

# RK-HUB User Manual

For programming a wireless system: [Wireless Module Programming Guide](#) or [Wireless RAK Programming guide](#)



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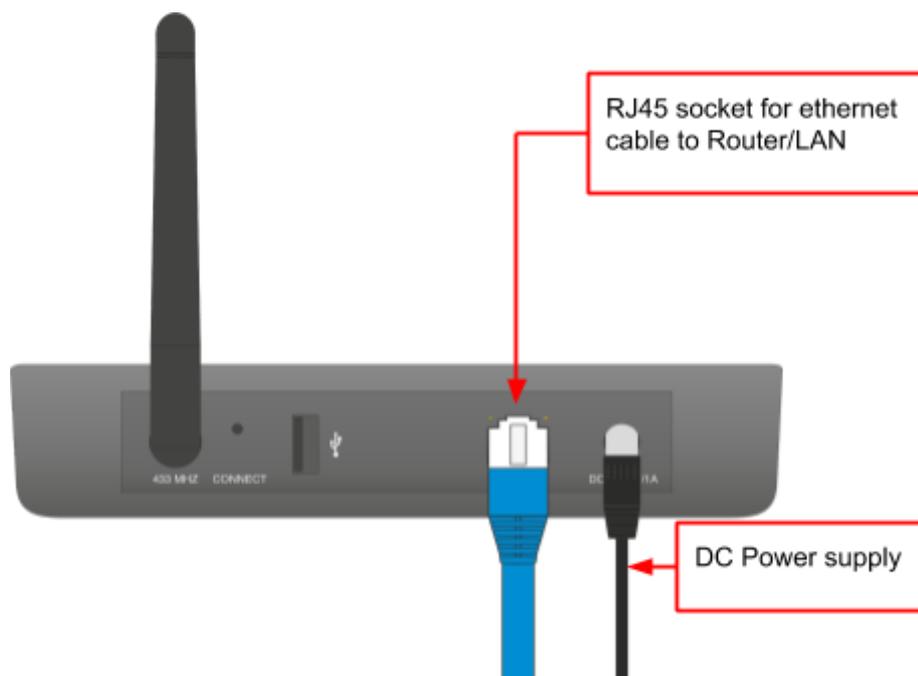


## 1 Functions of the RK-HUB

The RK-HUB will add the following features to a Rako wireless system:

- Network interface: Local Programming, App control and IP integration of 3rd party control systems.
- Cloud Gateway: Interfaces with Amazon Alexa, Google Home, Apple Homekit, Sonos etc.
- Storing Project file information: Room, Channel and Scene information can be stored.
- Timed Events: Automatic functions at fixed times including dawn & dusk.
- Mapping: Commands can be redirected to perform other tasks.
- Macros: A series of commands that are triggered by a single command or event. Specific steps can be enabled and disabled giving conditional functionality.
- Holiday Mode: Replays recorded system activity, creating an occupied appearance to a property.

## 2 Installing the RK-HUB



- Step 1: Plug DC power supply into RK-HUB and available 13A socket.
- Step 2: Plug the Ethernet patch cable from the RK-HUB to a spare port in a router or network switch.
- Step 3: Mount the RK-HUB to a wall using fixing point at top of case if desired.

### 3 Discovering the HUB and Setting the House Number

Before proceeding with any programming the HUB needs to be discovered and the House number set. This is done via a webpage setup wizard.

#### 3.1 Discovering the HUB

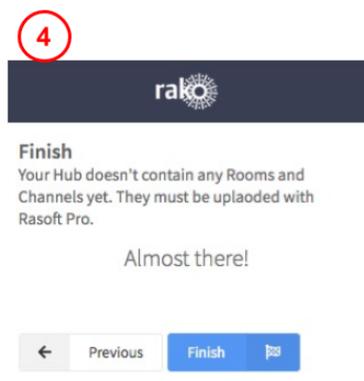
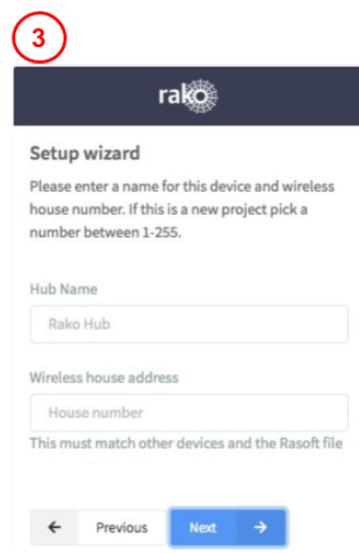
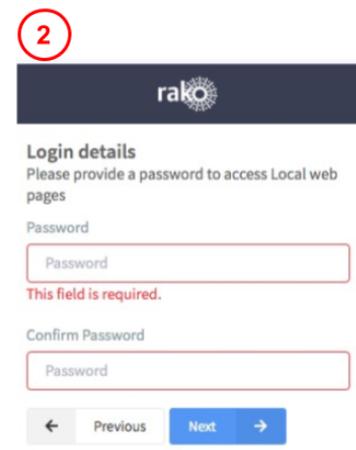
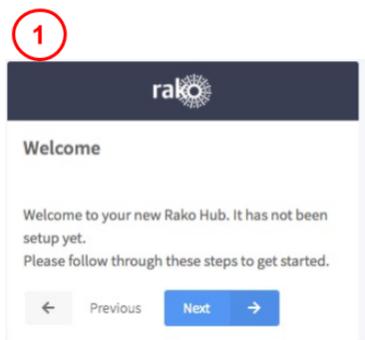
Open Rasoft Pro programming software. Ensure that the laptop is connected to the same network as the HUB.

The HUB should appear in the "Communication" window in the bottom right of the software with a red stop sign. If it does not appear press "Refresh". If it still does not appear refer to [section 3.4](#) of this manual.



#### 3.2 Setting up the HUB using the Webpage Wizard

To access the HUB Webpages right click the communication device in the bottom right of the software. Select "Open in Browser"



- Step 1: Welcome page, select "Next to begin setup".
- Step 2: Set a Password, this will be used to login to the webpages. It will also be the password used to login to the App if a password is needed.
- Step 3: Sets the House number of the HUB and therefore system. This should be set to match the Rasoft Pro project file as defined in the "New Project Wizard".
- Step 4: Select "Finish" to complete setup.

### 3.3 Managing the HUB House number

Leaving the HUB on the default House address of 1 is strongly discouraged. Leaving the House number as 1 drastically increases the likelihood of interface from nearby Rako systems.

The HUB always has a default House Address of 1 if it has not been set up before. Before programming using the HUB it is important to ensure the HUB House number corresponds to the Project file House number.

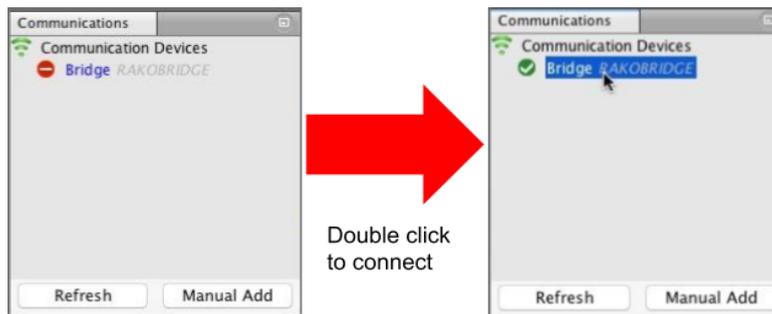
The change the House number if the HUB has already been set up as described in 3.2 see below:

The image shows a screenshot of the Rako Hub configuration web interface. It is divided into three main sections with red callout boxes and arrows:

- 1) Project File House number can be found in the software at the top of the Room List:** An arrow points to a 'Room List' window showing a table with columns for room names and house numbers. The first row is highlighted: 'example(House Number: 92)'. Below it are 'living room [Rm: 9]', 'kitchen [Rm: 13]', and 'hall [Rm: 17]'.
- 2) Select "Configuration" to open page as shown:** An arrow points to the 'Configuration' icon in the left-hand navigation menu of the main interface.
- 3) Set "Wireless House Address" to match Project File. So change from 1 to 92:** An arrow points to the 'Wireless house address' input field in the 'Rako Hub configuration' section, which currently contains the value '1'.
- 4) Click "Update" to save changes:** An arrow points to the 'Update' button at the bottom of the configuration form.

The main interface shows a sidebar with navigation options: Overview, Cloud, Remote, Activities, Logs, Configuration, and Help. The 'Hub configuration' section is active, with sub-options for Rako network, LAN network, Date & time, and Security & Privacy. The 'Rako Hub configuration' form includes fields for Wireless house address, UID, Hub address, and Hub channel, along with a 'Password' section and several checkboxes for advanced settings.

As a final check it is advisable to disconnect and reconnect to the HUB:



If no pop-up box appears then the HUB House number and Project file House number are the same.

### WARNING

If a pop up box appears with a warning about the House number click "Cancel". Do not continue programming this means there is a conflict between the "Project File House Number" and "HUB House Number".

#### 3.4 If you cannot connect to the HUB

If the software cannot connect to the HUB first restart the software and ensure that it is fully updated. If the HUB still does not appear it is most likely a networking issue. If this problem cannot be solved then the HUB can be connected to point to point using a standard ethernet cable.

## 4 Linking the HUB for cloud services

To be able to access cloud services the HUB must be linked to a [my.rakocontrols.com](https://my.rakocontrols.com) account.

### 4.1 Where to find each cloud service

Some cloud services are configured and customised from the HUB webpage whereas others are from [my.rakocontrols.com](https://my.rakocontrols.com)

HUB webpage: Sonos Activities (new cloud API and "ACM" style custom IP strings) including custom and default templates (RCM/WCM-audio style keypads)

[my.rakocontrols.com](https://my.rakocontrols.com): Amazon Alexa, Google Home and Apple Homekit including "Custom Scenes" and advanced apple homekit configuration (Channel and Room mode etc.)

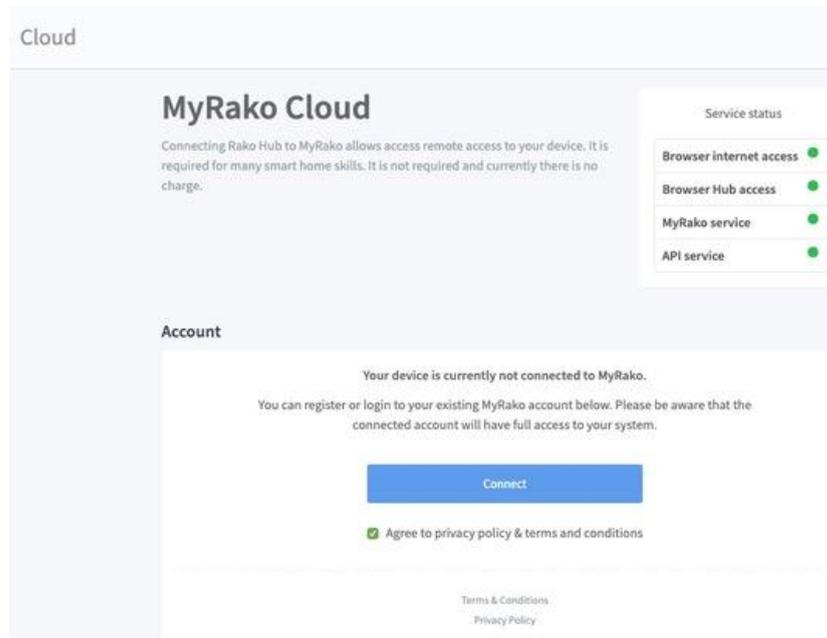
NB

*More detailed descriptions of how to use the advanced settings within the cloud services are linked from the relevant section of either the HUB webpages or [my.rakocontrols.com](https://my.rakocontrols.com)*

## 4.2 Linking the HUB to Cloud services

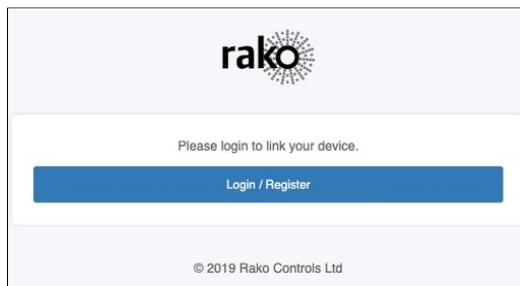
This is linked via the HUB webpages, navigate to the “Cloud” section from the menu on the right hand side of the screen. This will open a page as below:

- Step 1: Press “Connect”: this will link you to the [my.rakocontrols.com](https://my.rakocontrols.com) page.

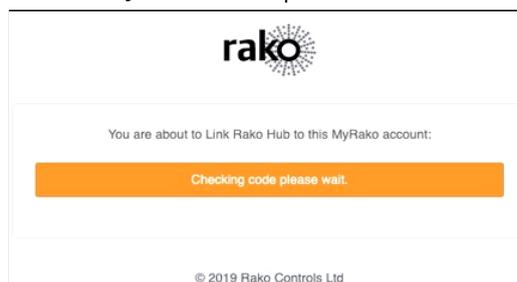


Make sure that all “Service Status” is green before proceeding with the following steps:

- Step 2: Press “Login/Register” if you already have a [my.rakocontrols.com](https://my.rakocontrols.com) use the email and password that is used for this, if not create an account.

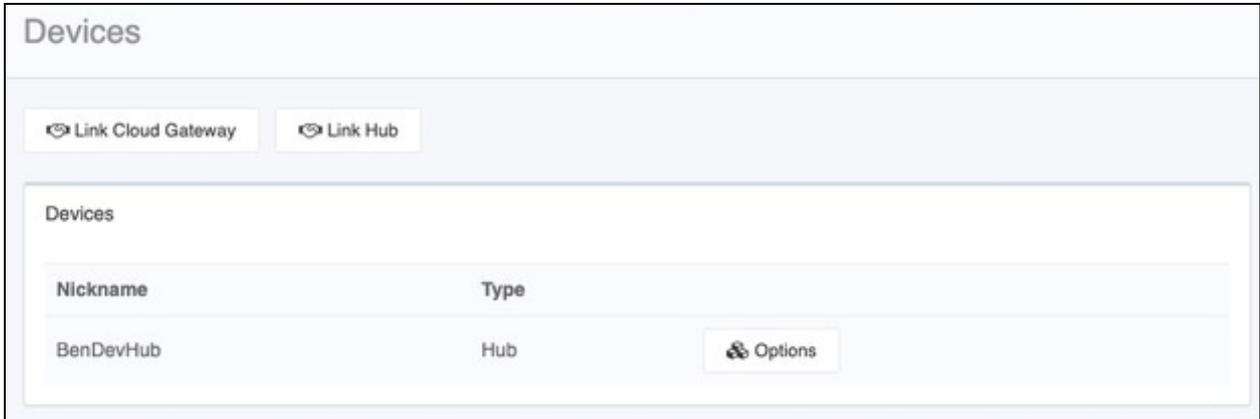


- Step 3: Once logged in the code within the HUB will be automatically verified. Please wait, this process may take a couple of minutes



- Step 4: Once it has linked the HUB will ask to be given a "Nickname". This is how it will be referred to in the [my.rakocontrols.com](http://my.rakocontrols.com) interface. It is not the same as the "HUB name" as defined within the HUB setup wizard.

Once completed the [my.rakocontols.com](http://my.rakocontols.com) "Devices" page should appear as below:



## 5 Adding the HUB as a device to Rasoft Pro

Once the HUB has been successfully connected it will need to be added into the software as a device. *Please note this guide assumes that your project file has already been created as described in the relevant rasoft programming guide.*

- Step 1: Select "File"- "New Device" to open the new device wizard. Choose "Bridge" as the device to be added.
- Step 2: Select "Next" on the "Assign to Room" step. No room or channel needs to be associated to the HUB.
- Step 3: Select the HUB from the list, it will appear if you are successfully connected in the communications window. Click "Refresh" if it does not appear.
- Step 4: The HUB should now appear in the device list with green text and a blue icon. The device is now assigned.

## 6 Uploading the project file

Once the entire system has been completed the project file should be uploaded to the HUB. The HUB stores the Room, Channel and Scene information for the system. This information is required for the App. to operate correctly.

The "Smartphone/Web Data" tab is used to upload the Project File to the HUB. Once selected it will open the page as below. Press "Save & Upload Room Data To Bridge" to upload.

Smartphone / Web Data						Room Import	Mappings	Macros	Events	Holiday Exclusions	Room Enables	Firmware
Note: Sorting the Room columns will affect the smartphone order												
Rooms:												
ID	Enabled	Title	Type	Mode								
9	<input checked="" type="checkbox"/>	Hall	Lights	4 Scenes + Off								
17	<input checked="" type="checkbox"/>	Kitchen	Lights	4 Scenes + Off								
25	<input checked="" type="checkbox"/>	Study	Lights	4 Scenes + Off								
33	<input checked="" type="checkbox"/>	Living Room	Lights	4 Scenes + Off								
41	<input checked="" type="checkbox"/>	Snug	Lights	4 Scenes + Off								
49	<input checked="" type="checkbox"/>	Master Bed	Lights	4 Scenes + Off								
57	<input checked="" type="checkbox"/>	Master Ensuite	Lights	4 Scenes + Off								
65	<input checked="" type="checkbox"/>	Master Dress	Lights	4 Scenes + Off								
Channels:												
ID	Enabled	Title	Type	Scenes:								
1	<input checked="" type="checkbox"/>	Spots		ID	Enabled	Title						
2	<input checked="" type="checkbox"/>	Pendant		1	<input checked="" type="checkbox"/>	Scene 1						
3	<input checked="" type="checkbox"/>	Wall Light		2	<input checked="" type="checkbox"/>	Scene 2						
4	<input checked="" type="checkbox"/>	Uplighters		3	<input checked="" type="checkbox"/>	Scene 3						
5	<input checked="" type="checkbox"/>	SA		4	<input checked="" type="checkbox"/>	Scene 4						
Save & Upload Room Data to Bridge												

**Type** - This will change the appearance of the icon used at the top of the room screen on the App. It will also affect the keypad that appears. For example a room set to "switch" will show two buttons: "on" and "off" whereas a "blind" type room will show three buttons: "open", "stop" and "close".

**Mode** - The mode of the room is only set when "lighting" is selected as the type. It will set the variety of "keypad" that will appear in the App. Typically it is best to make this match the physical keypad in the room.

**NB**

- 1) If a number of scenes that is not 4, 7 or 16 is desired then "named scenes" should be selected. Give custom names to the scenes in the room editor and any number of scenes can be made to appear on the App.
- 2) While the order of the rooms can be changed from this screen the order of the channels is always fixed. To get channels in a specific order they must be addressed or mapped in the desired order.

## [7 Downloading the project file](#)

If information has been uploaded to the HUB then it is possible to import the Room, Channel and Scene data into a blank project file.

The tab used for downloading information from the HUB is called "Room Import" select it to open the page below.



- Step 1: Press the “Download Data” at the top of this page. This will open the data for preview on this page.
- Step 2: Press “Refresh List” if the rooms do not appear. If no rooms appear or only “default room” or “test bench” then there is no information to be downloaded from the HUB.
- Step 3: Press “Import Data” to write the Room and Channel information into the Project File.
- Step 4: Press “Refresh Channel Levels” to write the Scene data into the Project File.

## 8 Events

Events can be viewed, added and changed using either Rasoft Pro, The Rako App or HUB webpages. It should be noted that calendar event conditions can only be set from the HUB webpage interface.

The HUB can generate automated Events that trigger commands at specific times.

For example it is possible to automatically turn on the Garden lights on at Dusk and turn off the Garden lights at Dawn.

## 8.1 Setting Events using Rasoft Pro

HUB Events can be viewed and edited using Rasoft Pro. To open the events page in the software select the HUB in the device editor and select the "Events" tab from the top of the window.

The screenshot shows the Rasoft Pro interface for configuring events. It is divided into three main sections, each highlighted with a red box and labeled with a red arrow pointing to a descriptive text box below:

- Mappings List:** A list of events on the left side of the screen. The first event, "1 - Dusk MTWTF -> [Rm:21 externals] Scene 1", is selected and highlighted.
- Event Trigger/Active Days:** A central section for configuring the event's timing. It includes options for "Enabled" (checked) or "Deleted", "Dawn", "Dusk" (selected), and "Time". There is also an "Offset Minutes" field set to 0. The "Active Days" section has checkboxes for Monday through Sunday, with Monday through Friday selected. There are buttons for "All", "Weekdays", and "Weekends".
- Output Action:** A section on the right for configuring the action triggered by the event. It includes fields for "Room" (externals [Rm: 21]), "Channel" (All Channels), and "Action" (Scene). There is also a "Scene" dropdown menu set to "Scene 1" and a "Fade Rate" section with a checked "Use Default Value" option.

Below the interface, three red boxes provide descriptions for each section:

- Mappings List:** Selects the map to be created/edited and shows a summary of each Event.
- Event Trigger/Active Days:** Sets the time this event will occur (Dawn, Dusk or a specific time). Also can set the days on which this event will occur.
- Output Action:** Sets the Action triggered by the Event.

### Mappings List:

All Events are listed down the left hand side of the screen. Select it such that it is highlighted to edit the "Event Trigger/Active Days" and "Output Action" sections for this Event.

### Event Trigger/Active Days:

The "Event Trigger" and "Active Days" are the timing conditions that define when the event will occur.

### NB

*The dawn and dusk settings can be changed via the location settings in the webpage interface. An offset from this value can be set from this screen if desired.*

## Output Action

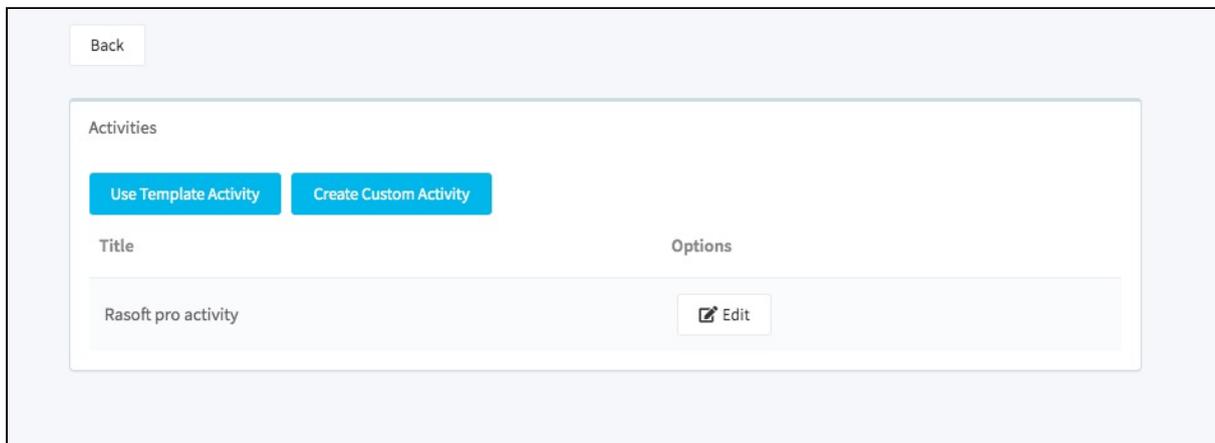
The Output action section on the right hand side of the screen will define the command to be sent when the conditions in "Event Trigger"/"Active Days" are met.

### NB

*The "Action" drop down menu is used to select the command sent when the event is triggered. Typically these will be scene commands but it is possible to trigger and control Macros, Holiday settings etc.*

## 8.2 Setting Events via the HUB webpages

Events can be set via the "Activities" section of the HUB webpages. Navigate to this by selecting "Activities" from the menu to the left hand side of the HUB webpages and then selecting "Create Custom Activity".



### A note on "Activities":

*"Activities" refers generically to any HUB "Action" for example: Mappings (including Audio maps) and Events.*

*This section is still in a beta state, it is advised that you limit the use of the section to:*

- Mapping Sonos audio commands
- Creating Events

*Mapping and events created in Rasoft Pro will appear here (as above) but will not be editable.*

*Please consult Rako technical support if you have any questions about "Activities"*

Events can be created using the interface below, this interface works in a very similar way to that found in Rasoft Pro and the App.

Activity - Event NaN

Type

Time

15 : 53

Dawn

Dusk

---

Condition

+ Set Condition

Output

+ Set Output

Submit Cancel

Type:

This is the time at which the output of the event will occur. It can be defined via a 24 hour clock or in relation to the year round tracked dawn/dusk time internal to the HUB.

Condition:

A condition requirement can be added to the event which needs to be satisfied for the output of the event to occur. This can be a day of the week, or calendar condition.

Output:

The "Output" is the command that will be set when the "Type" and "Condition" are both met. This will usually be a Scene but can also be a level, fade etc.

Once all information has been filled in press "Submit" to activate the Event.

8.3 Setting Events using the Rako App.

Events can also be created via the Rako App. The method to create events in the App is essentially the same as detailed above.

For more information please refer to the [App User Guide](#).

## 9 Mappings

When Mapping are used the HUB can “listen” to a Rako command (Source) and perform a certain action (Output Action) every time it is “heard”.



### 9.1 Mapping wireless commands to give multi-room functionality

Wireless commands can be mapped to additional wireless commands to make multiple rooms turn on at once. In the example below the “Hall Scene 1” is mapped to also trigger “Kitchen Scene 1”.

NB

*It is usually preferable to use a programmable keypad rather than HUB Mapping when possible. Where WCMs are RNCs are used in the system use **Keypad Mapping** rather than HUB Mapping.*

**Mappings List:**  
Selects the map to be created/edited and shows a summary of each mapping.

**Source/Condition/Active Days:**  
Selects the command that needs to be “heard” for the output action to be triggered.  
  
Also the “Condition” and “Active Days” sections can be used so that the map will only trigger at certain times.

**Output Action:**  
Selects the action that occurs when the Source command is “heard” assuming the Active Days and Condition are met.  
  
The action can range from transmitting a scene to starting/controlling a Macro.

NB

*It is also possible to “Enable” and “Disable” maps from other commands via the “Mapping Control” Action.*

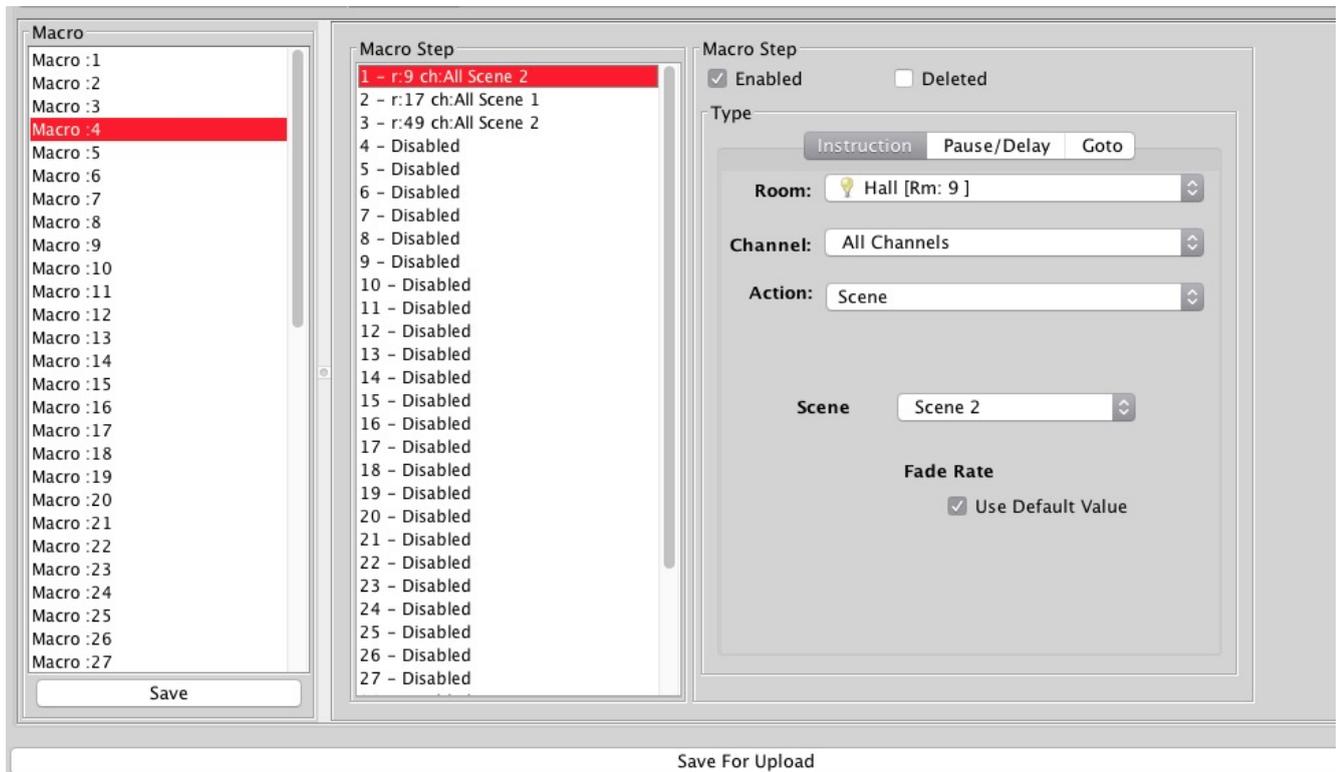
## 9.2 Triggering Macros from Maps

When a Macro is used it must be triggered from a map (this could also be from a WCM map, WAVFR map etc.). Below Mapping 2 is an example of a map being used to trigger a macro: in this case "Start Macro 2".

## 10 Macros

Macros allow a sequence of actions to take place when triggered by an Event or Map. The HUB can store up to 60 Macros each of which can have a maximum of 32 Steps.

The HUB Macro screen is located from the tab in the HUB device editor.



There are 3 steps in this example Macro:

- Room 9, All Channels, Scene 2
- Room 17, All Channels Scene 1
- Room 49, All Channels Scene 2

With this simply Macro the HUB will just run through the three commands listed. More complex functionality can be achieved by using commands in the tables outlined below.

## 10.1 Writing Macros

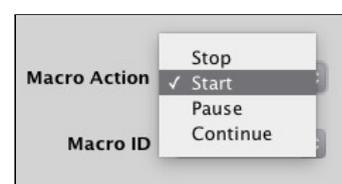
Macro steps can be one of four types:

Action	Pause	Delay	Goto
Can be a simple command including Scenes, Fades etc. Can also include "Macro Control", "Mapping Control" for more complex programming.	A running Macro will stop at a Pause and remain there until it hears a Continue.	The Macro can wait at this step for a defined period of time. Useful when programming PIR timeouts etc.	The Macro can be sent to a defined step in this or another Macro.

## 10.2 Triggering Macros

Macros can be triggered in several ways. Most commonly:

- HUB Mapping
- HUB Event



Once a macro trigger is sent it will perform one of four different functions to a Macro:

Start	Stop	Pause	Continue
This will cause the Macro to start from the beginning (Step 1) regardless of its current position in the Macro.	This will cause a Macro that is already running to Stop running and return to Step 1.	This will cause a Macro to Pause at whatever step it is currently running.	This will cause the Macro to continue from a Pause state, performing the step immediately after this and proceeded.

**NB**

*It is also possible to "Enable" and "Disable" Macros (or parts of Macros) via the "Macro Control" Action.*

## 11 Holiday Mode

Holiday mode allows the HUB to record normal lighting activity in a property over a period of time. This can then be replayed whilst the property is empty in order to give a realistic impression that it is occupied.

Holiday mode has three states:

- Record: Used to create a log of the used of the system.
- Playback: Used when the house is unoccupied to replay the information gathered in "Record".
- Idle: Used when the system is in normal occupied operation and no recording is being made.

Holiday mode is most easily controlled from the App. However it is also possible to change the holiday mode state from a keypad map, HUB map and by pressing buttons directly on the HUB.

NB

For how to control Holiday mode via the App. see "[App user Guide](#)".

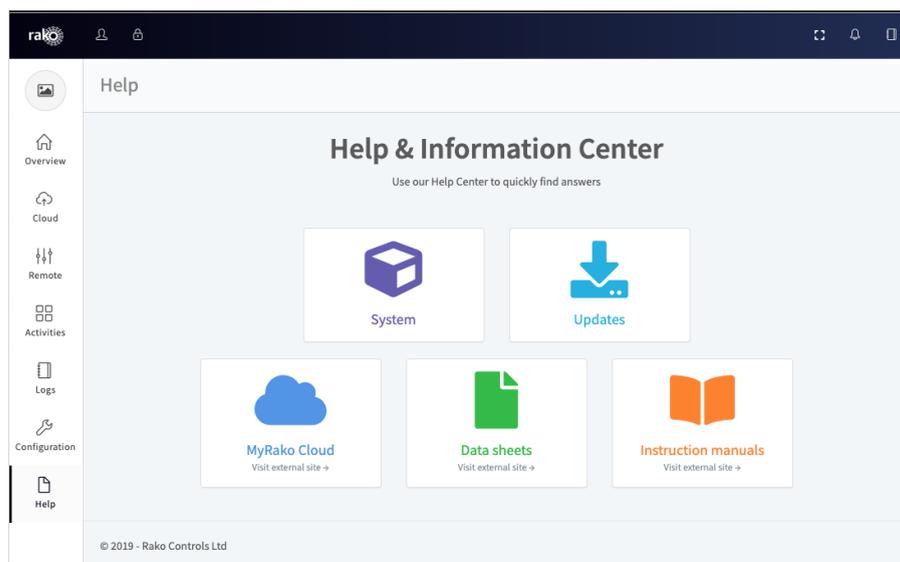
## 12 Upgrading the HUB

As the HUB is a new product it will likely require updates more frequently. Complete the following steps to make sure the HUB is up to the latest firmware and all features are available.

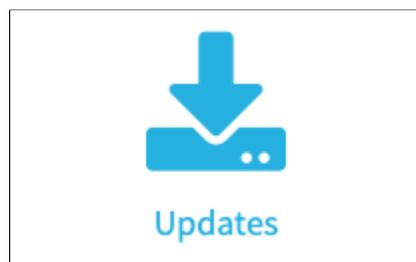
**Do not update the HUB through RASOFT Pro always through the HUBs webpage.**

Sometimes it may be necessary to update the HUB. This is done via the HUB webpage interface using the method described below:

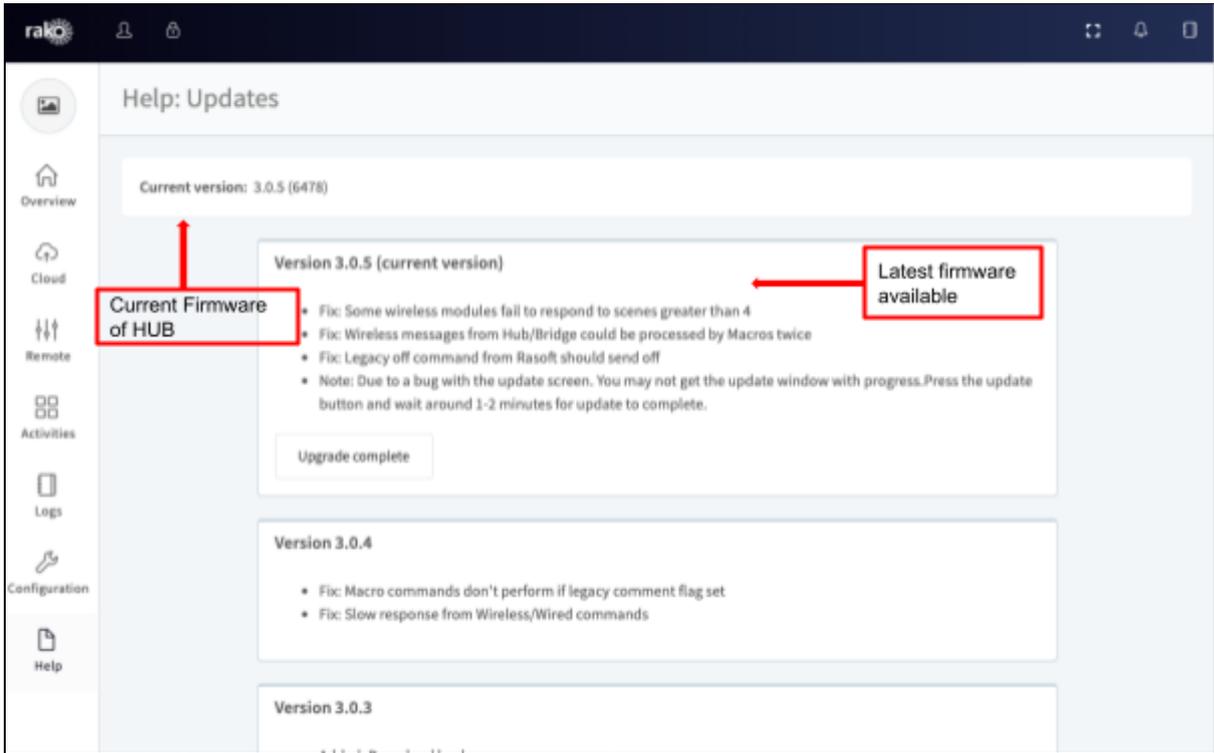
- Step 1: Access the HUB webpages as shown in [section 3.3](#) of this manual
- Step 2: After navigating to the HUB web pages select "Help" from the toolbar on the left hand side of the screen:



- Step 3: Click on the "Updates" panel:



- Step 4: This will show the current firmware of the HUB and will also show the latest version available.



NB:

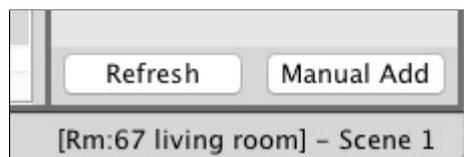
*As the HUB is a new product it will require updates to have all the features available. Complete the following steps to make sure the HUB is up to the latest firmware and all features are available.*

## 13 Feedback from the HUB

It is possible to monitor commands received and transmitted by the HUB. This can be done using the UDP Feedback feature.

### 13.1 Live feedback

In the very bottom right of the software (below the communications window) is the Live feedback section. Each command received or transmitted by the HUB will appear here and it is useful for checking commands that have been programmed as desired.

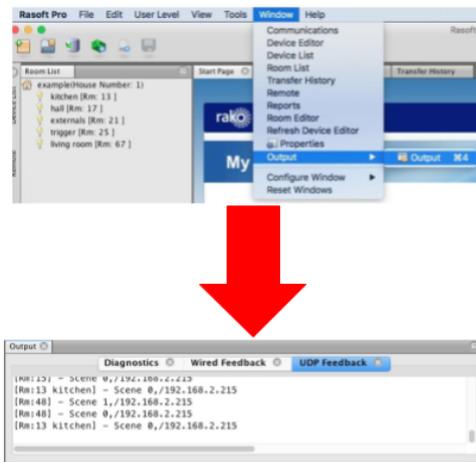


NB

*A Bridge/HUB will have to be connected to in order to see this feedback.*

### 13.2 UDP feedback log

When more detailed or long term feedback is required then a log of commands received/transmitted by the HUB can be opened. In the toolbar select "Window" - "Output" - "Output" (as shown below).



### 13.3 HUB Webpages logs

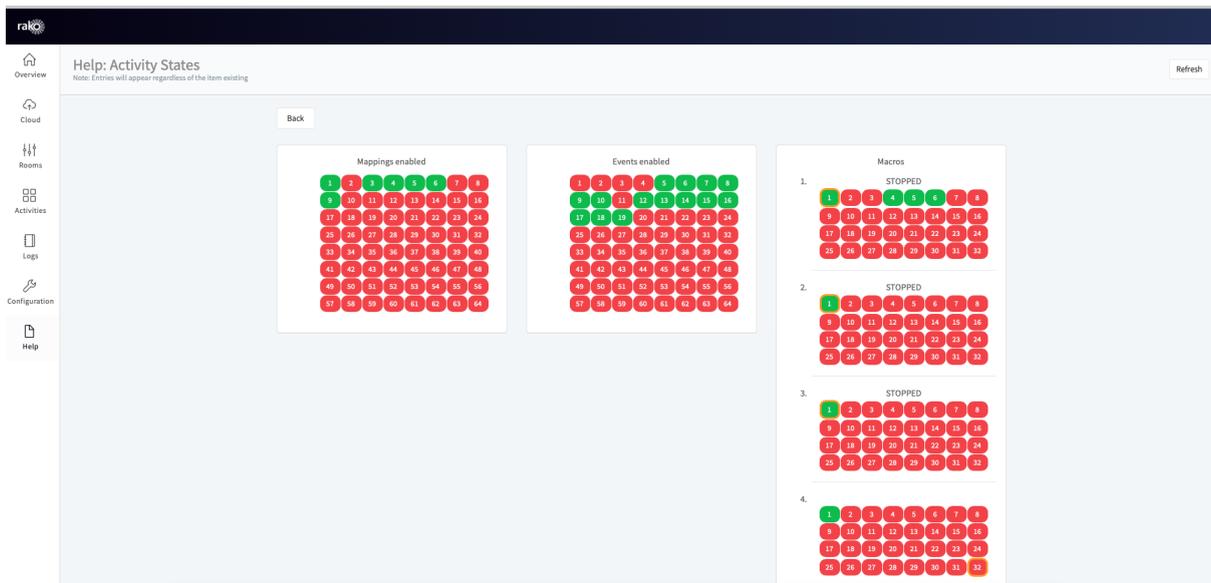
A timestamped log of system activity can be found within the HUB webpages. These can be accessed by selecting the "Logs" section of the HUB webpages.

Type	Title	Description	Time
Web request	Web request	[Rm:9]Off	12:37:34
Web request	Web request	[Rm:9]Scene 4	12:37:32
Web request	Web request	[Rm:9]Scene 3	12:37:30
Web request	Web request	[Rm:9]Scene 2	12:37:27
Web request	Web request	[Rm:9]Scene 1	12:37:25
Web request	Web request	[Rm:9][Ch:7]Level: 0%	12:37:19
Web request	Web request	[Rm:9][Ch:7]Level: 100%	12:37:18
Rasoft/Telnet	Rasoft/Telnet	[Rm:9][Ch:7]Ident	12:10:55
Rasoft/Telnet	Rasoft/Telnet	[Rm:21]Scene 1	12:08:42
Rasoft/Telnet	Rasoft/Telnet	[Rm:21][Ch:6]Ident	12:08:39
Rasoft/Telnet	Rasoft/Telnet	[Rm:21][Ch:6]Ident	11:58:43

As well as a description of the address (Room and Channel) and command the source of the command can also be viewed.

## 14 Activity States

The “Activity States” Page in the system settings of the HUB Webpages is used to trigger Events, Mappings and Macros. This can be useful for testing purposes, for example testing dawn and dusk events/macros.



Each green number is an active Mapping/Event/Macro and by clicking on the box it will be enabled, you can see if it has worked by going onto the HUB logs and it will show something like this.

Network data		
Type	Source	Description
	Event	[Bridge] Macro Control Enable 1->1 Step: 1->3

Rako thanks you for having purchased a Rako product and hopes that you are pleased with your system. Should for any reason you need to contact us please contact us via our website [www.rakocontrols.com](http://www.rakocontrols.com) or by phoning our customer help line on 01634 226666.

