

BJ-889 BJOY Ring Wireless

User Guide



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1_ Introduction

The BJOY Ring Wireless mouse emulator is a device that behaves like a conventional mouse. It is specially designed to adapt to the controls of a wheelchair, using the inclination of the chair's joystick to move the cursor and external switches to perform the normal functions associated to a mouse's clicks.

BJOY Ring wireless is aimed at users who use a wheelchair and want to access their computer and/or compatible mobile devices (smartphones and tablets).

Main features:

- **Non-invasive** and **easy to install**.
- **Adapts to the assembly position** and to the user's mobility by calibration.
- **Automatic recognition** of the assembly inclination at the time of the connection. It can be installed in an inclined position up to 45°.
- Compatible with all wheelchair models.
- **Two customisable input switches** to perform the functions associated to the mouse clicks.
- One of the switches allows for the cursor movement to be disconnected.
- **Configurable and customisable operation** using the configuration software supplied with the product.
- BJOY Ring wireless can be configured on start-up and all the parameters are **saved to the device**. This facilitates its use on different computers and mobile devices with no need to reconfigure it.
- Access **up to 4 devices** simultaneously with the same emitter.
- BJOY Ring wireless can also operate as a wired device.

2_Use of the BJOY Ring wireless

IMPORTANT: Before using the mouse the wheelchair must be disconnected.

2.1_ Pointer movement

Although the device adapts to the assembly position, it must be calibrated in order to obtain the best response from the joystick's movements. To perform the calibration:

- 1) Install the BJOY configuration program in your Windows PC.
- 2) Plug the receiver into the computer's USB port or connect the emitter to the USB port directly using the micro USB cable provided.
- 3) Do the calibration following the instructions of the menu "Calibration" in the configuration program.

Once the calibration is done the device can be used like the joystick of the wheelchair. To move the pointer on the computer screen or the compatible mobile device you just need to move the joystick in the desired direction.

To avoid the pointer moving on the screen when you want to drive the wheelchair, you have to shutdown the mouse (see section 2.4.)

If due to a slight change in the position of the joystick the mouse moves slightly without moving the joystick, the device can be deactivated and then reconnected in order to recognise a new resting position. If this occurs frequently or the position of the wheelchair joystick is not stable, the minimum inclination value can be modified using the "Dead zone width" available in the configuration program (Calibration).

For the correct use of this device, it is recommended:

- **Do not use it in moving vehicles**
- Do a calibration if there is a substantial change to the wheelchair joystick's resting position.
- Do a calibration if irregular behaviour is noted.

2.2_ How to make the clicks

To make the click use the two external switches which can be connected to the switch entries indicated as A and B in the emitter box. By default these entries are assigned to the following functions:

Entry A: Left click

Entry B: Right click

The functions assigned to each entry can be changed using the configuration program (menu "Click").

2.3_ AutoClick

If enabled, this function allows the dwell click for the left click. It can be enabled from the "AutoClick" menu in the configuration program.

It is also possible to adjust the delay time to make the click.

2.4_ How to shut down the device

There are different ways for shutting down the device:

1. Enabling the option to shut down with a switch press in the configuration program ("Shutdown" menu). The device will beep twice to warn about being deactivated.
2. Using the button "Shutdown now" in the configuration program ("Shutdown" menu). The device will beep twice to warn about being deactivated.
3. The device shuts down automatically after several minutes idle. It is possible to configure the minutes to disable radio via the configuration program ("Shutdown" menu). There is no auditory feedback.
4. When there are no receivers in the coverage range the device will be deactivated after 5 minutes. There is no auditory feedback.

When device is shut down:

- Battery power consumption is lower
- The emitter does not try to connect to any receiver
- There are no LED indications

2.5_ How to activate the device

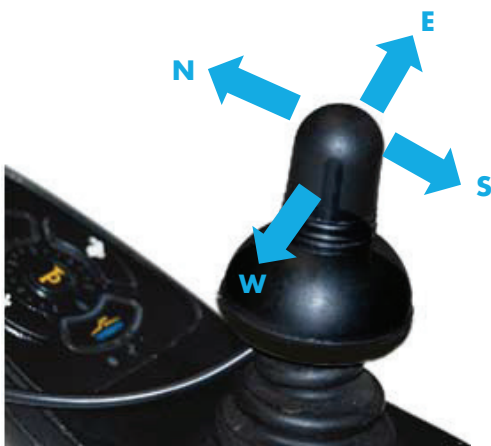
There are two ways of activating the device after idle or shut down:

1. By a switch press

It is strongly recommended for users who use switches. To activate the device with a switch press, plug the switch into the switch input A.

2. By making a gesture with the joystick

The **gesture** consists of moving the joystick through the 4 cardinal points (N, E, S, W) in a time between 0.5 and 3 sec. See figure below:



The gesture can start from any cardinal point, but it is important to **maintain the same assembly position in which the device was calibrated** and take the joystick to the maximum position in each side, as when it was calibrated.

The activation is followed by a sequence of beeps. **Do not move the joystick while the device is beeping.**

It is recommended to make the **gesture slowly enough** to arrive to the 4 points but in a time below 3 seconds. If the device is not activated, repeat the gesture.

IMPORTANT: When the device is connected for the first time to the computer for calibration, press the reset button to activate it. The activation is followed by a sequence of beeps. **Do not move the joystick while the device is beeping.**

2.6_ How to add more receivers

One emitter can be paired up to four receivers. By default the product includes one receiver paired to the emitter. To add more receivers follow these steps:

1.	Plug the receiver into the device you want to control (PC or compatible tablets and smartphones). To plug the receiver into compatible tablets and smartphones use a USB-OTG cable. (See which tablets and smartphones are compatible in section 3 of this guide)	 
2.	Press the pair button in the receiver. The red LED in the receiver will blink twice, stop for 1 second and blink again.	Pair button 
3.	Press the pair button in the emitter.	
4.	When emitter and receiver are paired, the red LED of the receiver and the green LED of the emitter will be on for 2 seconds. Pairing a fifth receiver will delete the first paired receiver and so on.	

2.7_ How to toggle among receivers

BJOY Ring wireless can be used to access up to four different devices. These devices can be located in different environments or in the same environment.

Scenario A: Devices in different environments



If the receivers are located in different environments (for example in the school and at home) it is not necessary to toggle. **The emitter recognises automatically the paired receiver** when the user gets closer. This process may take up to 10 seconds. Make sure that the BJOY Ring is activated.

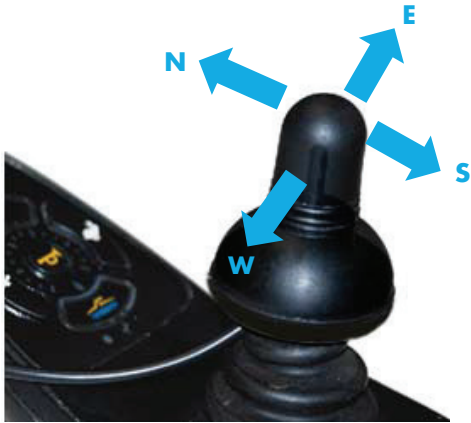
Scenario B: Devices in the same environment



It is possible to alternate among paired receivers so that the user can access different devices located within the same environment.

There are two ways to alternate among receivers:

1. By making the gesture with the joystick



The gesture is the same as for activating the mouse. Before making the gesture, make sure that the BJOY Ring is activated. The emitter recognises automatically the receiver within the coverage range.

A triple beep warns the user that the receiver has been toggled. If this does not occurred repeat the gesture.

The use of a gesture is recommended only for users who do not use switches.

2. By double press in switch B

To toggle among receivers by making a double press in switch B enable the option "Alternate receivers making double-click in switch B" in the configuration program (menu "Shut down").

Enabling this option will deactivate the use of the gesture to toggle.

IMPORTANT: When the device is activated after shut down or idle, it will connect to the last connected receiver if this receiver is within the coverage range.

2.8_ Operation as a wired device

The BJOY Ring wireless can operate as well as a wired device.

To operate it as a wired device connect the emitter to the USB port of the computer or compatible tablet/smartphone using the micro USB cable provided.

When wired:

- The wireless function is deactivated. The mouse will work only with the device to which it is connected.
- Battery is charging

3_Use with compatible smartphones and tablets

It is possible to use the BJOY Ring with Android smartphones and tablets. For doing so, connect the receiver to a compatible smartphone or tablet using a USB-OTG cable.

Compatible Android devices must:

1. Support **USB Host** or **USB-OTG** (almost all new Android phones or tablets do).
2. Have **on-screen buttons** ("back", "home" and "multitasking" buttons) so that the user is able to control all the phone functions with the BJOY Ring. The user may have **limited access to a phone with no on-screen buttons**, being able only to (partially) control the application currently open.
3. Have an **Android version later than 3.2**. Earlier versions do not include the pointer feature and may not support the USB Host / USB-OTG feature.

To take full advantage of the BJOY Ring when connected to a smartphone and/or tablet remember to calibrate and configure the device using the configuration program in a Windows PC.

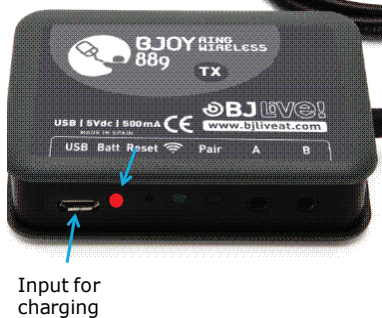
4_ Battery charging and care

4.1_ Battery charging

The battery needs charging when the red LED on the emitter starts flashing and the device beeps **3 times every hour**. The beeps will continue for about 3 hours until the battery is fully discharge. **It is VERY IMPORTANT not to let the battery fully discharge**. Allowing the battery to fully discharge could cause irreversible damage to it.

To check the battery's status go to the menu "Status" in the configuration program.

To charge the device, follow these steps:

1.	Connect the charger cable to any computer USB port or to the charger supplied with the product.	Needs charging  Input for charging
2.	During charging, the LED will flash red. The LED will turn red permanently when the battery is fully charged. Then it must be disconnected from the charger. When the charging cable is disconnected, the LED switches itself off and the device returns to stand by mode, ready for use.	Charging 

IMPORTANT: During a standard use, **it is recommended to charge the device once a day.**

4.2_ Battery care

- The battery installed in the device is a single lithium ion polymer cell.
- It is **VERY IMPORTANT not to let the battery fully discharge**. It should be recharged immediately when the battery LED indicates that the battery is discharged. Allowing the battery to fully discharge could cause irreversible damage to it.
- Ion polymer batteries cannot withstand temperature excesses. For this reason:
 - Do not leave the remote near heat sources such as radiators, electric blankets, heaters, etc.
 - Never leave the remote inside vehicles.

If it overheats, the battery could catch fire.

- Only charge the battery with the charger supplied with the product or through a USB port. The charging process must be witnessed in order to detect any charging abnormalities.

- Use the battery and charger for their intended purposes only. Improper use or use of unapproved batteries or chargers may present a risk of fire, explosion, or other hazard, and may invalidate any approval or warranty.
- The battery can be charged and discharged countless times but it will eventually wear out. You will need to replace the battery when the battery life is noticeably shorter than normal. To do this, contact BJ Adaptaciones to replace it.
- The full charging time of the battery can vary between 4 and 5 hours.
- Lithium-ion polymer batteries can be charged before they are fully discharged because they are not susceptible to the memory effect. We do not recommend charging the battery before it has lost 5% of its charge. This will cut down on unnecessary charging that can be harmful due to the increase in temperature. Charging and discharging quickly and often will increase the inaccuracy between the battery charge status and power meter readings.
- Leaving the battery at a high level of charge in a high-temperature environment for extended periods (> 60°C) also accelerates the loss of capacity.
- Frequent full charges and discharges put stress on the battery and drastically reduce its lifespan.
- Try to keep it between 15°C and 25°C (59°F and 77°F). Extreme temperatures reduce the capacity and lifetime of the battery. A device with a hot or cold battery may not work temporarily.
- When the battery is fully charged, disconnect it from the charger, as overcharging may shorten the battery's lifetime.
- The correct way to disconnect the device from an external power supply is, firstly, to unplug the cable from the socket transmitting the electricity to the power supply/equipment charger. You may then remove the connector socket directing the voltage to the actual equipment.
- You should do this the other way round when connecting to the power supply.
- When you unplug a charger or an accessory, hold and pull the plug, not the cord.
- When your charger is not in use, unplug it from the electrical plug and the device.
- Do not use the charger outdoors.

- If you believe the battery or charger is damaged, contact your supplier to have it inspected before continuing to use it. Never use a damaged charger or battery.

5_ Maintenance of the equipment

When maintaining and cleaning the equipment take into account the following precautionary measures:

- Do not connect the equipment to any other type of connections other than USB ports.
- To connect and disconnect the charging cable always hold it by its connector. Do not directly pull the cable.
- Avoid liquids entering into the switch box as this could seriously damage the equipment.
- Use a moist cloth in order to clean the device. Do not use abrasive substances. Always clean the device when it is disconnected.
- The equipment is not designed to be used outdoors. The assembly of emitter and receiver must be performed indoors.
- Do not manipulate the device in the event of a fault.

6_Technical characteristics

- Plug and Play USB device (5V/70 mA).
- Available in two sizes:
 - BJ-889-S: Small size for joystick 4.8 mm diameter.
 - BJ-889-L: Large size for joystick 6.35 mm diameter.
- Recognition of the mounting angle automatically. It works with an inclination up to 45°.
- Two customizable switch inputs.
- Extension cable included.
- Beeper for auditory feedback.

SET:

- Emitter paired up to 4 receivers.
- Operating range: 5m.
- Frequency: 868 MHz.

Receiver:

- Plug and Play USB 2.0 device
- Pairing button.
- Size: 51 x 26 x 14 mm.

Emitter:

- Battery: 900 mA.
- Rechargeable battery via micro USB cable.
- Pairing button.
- Two switch inputs for 3.5mm mono jack plug (female).
- Calibration done via local USB port.
- LED battery status and pairing indicator.
- Two switch entries.
- Beeper for auditory feedback for low battery and clicks (optional).
- Size: 80 x 56 x 22 mm.

This product complies with the European directives 2004/108/EC. The declaration of conformity can be consulted at the product's webpage.

7_ Disposal of the product

- At the end of the product's useful life neither the product nor its electronic accessories (e.g. the USB cable) can be eliminated together with other domestic waste.
- To avoid possible environmental or human harm which could be caused by uncontrolled waste disposal, separate these products from other types of waste and correctly recycle them. This will promote the sustainable reuse of material resources.
- Consumers can contact the establishment where they purchased the product or the relevant local authorities in order to obtain more information about how and where they can be ecologically and safely recycled.

