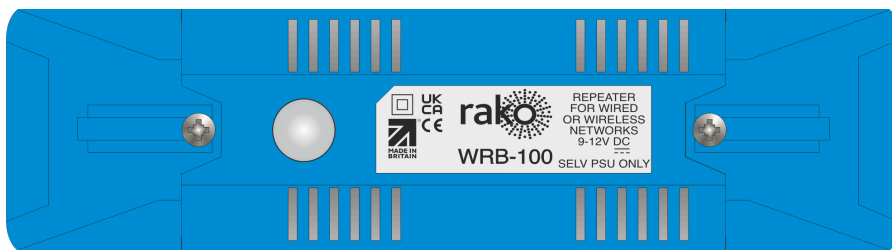




Instruction Manual

WRB-100

Rakom Wireless Repeater



2024
Version 2.0.0



For programming information: [Wireless Module Programming Guide](#) or [Wired system Programming Guide](#)

For general system information: [Wireless RAK Application Sheet](#) or [Wired RAK Application Sheet](#)

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[1 What is the WRB-100?](#)

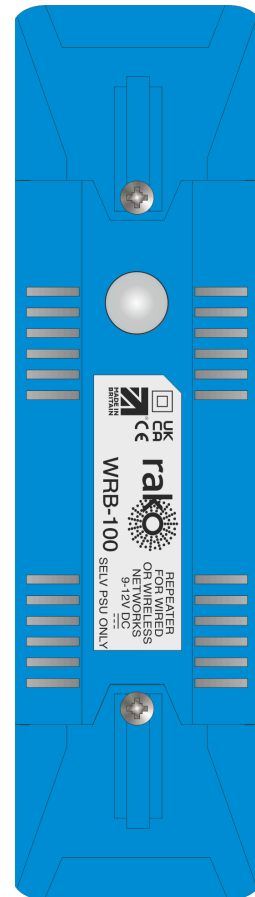
The WRB-100 is a command repeater used in Wireless and Wired networks.

There are two modes that the WRB-100 can operate:

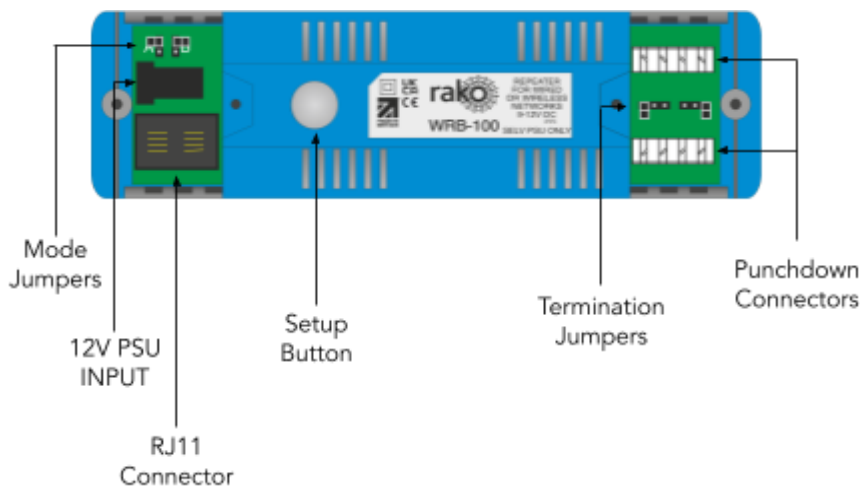
- Wireless mode
- Wired spine mode

Wireless mode repeats a wireless message when it is received, commonly used to extend the range of transmitted commands to the receivers.

Wired spine mode links two or more WRB-100 units via CAT5 using the onboard punch-down connector, this is commonly used when there is a large area between transmitters and receivers which needs to be covered which would not be feasible in Wireless repeater mode.



2 Inputs



3 Terminating the WRB-100 (wired only)

It is important to terminate the WRB-100 correctly otherwise the Wired system will not function. The termination that is required depends on the nature of the installation and the position of the RAK-LINK within the system.

No Term - Both Jumpers removed

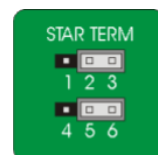
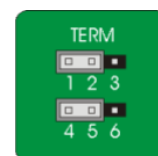
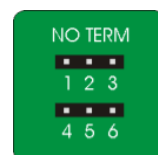
Used when the WCM is not at the end of the line. This is usually identifiable by two cables being punched down to the WCM.

Term - Jumper fitted across 1+2 & 4+5

Used when the WCM is end of line in a daisy chain configuration.

Star Term - Jumper fitted across 2+3 & 5+6

Used when the WCM is the end of line in a STAR wire configuration.



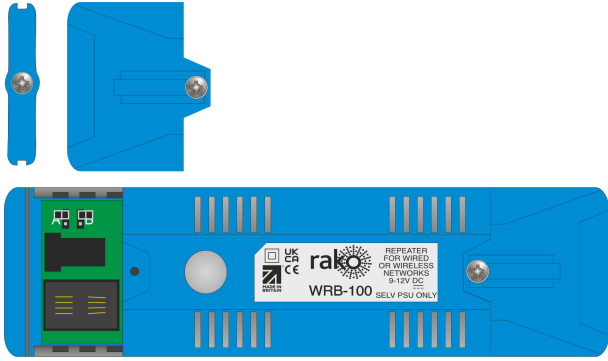
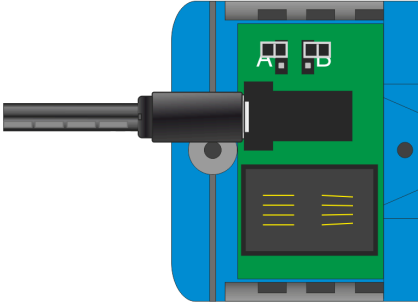
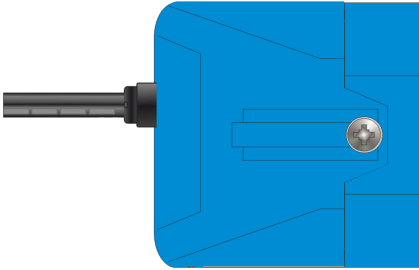
4 Installation - Wireless Mode

⚠ WARNING

Installation should only be carried out by a competent electrician.

- WRB-100 modules should be mounted in areas that are adequately ventilated, dry, and outside of any enclosed metal casings that may interfere with the wireless signal.
- Modules should be mounted vertically, with the terminals at the bottom, or horizontally.

- While the modules are designed to be maintenance-free, they should be mounted in an accessible location should investigation or re-addressing of the units be necessary.
- Ensure that the cable clamp is fitted tightly to secure the cables.

<p>STEP 1</p>		<p>Remove the left side cover and cable clamp.</p> <p>NB In Wireless Mode, the only connector used is the DC Input.</p>
<p>STEP 2</p>		<p>Connect the 12V PSU to the DC Input of the WRB100.</p>
<p>STEP 3</p>		<p>Replace the cover and cable clamp, and switch the power supply on.</p> <p>Test the WRB-100 is powered by pressing the</p>

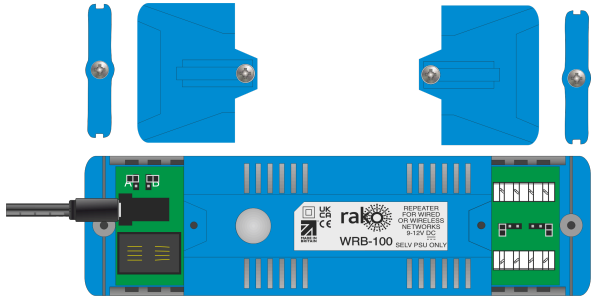

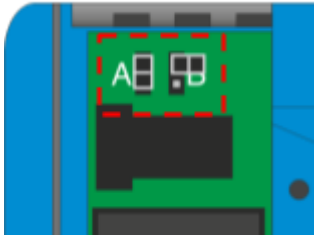
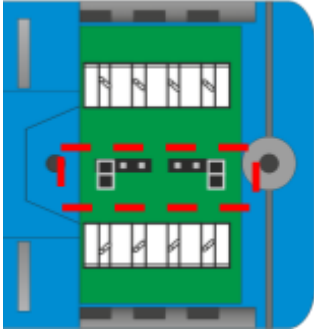

5 Installation - Wired Mode

⚠ WARNING

Installation should only be carried out by a competent electrician.

- The WRB-100 must be connected to a RAK-LINK when used in Wired Mode.
- WRB-100 modules should be mounted in areas that are adequately ventilated, dry, and outside of any enclosed metal casings that may interfere with the wireless signal.

- Modules should be mounted vertically, with the terminals at the bottom, or horizontally.
- While the modules are designed to be maintenance-free, they should be mounted in an accessible location should investigation or re-addressing of the units be necessary.
- Ensure that the cable clamp is fitted tightly to secure the cables.

STEP 1		Remove the covers and cable clamps.
STEP 2		Connect the WRB-100 to the Wired network with the RJ11 or Punchdown connector.
STEP 3		Set the mode jumper to 'A' for Wired spine mode.
STEP 4		Set the Wired termination depending on its positioning, see 'Terminations' for more information.
STEP 6		Replace the covers and cable clamps.

6 Programming the WRB-100

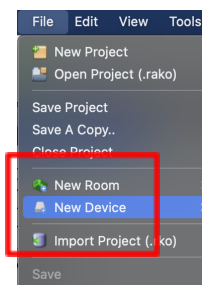
6.1 WRB-100 Programming (Wireless Mode)

The following steps assume that a project file has been created and that there is a configured communication device, if this has not been completed see the [Wireless setup guide](#).

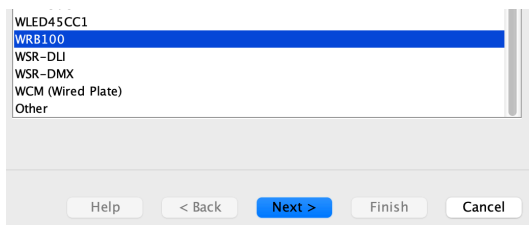
- Connect to either a RAMPI or a HUB in the Communication Devices



- In Rasoft Pro, go to File > New Device



- A Device menu will pop up, select the WRB100 and select 'Next'



- Give the WRB-100 a name and select 'Next'.
-

Device Name
WRB100
Device Name

- The Room and Channel are left blank as they are automatically allocated, select 'Next'.
- To put the device into setup mode, press and hold the clear button on the WRB100, and the LED will begin to flash. Release the button; the LED should continue to flash.
- Select 'Use in Wireless Mode', this will send an 'Ident' command to the WRB-100 in setup mode, once this is complete, the LED on the device should no longer be flashing.

WRB100
Press the button until the LED starts to flash.
Please note if you are not connecting it to a Wired Network you should press the use in "Wireless Mode" Option

Add as Virtual Device Use in wireless mode

Waiting for device to enter setup

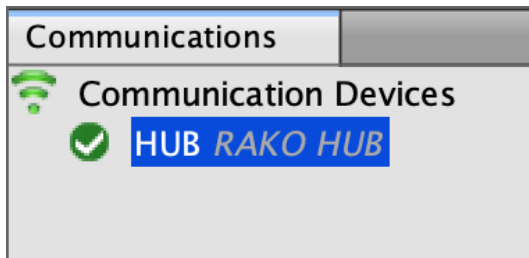
Help < Back Next > Finish Cancel

- Select 'Finish', the device is now paired and in the project file.
- To confirm that the WRB100 is repeating Wireless messages, the LED on the WRB100 will alternate between colours when a command is being received and repeated.

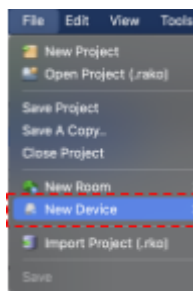
6.2 WRB-100 Programming (Wired Mode)

The following steps assume that a project file has been created and that there is a configured communication device, if this still needs to be completed see the [Wired Setup Guide](#).

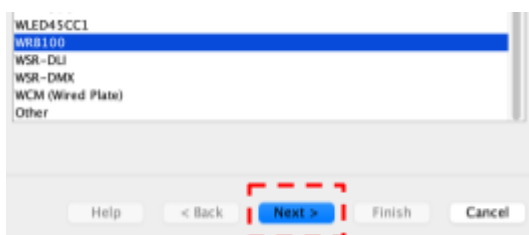
- Connect to the HUB in the Communication Devices



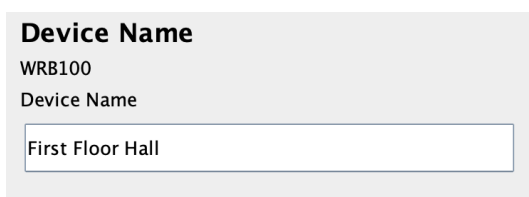
- In Rasoft Pro, go to File > New Device



- A Device menu will pop up, select the WRB100 and select 'Next'



- Give the WRB-100 a name and select 'Next'.



- The Room and Channel are left blank as they are automatically allocated, select 'Next'.
- To put the device into setup mode, press and hold the clear button on the WRB100, and the LED will begin to flash. Release the button; the LED should continue to flash.
- Once the WRB-100 has entered setup mode, the New Device Wizard will show 'Device Found', and select 'Finish' to complete the setup.



- To confirm that the WRB100 is repeating Wireless messages, the LED on the WRB100 will alternate between colours when a command is being received and repeated.

[7 Advanced Programming Features](#)

Once the WRB-100 has been configured, there are additional programming options available.

[7.1 Room Enables](#)

The Room Enables feature can be configured to retransmit selected Rooms only, this is especially useful in systems with multiple WRB100s as excessive RF transmissions can have a detrimental effect on Wireless range.

To set Room Enables:

- In Rasoft Pro, go to the Devices section and select the WRB-100

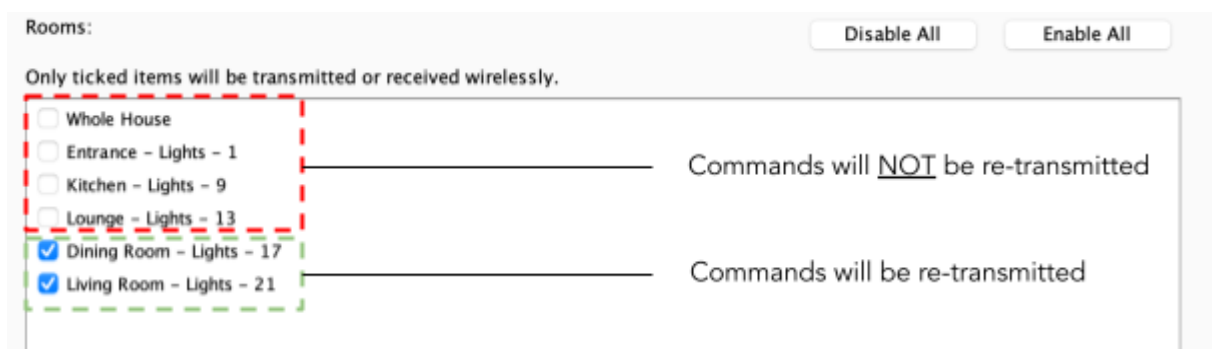


HUB/Bridge RAKO HUB
WK-PIR ID:257300
RAK-LINK R:900 C:100
WSR-DLI Living Room
WLED30CV4 New Device
WCM (Wired Plate) Hallway
WRB100 booster
RCI-4L New Device
RCI-7M New Device
RK-MOD New Device
RMT500 Entrance - Pendant
RMT500 Entrance - Downlights
RMT500 Entrance - Linear
RMT500 Entrance - Wall Lights
RMT500 Entrance - Lamps

- In the Device Editor menu, select 'Room Enables'



- Rooms can now be selected and deselected by ticking the boxes for each room, it is recommended that the WRB100s only have Rooms selected in their vicinity or range, in the example below, the WRB100 is repeating Wireless commands for selected Rooms only.



7.2 Repeated Messages

Wireless to Wireless

When the WRB100 is in Wireless Mode, it will repeat a command three times before blocking retransmission. Once a different command is received the WRB100 will go back to repeating the initial command, this is to prevent looping.

House 5, Room 10, Scene 1

House 5, Room 10, Scene 1

House 5, Room 10, Scene 1

House 5, Room 10, Scene 1

House 5, Room 10, Scene 1

House 5, Room 22, Scene 4, <---- Different command, Room 10 Scene 1 will now repeat.

House 5, Room 10, Scene 1

Wired to Wireless

The WRB100 in Wired Mode the retransmission rate is limited to 1 command per second to prevent looping.

House 5, Room 10, Scene 1

1s

House 5, Room 10, Scene 1

1s

House 5, Room 10, Scene 1

Wireless to Wired

Limited to one repeated command, it is blocked until a different command is sent.

House 5, Room 10, Scene 1

House 5, Room 10, Scene 1

House 5, Room 10, Scene 1

House 5, Room 22, Scene 4 <---- Different command, Room 10 Scene 1 will now repeat.

House 5, Room 10, Scene 1

Thank you for choosing Rako Controls; we hope that you are pleased with your system. Should you require further assistance, please contact us via our website, www.rakocontrols.com, or by calling our customer support helpline on 01634 226666.

