

Accessing the Rako Hub from an external application.



Contents

[1 Introduction](#)

[2 TCP](#)

[3 BASIC](#)

[BASIC Commands \(Client -> Hub\)](#)

[SUB](#)

[STATUS](#)

[SEND](#)

[BASIC Commands](#)

[QUERY](#)

[Room Query](#)

[ROOM_TYPE](#)

[ROOM_MODE](#)

[Channel Query](#)

[Level Query](#)

[RGB Query](#)

[BASIC Feedback \(Hub -> Client\)](#)

[Feedback](#)

[Tracker](#)

[BASIC Notes](#)

[4 JSON](#)

[Connection \(JSON\)](#)

[STATUS \(JSON\)](#)

[QUERY \(JSON\)](#)

[Command list \(JSON\)](#)

[Send colour \(JSON\)](#)

[Feedback](#)

[Feedback \(JSON\)](#)

[Tracker \(JSON\)](#)

[5 UDP/IP](#)

[UDP Discover](#)

[6 Compatibility](#)

[7 Changelog](#)

1 Introduction

The Rako HUB can be accessed via a REST API, TCP socket or the legacy interfaces specified in 'Accessing The Rako Bridge'.

2 TCP

Products:

RK-HUB

WK-HUB

The TCP interface is available on port 9762. It can be used in BASIC or JSON mode. After the client connects, you must use the **SUB** message to select the protocol. Line termination can be the following: '\r', '\n' or '\r\n'. The encoding is UTF-8. Note: The legacy protocol uses port 9761 which is described in 'Accessing The Rako Bridge'.

Client to HUB commands are the following:

SUB: Must be sent as the first message to identify the client. Selects either BASIC or JSON.

STATUS: HUB identifiers and version info.

SEND: Transmit commands from the HUB.

QUERY: Query room data and levels info.

HUB to client feedback is provided in the following two ways:

Feedback: Triggered by "Button presses" may not result in a level change. Outputs all Rako commands.

Tracker: Occur when the level or scene of a dimmer changes. Only outputs level and scene changes.

3 BASIC

BASIC Commands (Client -> Hub)

[JSON Connection described later](#)

SUB

Name	SUB (BASIC)		
Parameters	Arg	Name	Example
	0	Command	SUB
	1	Format	BASIC
	2	Version	V3
	3	Client name	MY_DRIVER
	4	Subscriptions	TF
	Description	Subscriptions: T: Tracker events F: Feedback events	
Request Example	SUB,BASIC,V3,MY_CONTROL_SYSTEM\r\nSUB,BASIC,V3,MY_CONTROL_SYSTEM,TF\r\n		
Example Description	Subscribe as MY_CONTROL_SYSTEM. Basic format Version 2 to Tracker and Feedback.		
Response Example	A,1		

STATUS

Name	STATUS (BASIC)		
Request	Arg	Name	Example
	0	Status	STATUS
	1	RFU	0
Request Example	STATUS,0\r\n		
Response	Arg	Name	Example
	0	Command	STATUS
	1	Product Type	Hub
	2	Protocol Version	V3
	3	HUB Id 36 character UUID	3ab4696c-8844-4ab9-a4 8c-2c95fcb5f0e3
	4	Mac	70:B3:D5:08:40:00
	5	HUB Version	3.0.6
	6	RFU	0
Response example	STATUS,Hub,V3,353e89dd-862c-3256-aa79-8c3b89c23f2 1,70:B3:D5:08:40:00,3.0.6,0\r\n		

SEND

Name	SEND (BASIC)		
Request	Arg	Name	Example
	0	Command	SEND
	1	Room	4
	2	Channel	1
	3	Command	SCENE (See commands table)
	4..7	Argument(s)	4
Request Example	SEND,4,1,SCENE,5\r\n SEND,1,2,LEVEL,3\r\n SEND,5,4,RGB,127,0,255\r\n		
Response	Arg	Name	Example
	0	Command	SEND
	1	Success	1
Response example	SEND,1 AERROR,UNKNOWN_ERROR		
Response Notes	The result '1' indicates the command has been successfully queued. It may fail to execute when processed. It is recommended to check the tracker feedback to ensure the command performed.		

BASIC Commands

Command	Description
SCENE	Scene 0-16 (0 = off)
LEVEL	Level (0-255)
FADE_UP	Start fading up
FADE_DOWN	Start fading down
FADE_STOP	Stop fading
RGB	Provide three 0-255 values for RGB. e.g. green = 0,255,0 White values are automatically calculated from the RGB

RGB example

RGB send/response example with RGBW strip on room 85 channel 6.
Connection subscribed (SUB) with 'TF' flags.

```
SEND,85,6,RGB,150,255,255
F,85,8,LEVEL,123
F,85,6,LEVEL,210
F,85,7,LEVEL,210
F,85,9,LEVEL,255
SEND,1
T,85,8,LEV,150,123,168,0
T,85,6,LEV,255,210,280,0
T,85,7,LEV,0,210,1310,0
T,85,9,LEV,0,255,1591,0
```

User sends the 'SEND' command.
Hub replies with 4 'F' feedback commands are sent with roughly 500ms delay.
Hub replies with SEND,1.
Hub replies with 4 'T' tracker messages showing current and target levels.

QUERY

Strings with invalid characters for CSV will be escaped, when this happens the entire string will be quoted.

Name	QUERY (BASIC)		
Request			
	Arg	Name	Example
	0	Command	QUERY
	1	Type	ROOM
	2	Room Id (Optional. If missing uses room 0 (All rooms))	17
	3	Arguments (Optional)	N
Arguments N: No header			
Response			
	Line	Name	Example
	0	Column headers	QUERY,ROOM_ID,ROOM_TITLE,ROOM_TYPE\r\n
1..x	Data	17,Master Bedroom,LIGHT\r\n	
Note	Type can be ROOM, CHANNEL or LEVEL. See tables below.		

Room Query

Request Example	<pre>QUERY, ROOM\r\n QUERY, ROOM, 0, N\r\n QUERY, CHANNEL, 0\r\n QUERY, LEVEL, 17, N\r\n</pre>															
Response example (ROOM)	<pre>QUERY_HEADER, ROOM_ID, ROOM_TITLE, ROOM_TYPE, ROOM_MODE\r\n QUERY, 17, Master Bedroom, LIGHT, 0\r\n QUERY, 14, Master Dress, BLIND, 0\r\n QUERY, 13, "One Room", LIGHT, 0\r\n QUERY_COMPLETE, 3</pre>															
Response description (ROOM)	<table border="1"> <thead> <tr> <th>Argument</th> <th>Name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>ROOM_ID</td> <td>17</td> </tr> <tr> <td>1</td> <td>ROOM_TITLE</td> <td>Master Bedroom</td> </tr> <tr> <td>2</td> <td>ROOM_TYPE</td> <td>LIGHT</td> </tr> <tr> <td>3</td> <td>ROOM_MODE <i>(Added in V3)</i></td> <td>4+OFF</td> </tr> </tbody> </table>	Argument	Name	Example	0	ROOM_ID	17	1	ROOM_TITLE	Master Bedroom	2	ROOM_TYPE	LIGHT	3	ROOM_MODE <i>(Added in V3)</i>	4+OFF
Argument	Name	Example														
0	ROOM_ID	17														
1	ROOM_TITLE	Master Bedroom														
2	ROOM_TYPE	LIGHT														
3	ROOM_MODE <i>(Added in V3)</i>	4+OFF														

ROOM_TYPE

LIGHT	Scene 1-4, Fade Up, Fade Down (Fade buttons should send stop on release)																
BLIND	<p>3 buttons open, stop, close.</p> <table border="1"> <thead> <tr> <th>Button</th> <th>Press</th> <th>Release</th> <th>Alt</th> </tr> </thead> <tbody> <tr> <td>Open</td> <td>FadeUp</td> <td>Stop</td> <td>Scene 2</td> </tr> <tr> <td>Stop</td> <td></td> <td>Scene 3</td> <td></td> </tr> <tr> <td>Close</td> <td>Fade Down</td> <td>Stop</td> <td>Scene 4</td> </tr> </tbody> </table> <p>If press/release events are unavailable use Alt.</p>	Button	Press	Release	Alt	Open	FadeUp	Stop	Scene 2	Stop		Scene 3		Close	Fade Down	Stop	Scene 4
Button	Press	Release	Alt														
Open	FadeUp	Stop	Scene 2														
Stop		Scene 3															
Close	Fade Down	Stop	Scene 4														
SWITCH	<p>On: Scene 1 Off: Scene 0 (Off)</p>																
CURTAIN	Same as Blind (Different room icon)																
AUDIO	Deprecate RFU																
BLIND_SMART	Positional blind with level percent used for blind position																
CURTAIN_SMART	Same as BLIND SMART (Different room icon)																
VENTILATION	Same as LIGHT (Different room icon)																

ROOM_MODE

0	Default (None set)
S4OFF	4 Scenes, fade up/down, off
S7OFF	7 Scenes, fade up/down, off
S16OFF	16 Scenes, fade up/down, off
SNAMEDOFF	Scenes Scenes, fade up/down, off

Channel Query

Request Example	<pre>QUERY, CHANNEL\r\n QUERY, CHANNEL, 17\r\n</pre>																												
Response example (CHANNEL)	<pre>QUERY_HEADER, ROOM_ID, ROOM_TITLE, ROOM_TYPE, ROOM_MODE, CHANNEL_ID, CHANNEL_TITLE, CHANNEL_TYPE, S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16\r\n QUERY, 17, Master Bedroom, Lights, 1, Ceiling, SLIDER, 79, 191, 127, 63, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0\r\n QUERY, 17, Master Bedroom, Lights, 2, Bedsides, SLIDER, 79, 191, 127, 63, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0\r\n QUERY_COMPLETE, 2\r\n</pre>																												
Response description (CHANNEL)	<table border="1" data-bbox="443 835 1150 1503"> <thead> <tr> <th data-bbox="443 835 533 931">Argument</th> <th data-bbox="533 835 791 931">Name</th> <th data-bbox="791 835 1150 931">Example</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 931 533 994">0</td> <td data-bbox="533 931 791 994">ROOM_ID</td> <td data-bbox="791 931 1150 994">17</td> </tr> <tr> <td data-bbox="443 994 533 1057">1</td> <td data-bbox="533 994 791 1057">ROOM_TITLE</td> <td data-bbox="791 994 1150 1057">Master Bedroom</td> </tr> <tr> <td data-bbox="443 1057 533 1149">2</td> <td data-bbox="533 1057 791 1149">ROOM_TYPE <i>(Changed in V3)</i></td> <td data-bbox="791 1057 1150 1149">LIGHT</td> </tr> <tr> <td data-bbox="443 1149 533 1238">3</td> <td data-bbox="533 1149 791 1238">ROOM_MODE <i>(Added in V3)</i></td> <td data-bbox="791 1149 1150 1238">4+OFF</td> </tr> <tr> <td data-bbox="443 1238 533 1301">4</td> <td data-bbox="533 1238 791 1301">CHANNEL_ID</td> <td data-bbox="791 1238 1150 1301">5</td> </tr> <tr> <td data-bbox="443 1301 533 1366">5</td> <td data-bbox="533 1301 791 1366">CHANNEL_TITLE</td> <td data-bbox="791 1301 1150 1366">Pendant</td> </tr> <tr> <td data-bbox="443 1366 533 1431">6</td> <td data-bbox="533 1366 791 1431">CHANNEL_TYPE</td> <td data-bbox="791 1366 1150 1431">BLIND</td> </tr> <tr> <td data-bbox="443 1431 533 1503">7..23</td> <td data-bbox="533 1431 791 1503">S1..S16</td> <td data-bbox="791 1431 1150 1503">255</td> </tr> </tbody> </table> <p data-bbox="443 1536 647 1727">Channel Types: SLIDER BLIND SWITCH SCENES FADEUPDOWN</p> <p data-bbox="443 1760 884 1823">S1..S16 Scene 1-16 for each channel (0-255)</p>		Argument	Name	Example	0	ROOM_ID	17	1	ROOM_TITLE	Master Bedroom	2	ROOM_TYPE <i>(Changed in V3)</i>	LIGHT	3	ROOM_MODE <i>(Added in V3)</i>	4+OFF	4	CHANNEL_ID	5	5	CHANNEL_TITLE	Pendant	6	CHANNEL_TYPE	BLIND	7..23	S1..S16	255
Argument	Name	Example																											
0	ROOM_ID	17																											
1	ROOM_TITLE	Master Bedroom																											
2	ROOM_TYPE <i>(Changed in V3)</i>	LIGHT																											
3	ROOM_MODE <i>(Added in V3)</i>	4+OFF																											
4	CHANNEL_ID	5																											
5	CHANNEL_TITLE	Pendant																											
6	CHANNEL_TYPE	BLIND																											
7..23	S1..S16	255																											
Note	Query channel contains all data in QUERY,ROOM																												

Level Query

Response example (LEVEL)	<pre> QUERY, LEVEL, 18\r\n QUERY_HEADER, ROOM_ID, CHANNEL_ID, CURRENT_SCEN E, CURRENT_LEVEL, TARGET_LEVEL, RFU\r\n QUERY, 18, 0, -1, 0, 0, 0\r\n QUERY, 18, 2, -1, 50, 50, 0\r\n QUERY_COMPLETE, 2\r\n </pre>																							
Response description (LEVEL)	<table border="1"> <thead> <tr> <th data-bbox="443 555 504 645">Ar g</th> <th data-bbox="504 555 788 645">Name</th> <th data-bbox="788 555 1126 645">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 645 504 712">0</td> <td data-bbox="504 645 788 712">ROOM_ID</td> <td data-bbox="788 645 1126 712">Room number</td> </tr> <tr> <td data-bbox="443 712 504 779">1</td> <td data-bbox="504 712 788 779">CHANNEL_ID</td> <td data-bbox="788 712 1126 779">Channel number</td> </tr> <tr> <td data-bbox="443 779 504 869">2</td> <td data-bbox="504 779 788 869">CURRENT_SCENE</td> <td data-bbox="788 779 1126 869">Current scene. Can be -1 if not set.</td> </tr> <tr> <td data-bbox="443 869 504 936">3</td> <td data-bbox="504 869 788 936">CURRENT_LEVEL</td> <td data-bbox="788 869 1126 936">Current level</td> </tr> <tr> <td data-bbox="443 936 504 1003">4</td> <td data-bbox="504 936 788 1003">TARGET_LEVEL</td> <td data-bbox="788 936 1126 1003">Target Level</td> </tr> <tr> <td data-bbox="443 1003 504 1070">5</td> <td data-bbox="504 1003 788 1070">RFU</td> <td data-bbox="788 1003 1126 1070">Refrain from use</td> </tr> </tbody> </table>			Ar g	Name	Description	0	ROOM_ID	Room number	1	CHANNEL_ID	Channel number	2	CURRENT_SCENE	Current scene. Can be -1 if not set.	3	CURRENT_LEVEL	Current level	4	TARGET_LEVEL	Target Level	5	RFU	Refrain from use
Ar g	Name	Description																						
0	ROOM_ID	Room number																						
1	CHANNEL_ID	Channel number																						
2	CURRENT_SCENE	Current scene. Can be -1 if not set.																						
3	CURRENT_LEVEL	Current level																						
4	TARGET_LEVEL	Target Level																						
5	RFU	Refrain from use																						

RGB Query

<p>Response example (RGB)</p>	<pre> QUERY,RGB,18\r\n ROOM_ID,ROOM_TITLE,CHANNEL_ID,CHANNEL_TITLE, RGB_INDEX,RGB_TITLE,RGB_COLOR\r\n QUERY,9,Kitchen,3,Plinth red,0,Plinth,RED\r\n QUERY,9,Kitchen,5,Plinth green,0,Plinth,GREEN\r\n QUERY,9,Kitchen,4,Plinth blue,0,Plinth,BLUE\r\n QUERY_COMPLETE,3\r\n </pre>																										
<p>Response description (RGB)</p>	<table border="1" data-bbox="443 696 1126 1335"> <thead> <tr> <th>Arg</th> <th>Name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>ROOM_ID</td> <td>Room number</td> </tr> <tr> <td>1</td> <td>ROOM_TITLE</td> <td>Room title</td> </tr> <tr> <td>2</td> <td>CHANNEL_ID</td> <td>Channel number</td> </tr> <tr> <td>3</td> <td>CHANNEL_TITLE</td> <td>Channel title</td> </tr> <tr> <td>4</td> <td>RGB_INDEX</td> <td>Index of separate RGB areas in room</td> </tr> <tr> <td>5</td> <td>RGB_TITLE</td> <td>A non unique title for the particular RGB area. (Can be blank)</td> </tr> <tr> <td>6</td> <td>RGB_COLOR</td> <td>RED, GREEN, BLUE or WHITE</td> </tr> </tbody> </table> <p>Note:</p> <ul style="list-style-type: none"> • RGB areas are shown as colour wheels in the Rako app • Items will contain RGB or RGBW • Internally colour wheels are indexed by the room & channel value of RED. • Send commands to hub using the SEND,RGB command (White channel is automatically calculated) 			Arg	Name	Description	0	ROOM_ID	Room number	1	ROOM_TITLE	Room title	2	CHANNEL_ID	Channel number	3	CHANNEL_TITLE	Channel title	4	RGB_INDEX	Index of separate RGB areas in room	5	RGB_TITLE	A non unique title for the particular RGB area. (Can be blank)	6	RGB_COLOR	RED, GREEN, BLUE or WHITE
Arg	Name	Description																									
0	ROOM_ID	Room number																									
1	ROOM_TITLE	Room title																									
2	CHANNEL_ID	Channel number																									
3	CHANNEL_TITLE	Channel title																									
4	RGB_INDEX	Index of separate RGB areas in room																									
5	RGB_TITLE	A non unique title for the particular RGB area. (Can be blank)																									
6	RGB_COLOR	RED, GREEN, BLUE or WHITE																									

BASIC Feedback (Hub -> Client)

Feedback

Name	Feedback																				
Feedback Example	F, 17, 0, SCENE, 1																				
Data	<table border="1"><thead><tr><th>Arg</th><th>Name</th><th>Example</th></tr></thead><tbody><tr><td>0</td><td>Feedback</td><td>F</td></tr><tr><td>1</td><td>Room number</td><td>17</td></tr><tr><td>2</td><td>Channel number</td><td>0</td></tr><tr><td>3</td><td>Type</td><td>SCENE</td></tr><tr><td>4</td><td>Argument</td><td>1</td></tr></tbody></table>			Arg	Name	Example	0	Feedback	F	1	Room number	17	2	Channel number	0	3	Type	SCENE	4	Argument	1
	Arg	Name	Example																		
	0	Feedback	F																		
	1	Room number	17																		
	2	Channel number	0																		
	3	Type	SCENE																		
	4	Argument	1																		

Tracker

Name	Tracker																													
Tracker Example	T, 17, 8, LEVEL, 127, 79, 299, 0																													
Data	<table border="1"> <thead> <tr> <th>Arg</th> <th>Name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Tracker</td> <td>T</td> </tr> <tr> <td>1</td> <td>Room number</td> <td>17</td> </tr> <tr> <td>2</td> <td>Channel number</td> <td>8</td> </tr> <tr> <td>3</td> <td>Type</td> <td>LEVEL</td> </tr> <tr> <td>4</td> <td>Current Level</td> <td>127</td> </tr> <tr> <td>5</td> <td>Target Level</td> <td>79</td> </tr> <tr> <td>6</td> <td>Time to take (ms)</td> <td>299</td> </tr> <tr> <td>7</td> <td>Temporary</td> <td>0</td> </tr> </tbody> </table>			Arg	Name	Example	0	Tracker	T	1	Room number	17	2	Channel number	8	3	Type	LEVEL	4	Current Level	127	5	Target Level	79	6	Time to take (ms)	299	7	Temporary	0
	Arg	Name	Example																											
	0	Tracker	T																											
	1	Room number	17																											
	2	Channel number	8																											
	3	Type	LEVEL																											
	4	Current Level	127																											
	5	Target Level	79																											
	6	Time to take (ms)	299																											
	7	Temporary	0																											
<p>Note:</p> <ul style="list-style-type: none"> Temporary indicates it has come from a source such as fade buttons and is likely to not progress to the target level. If unsure, ignore events with temporary=1. 																														

BASIC Notes

- The column names will only change with a new version specified with the 'SUB' command. It is not required to check the 'Column headers'.

4 JSON

Connection (JSON)

Name	SUB (JSON)		
Direction	Client->Hub		
Parameters			
	Arg	Name	Example
	0	Command	SUB
	1	Format	JSON
	2	JSON Structure	
Description	Subscriptions: TRACKER : Tracker events FEEDBACK : Feedback events		
Example	SUB,JSON,{"version": 2, "client_name": "MY_TEST_CLIENT", "subscriptions": ["TRACKER", "FEEDBACK"]} \r\n		
Example Description	Subscribe as MY_TEST_CLIENT JSON format version 2 to Tracker and Feedback.		

STATUS (JSON)

Name	STATUS (JSON)													
Direction	Client->Hub													
Description	Subscriptions: TRACKER: Tracker events FEEDBACK: Feedback events													
Example	<pre>{ "name": "status", "payload": {} }</pre>													
Response	<table border="1"> <thead> <tr> <th>Name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>productType</td> <td>Hub</td> </tr> <tr> <td>protocolVersion</td> <td>2</td> </tr> <tr> <td>hubId 36 character UUID</td> <td>ebbe7961-7abb-3aed-9fef-0bb7871ef74d</td> </tr> <tr> <td>mac</td> <td>70:B3:D5:08:40:00</td> </tr> <tr> <td>hubVersion</td> <td>3.0.6</td> </tr> </tbody> </table>		Name	Example	productType	Hub	protocolVersion	2	hubId 36 character UUID	ebbe7961-7abb-3aed-9fef-0bb7871ef74d	mac	70:B3:D5:08:40:00	hubVersion	3.0.6
Name	Example													
productType	Hub													
protocolVersion	2													
hubId 36 character UUID	ebbe7961-7abb-3aed-9fef-0bb7871ef74d													
mac	70:B3:D5:08:40:00													
hubVersion	3.0.6													
Example Response	<pre>{"name":"status","payload":{"productType":"Hub","protocolVersion":2,"hubId":"ebbe7961-7abb-3aed-9fef-0bb7871ef74d","mac;":"70:B3:D5:08:43:27","hubVersion":"3.1.5"}}</pre>													

QUERY (JSON)

Name	QUERY (JSON)											
Direction	Client->Hub											
Parameters	<table border="1"> <thead> <tr> <th>Arg</th> <th>Name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>queryType</td> <td>ROOM</td> </tr> <tr> <td>1</td> <td>roomId</td> <td>15</td> </tr> </tbody> </table>			Arg	Name	Example	0	queryType	ROOM	1	roomId	15
	Arg	Name	Example									
	0	queryType	ROOM									
	1	roomId	15									
Description	<p>Queries:</p> <p>ROOM: Query room names and types</p> <p>CHANNEL: Query room data and channel data</p> <p>LEVEL: Query tracked level information</p> <p>COLOR: Query RGB/W and colour temperature items.</p>											
Example	<pre>{ "name": "query", "payload": { "queryType": "ROOM", "roomId": 0 } }</pre>											
Example Description	Query roomId 0 will return all rooms.											
Response Example (ROOM)	<pre>{ "name": "query_ROOM", "payload": [{ "roomId": 9, "title": "Test room", "type": "LIGHT" }, { "roomId": 10, "title": "Test room", "type": "CURTAIN" }] }</pre>											
Response Example (CHANNEL)	<pre>{ "name": "query_CHANNEL", "payload": [{ "roomId": 9, "title": "Test room",</pre>											

	<pre> "type": "LIGHT", "channel": [{ "channelId": 1, "title": "Pendant", "type": "SLIDER", "sceneLevels": [0 ,255 ,191 ,127 ,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0] }, { "channelId": 2, "title": "Bookshelf Red", "type": "SLIDER", "sceneLevels": [0 ,255 ,191 ,127 ,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0] }, { "channelId": 3, "title": "Bookshelf Blue", "type": "SLIDER", "sceneLevels": [0 ,255 ,191 ,127 ,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0] }, { "channelId": 4, "title": "Bookshelf Green", "type": "SLIDER", "sceneLevels": [0 ,255 ,191 ,127 ,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0] }] }, { "roomId": 10, "title": "Test room", "type": "CURTAIN", "channel": [{ "channelId": 1, "title": "Window", "type": "BLIND", "sceneLevels": [0 ,255 ,191 ,127 ,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0] }] }] } </pre>
Response Example	<pre> { "name": "query_LEVEL", </pre>

<p>(LEVEL)</p>	<pre>"payload": [{ "channel": [{ "channelId": 0, "currentLevel": 50, "targetLevel": null }, { "channelId": 1, "currentLevel": 50, "targetLevel": null }], "roomId": 45, "currentScene": -1 }]</pre>
<p>Response Example (COLOR)</p>	<pre>{ "name": "query_COLOR", "payload": [{ "roomId": 9, "title": "Test room", "type": "LED", "color": [{ "sceneId": 0, "rgb": [0 ,0 ,0], "hex": "000000", "kelvin": null }, { "sceneId": 1, "rgb": [255 ,255 ,255], "hex": "FFFFFF", "kelvin": null }, { "sceneId": 2, "rgb": [191 ,191 ,191], "hex": "BFBFBF", "kelvin": null }, { "sceneId": 3, "rgb": [127 ,127 ,127], "hex": "7F7F7F", "kelvin": null }] }] }</pre>

```

    },
    {
      "sceneId": 4,
      "rgb": [63 ,63 ,63],
      "hex": "3F3F3F",
      "kelvin": null
    }
  ],
  "channel": [
    {
      "channelId": 2,
      "title": "Bookshelf Red",
      "rgbColor": "RED",
      "sceneLevels": [0 ,255 ,191 ,127
,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ]
    },
    {
      "channelId": 4,
      "title": "Bookshelf Green",
      "rgbColor": "GREEN",
      "sceneLevels": [0 ,255 ,191 ,127
,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ]
    },
    {
      "channelId": 3,
      "title": "Bookshelf Blue",
      "rgbColor": "BLUE",
      "sceneLevels": [0 ,255 ,191 ,127
,63 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ,0 ]
    }
  ],
  "primaryChannel": 2,
  "rgbMode": "MULTICHANNEL",
  "rgbTitle": "Bookshelf"
}
]
}

```

Query notes:

- Room types are defined in the BASIC section
- Query CHANNEL contains all information in Query,ROOM.
- Query,LEVEL will not return any rooms at power up, they will be tracked from first user interaction.
- QUERY,COLOR finds rgb/w capable rooms by channel names. The channels must be sequential containing 'red', 'green & 'blue' in their names.

Send command (JSON)

Name	Send																				
Direction	Client->Hub																				
Payload	<p>Payload:</p> <table border="1"> <thead> <tr> <th>Element name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>room</td> <td>Room number</td> </tr> <tr> <td>channel</td> <td>Channel number</td> </tr> <tr> <td>description</td> <td>Description</td> </tr> <tr> <td>action</td> <td>Action</td> </tr> </tbody> </table> <p>Action:</p> <table border="1"> <thead> <tr> <th>Element name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>command</td> <td>*required command</td> </tr> <tr> <td>scene</td> <td>*optional scene number</td> </tr> <tr> <td>level</td> <td>*optional level 0-255</td> </tr> <tr> <td>down</td> <td>*optional fade direction</td> </tr> </tbody> </table>	Element name	Example	room	Room number	channel	Channel number	description	Description	action	Action	Element name	Example	command	*required command	scene	*optional scene number	level	*optional level 0-255	down	*optional fade direction
Element name	Example																				
room	Room number																				
channel	Channel number																				
description	Description																				
action	Action																				
Element name	Example																				
command	*required command																				
scene	*optional scene number																				
level	*optional level 0-255																				
down	*optional fade direction																				
Example (Scene)	<pre>{ "name": "send", "payload": { "room": 1, "channel": 2, "action": { "command": "scene", "scene": 3 } } }</pre>																				
Example (Level)	<pre>{ "name": "send", "payload": { "room": 1, "channel": 2, "action": { "command": "levelrate", "level": 255 } } }</pre>																				

Command list (JSON)

Command	ID	Argument	Description
ident	8		Flash the circuit
stop	15		Stop fading
scene	49	scene	Scene 0-16 (0 = off)
levelrate	52	level	Level (0-255)
fade	50	down	Start fading up or down.

Send colour (JSON)

Name	Send Color (RGB/W)	
Direction	Client->Hub	
Payload	Payload:	
	Element name	Example
	room	Room number
	channel	Channel number
	red	Red (0-255)
	green	Green (0-255)
	blue	Blue (0-255)
Note: The channel number should be set to a single channel containing RGB. Channel 0 is also valid.		
Example	<pre>{ "name": "send-color", "payload": { "room": 16, "channel": 2, "red": 25, "green": 50, "blue": 255 } }</pre>	

Name	Send Color (Temperature)	
Payload	Payload:	
	Element name	Example
	room	Room number
	channel	Channel number
	temperature	Kelvin value (1700-10,000)
Example	<pre>{ "name": "send-colorTemp", "payload": { "room": 16, "channel": 2, "temperature": 2700 } }</pre>	

	}
--	---

Feedback

Feedback (JSON)

Name	Feedback (Use for mapping to button presses)																					
Direction	Hub->Client																					
Payload	<table border="1"> <thead> <tr> <th>Element name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>room</td> <td>Room number</td> </tr> <tr> <td>channel</td> <td>Channel number</td> </tr> <tr> <td>description</td> <td>Description</td> </tr> <tr> <td>action</td> <td>Action</td> </tr> </tbody> </table> <p>Action structure</p> <table border="1"> <thead> <tr> <th>Element name</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>command</td> <td>*required command</td> </tr> <tr> <td>scene</td> <td>*optional scene number</td> </tr> <tr> <td>level</td> <td>*optional level 0-255</td> </tr> <tr> <td>down</td> <td>*optional fade direction</td> </tr> </tbody> </table>		Element name	Example	room	Room number	channel	Channel number	description	Description	action	Action	Element name	Example	command	*required command	scene	*optional scene number	level	*optional level 0-255	down	*optional fade direction
Element name	Example																					
room	Room number																					
channel	Channel number																					
description	Description																					
action	Action																					
Element name	Example																					
command	*required command																					
scene	*optional scene number																					
level	*optional level 0-255																					
down	*optional fade direction																					
	<pre>{ "name": "feedback", "payload": { "action": { "actUniqueId": -1, "defaultFadeRate": true, "decay": 0, "level": 90, "expFadeRate": false, "command": 52 }, "room": 85, "channel": 4, "description": "[Rm:85 Wine Cellar][Ch:4 Counter] Level: 35%" } }</pre>																					

Tracker (JSON)

Name	Tracker (Use for tracking scenes and levels)															
Direction	Hub->Client															
Payload	<table border="1"> <thead> <tr> <th>Element name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>roomId</td> <td>Room number</td> </tr> <tr> <td>channelId</td> <td>Channel number</td> </tr> <tr> <td>currentLevel</td> <td>Current Level</td> </tr> <tr> <td>targetLevel</td> <td>Target Level</td> </tr> <tr> <td>timeToTake</td> <td>Time to take in milliseconds</td> </tr> <tr> <td>temporary</td> <td>Temporary indicates it has come from a source such as fade buttons and is likely to not progress to the target level. If unsure, ignore events with temporary=true.</td> </tr> </tbody> </table>		Element name	Description	roomId	Room number	channelId	Channel number	currentLevel	Current Level	targetLevel	Target Level	timeToTake	Time to take in milliseconds	temporary	Temporary indicates it has come from a source such as fade buttons and is likely to not progress to the target level. If unsure, ignore events with temporary=true.
	Element name	Description														
	roomId	Room number														
	channelId	Channel number														
	currentLevel	Current Level														
	targetLevel	Target Level														
	timeToTake	Time to take in milliseconds														
	temporary	Temporary indicates it has come from a source such as fade buttons and is likely to not progress to the target level. If unsure, ignore events with temporary=true.														
	<table border="1"> <thead> <tr> <th>Element name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>roomId</td> <td>Room number</td> </tr> <tr> <td>channelId</td> <td>Channel number</td> </tr> <tr> <td>scene</td> <td>Scene number</td> </tr> </tbody> </table>		Element name	Description	roomId	Room number	channelId	Channel number	scene	Scene number						
	Element name	Description														
roomId	Room number															
channelId	Channel number															
scene	Scene number															
Example (Level tracker)	<pre>{ "name": "tracker", "payload": { "roomId": 85, "channelId": 4, "currentLevel": 127, "targetLevel": 90, "timeToTake": 230, "temporary": false } }</pre>															

Example 2 (Scene tracker)	<pre>{ "name": "tracker", "payload": { "roomId": 85, "channelId": 0, "scene": 4 } }</pre>
--------------------------------------	---

5 UDP/IP

Products:

RA/RTC/WA/WTC-Bridge

APR/WRE-Bridge (V1.7.9 Limited support)

UDP Discover

All text is encoded with WINDOWS-1252

To find a BRIDGE or HUB on the network send a UDP broadcast packet where the data consists of a single literal 'D'. The bridge will reply to the source IP address with:

Request

Direction	Parameters		Description	Example
	Byte	Function		
Client to UDP Broadcast	0	0x44: 'D' for request	Discover Required	0x44
Client to UDP Broadcast	1	0x58: 'X' for request	Bypass Disable auto detect	0x58
Client to UDP Broadcast	2	0x48: 'H' for request	Append \r\nHub\r\n2	0x48

Bridges and HUBs are discovered by the same command so it is recommended to send "DXH" as the discovery command.

Response

Line	Description	Example
0	User configurable device name	RakoHub
1	Mac address	70-B3-D5-08-41-9F
2	Product type	HUB
3	Minimum api version	2

Example

Direction	Broadcast Reply From Bridge
Bridge	RAKOBIDGE\r\n00-04-A3-B1-21-F1\r\n
HUB before version 3.0.6	RakoHub\r\n70-B3-D5-08-40-00\r\nHUB\r\n
HUB after version 3.0.6	MyRakoHub\r\n70-B3-D5-08-41-9F\r\nHUB\r\n2\r\n

HUB versions after 3.0.6 include the version. The TCP API requires 3.0.6 and later.

Note

The device name is a case insensitive alphanumeric string including space and hyphen with a maximum length of 16 characters.

6 Compatibility

Hub Version	Date	Description
Pre 3.0.6		API not supported.
3.0.6	18/12/2019	API V2 supported
3.0.9	27/04/2020	Issue present requiring extra arguments to send command (Use of version not recommended).
3.1.0	11/06/2020	API V3 supported. (V2 still supported).
3.1.5	17/08/2020	Minimum version for JSON support
3.1.6	21/08/2020	Support for RGB feedback

Note:

- All Hubs can upgrade to the latest version.
- RAWA/RTC/WTC/WRA Bridge will never support this protocol. Use 'Accessing The Rako Bridge'.

7 Changelog

Version	Date	Description
0.1.5	21/01/202	API version V2
0.1.6	24/04/2020	BASIC API V3 <ul style="list-style-type: none">• Added changelog• PLAIN renamed to BASIC (Only in document)• Documentation for JSON API• Added description for RoomType and ChannelType• Added room mode to Room query• V3 QUERY,CHANNEL Room Type was changed to be the same as QUERY,ROOM• Added QUERY,RGB• Added SEND,{room},{channe},RGB,{R},{G},{B}
0.1.7	20/06/2020	Document formatting
0.1.8	10/08/2020	Added JSON query information
0.1.9	13/08/2020	Query example correct for Room and Channel
0.2.0	25/08/2020	Update UDP Discovery descriptions

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 or by phoning our customer help line on 01634 226666.

