

**BLUE RETRO**

**PCE  
BT**

**TURBO  
BT**

**INSTRUCTION MANUAL**

**HUMBLE BAZOOKA**

# Thank You

## ...for buying the PCE BT or Turbo BT adapter!

Before using your adapter, please read this instruction manual carefully. Familiarize yourself with the proper use of the adapter and its features. Always operate your PCE BT or Turbo BT according to these instructions.

**Thanks Jacques Gagnon "Darthcloud64"** for creating the amazing BlueRetro project! A portion of the adapter cost was sent to Jacques to help continue support for the project.

## BlueRetro GitHub

<https://github.com/darthcloud/BlueRetro>

## About the PCE BT and Turbo BT

The PCE BT and Turbo BT are very low latency Bluetooth adapters that allow you to connect multiple modern controllers and devices to your PC Engine and/or TurboGrafx-16 game consoles.

## Features

- Low Latency
- Use modern Bluetooth controllers
- Multitap mode
- 2, 3 and 6 button support
- Mouse support
- Robust button mapping feature
- Apply Turbo to any button with varying speeds
- Firmware updatable

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## Adapter Buttons and LED Status

### Buttons:

**“R” Button:** Resets the adapter

### “P” Button:

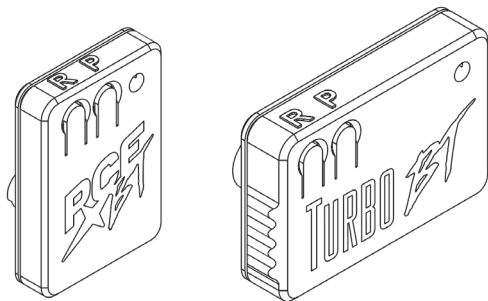
- **Short press (outside BT inquiry mode):** Disconnect all Bluetooth devices from the adapter.
- **Short press (BT inquiry mode):** Cancel Bluetooth inquiry mode (new pairing).
- **3 sec hold:** Enable Bluetooth inquiry mode (new pairing). This is used to connect more than one device. (i.e. Multitap Mode)
- **10 sec hold:** Factory resets the adapter to default configuration and clears BT pairing keys.

### LED Status:

**Solid:** An error occurred, try rebooting the adapter with the “R” button.

**Pulsing:** Bluetooth inquiry mode enabled (new pairing).

**Off:** No errors, Bluetooth inquiry mode disabled, controller connected.



# Web Config

The PCE BT and Turbo BT allow you to customize and configure settings like 6 button mode, using a mouse, button mapping, turbo, and multitap. To do this you will need to log into the Web Config of the adapter using Chrome on a computer or mobile device. No device should be paired to the adapter while trying to access the Web Config. A full technical guide for the Web Config can be found here: <https://github.com/darthcloud/BlueRetro/wiki/BlueRetro-BLE-Web-Config-User-Manual>

## Connecting to the Web Config

1. If a device is paired to the adapter, short press the “P” button to disconnect it.
2. In Chrome, go to <https://blueretro.io>
3. The Web Config has several links in the index but we only need to worry about the following:
  - BlueRetro Advance config:** Most of the configuration happens here.
  - BlueRetro Presets config:** This page is where you’ll set presets like mouse support.
  - BlueRetro OTA FW update:** This is used to update the adapter’s Firmware.
4. Once you’ve clicked on the page you want to visit, click the “Connect BlueRetro” button.
5. A small window will pop up. Select the BlueRetro adapter name from the list of Bluetooth devices and click “Pair”. If you get an error like “Argh! NetworkError”, repeat steps 1 - 4.

# Pairing Devices

When you power on the PC Engine or TurboGrafx-16 with the PCE BT or Turbo BT plugged into the controller port, the adapter will automatically be in “inquiry” mode with the LED pulsing, ready for pairing either an already paired device or new and ready to be paired device.

Additional information can be found here:

<https://github.com/darthcloud/BlueRetro/wiki/Controller-pairing-guide>

## Pairing Process

1. Power on the console with the adapter plugged in.
2. The LED on the adapter will pulse indicating it's ready to pair with a device. If the LED is solid, there is an error and you should press the “R” button on the adapter to reset it.  
**Note: If this is the first time power on the device, there may be a 30 second delay in seeing the LED pulse.**
3. Put your device into pairing mode (use your device's manual to find out how to do this).
4. The LED on the adapter will turn off once the device is paired to it.
5. If you're pairing the same device to the adapter on the next play session and you haven't paired the device to something else, then you should be able to simply turn on the device for it to pair again to the adapter.

## 6 button Mode

Since version 1.9, BlueRetro supports the following macro for toggling 6 button mode:

**L2 + R2 + Start + Select** or the **“Home”** button (PS, Heart, or Xbox button) if your controller has one.

*When using the macro the adapter will default back to 2 button mode after each power cycle.*

### Toggling 6 Button mode in the Web Config

1. Connect to the Web Config using the “Connecting to the Web Config” section above and use the **“BlueRetro Advanced Config”** link within the Web Config.
2. Once connected, scroll down to the “Output Config” section, click the “mode” drop down, and select “GamePadAlt” from the list. Remember that “GamePad” is the setting you’d use when you’re ready to go back to 2 Button mode.
3. Click the save button. A message stating, “Config saved, power cycle BlueRetro adapter for Mode change to take effect” will appear under the section.
4. Press the “R” button on the adapter. The adapter is now in 6 button mode and ready for a device to be paired to it.

### Some things to remember about the original hardware

- The PCE BT and Turbo BT are designed to mimic the original hardware. Any issues the original hardware had with 6 button controllers will be present when using these adapters.
- Most games don’t support 6 button controllers and will cause input glitches in 6 button mode.
- 3 Button controllers were actually just 2 button controllers but with the ability to map the third button to RUN or SELECT.
- 3 button games do not always support 6 button controllers and using 6 button mode with them can cause input glitches.

## Using a Bluetooth Mouse

The PCE BT and Turbo BT also support using a Bluetooth mouse. If using a flash cart, it's recommended that you launch the game with mouse support first before switching to mouse mode.

### Using a Mouse

1. Connect to the Web Config using the "Connecting to the Web Config" section above and use the **"BlueRetro Advanced Config"** link within the Web Config.
2. Once connected, scroll down to the "Output Config" section, click the "mode" drop down, and select "Mouse" from the list.
3. Click the save button. A message stating, "Config saved, power cycle BlueRetro adapter for Mode change to take effect" will appear under the section.
4. Click the "index" link at the top of the page to return to the index.
5. Click the **"BlueRetro Presets config"** link and follow the same connection instructions for the Web Config from the Web Config section.
6. Once connected again, click the "select preset" drop down menu in the "Mapping Config" section.
7. Select "Default Mouse" and then the save button.
8. Press the "R" button on the adapter. The adapter is now in mouse mode and ready for a Bluetooth mouse to be paired to it.



## Multitap Mode

The PCE BT and Turbo BT have an emulated Multitap mode that supports up to 5 controllers.

**Note: When the Multitap mode is active, each connected device will mirror the first device's configuration. For example, if the first device is set to 6 button mode, each connected device will also be in 6 button mode. The PCE BT and Turbo BT don't support the original Multitap/Turbotap.**

### Setting up Multitap mode

1. Connect to the Web Config using the "Connecting to the Web Config" section above and use the "**BlueRetro Advanced Config**" link within the Web Config.
2. Once connected, scroll down to the "Global Config" section of the Advance config. Next to "Multitap", click the drop down and select "Slot 1". Click the "Save" button.
3. Press the "R" button on the adapter.
4. With the adapter in inquiry mode, pair your first controller.
5. Once it's connected, press and hold the "P" button on the adapter for a few seconds until the LED starts to blink again. The adapter is now back into inquiry mode and the first device is still connected.
6. Put the next device into pairing mode and allow it to connect to the adapter.
7. Follow steps 5 and 6 to connect more devices.

# Button Mapping

The PCE BT and Turbo BT have a robust button mapping feature that can be a little confusing at first but actually not difficult once you understand it. You will want to familiarize yourself with the default mapping reference spreadsheet to help setup corresponding source and destination buttons: <https://tinyurl.com/bde43mbm>

## Remapping the Buttons

1. Connect to the Web Config using the "Connecting to the Web Config" section above and use the "**BlueRetro Advanced Config**" link within the Web Config.
2. Once loaded, scroll down to the "Mapping Config" section of the page.
3. You will notice there are quite a few drop downs in this area of the page. We'll be focusing on the following:

**Src label:** This represents the physical Bluetooth controller you want to use (i.e. PS4 / PS5).

**Dst label:** This represents the target controller (i.e. PC Engine).

**Src:** This column represents the various buttons from the source controller.










**Dest:** This column represents buttons from the destination controller.

**Turbo:** Speed settings based on frames if you want turbo on any given button.











**Continued on the next page...**

## Button Mapping

### Remapping the Buttons (continued)

- Using the PS5 controller as the *Src Label* example and the PC Engine as the *Dst Label* example, let's say you wanted to change the PS5's  button to be the PC Engine's  button and the PS5's  button to the PC Engine's  button. In the *Dst Label* column, select the drop down next to the corresponding *Src Label*'s button you'd like to remap. In this case we're going to change the current  button to be , change the current  to being nothing, and setting the currently empty drop down next to  to . This essentially makes  $\text{X} = \text{B}$  and  $\text{C} = \text{A}$ .
- Make sure to click the save button beneath the Mapping Config section. The new button mapping is immediately updated on the adapter once you click the save button.

### Turbo Buttons (optional)

- Let's add some turbo buttons to  and . Select the drop down next to  in the *Dst Label* column and set it to . Do the same for the drop down next to  but set it to  in the *Dst Label* column.
- Finally, set the turbo speed for  and  ( and ) by selecting a rate from the drop down. The rate is based on the console's controller polling rate which is most likely 60hz. Here's a few examples. Selecting "1/2 frames" pulses the button at 30Hz, so 1 frame on, 1 frame off. Selecting "2/4 frames" pulses a button at 15Hz, so 2 frames on, 2 frames off.  
**Tip: For the original PC Engine / TurboGrafx-16 controller, the slow turbo is the equivalent of "4/8 frames" and the fast turbo is "2/4 frames".**
- Make sure to click the save button after any changes.

## Default Button Mapping

Use this table to reference what the default mapping is between the PC Engine / TurboGrafx-16 and modern Bluetooth controllers.

For more controller references, visit: <https://tinyurl.com/bde43mbm>

Distination		Source (Bluetooth Controller)				
PCE	PCE 6-btn	PS4/PS5	Xbox S/X	Switch Pro	Switch NES	8bitdo M30
		L1 / L2	LB / LT	L / ZL		L /
		R1 / R2	RB / RT	R / ZR		R /
Run	Run	Options	Menu		Start	Start
Select	Select	Share	View		Select	

## Updating the Firmware (OTA)

The PCE BT and Turbo BT adapters are firmware upgradeable via the Web Config. The process is very simple but takes around 10 minutes with a computer and much longer on a mobile device, so we recommend using a computer for this process.

### Downloading the firmware package

1. First, we'll need to download the latest update firmware package from:  
<https://darthcloud.itch.io/blueretro>
2. Click the "Download Now" button. A pop up will appear where you can either donate to Jacques Gagnon, the creator of BlueRetro or click "No thanks, just take me to the downloads" to be taken to the download page.
3. Select the latest firmware package with "**HW1**" in the name.
4. Once downloaded, unzip the package somewhere you'll remember.

### Flashing the OTA bin file

5. Connect to the Web Config using the "Connecting to the Web Config" section above for reference and click the "**BlueRetro OTA FW update**" link within the Web Config.
6. Click the button next to the "Select firmware" text and locate the unzipped firmware folder.
7. Inside the folder you should see several bin files but the one we want is called "**BlueRetro\_pc\_engine.bin**". Open the bin file.
8. Now click the "Update Firmware" button and allow the firmware to update. This typically takes around 10 minutes on a PC and much longer on a mobile device.
9. Your adapter firmware is now updated.

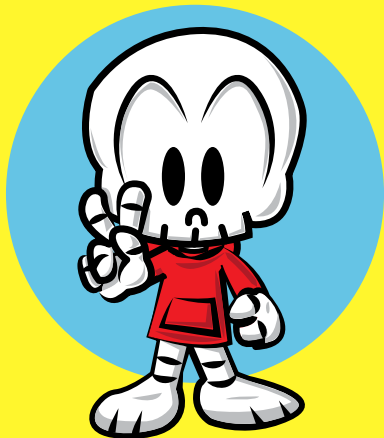
# Troubleshooting

Problem	Possible Solution
8bitdo controller D-Pad isn't working	<ul style="list-style-type: none"><li>• Press select + D-Pad Up to put the controller into "D-Pad" mode.</li><li>• Please read the controller's user manual for full macros.</li></ul>
How do I use 6 button mode?	<ul style="list-style-type: none"><li>• Please read the "6 button and Mouse Support" section.</li></ul>
LED is solid when powering on the console.	<ul style="list-style-type: none"><li>• Hit the "R" button on the adapter.</li><li>• If the LED is still solid, unplug and plug the adapter back into the console.</li></ul>
The Web Config displays "Argh! NetworkError"	<ul style="list-style-type: none"><li>• Try connecting again.</li><li>• Hit the "R" button on the adapter and try connecting again.</li><li>• This may take a few tries.</li></ul>
Issues connecting to the Web Config	<ul style="list-style-type: none"><li>• Make sure you're using Chrome browser.</li><li>• Hit the "R" button on the adapter and try connecting again.</li></ul>
Buttons are acting strange in [game title]	<ul style="list-style-type: none"><li>• Some games poll the controller differently, which can cause issues for the adapter (i.e. Might &amp; Magic 3). Please open a ticket on the BlueRetro GitHub so we can track and possibly fix the issue.</li></ul>
[Game title] isn't working right with 6 button mode enabled	<ul style="list-style-type: none"><li>• Most PC Engine and TurboGrafx-16 games don't support 6 button mode. This is how the original hardware works as well. Please see the "6 Button Mode" section for details.</li></ul>

If you have issues not listed here, please use our website's contact form for support.

You can also discuss issues on the BlueRetro GitHub:

<https://github.com/darthcloud/BlueRetro/discussions>



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