# Wireless module setup guide

# 1 What you need to get started

This guide is for programming a system using the Rasoft Pro software (available for download at http://www.rakocontrols.com/rasoftpro/).

Classic Rasoft

Rasoft Pro

It is strongly advised to download and use the new software as some new features are not supported by Rasoft classic.

Programming the system will require a communication device to be connected: either a RAUSB/RAMPI or Bridge Module to a laptop or mac. It may also be useful to have a full list of the rooms and circuits that will be included in the project so these can be entered when using the new project wizard.

# 2 Create a new Rasoft Pro Project File

Open the Rasoft Pro programming software and click "File" - "New Project" to bring up the new project wizard. Each step of the process of creating the file is prompted in the software but further detail is provided here.

### 2.1 Project name and House numbers

Choose a suitable project name, typically the name of the property, a description for the project can also be added.



Every Rako system must be assigned a House number. Rasoft Pro will suggest a House number based on previous projects by default, a custom House number can be selected if preferable.

**NB**
*Rako products have a factory default House number of 1 so it is strongly recommend that this is not used. This will avoid interference with other systems also left on the default house address.*

## 2.2 Save Locations

Select the Save Location for the project file. It is best to use the default save location (C:/Users/[user]/Rako). Files saved at this address will appear in recent projects on the Rasoft Pro home screen when it is reopened.
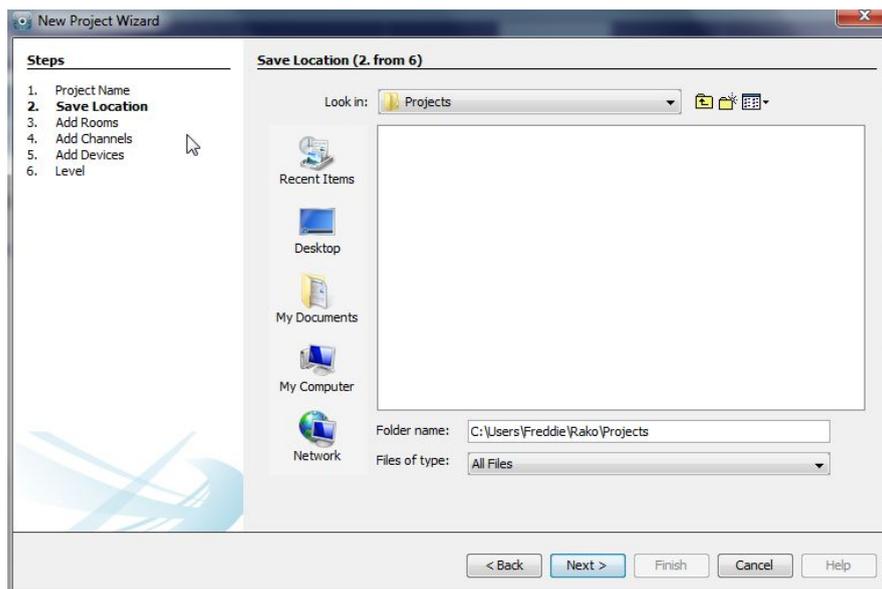


## 2.3 Adding rooms
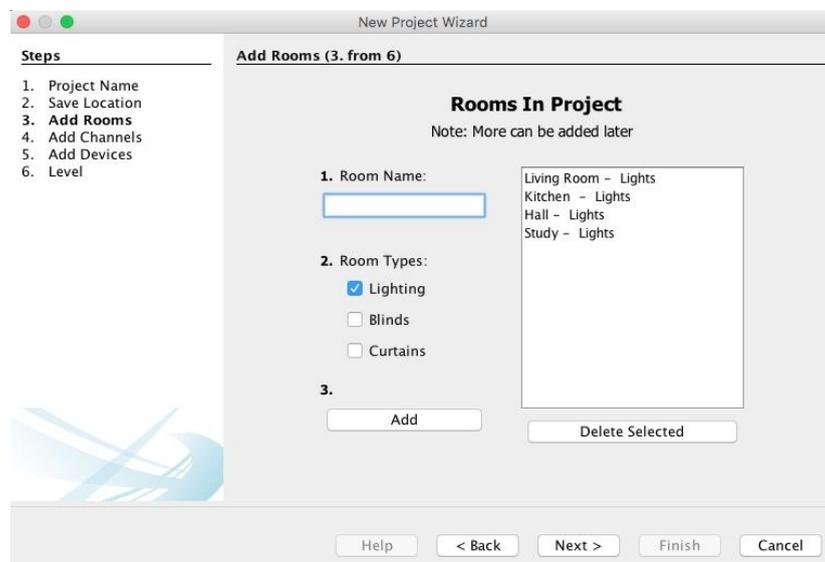
To add rooms to the project, type in the room name, select the room type (lights, blinds or switched) and click add.

Setting the correct room type is important at this stage as it will determine how certain pages of the software and App are displayed.

**NB**
*Rako rooms do not necessarily directly relate to physical rooms. For example a physical room with lighting and blind control should be set as two Rako rooms. This is because the mode of control of lighting and blinds are quite different and for ease of programming not normally linked.*

Once a room is added it will appear under the room list heading with an automatically assigned room number. Continue adding until the box on the right hand side is populated with all the rooms in the property. Rooms can be deleted at any time by highlighting them and clicking "delete selected".
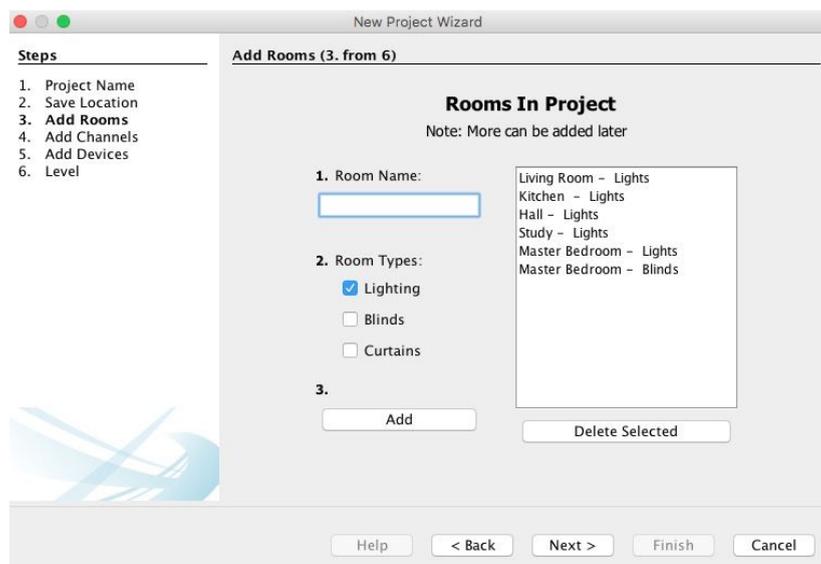


**Adding rooms for group features:**

Although in most cases the automatically assigned Room numbers are adequate sometimes it may be preferable to manually select Room numbers. This will mainly be necessary when "Group" features are being used (see Appendix 3).

*Do not use room 255 as this is occupied by the RXLink.*

There are two methods of setting a custom Room number. For a new Room in an existing project select "File" – "New Room" to bring up this menu:
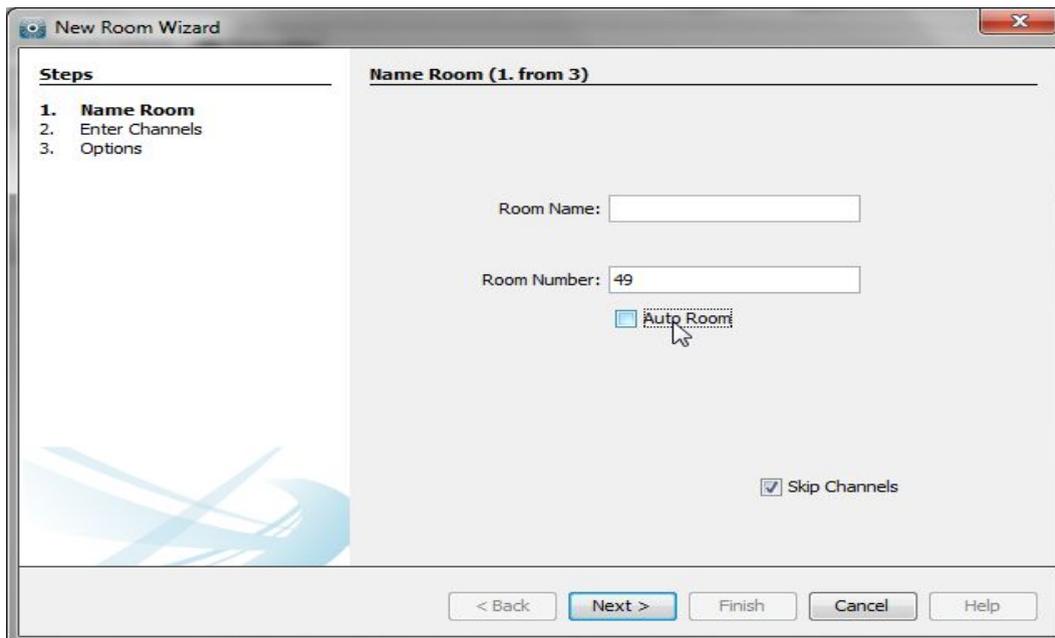
Un-check the "Auto-Room" box and enter the desired Room number.

Alternatively an existing Room number can be changed from the "Room Editor" tab. Select ID and change the value:
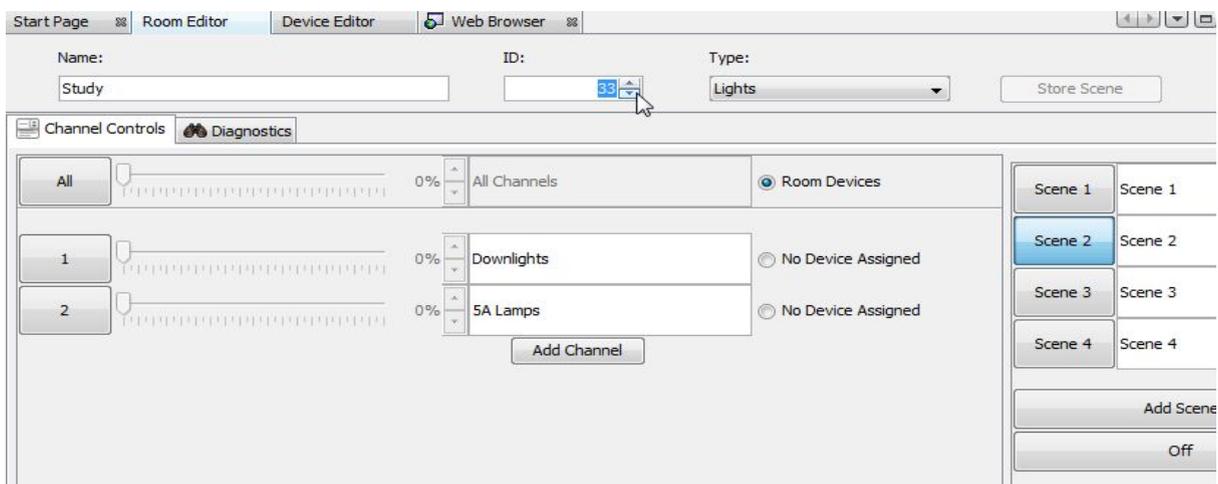


It is best to do this before any devices are assigned to this Room. If circuits are already mapped to the RXLink you will be prompted in the software:

Select "Yes" to both options. These will change the room numbers in the mappings page for the RXLink to the new room numbers. The mappings will have to be uploaded again once these changes have been made.

**NB**
*If wireless modules are addressed to a room with a changed number they will all have to be re-addressed as it from new.*
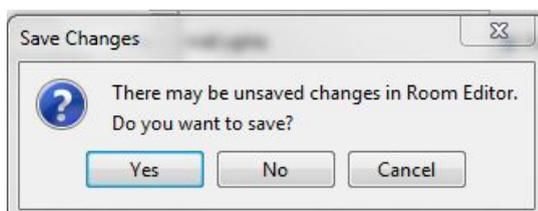
## 2.4 Adding channels

In the "Add Channels" screen all the added rooms will appear along the top. Each column below the room name lists the Channels within that Room.

**NB**
*A channel is usually the same as a circuit of lights although it may sometimes be desirable to have two or more circuits as one channel if they are always to dim together.*

Type the name of the circuits into the column associated with each room to populate the channels. Like Rooms, new Channels can be added, altered or deleted later.



**New Project Wizard**

**Steps**

1. Project Name
2. Save Location
3. Add Rooms
4. **Add Channels**
5. Add Devices
6. Level

Add Channels (4. from 6)

**Channels for Rooms**

Note: Can be added and modified later

| Living room | Kitchen | Hall | Study | Master Be... | Master Be... |
|---|---|---|---|---|---|
| Downlights | Downlights | Chadeleir | Downlights | Downlights | Left Blind |
| Wall lights | Under Cabinet | Wall lights | 5A lamps | Pendant | Right Blind |
| Coffer LED | Kickboard LED | | | Bedside 5A l... | |
| | | | | Bedside 5A l... | |

< Back    Next >    Finish    Cancel    Help

## 2.5 Adding devices

The devices to be programmed are added using this page, for a wireless RAK system this will usually just be RXLinks. Select the number of RXLinks in the system and click add. Adding devices using this page will create them as "virtual devices" in the Device Editor once the project has been generated.

It is not essential to add the RXLinks at this stage. They can be added one by one later if this is prefered. If this is the case then just leave this screen blank and press "next".
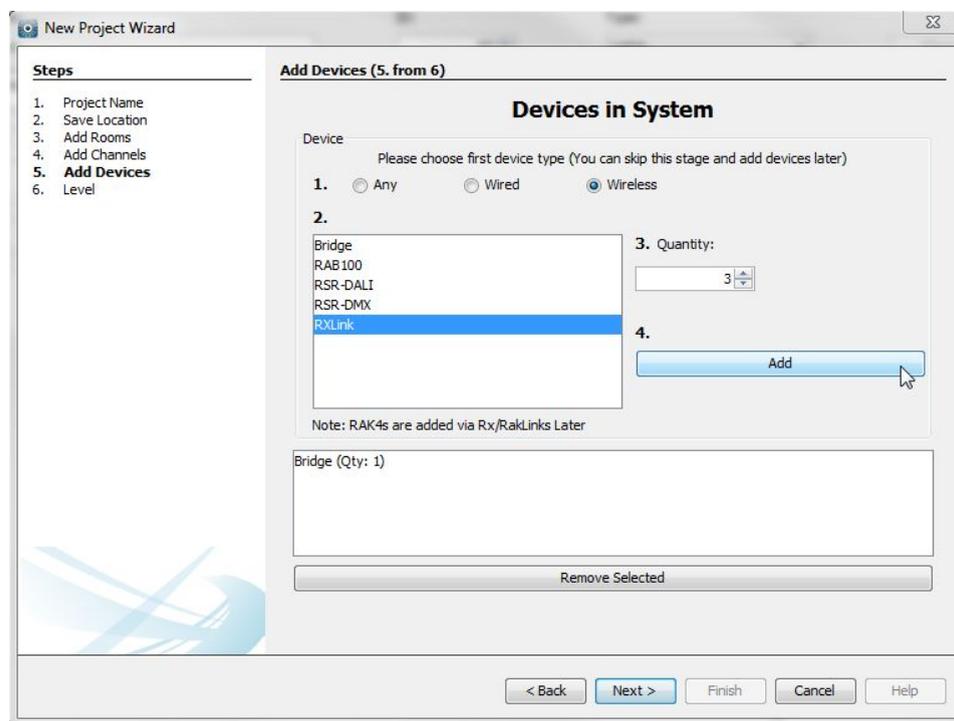


If a Bridge is being used to programme the system add it in the same way. If an RAMPI/RAUSB is being used it does not need to be added as a device.

## 2.6 Selecting a level

There are three user levels available in Rasoft Pro. In general the intermediate level should be used, this will give full access to all menus while still providing help options if required.

The beginner mode excludes a small number of menus such as: fade rates per scene, profile editor and the change type function.

The expert mode allows access to all debug menus which are only required when programming a wired system.

## 2.7 Connecting to a communication device

Before starting to assign circuits to channels the computer must be connected to a communication device this can be either a Bridge or RAMPI.  When a communication device can be found by Rasoft Pro it will appear in the communications window in the bottom right of the screen. For information on how to connect to a communication device see Appendix 1.

# 3 Addressing modules

Once all the rooms and channels are added into the project, a communication device is operational and all modules are connected to a supply then the modules are ready to be addressed.

The method below describes the fastest way to address a wireless module.  Alternatively select "file device" and follow the prompts in the "new device setup wizard.

## 3.1 Addressing a dimmer from the room editor

To assign room and channel numbers to modules first bring up the "room editor" tab by clicking on the relevant room in the "room list". This will show the channels added to the room earlier. Notice how to the right of the channel description it says "no device assigned".
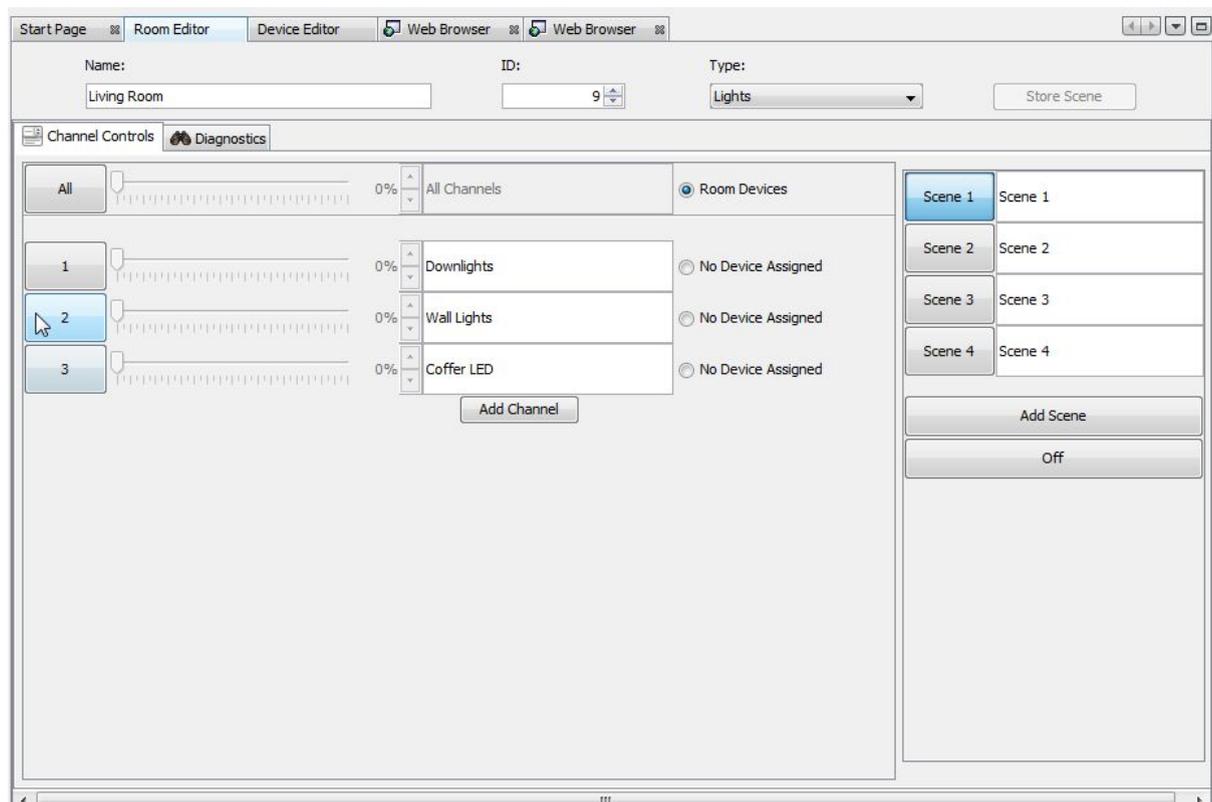


For example: to address the living room wall lights you will want to press the "2" button as shown above after putting the module into setup mode.  Details of how to put modules into setup mode are described below.

Select the appropriate module from the list and click "finish". When finish is clicked a second ident signal is sent to confirm that the correct module has been programmed. The module should flash the load connected briefly.

## 3.2 Putting a module with a button into setup mode

To do this press and hold the button on the module until the internal LED begins to flash periodically.  When the button is released it should continue to flash, while it is still flashing press the numbered button on the software to send an "ident" signal.

At this point the module will stop flashing and remains solid for around a second and then go out.
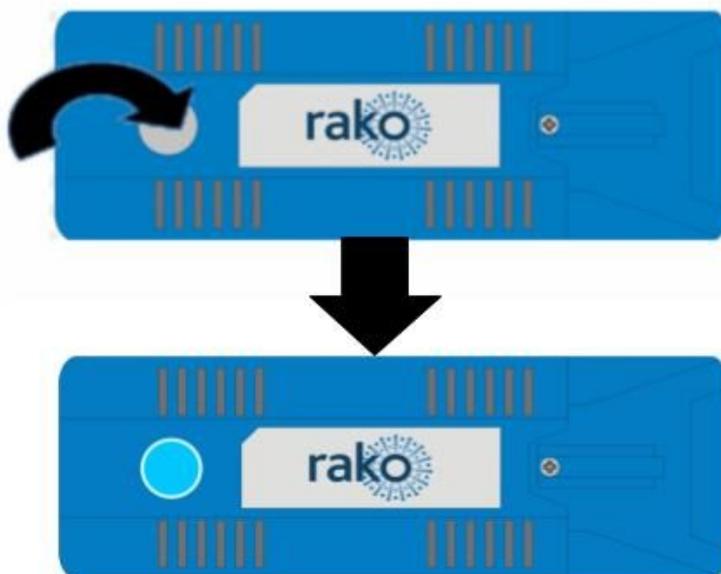
**NB**
*When a module is readdressed from default (Ho1 Rm4) to any other house and room address the power up mode will change from "100%" to "Off". This is only the case with the modules with set-up buttons. For more information on power modes see Appendix 2.*

## 3.2 Modules with magnet setup

For an older module with a magnet setup the process is exactly the same except the module is put into setup using a magnet.

To put the unit in setup mode hold a magnet steady against the side of the module next to the location of its internal LED. When the magnet is in the correct location the LED will illuminate. Keep the magnet in position for a few seconds until the LED starts to blink periodically showing the device is now in setup mode. Remove the magnet and the Led should continue to blink.

When a module has been added to the project using the new device wizard it will appear in the device list in the bottom left tile. To the right of the channel name the module type will now appear showing that a device is assigned to this channel. Clicking on this will take you to the device tab for this module.

# 4 Setup for wall-plates with dip switches (RCM)

Once all the modules have been addressed via the software the wall-plates need to be paired to the desired room. On the reverse of the wall-plate are two sets of dip-switches one each for the room and house address, Examples below:
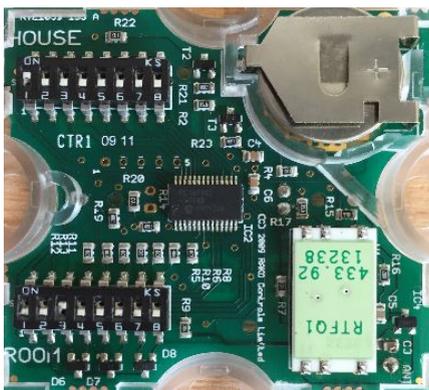


**RCP**
House: 1
Room: 4



**RCM**
House: 98
Room: 17

If the modules looks like an RCM but there are no dip-switches fitted then this module is an RNC module and cannot be addressed manually. See section 6 "setting up programmable wallplates (RNCs)" for details.

The dip-switches work using a binary number system, if unfamiliar with binary the switch settings can be read from the software. Right click on the room of the keypad to be programmed and select "dip-switches".
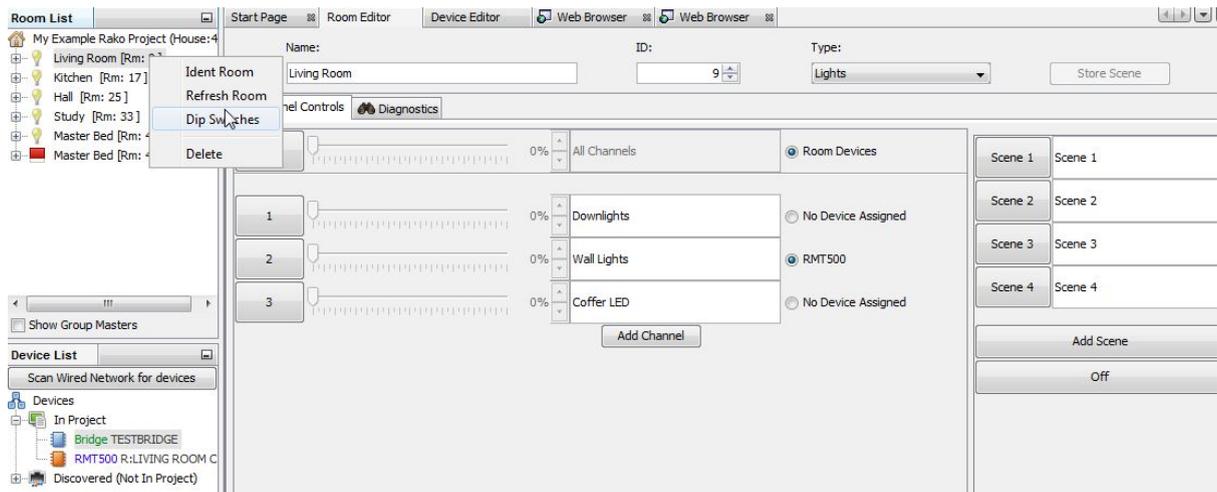
This will bring up a menu indicating how the dip switches need to be set for this room.
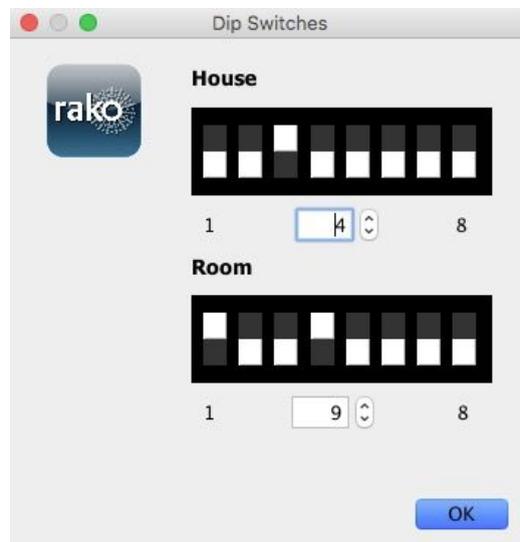


Set the wall-plates dip switches as indicated for all switches used in this room.  Repeat this process for all the different rooms in the system.

# 5 Setting up a programmable wallplate (RNC)

The RNC wallplate allows custom commands to any room or channel to programmed on to individual buttons of a wireless wallplate. This gives functionality comparable to the wired keypads rather than the single room control offered by the RCM.

## 5.1 Addressing the RNC

Unlike the RCM the RNC type keypads must be programmed using the software, a RAMPI is required to do this. First ensure that the RAMPI is connected to Rasoft Pro in the communication window see Appendix A1.1.

- To begin the setup process place on the RAMPI device on the RNC as indicated

- When the device is correctly positioned a green LED will flash in the RAMPI and a window will pop-up in Rasoft Pro.

- Give the device a suitable name so that it is identifiable in the software.
- Select the local room for the device. After the initial setup the RNC will behave like an RCM with dip switches set to this room.
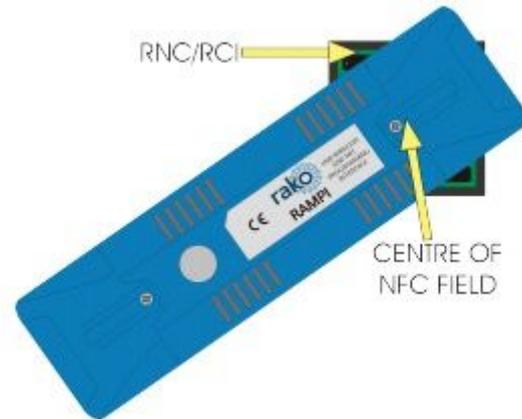
**NB**

*It is important to set the room at this stage. If "Assign later" is selected then the RNC will not be programmed and will be added as a virtual device*

- Select finish on the next page to complete setup. The RAMPI will need to upload to the RNC at this stage.

**Uploading test DeviceAddress, RasoftData**

0%

Uploading section: DeviceAddress
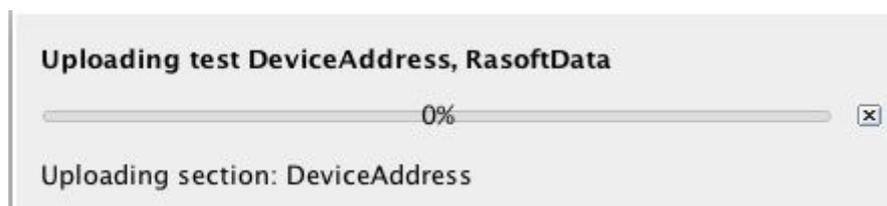
## 5.2 Uploading a template to a RNC

By default an RNC will behave as if they are a seven button keypad, ie four scenes fade up and fade down. When other types of RNC are used or if custom button maps are required the "button config (mapping)" screen needs to be used.

The button mapping screen can be accessed by selecting it in the device list this will open the device editor of the RNC.
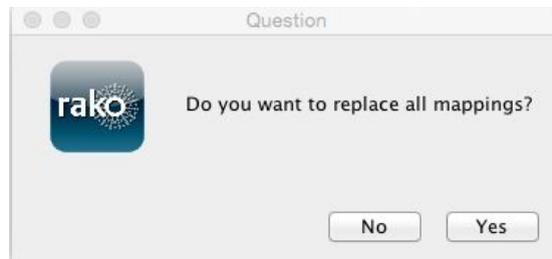
Mapping templates for all common RNC button layouts are available in Rasoft Pro.

To apply a template to a RNC:

- In the button mapping tab of the device editor scroll to the bottom to view the templates tile
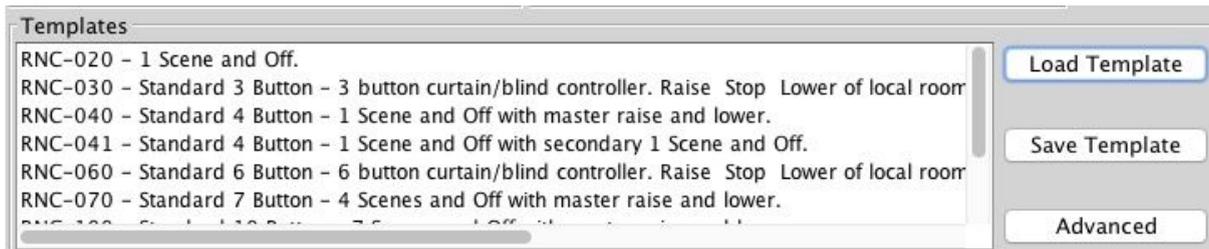


- Select the relevant template and click load template. This will open a pop up box; select yes to overwrite the mapping with the template



- The mappings for this template will now appear in the left tile of the device editor

- Click "save for upload" at the bottom of the page to upload these setting onto the RNC.

- At this point a progress bar will appear on the screen. Touch the RAMPI on the RNC to upload these settings.

## 5.3 Setting custom button mappings

By default or when any of the templates are uploaded the RNC will only send commands to the "local room" defined during the initial setup of the RNC. With a programmable keypad it is possible to make any button send a command to any device in the system by manually writing the mappings into the software.

The main section of the mapping screen is divided into three sections, from left to right "mappings" "keypad" and "button action".

**Mappings**

This section shows the mappings that will be uploaded to the plate.  This tile is also used to select the mapping to be edited. The mapping is summarised in this tile in the format:

**Button input**: letter corresponding to that selected in the keypad tile
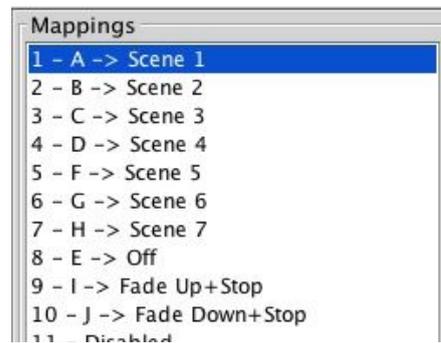**Room**: this will only show if the room number is different to the "local room"
**Action**: scene, fade, level etc.

A RNC can hold twenty four maps but macros are available when lots of commands need to be sent from a single button press.

**Seven button plate maps (default):**          **Ten button plate maps (requires template):**



**Keypad**

This tile defines the input to be mapped. The lettered buttons equate directly to all the buttons available for use on a RNC, often not all these will be occupied and will remain unmapped.  So on a ten button plate (RNC100) all buttons A-J will be used whereas on a two button plate (RNC020) only inputs B and D are used.

There are two types of button input that can be used in a RNC mapping:

Trigger on press:
As soon as the button is pressed the mapped "button action" will be sent.  In nearly all cases this is the setting used.

Trigger on release:
A trigger on release will send the mapped "button action" command once the button is released.  This is usually used to allow two function to be associated with a single button.

When mapping a fade command it is vital that the "send stop on release" check box is ticked.  When a dimmer hears a fade command it will continue to fade until it receives a "stop".

**Button action**



This tile is used to set the command sent from the input selected in "keypad".  By default room will be the local room for that keypad.  All the rooms in the project will be visible in the drop down menu as will an option for a "custom room", which can be manually added, and previous room.

The next drop down menu can be used to change the channel affected by this command. Usually "all channels" is selected so that the entire room will be affected by this map.  All the rooms added in the room editor will appear in this drop down menu as will "last used" and "custom".

**Previous room and last used functions:**

Previous room will set the room number to that which was last sent by this keypad.  It will not track commands sent by any other keypads.

The last used function sets the channel to the most recent previous command sent from that device. This is commonly used when a RNC is set up to toggle individual channels. In this case "last used" is used for the fade buttons so that the user can adjust the brightness of the channel they have just turned on. An example of this setup can be seen in the template "RNC-CHANNEL-070"

**NB**
*The "last used" function only works per RNC. It will not track the commands from another RNC even if it is shares a local room.*

The action section sets which command will be sent to the room and channel that have been set.

# 6 Setting scenes

With all the circuits addressed and wall-plates set up the system should be fully functioning. At this stage the scene settings will be on default:

Scene 1 – All on 100%
Scene 2 – All on 75%
Scene 3 – All on 50%
Scene 4 – All on 25%

### 6.1 How to set a scene

While this is fine it does not provide particularly imaginative mood settings for the room. To set scenes:

- Click on the room to bring up the room editor tab
- Select a scene (the selected scene will turn blue)
- Move the slider for each channel to the desired light level
- Press "store scene"

Scenes can be given names rather than numbers. This will change how they are displayed on the Rako App.

To set more than 4 scenes click the add scene button. Up to 16 scenes are programmable on each dimmer.

## 6.2 Advanced scene setting features:

Right click on the "store scene" button to make a drop down menu appear:

```
Send Store Command

Transmit all sliders

Write Scene '1' Level Data
Write All Scenes Level Data
```

These extra options allow scenes to be transmitted without the need to individually reset every slider for every channel.  This is particularly useful when a dimmer has been swapped and the scenes need to be reuploaded to match those in the removed dimmer.

**Send Store Command:**

Performs the same function as pressing the "Store Scene" button normally (left clicking).

**Transmit all sliders:**

Retransmits all the current slider levels for the selected scene.

**Write Scene "1" Level Data:**

Uploads all levels and stores the currently selected scene (in this case scene 1)

**Write All Scenes Level Data:**

Uploads all levels and stores all scenes. Essentially reuploads all scene information for this room to all dimmers addressed to this room.

# A1 Setting up a communication devices:

## A1.1 RAMPI

To connect to the RAMPI simply plug the module into the USB port on your computer. Rasoft should find the device, right click on "RAMPI" in the communications box and select connect. If the "RAMPI" icon does not appear click refresh below the communications box.

## A1.2 Bridge

Step 1: Connect the Bridge to a router:

The WA & WTC-Bridges are supplied with an RJ45 network cable. Connect this to an unused port on a wireless router. Connect the Bridge the Rako Wired Network via the RJ11 port and supplied cable (white cable).  This can be plugged directly into the RAKLink or RAKstar (if used).  It can also be punched down at any point in the wired network via a WP-CON or WP-CONC.  A Blue light should flash continuously within the Bridge. Connect your PC to the same router, either by wireless network or by fixed Ethernet cable.

Set the Bridge House Number:

Every RAKO wireless system has a House ID number between 1 and 255. It is necessary to tell the Bridge which house ID number has been chosen so that it talks to the correct house. The RASOFT configuration file gives the chosen House ID number at the top of the room list.

**NB**
*For a system that has already been programmed but there is no file: look at the DIP switches settings on the rear of the lighting control wall plate. The dip-switch information panel (right click on room in room list and select dip-switches) can be used to decode these binary settings. Move the switches on the screen to match those of the wall-plate to show the House and Room number.*

The Bridge house number is set via the web page interface.In Rasoft Pro in the bottom right communications window right click on the Bridge and select "Open in Browser".
When successfully loaded the Webpage will appear as below:

Click on the Configuration Button on the right hand side.

The default User Name is **admin**
The default password is **microchip**

When successfully logged in, the screen below will be displayed:



Change the "Wireless House Address" to the house number in the project file (default will be

1). Scroll to the bottom of the screen and press "save config". The following message will be displayed if the settings are successfully changed:



# Reboot In Progress...

Your settings were successfully saved, and the bridge is now rebooting to configure itself with the new settings.

### Your bridge is now located at: http://RAKOBRIDGE/

**NB**

*Some firewall programs will prevent access to the Bridge. Temporarily turning off the firewall will allow Bridge configuration. Remember to re-enable the firewall afterwards.*
*If it is not possible to make connection to the Bridge from the laptop, it could be due to IP addressing in the router. Try connecting the Bridge directly to the laptop using an RJ45 cable. This will allow the Bridge to be configured. Connect the Bridge back onto the router afterwards in order to enable the App to work.*

Adding the Bridge as a Device in Rasoft Pro:

Once the Bridge is successfully connected and the House number has been set the Bridge is ready to talk to the system. The communications window in the bottom right of the screen will say if the Bridge is connected or not. When Rasoft can see the Bridge a green tick will appear next to it.
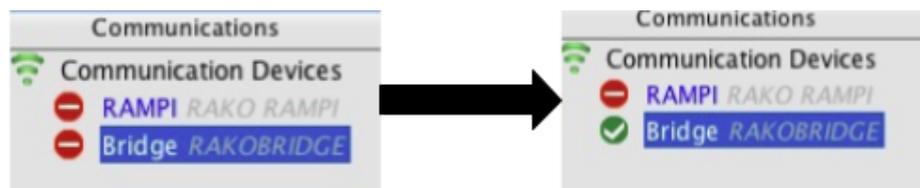


To add the Bridge as a device select "File" - "New Device" to bring up the "New Device Wizard". Choose "Bridge" from the device list (it will always be at the top of the list).

Skip through the "Assign to room" page by clicking next.

This will bring up the screen as below. The Bridge you are connected to will appear followed by its IP and MAC address. Select it and click "finish".
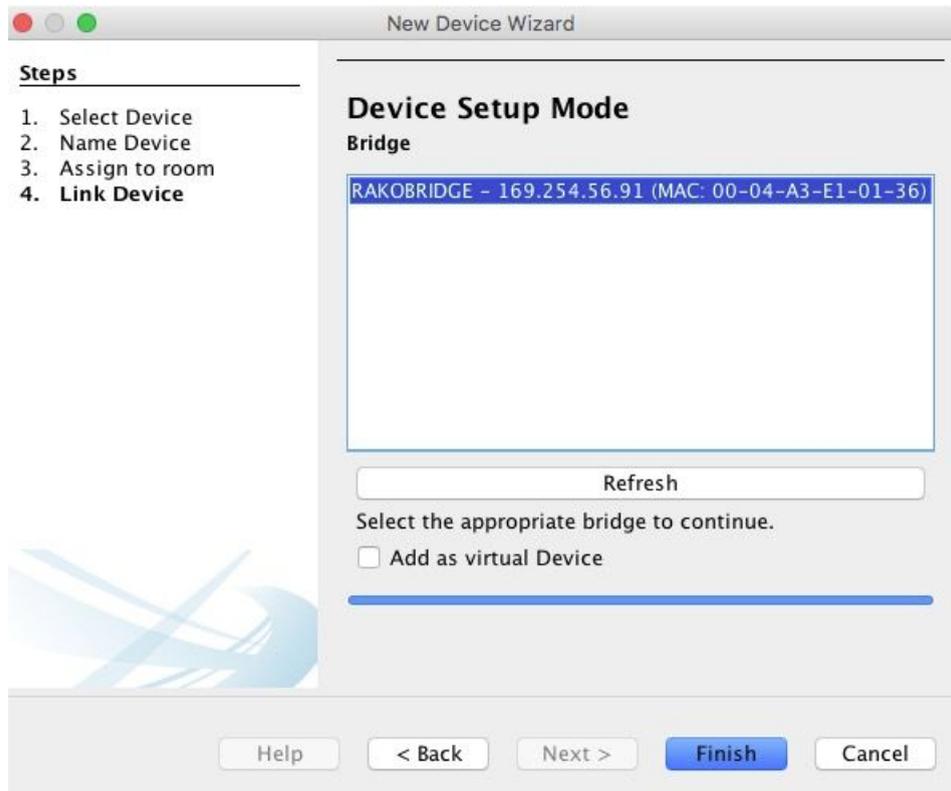
Once the device has been successfully set up then it will appear in the device list with green text and a blue icon.

Now this device is assigned on the software all Bridge functions will be accessible via tabs in the device editor. For more information on the Bridge functions please see the Bridge instructions contained within the Bridge box.
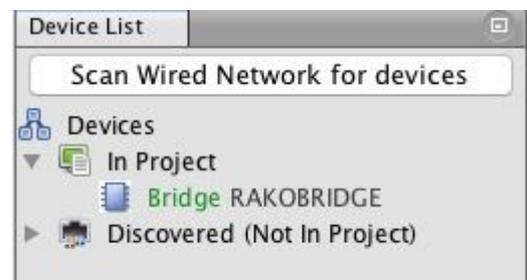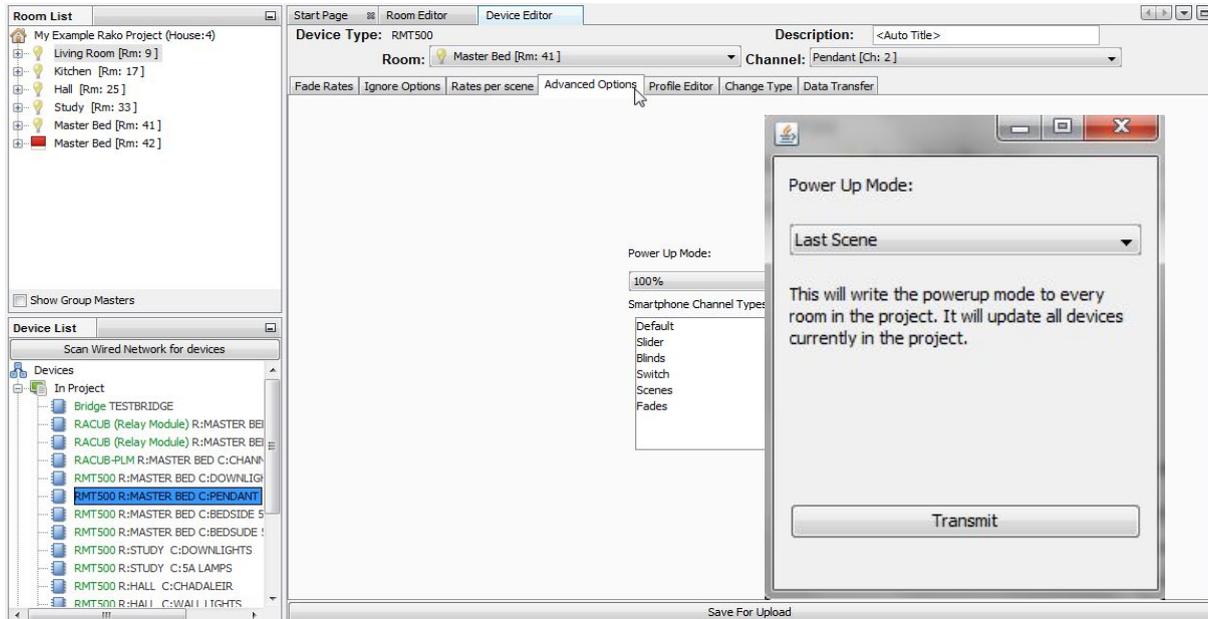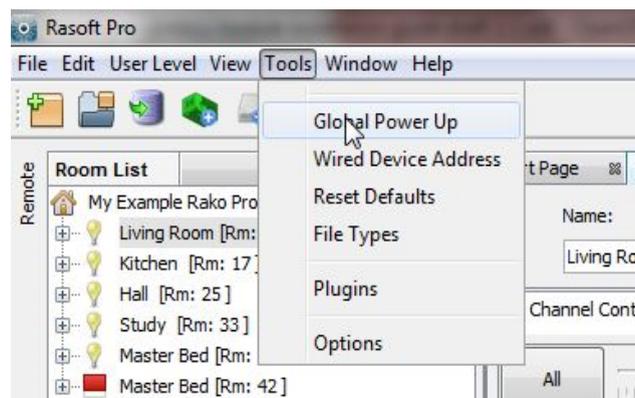


# A2 Power up modes

The power up mode dictates the output of a circuit on power restoration. While still on factory default settings all Rako products will have a power up mode setting of 100%.

When new Rako modules are addressed from default then the power up mode will automatically change from 100% to Off. For all other Rako products the power up mode must be changed using the software.

To manually change the power up mode of a specific channel select it in the device list and then go to the "advanced options" tab to show the power up mode options.

It is possible to set the power up modes "globally" for the entire system. To access this menu select "tools" - "global power up". This will send a House master power up mode to all modules.



It is advised that the power up mode is either left on "off" or set to "last scene." In general it is not a good idea to have the lights come on after a power cut so a scene or percentage power up mode is best avoided unless specifically requested.

To test the power-up modes it is a good idea to turn off Rako circuits from the MCB to make sure that the desired power-up modes have been uploaded successfully.
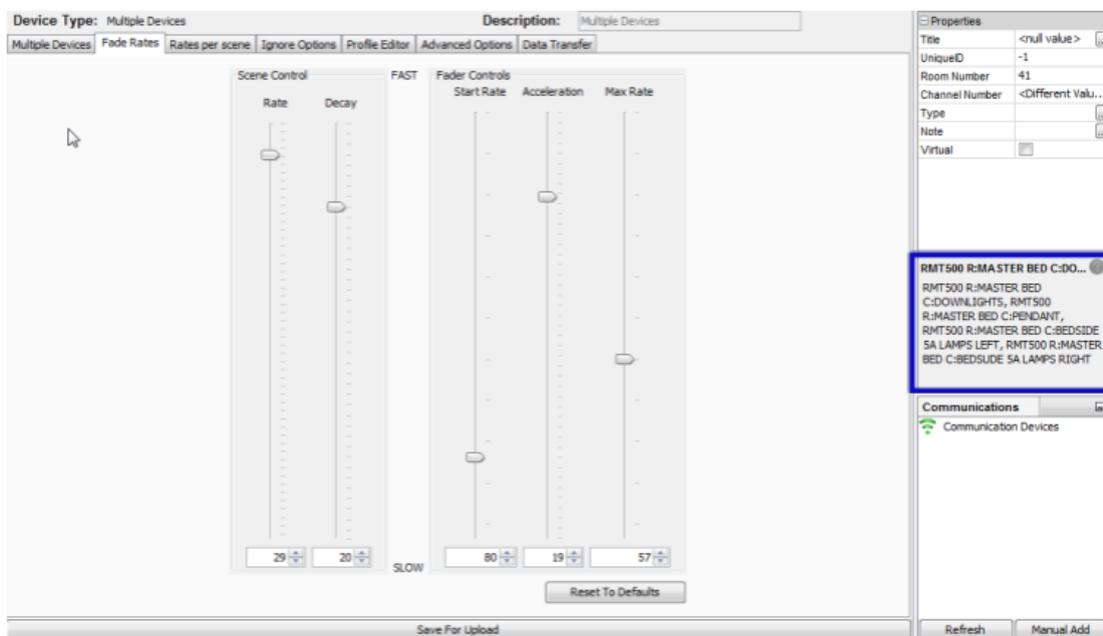
# A3 Fade rates

Using Rasoft pro it is possible to edit the rate at which Rako modules move between different lighting levels. To change the fade rates for the entire room right click on "room devices" in the top right of the room editor.
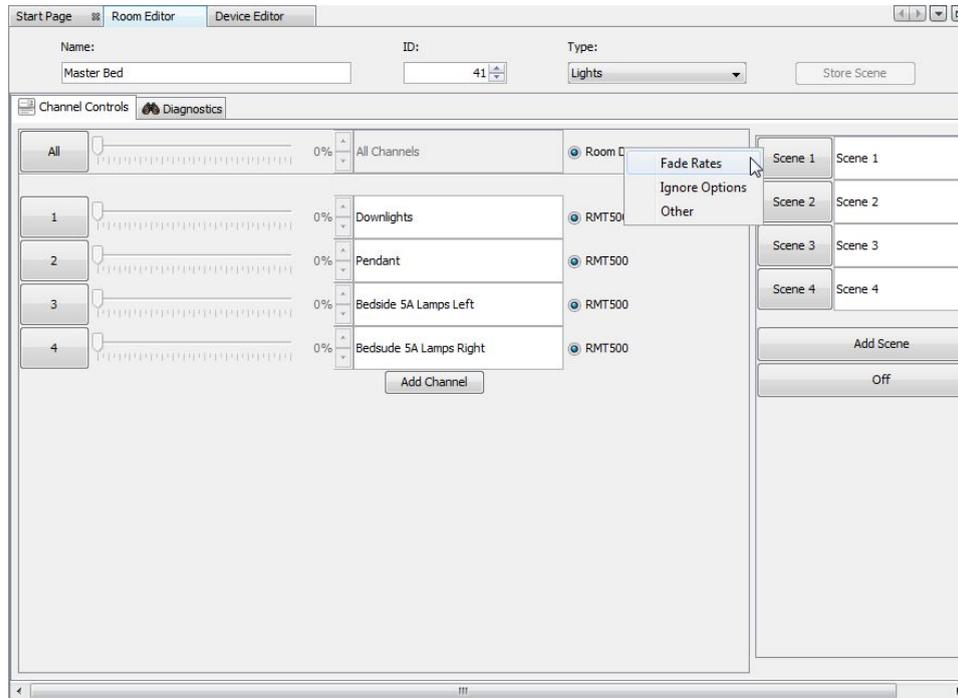


**NB**

*This will set fade rates for every device in the master bedroom. To set fade rates for a specific device select it in the device list and click on the fade rates tab in the device editor.*

The fade rates menu will be displayed as above. Notice the window on the right hand side (highlighted above) lists the circuits that will be affected by these changes are listed.

There are two types of fade rates that can be adjusted:

**Scene controls** will change the rate at which circuits move between scenes (including Off).

**Fader controls** will change the rate at which circuits dim up or down when the fade buttons (raise/lower) are used.

**NB**
*Setting all of the fader controls to max. speed will make it almost impossible to dim the lights from the fade up/down buttons.*

# A5 Uploading to a Bridge and App setup

When the system is programmed the last thing required is a Bridge upload. This ensures that the programming data on the computer matches that on the Bridge. Even if the Rako App.is not being used it is important as it will enable a later download of the project information without the need for the original file.

To upload to the Bridge select the bridge from device list, opening the Bridge options in the device editor tab. Go to the "data transfer" tab and click "upload".
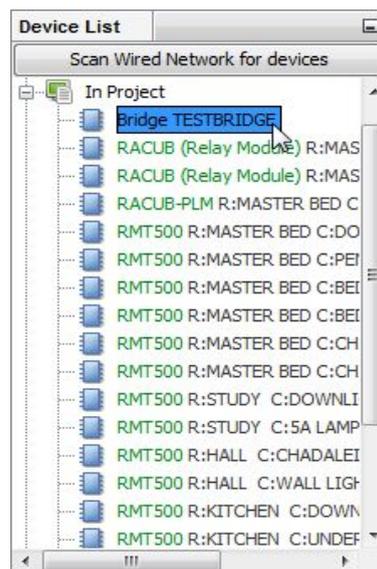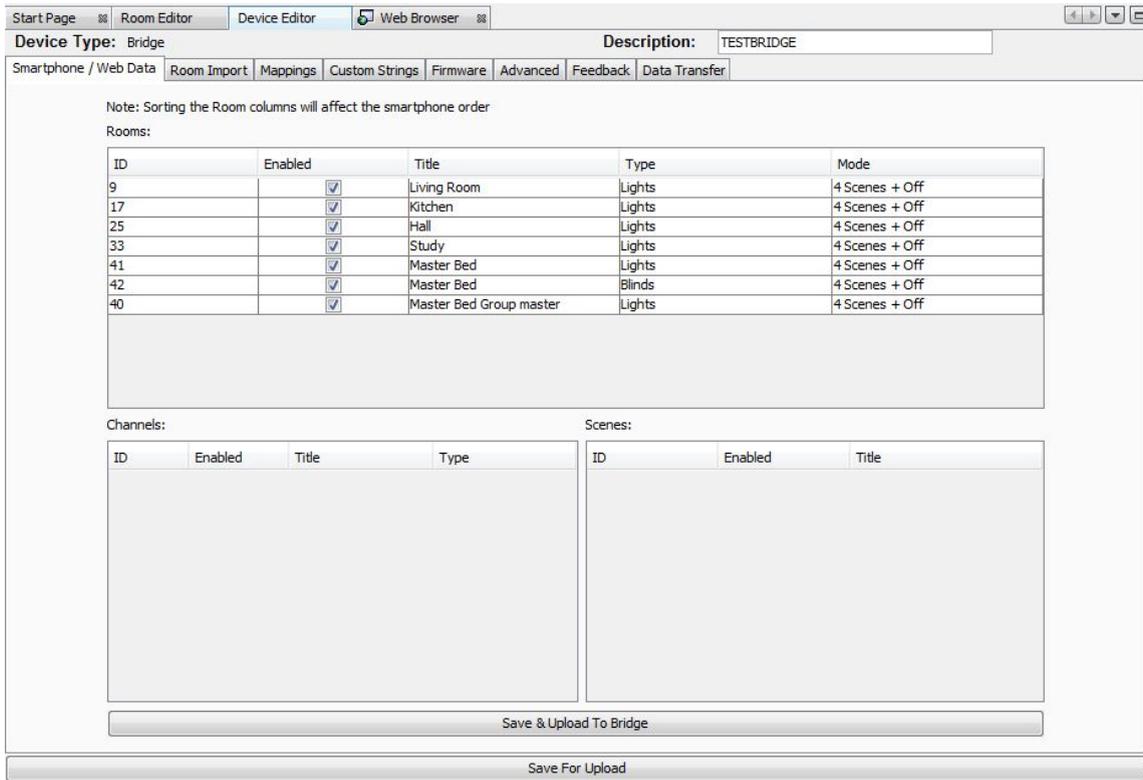
There are several settings that can be altered to change the appearance and functionality of the Rako App. Select the "Smartphone/Wed Data" tab. This should display all the rooms that have been added to the project:

From this page the various setting to define how the App will appear are set. To bring up the channels and scene settings to be uploaded highlight the desired room:
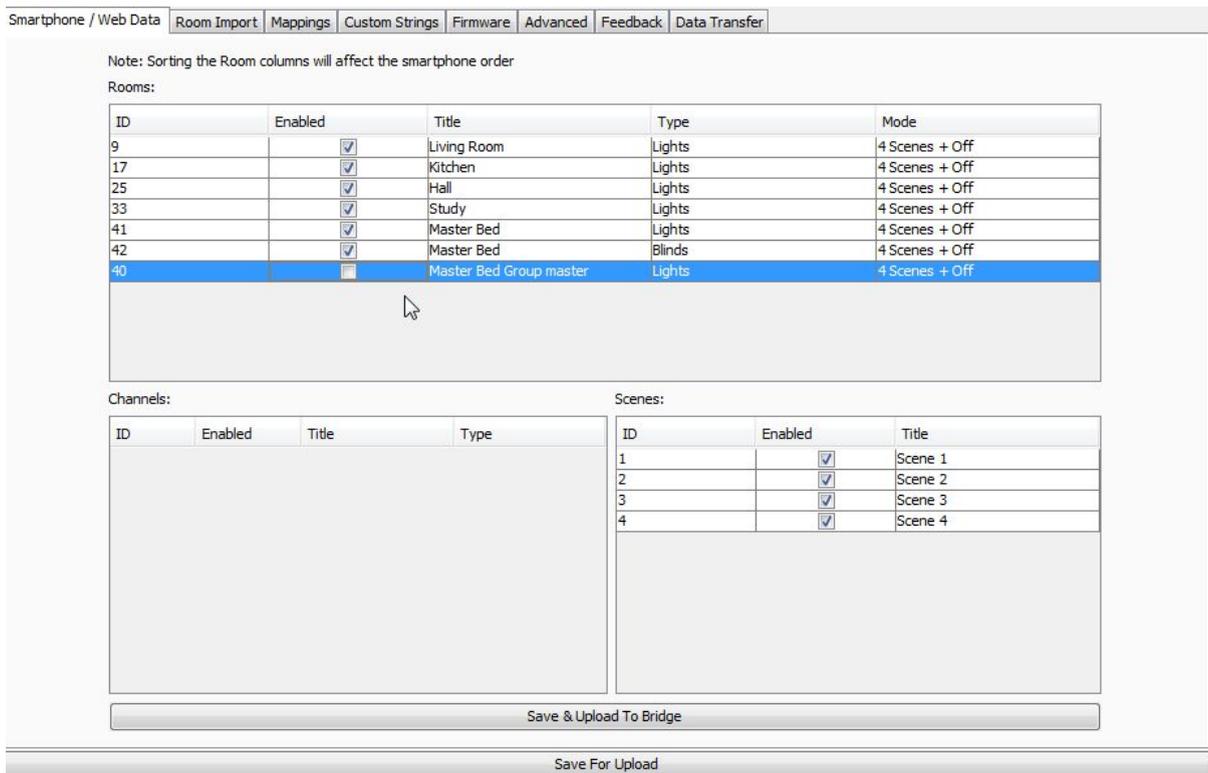
**Enable** – When this box is checked this room/channel/scene will appear on the app.

**Title** – This will be the label given to this room/channel/scene on the app. Changing this will also change the room name in the room list of the project file.

**Type** – This will change the screen layout of the channels section in the app.

**Mode** - This will change how the on screen keypad in the App is displayed. It can represent either a 7 or 10 button keypad. It can also be displayed as a scrolling menu showing all 16 scenes.

It is also possible to change the order in which the rooms will appear in the App. To do this just click and drag the rooms to the desired position.

**NB**
*The Master Bed group master is unchecked, typically group masters or "dummy rooms" will be excluded as they do not have channels associated with them directly.*