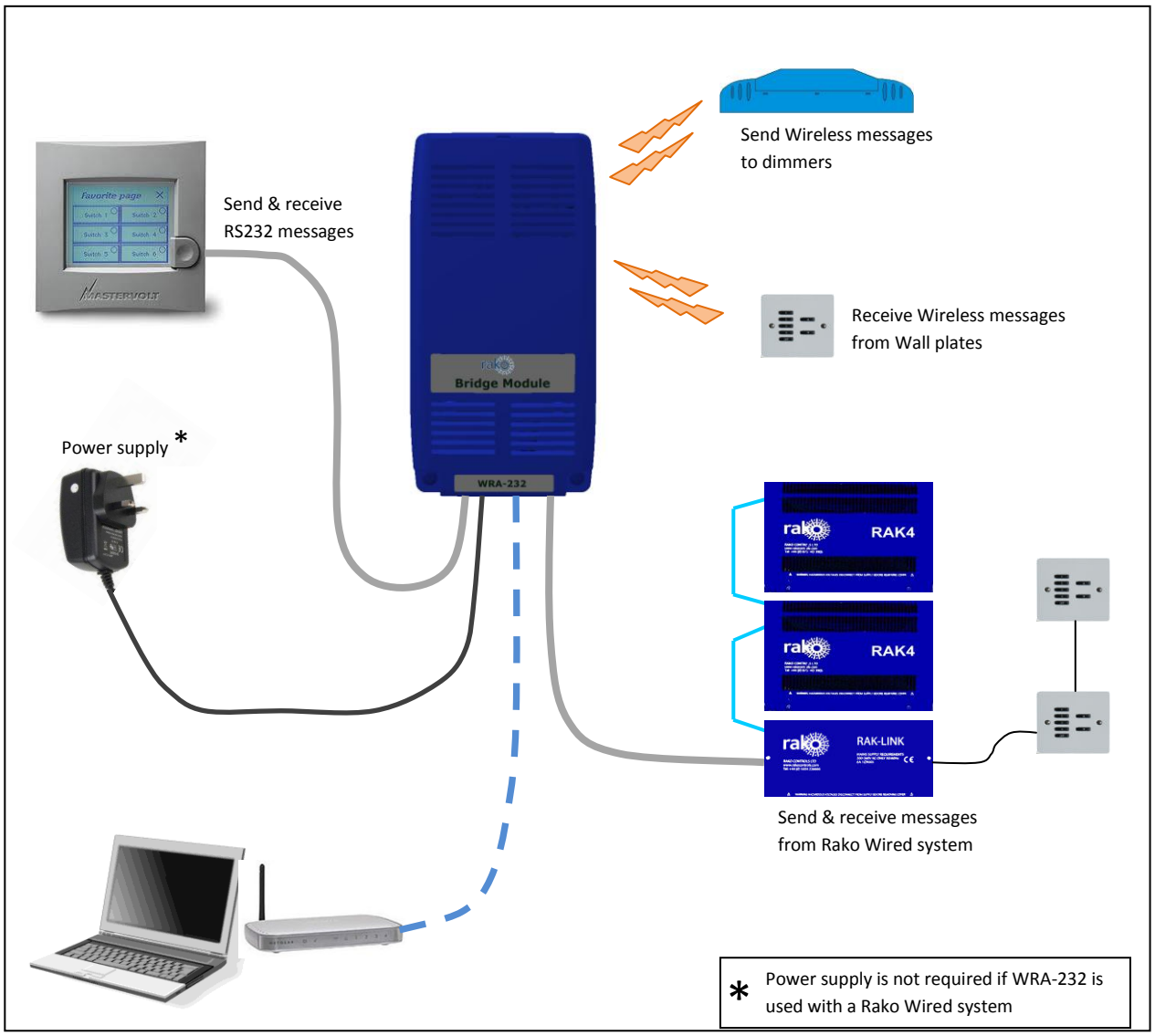
WRA-232 User Manual

What is WRA-232

WRA-232 will send and receive RS-232 messages with Rako systems.
WRA-232 works with Rako Wired or Wireless systems.
WRA-232 has Ethernet port for configuration only.



Note:

WRA-232 will operate with Wired and Wireless systems. However, it cannot be used to link a Wired System to a Wireless system. Use WA-Bridge or WTC-Bridge for that function.

Getting started with WRA-232

Some initial setup of WA-Bridge is needed.

- First, Plug the Power Supply into the WRA-232 and apply power. The Blue LED on the WRA-232 circuit board will start to blink.
- Plug the Ethernet patch cable from the WA-Bridge to a spare port on a wireless router.
- Use a normal web browser (eg Internet Explorer) to connect to the RTC-Bridge via the router.



Use a laptop to connect to the RTC-Bridge

The WRA-232 URL is

http://rako232bridge

Or

http://rako232bridge.local

Use a Web Browser to view the WRA-232 control panel.

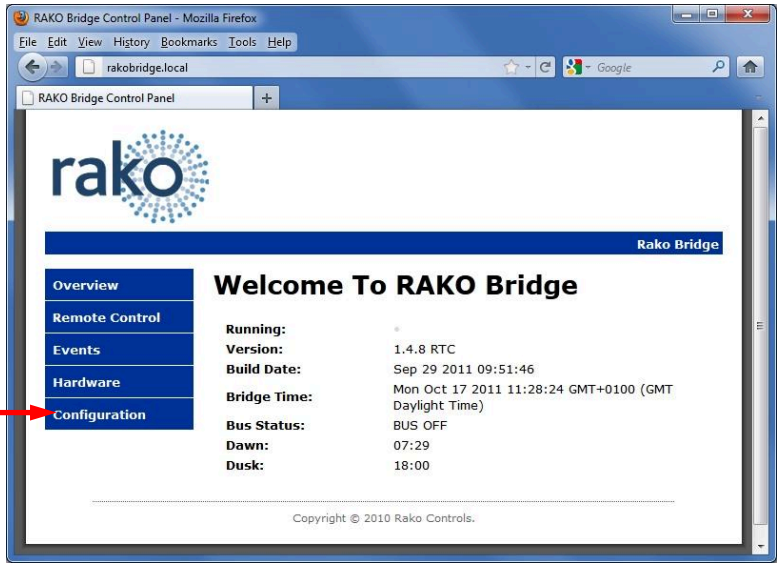


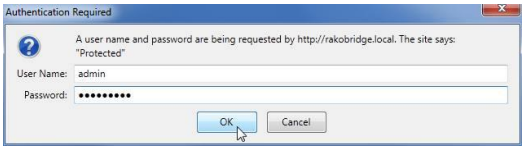
Basic Configuration of the WRA-232

For WRA-232 to operate correctly with a RAKO system some initial setup must be performed. This is done using a PC and the RJ45 configuration connector.

Set Wireless House Number

Click the *Configuration* button on the WRA-232 control panel.



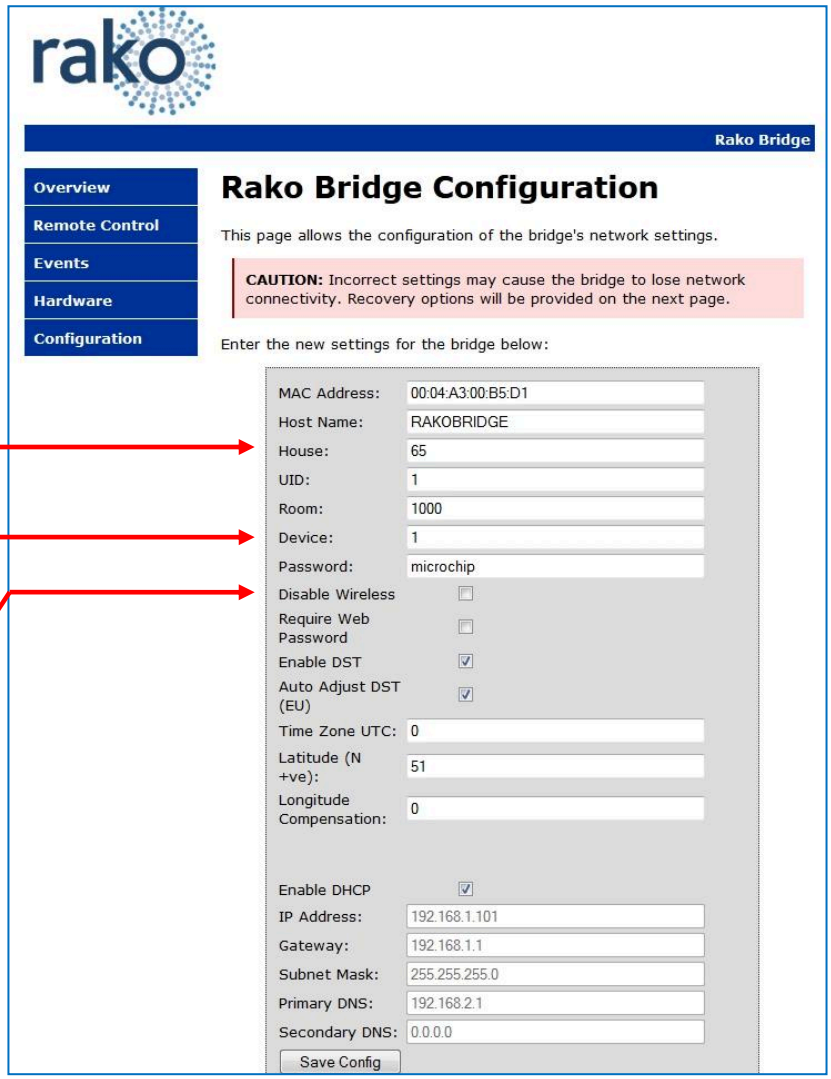


Login
User Name = *admin*
Password = *microchip*

Set the House number to match Rako Wireless system

If the WRA-232 is used on a Rako WIRED system then change this Device Number. See Notes on next page

This option can be used to Disable the Wireless transmitter & receiver on the WRA-232. See notes on next page.



WRA-232 Device Numbers

This setting is important when the WRA-232 is used with a Rako Wired system.

In the Wired system all Bridges, Wall Controllers, RAK-Links etc have unique identifiers. It is important that no two items in the same logical *Room* have the same *Device* numbers.

The WRA-232 default room is Room 1000. This room number is also used by WRA-Bridges and WA-Bridges. If there is a WA or WRA Bridge on the system then be sure that the WRA-232 and the other Bridge have different device numbers.

Disabling the WRA-232 Wireless

Do not have two Bridges on the same system which both have Wireless enabled. This will cause messages from one Bridge to be received by the other causing several repeats of the same message to occur.

It is common for a WRA-232 to be in the same system as a RA-Bridge, RTC-Bridge, WA-Bridge or WTC-Bridge. If this is the case, then disable the WRA-232 wireless.

Using WRA-232 with RS-232

The Rako WRA-232 uses the following configuration:

9600 baud, No Parity, 8 Data bits, 1 stop bit

The flow control should be set to Xon/Xoff or None.

Command Line Interface

The interface indicates it is waiting for a command by issuing the “>” character. Characters sent to the interface are echoed. The interface interprets text commands and, where necessary, encodes and transmits the appropriate message via the radio link. The interface is not case sensitive. Each command consists of the following:

[COMMAND] <VALUE>

The command is terminated with a carriage-return character and, depending of the command, has an additional argument. The argument is delimited by one or more white-spaces, tabs or colons. If the Command is valid, the interface responds with:

OK

If the command is invalid, the interface responds with:

Invalid Command!

It is not necessary to enter the full text of the command. A shortened non-ambiguous version can be used. For example the command HOUSE:1 can be shortened to HO:1.

Command Summary

Command	Notes
ROOM [<room_number>]	Sets the ROOM address to <room_number>. The Room number must be between 0 and 255. Room 0 controls all units with the same House address. If <room_number> is omitted, the room is set to 0. The Room address is stored in non-volatile memory.
CHANNEL [<Channel_Number>]	Selects the Channel address. The <channel_number> must be between 0 and 15. Channel 0 controls all channels within the current Room. If <Channel_Number> is omitted the channel is set to 0.
SCENE <scene number>	Sets the scene for the current House/Room/Channel. The <scene number> must be between 1 and 4, which correspond to the buttons on a control panel.
OFF	Turns off the lights in the current House/Room/Channel.
LEVEL <Power_level>	Sets the power level for the current House/Room/Channel. The <power_level> must be between 0 and 255, with 255 representing 100% power.
STORE	Stores the current power level to the current Scene. This will only apply to dimmers addressed by the current House/Room/Channel.
RESET	Resets the microcontroller.
VER	Displays version information
STATUS	Displays current House, Room and Channel in the form: HO:nnn RO:nnn CH:nnn nnn is 3 digit decimal number with leading zeros. nnn is between 0 and 255.

Command	Notes
COMMAND [<command_number>]	Issues <command_number> to the lights in the current House/Room/Channel. The <command_number> must be between 0 and 15.
ADDRESS <EEPROM_address>	Sets the EEPROM address within the dimmers. The (EEPROM_address> must be between 0 and 127.
DATA <EEPROM_data>	Transmits <EEPROM_data> to the address set using the ADDRESS command. The <EEPROM_data> must be between 0 and 255.
NOECHO	Turns off character echoing. This command is only available on the Bi-directional RS232 interface. The current echo mode is stored in non-volatile memory.
ECHO	Turns on character echoing. This command is only available on the Bi-directional RS232 interface. The current echo mode is stored in non-volatile memory.

Table 1 – Command Line Interface

Command Number Summary

Using the COMMAND instruction, a literal command can be sent to the addressed controllers. Table 2 details the meanings of the various instructions.

Instruction Number	Instruction	Program mode instruction
0	off	
1	light+	light+
2	light-	light-
3	ps1	Store + Ident
4	ps2	ch+
5	ps3	ch-
6	ps4	
7	program mode	
8	ident	ident
9		
10	low battery	low battery
11	eeprom write	eeprom write
12	level set	level set
13	store	Store
14		exit
15	STOP	STOP

Table 2- Command Instructions

To fade the lights the command light+ or light- must be issued. This fades the lights at the rate determined by the value stored within the dimmer. To stop the lights fading the STOP command needs to be issued.

EEPROM Addresses

Information is stored in the dimmers in non-volatile or EEPROM memory. This memory can be written to using the RS232 interface. The EEPROM consists of 128 bytes of storage, some of which is used internally by the dimmer to remember the current state. ONLY THE ADDRESSES DETAILED BELOW SHOULD BE WRITTEN TO. To write data to the EEPROM area it if first necessary to set the

HOUSE,ROOM and CHANNEL address of the dimmer(s). Next, the address should be set using the ADDRESS command and finally, the data should be written using the DATA command.

EEPROM ADDRESS	Action	Notes
1	Scene 1 preset value	
2	Scene 2 preset value	
3	Scene 3 preset value	
4	Scene 4 preset value	
9	Start Mode (After power failure)	0=0ff 1-4 = Scene 5=Memory 6-255=Absolute power level
22	Ignore Program Mode	>0= Ignore
23	Ignore Group Commands	>0 = Ignore
24	Ignore House Commands	>0 = Ignore
26	Use Profile	>0 = use profile
34	Scene Fade Rate	0=fast
36	Scene Fade Decay Rate	0=no decay
40	Manual Fade Rate Max	Sets the maximum rate
48	Manual Fade Rate Acceleration	Sets the acceleration to maximum rate
50	Manual Fade Rate Start	Sets the starting fade rate
63-127	Profile Data	Determines the dimmers profile These values should only be changed using the RASOFT software.

Table 3- EEPROM Addresses

Care should be taken when changing values if the channel or room number is set to zero as this will change the values on all the dimmers.

Bi-Directional operation

The Rako® Bi-directional RS232 interface works as both a transmitter and receiver of Rako coded messages. Using this module it is possible to interface a Rako lighting installation to an external system where the system can both control the lighting and be aware of buttons being pressed on Rako devices.

In addition to accepting the commands defined in Table 1, the Rako® Bi-directional RS232 interface will output received commands in the following format:

<RRR:CC:IN

Where RRR represents the decimal room number from 0-255, CC indicates the channel number 0-15 (0 being 'all channels') and IN indicates the instruction as set out in Table 2- Command Instructions. The string will always be on a separate line, start with a "<" and terminate with a CR LF.

The unit will only output messages for the current house. The house address must first be set using as described in the "Table 1Basic Configuration" section.

The following sequence represents a controller in room 4. Note: the text in italics is for explanation and does not appear on the output.

<004:00:03 >	*Scene 1 button pressed.*
<004:00:10 >	*Battery low indication.*
<004:00:01 >	*Fade up button pressed.*
<004:00:15 >	*Fade up button released.*
<004:00:10 >	*Battery low indication.*

Command Examples:

This section details some typical command line examples. The '>' character is issued by the interface as is the 'OK' response. Note that the commands are not case sensitive, shortened versions of the commands and various delimiters can be used.

The house and room address are stored in EEPROM within the WRA-232 and do not require resetting should a power failure occur.

To set the dimmers in room 4 to scene 1

>RO:4

OK

>CH:0

OK

>SC:1

OK

For all the dimmers in room4, set the Start-Mode such that the lights will be at 50% following a power failure.

>ro 4

OK

>ch 0

OK

ADD 9

OK

Dat 127

OK