Instruction Manual

WRB100

Rako Wireless Repeater

2025
Version 2.0.1

UK CA

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1.0 What is the WRB100?

The WRB100 is a command repeater used in Wireless and Wired networks.

There are two modes that the WRB100 can operate:

- Wireless mode
- Wired mode

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

Wired mode communicates received wireless commands to the connected Rako wired network and received wired commands to the Rako wireless network.

2.0 Inputs

3.0 Installation - Wireless Mode

⚠WARNING

Installation should only be carried out by a competent electrician.

- WRB100 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 left side cover and cable clamp. NB In Wireless Mode, the only connector used is the DC Input.
STEP 2		Connect the 12V PSU to the DC Input of the WRB100.
STEP 3		Replace the cover and cable clamp, and switch the power supply on. Verify that the WRB100 is powered by pressing the setup button.

4.0 Installation - Wired Mode

⚠WARNING

Installation should only be carried out by a competent electrician.

- The WRB100 must be connected to the Rako Wired Network containing a RAK-LINK.
- WRB100 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 WRB100 to the Wired network with the RJ11 or Punchdown connector.
STEP 3		Set the mode jumper to 'A' for wired mode.

STEP 4		Set the Wired termination depending on its positioning, see '5.0 Terminating the WRB100 (wired only)' for more information.
STEP 5		Replace the covers and cable clamps.

5.0 Terminating the WRB100 (wired only)

It is important to terminate the WRB100 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 WRB100 is not at the end of the line. This is usually identifiable by two cables being punched down to the WRB100.

Term - Jumper fitted across 1+2 & 4+5
Used when the WRB100 is end of line in a daisy chain configuration.

Star Term - Jumper fitted across 2+3 & 5+6
Used when the WRB100 is the end of line in a STAR wire configuration.

6.0 Programming the WRB100

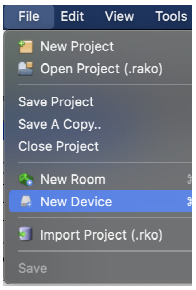
6.1 WRB100 Programming (Wireless Mode)

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.

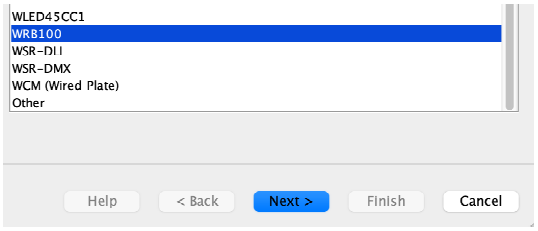
- Connect to either a RAMPI or a HUB in the Communication Devices



- In Rasoft Pro, go to File > New Device



- The "New Device wizard" will pop up, select the WRB100 and select 'Next'



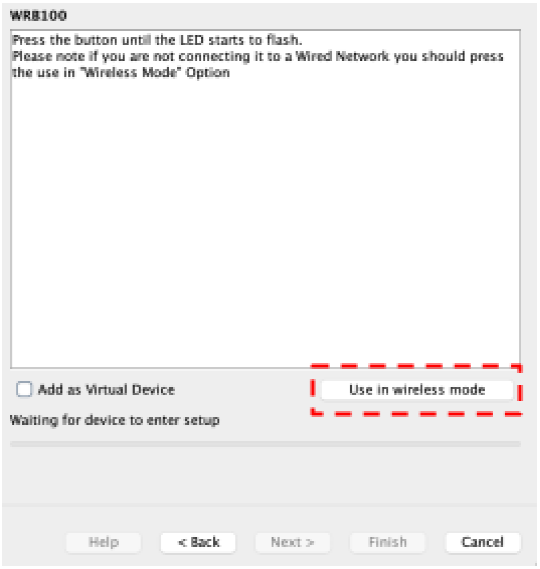
- Give the WRB100 a name and select 'Next'.



- 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 setup 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', which will send an 'Ident' command to the WRB100 in setup mode. Once this is complete, the LED on the device should no longer be flashing.



- 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 red/blue when a command is being received and repeated.

6.2 WRB100 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 WRB100 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 setup button on the WRB100, and the LED will begin to flash. Release the button; the LED should continue to flash.

- Once the WRB100 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 red/blue when a command is being received and repeated.

7.0 Advanced Programming Features

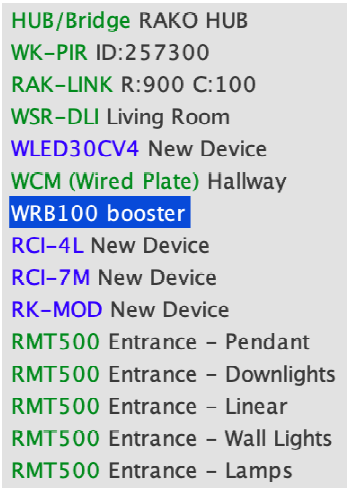
Once the WRB100 has been configured, there are additional programming options available.

7.1 Room Enables

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

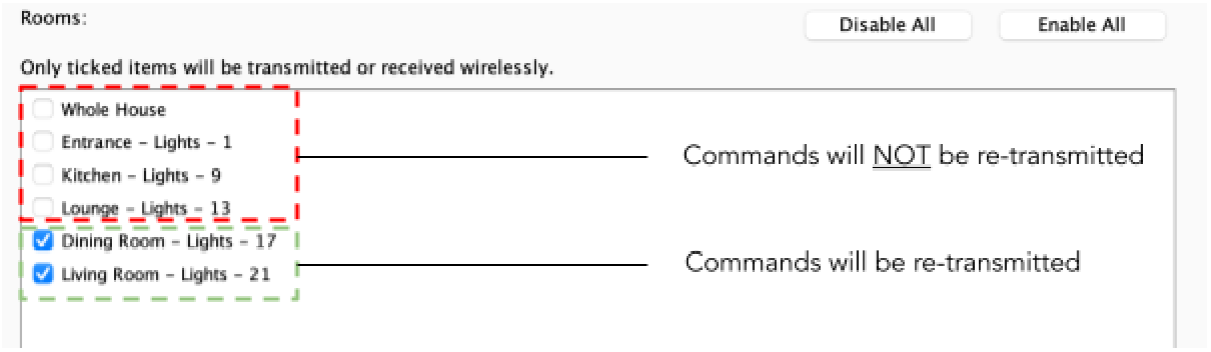
To set Room Enables:

- In Rasoft Pro, go to the Devices section and select the WRB100



- 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

When the WRB100 is 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

For information on the WRB100's LED patterns, see the Rako Wireless System Diagnostics Guide.