

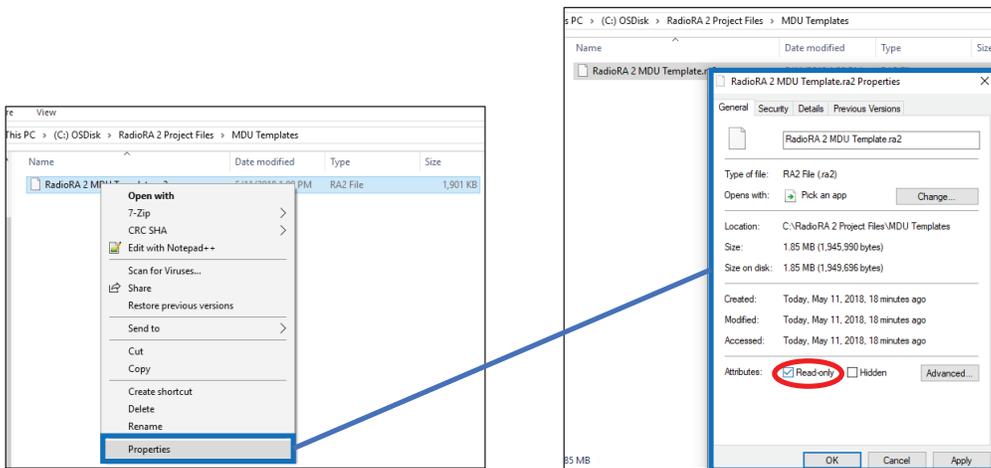
# Instructions for Programming a Multi-Dwelling Unit (MDU) or Hotel Using a RadioRA 2 or HomeWorks QS System

The following are instructions for programming a multi-dwelling unit (MDU) or hotel where each room, suite or apartment is an individual RadioRA 2 or HomeWorks QS system. The goal of the below procedures is to maintain the highest wireless performance in spaces where there are numerous Lutron systems, including non-residential systems, such as Vive, in common spaces.

## Instructions for a RadioRA 2 System

**Note:** These instructions require a RadioRA 2 PC tool version 6.3 or later.

1. Create a template project file for each type of unit on site. Ensure that all design and programming changes for each template have been finalized before proceeding to step 2.
2. Save each template file and then change that file to “read only” in Windows Explorer:



3. For each template file: Open the appropriate template file and then use “save as” to create a new file with a unique name for each unit that uses the current template.
4. For each unit: Open the correct project file created in step 3 for a given unit and change the following three things: **Main Repeater Frequency**, **Main Repeater Subnet Address**, and **System Address**.
  - a. On the design screen find the room that contains the main repeater.
  - b. Press Alt+F6 on the keyboard to enable advanced settings for the main repeater.
  - c. Right click on the main repeater.
  - d. Click **Advanced Settings**.
  - e. Choose a frequency for the Main Repeater other than 0x1A (433.6 MHz). It is recommended to utilize a 600 KHz separation between neighboring systems. Refer to the sample channel map on page 5 for an example of this approach. Please note that one-way transmitting devices, such as Pico remote controls and Radio Powr Savr sensors, will require their frequencies to be changed.<sup>1</sup>



## Instructions for a RadioRA 2 System *(continued)*

- f. Change the **Main Repeater Subnet Address** to a unique address. Lutron recommends the following: BRRR where B = the unique building number and RRR = three digits representing the room or unit number.

The numbering scheme is hexadecimal so characters 0 through F can be used (equivalent to decimal 1 to 16). While the hexadecimal letters would not easily translate to room numbers, they do help accommodate for multiple buildings on one property and it is recommended to use 0 through F for the building number, as a result.

As an example, unit 201 in building 1 would look like subnet address: 0201

- g. Click **Done**.  
 h. Click **Find Main Repeater**.  
 i. Click **Show Advanced**.  
 j. If the system will be connected to the network with other Lutron systems, change the **System Address** to a unique address. Use of addresses within the range of 224.0.2.0 to 224.0.255.255 is recommended.

5. Activate the devices in this project file and then transfer the project to this system.

**IMPORTANT:** Never reuse a unit's project file on a different unit. **Always** start with the template file.

6. Repeat steps 4 and 5 for the remaining units.

**Note:** If you need to make programming changes after you complete step 2, you must also make those changes to every file that you created in step 3. You would then need to use the correct project file in each room to transfer those changes.

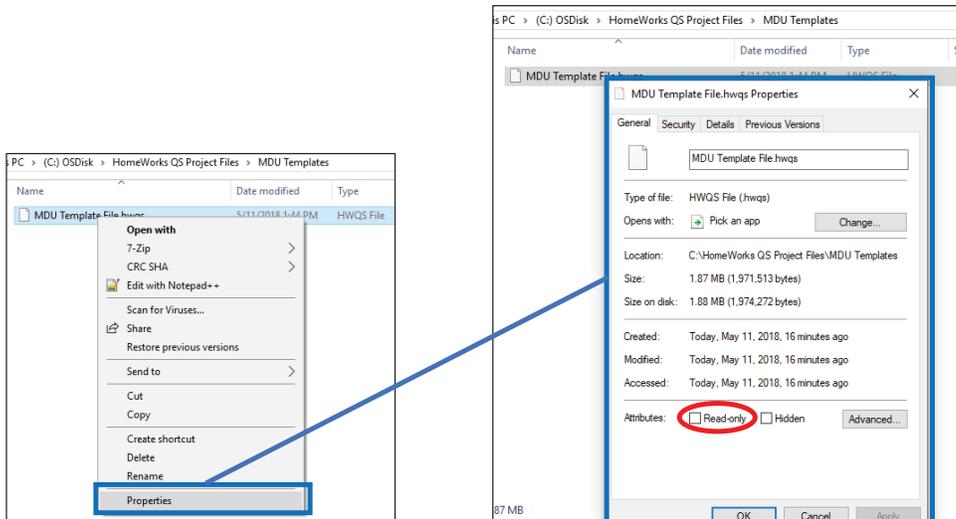


<sup>1</sup> Radio window sensors, temperature sensors, Pico remote controls, and occupancy sensors are some examples of “transmit only” devices. This type of device transmits without checking to see if another device is transmitting. If there are a lot of “transmit only” devices, the device behavior can slow down system response and cause other unwanted performance issues. Refer to the **OWT Device Frequency Change Procedure for Multi-Channel Systems** at [www.lutron.com](http://www.lutron.com) for more information.

## Instructions for a HomeWorks QS System

**Note:** These instructions require a HomeWorks QS PC tool version 6.1.0 or later.

1. Create a template project file for each type of unit on site. Ensure that all design and programming changes for each template have been finalized before proceeding to step 2.
2. Save each template file and then change that file to “read only” in Windows Explorer:

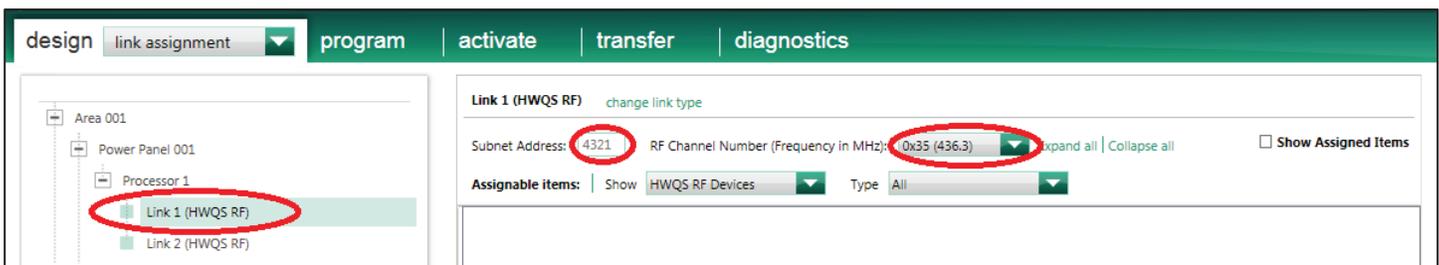


3. For each template file: Open the appropriate template file and then use “save as” to create a new file with a unique name for each unit that uses the current template.
4. For each unit: Open the correct project file created in step 3 for a given unit and change the following three things: **RF Frequency**, **RF Subnet Address**, and **System Address**.

- a. Navigate to the **design > link assignment** screen. For each RF link on the project:
  - i. Select an RF Processor Link on the area tree.
  - ii. Choose a frequency for the RF Link other than 0x1A (433.6 MHz). It is recommended to utilize a 600 KHz separation between neighboring systems. Refer to the sample channel map on page X for an example of this approach. Please note that one-way transmitting devices, such as Picos and Radio Powr Savr sensors, will require their frequencies to be changed.<sup>1</sup>
  - iii. Change the **RF Link Subnet Address** to a unique address. Lutron recommends the following: BRRR where B = the unique building number and RRR = three digits representing the room or unit number.

The numbering scheme is hexadecimal so characters 0 through F can be used (equivalent to decimal 1 to 16). While the hexadecimal letters would not easily translate to room numbers, they do help accommodate for multiple buildings on one property and it is recommended to use 0 through F for the building number, as a result.

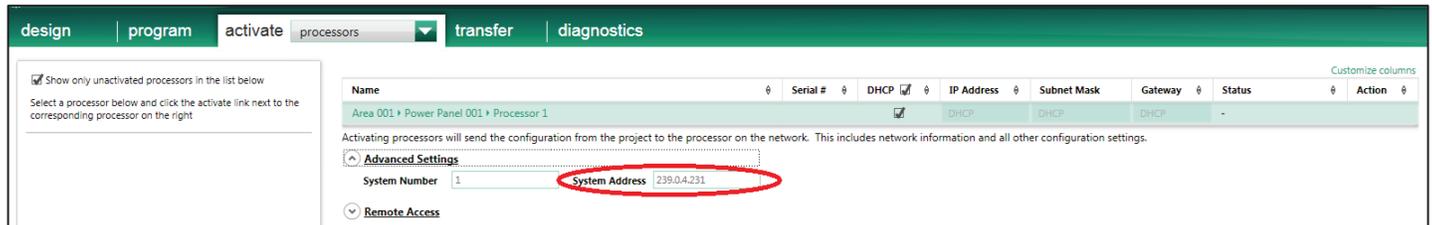
As an example, unit 201 in building 1 would look like subnet address: 0201.



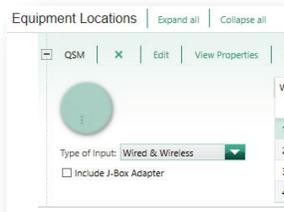
<sup>1</sup> Radio window sensors, temperature sensors, Pico remote controls, and occupancy sensors are some examples of “transmit only” devices. This type of device transmits without checking to see if another device is transmitting. If there are a lot of “transmit only” devices, the device behavior can slow down system response and cause other unwanted performance issues. Refer to the **OWT Device Frequency Change Procedure for Multi-Channel Systems** at [www.lutron.com](http://www.lutron.com) for more information.

## Instructions for a HomeWorks QS System *(continued)*

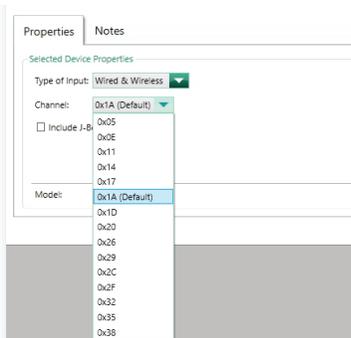
- b. If the system will be connected to the network with other Lutron systems, then the **system address** of each system must be unique:
  - i. Navigate to the **activate processors** screen.
  - ii. Expand the **Advanced Settings** group.
  - iii. Change the **System Address** to a unique multicast address. Use of addresses within the range of 224.0.2.0 to 224.0.255.255 is recommended.



- c. If the project is using wired links with wireless transmit-only devices working through a QSM, navigate to the **design > equipment** screen. For each QSM on the project:
  - i. Select the room on the area tree where the QSM is located.
  - ii. Click on **View Properties**.



- iii. Choose a frequency for the QSM other than 0x1A (433.6 MHz). It is recommended to utilize a 600 KHz separation between neighboring systems. Refer to the sample channel map on page 5 for an example of this approach. Please note that one-way transmitting devices, such as Pico wireless controls and Radio Powr Savr sensors, will require their frequencies to be changed<sup>1</sup>.



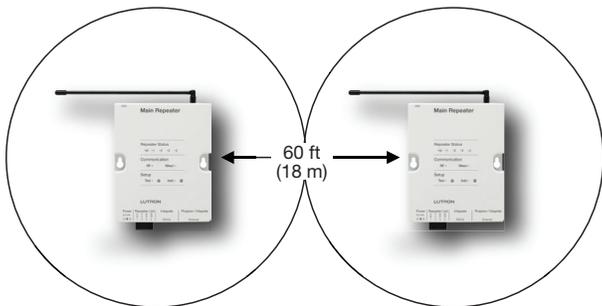
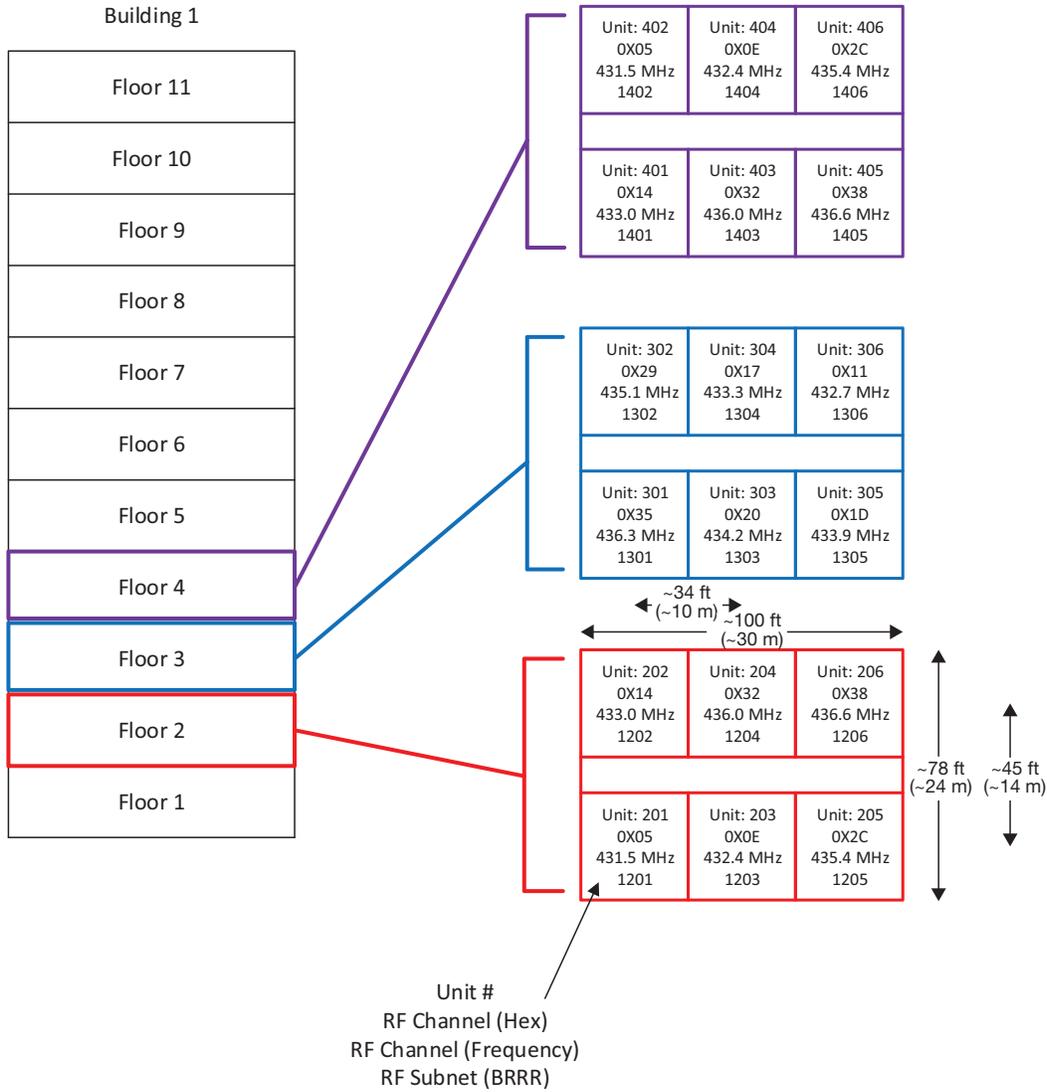
5. Activate the devices in this project file and then transfer the project to this system. **Always** start with the template file. **IMPORTANT:** Never reuse a unit's project file on a different unit.
6. Repeat steps 4 and 5 for the remaining units.
 

**Note:** If you need to make programming changes after you complete step 2, you must also make those changes to every file that you created in step 3. You would then need to use the correct project file in each room to transfer those changes.

<sup>1</sup> Radio window sensors, temperature sensors, Pico remote controls, and occupancy sensors are some examples of "transmit only" devices. This type of device transmits without checking to see if another device is transmitting. If there are a lot of "transmit only" devices, the device behavior can slow down system response and cause other unwanted performance issues. Refer to the OWT Device Frequency Change Procedure for Multi-Channel Systems at [www.lutron.com](http://www.lutron.com) for more information.

## MDU Example

Below is an example of a channel plan that will help to provide a guide of how to approach an MDU application. The actual physical layout and subsequent channel mapping will vary from site to site. The idea is to keep a 600 KHz channel separation in neighboring units, including units that are directly above.



## Terminology

- Site: The multi-dwelling unit (MDU) or hotel
- Unit: A room, suite, or apartment that will have a single RadioRA 2 or HomeWorks QS system
- Template Project File: a RadioRA 2 or HomeWorks QS project database that can have the Design and Programming completed but the devices have not yet been activated and the Main Repeater Frequency, subnet, and system address have not been set

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