Other devices will not be able to handle the network loop such as:

### RadioRA 2 Main Repeater

- The Main Repeater has to handle all network packets received and will become overloaded, causing the Main Repeater to enter Safe Mode
- All processor based functions to stop working
  - Pico wireless control
  - Timeclock Events
  - Smart Phone Control
- seeTouch keypads continue to work

To avoid network loops, it is important to keep a maximum of only one Sonos Room wired into the network and enable STP in the router.

For Lutron system networking best practices and troubleshooting, refer to the [Residential Systems Networking Guide](#) found at [www.lutron.com](http://www.lutron.com)

## Frequently Asked Questions

### What is a Sonos system?

Sonos is the smart audio player system that streams all your favorite music to any room, or every room. Control your music with one simple app, and fill your home with pure, immersive sound. A Sonos system offers a variety of players in different shapes and sizes for any or every room of your home. You can find out more at [www.sonos.com](http://www.sonos.com).

### What Lutron systems are compatible with the Sonos system?

Caséta Wireless, RA2 Select, RadioRA 2, and HomeWorks QS systems are all compatible with the Sonos system.

### What version of the Lutron Connect App is required for use with the Sonos system?

Lutron Connect App version 2.0 or later is required for integration with the Sonos system.

### What are the benefits of integrating Lutron Connect with a Sonos system?

There are several benefits when integrating a RadioRA 2 or HomeWorks QS system, with the Lutron Connect app, with a Sonos system. Sonos Rooms can be added to any single action scene button on an in-wall, tabletop keypad, or Lutron Connect app keypad. For example, music could be layered in with the lights, shades, and temperature control of the Morning scene, setting the perfect atmosphere for waking up in the morning and getting ready for the day. Sonos Rooms could also be included into the “Arriving/Leaving home” feature to automatically start playing music upon your arrival home while pausing them when you leave. Also, you can use the new Pico Remote Control for Audio<sup>1</sup> to control your Sonos Rooms from anywhere in your home (e.g. from the wall, nightstand, coffee table). Finally, scenes that have had Sonos programming added can be controlled through voice control integration using the Lutron Connect app.

### What can I do with a Pico Remote Control for Audio<sup>1</sup> and a Sonos system?

The Pico Remote Control for Audio allows you to play/pause your Sonos Rooms, raise or lower the volume, skip tracks and change between your Sonos Favorites.

### What can I do with scenes and a Sonos system?

You can create manual scenes that control lights, shades, and sound together (e.g. Dinner scene, Relax scene). Additionally, if you’re using the Arriving/Leaving Home feature you can automatically start playing your Sonos Rooms before you arrive home and automatically pause all your Sonos Rooms when you leave.

### What Sonos products work with RadioRA 2 and HomeWorks QS systems?

All Sonos components are compatible with RadioRA 2 and HomeWorks QS systems, including the Sonos One, PLAY:1, PLAY:3, PLAY:5, PLAYBAR, PLAYBASE, Beam, SUB, CONNECT, and CONNECT:AMP components.

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<sup>1</sup> App will only be able to program a Pico Remote Control for Audio if there is no other load type (non-Sonos) or devices programmed to it (e.g. lights, shades, fans, CCOs, etc)

## **Frequently Asked Questions *(continued)***

### **What hardware is required from a Sonos system to work with RadioRA 2 or HomeWorks QS systems?**

At least one compatible component listed on the previous page. When using the SUB component, it must be paired with at least one room.

### **What software is required from a Sonos system to work with RadioRA 2 or HomeWorks QS systems?**

You will need to install the Sonos app on your smartphone in order to initially setup your Sonos system and select your Sonos Favorites.

### **What hardware is required from a Lutron system to work with a Sonos system?**

You will need a RadioRA 2 or HomeWorks QS system with a Lutron Connect Bridge, and at least one keypad with single action button programming or a Pico Remote Control for Audio.

### **What software is required from a Lutron system to work with a Sonos system?**

You will need to install the free Lutron Connect app for RadioRA 2 and HomeWorks QS systems on your smartphone in order to set up your system and add Sonos Rooms to the Lutron app. The RadioRA 2 and HomeWorks QS systems must be running the 10.4 or higher operating system in order to work with the Sonos system.

### **Is there a fee for the Lutron Connect App?**

No, the app is free.

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