



Wireless Controller Adapter For Sega Genesis/Mega Drive



PS3



PS4



PS5



XBOX
ONE S



XBOX
SERIES X/S



SWITCH
JOYCON



SWITCH
PRO



WII U



8BITDO



RETRO-BIT



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BlueRetro

This device is a wireless controller adapter for Sega Genesis/Mega Drive consoles. Compatible with the best-selling Bluetooth controllers on the market.

Based on the open source project [darthcloud] (<https://github.com/darthcloud/BlueRetro>), Built using the powerful ESP32 chip.

Supports PS3 / PS4 / PS5 / Xbox One S / Xbox Series X|S / Wii / Wii U Pro / Switch Pro / Switch Joycon / 8bitdo / Retro-Bit Wireless Controller, etc.



Retroscaler Github



Darthcloud Github

Features

- 1) Only suitable for **Sega Genesis/Mega Drive** consoles.
- 2) Supports firmware updates.
- 3) Almost zero latency, the PS4 & PS5 controller less than 6ms of latency using blueretro.
- 4) Compatible with PS3 / PS4 / PS5/Xbox One S/Xbox Series XS / Wii / Wii U Pro / Switch Pro/Switch Joycon / 8bitdo / Retro-Bit Wireless Controller and Bluetooth mouse, keyboard devices.
- 5) Connect via Web Bluetooth at <https://blueretro.io> to configure adapter(Supported only in Windows/MacOS/Android Chrome).

Instructions

Button Usage

- "BOOT" Button:
 - Under < 3 sec hold: Disconnect all Bluetooth devices.
 - 10 sec holds: Restore to default configurations and clear BT pairing keys.



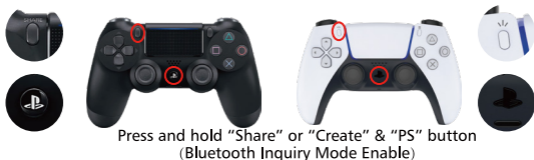
LED Status

- "RED LED" FULLY ON: Bluetooth failure
- "PURPLE LED" Pulsing: Searching wireless controller
- "BLUE LED" FULLY ON: Bluetooth connected successfully

Pairing with PS4 or PS5 controller

First time pairing

- 1) Boot up BlueRetro and make sure adapter is in inquiry mode ("SYNC" PURPLE LED pulsing).
- 2) Hold down "Share" button (PS4) or "Create" button (PS5) and "PS" button of the controller simultaneously until the light bar flash blink.



Successful pairing

- 1) For BlueRetro adapter: The "SYNC" BLUE LED fully on.
- 2) For PS4 or PS5 controller: The light bar fully on.



Reconnect

Simply hold down the "PS" button on the PS4 or PS5 controller until the Bluetooth function is activated. Then it will reconnect to BlueRetro adapter automatically.

Pairing with Xbox One S, Series X|S controller

As of v1.2.1 the minimum required Xbox FW for controller are:

Xbox One S: 4.8.1923.0 Adaptive: 4.5.1680.0 Series X|S: 5.9.2709.0

Update via the [Xbox accessories Win10 app](#).

(<https://apps.microsoft.com/store/detail/9NBLGGH30XJ3?hl=en-us&gl=US>)

For details of the update procedure, please visit on:

(<https://support.xbox.com/en-US/help/hardware-network/controller/update-xbox-wireless-controller>)

**Note: The adapter does not support
Xbox One 1st Gen Controller**



Not Support

First time pairing

- 1) Boot up BlueRetro and make sure adapter is in inquiry mode ("SYNC" PURPLE LED pulsing).
- 2) Power on controller via "Xbox" button and then hold the black "SYNC" button until the LED of "Xbox" button flash rapidly.



Press and hold
Black "SYNC" BUTTON
(Bluetooth Inquiry
Mode Enable)

Successful pairing

- 1) For BlueRetro adapter:
The "SYNC" BLUE LED fully on.
- 2) For Xbox One S, Series X|S
& Adaptive controller:
The LED of "Xbox" button
comes to constant.



Reconnect

Simply hold down the "Xbox" button on the controller to power on. Then it will reconnect to BlueRetro adapter automatically.

Pairing with Wii & WiiU Pro controller

First pairing

- 1) Boot up BlueRetro and make sure adapter is in inquiry mode ("SYNC" PURPLE LED pulsing).
- 2) Press red "SYNC" button, then the four lights flash.
- 3) LEDs will stop blinking on controller once pairing is complete.



Press and hold red "SYNC" button
(Bluetooth Inquiry Mode Enable)

Successful pairing

- 1) For BlueRetro adapter:
The "SYNC" BLUE LED fully on.
- 2) For Wii & WiiU Pro controller:
The first light fully on.



Reconnect

Simply press power button on the controller. Then it will reconnect to BlueRetro adapter automatically.

Pairing with Switch Pro & Joycon

First time pairing

- 1) Boot up BlueRetro and make sure adapter is in inquiry mode ("SYNC" PURPLE LED pulsing).
- 2) Press and hold the "SYNC" BUTTON on the top of the gamepad until the indicator on the underside of the pad starts flashing back and forth.



Successful pairing

- 1) For BlueRetro adapter: The "SYNC" BLUE LED fully on.
- 2) For Switch Pro & Joycon controller: The first light on the left fully on.



Reconnect

Simply press any button on the controller. Then it will reconnect to BlueRetro adapter automatically.

Pairing with 8bitdo controller

Note: This adapter is only compatible with 8bitdo controllers that have Bluetooth functionality. Before use, please ensure that your controller supports Bluetooth. The **8bitdo Pro2** controller was used as an example in this manual.

For details of the update procedure, please visit on:
(<https://support.8bitdo.com/firmware-updater.html>)

First time pairing

- 1) Boot up BlueRetro and make sure adapter is in inquiry mode ("SYNC" PURPLE LED pulsing).
- 2) Power up 8bitdo controller in Xinput mode, then LED 1 will start to blink. ("Start + X" button or set switch to X) (Only supported in Xinput mode!).

Set switch to X
(Turn on Xinput mode)



- 3) Press and hold "SYNC" BUTTON until LED starts flashing back and forth.



Press and hold "SYNC" BUTTON
(Bluetooth Inquiry Mode Enable)

Successful pairing

- 1) For BlueRetro adapter: The "SYNC" BLUE LED fully on.
- 2) For 8bitdo controller: The first light on the left fully on.
- 3) Press A buttons a few times to make sure joystick center value is properly init.



Reconnect

Simply press start button on the controller. Then it will reconnect to BlueRetro adapter automatically.

D-pad as Joystick or D-pad configuration

Most 8bitdo controllers are configured to have the D-pad emulate a joystick by default. In most case for BlueRetro you will want to configure it as a d-pad.

See [8bitdo support page FAQs for each controller](https://support.8bitdo.com/) for more info.
<https://support.8bitdo.com/>

8bitdo S30 Modkit: Hold Up + L + R for 5 seconds

8bitdo N30 Modkit: Hold Up + Select for 5 seconds

8bitdo M30 Bluetooth: Hold Up + Select for 5 seconds

Pairing with Retro-Bit controller

Note: This adapter is only compatible with retro-bit controllers that have Bluetooth functionality. Before use, please ensure that your controller supports Bluetooth. The **retro-bit saturn** controller was used as an example in this manual.

First time pairing

- 1) Boot up BlueRetro and make sure adapter is in inquiry mode ("SYNC" PURPLE LED pulsing).
- 2) Power up Retro-Bit controller in Xinput mode ("Home + X"), then LED starts flashing back and forth. **(Only supported in Xinput mode!)**



Press and hold "HOME+X" button
(Bluetooth Inquiry Mode Enable)

Successful pairing

- 1) For BlueRetro adapter: The "SYNC" BLUE LED fully on.
- 2) For Retro-Bit controller: The LED fully on.



Reconnect

Simply press "Home" button on the controller. Then it will reconnect to BlueRetro adapter automatically.

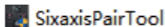
Pairing with PS3 controller

Note: Only official PS3 controllers are supported.

First time pairing

Windows

- 1) Download and install [Sixaxis Pair Tool](https://sixaxispairtool.en.lo4d.com/windows).
(<https://sixaxispairtool.en.lo4d.com/windows>)



- 2) Connect the BlueRetro adapter to PC or phone to get BD ADDR (MAC address). (Make sure your converter is plugged into the console or connected to the USB cable for power)
 - Open (<https://blueretro.io/>) in a chrome web browser. (Windows PC)
 - Navigate to "BlueRetro System Manager".
 - Click on "Connect BlueRetro".
(Make sure your PC had built-in Bluetooth compatibility or a Bluetooth dongle plugged in.)
 - The BD ADDR of your BlueRetro will be displayed when connected. Write it down.

```
BlueRetro System Manager
View on GitHub

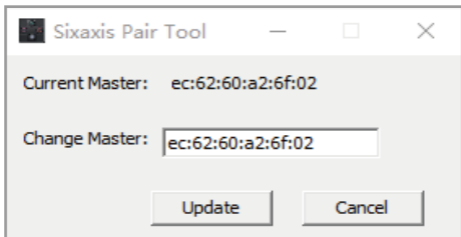
Connect BlueRetro
Disconnect all controllers from BlueRetro before connecting for update.

Live Output

Requesting Bluetooth Device...
Connecting to GATT Server...
Device name: BlueRetro_PS2_6F02
Device id: Z:NM0KEBXGN1Mpa&CHSaC+SQ==
Getting BlueRetro Service...
Get BD_ADDR CHRC...
Reading BD_ADDR...
BD_ADDR: ec:62:60:a2:6f:02
Get Api version CHRC...
Reading App version...
App version: v1.7 psx_external
Init Cfg DOM...
> Bluetooth Device disconnected

Reading BD_ADDR...
BD_ADDR: ec:62:60:a2:6f:02
Get Api version CHRC...
```

- 3) Use USB cable to connect your PS3 controller to PC .
- 4) Launch Sixaxis pair tool and enter BD ADDR into the Change Master.
- 5) Click update. (Once the update is complete the controller can be disconnected from the PC.)



- 6) Insert your BlueRetro adapter into your console to boot up BlueRetro. (Make sure adapter is in inquiry mode ("SYNC" LED pulsing)).
- 7) Hold down the "PS" button on your controller until the four red lights on top of the DualShock 3 flashing.



Press and hold the "PS" button (Bluetooth Inquiry Mode Enable)

Successful pairing

- 1) For BlueRetro adapter: The "SYNC" BLUE.

- 2) For PS3 controller: The four red lights on top of the DualShock 3 fully on.



Reconnect

Simply hold down the "PS" button on the PS3 controller until the Bluetooth function is activated. Then it will reconnect to BlueRetro adapter automatically.

Firmware update

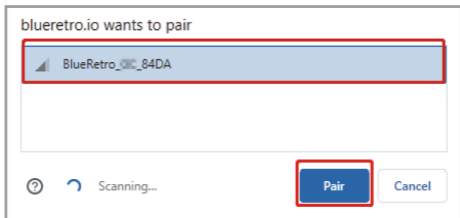
- 1) Plug the blueretro adapter into the Sega Genesis/Mega Drive consoles and power on the console.
- 2) Disconnect the controller that has been linked.
- 3) Turn on Bluetooth on your computer and type in the website (<https://blueretro.io>)
- 4) Select "BlueRetro OTA FW update" as instructed.



- 5) Click "Connect BlueRetro"



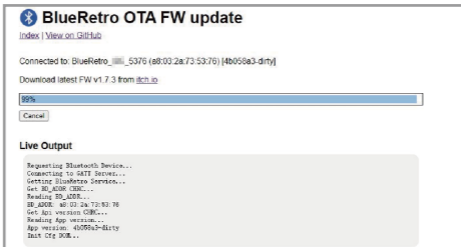
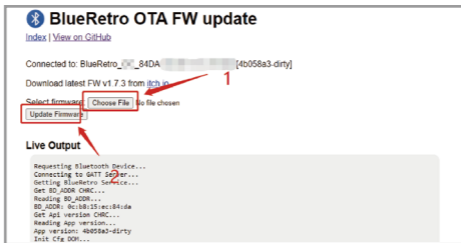
- 6) A window pops up to search for your blueretro device. When it's done, select your adapter and click Pair.



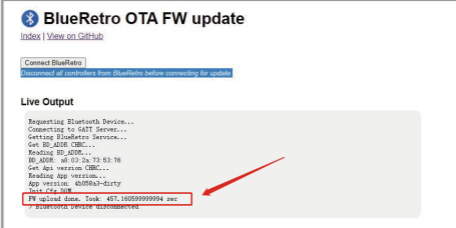
- 7) Once the connection is complete, select the latest firmware, then click the Update button, and the device will start updating automatically. (the latest firmware: <https://darthcloud.itch.io/blueretro>)

Note:

(To upload the latest firmware, just select the BlueRetro_genesis.bin file)



- 8) After the firmware update is completed, the connection will be disconnected automatically, and a message will be displayed indicating that the update has been completed. At this time, just switch on the power again and you can use it.



The image shows a web interface for a BlueRetro OTA firmware update. At the top left is a Bluetooth icon followed by the title "BlueRetro OTA FW update". Below the title are two links: "Index" and "View on GitHub". A button labeled "Connect BlueRetro" is present, with a warning message below it: "Disconnect all controllers from BlueRetro before connecting for update". A "Live Output" section displays a log of the update process. The log includes steps like "Requesting Bluetooth Device...", "Connecting to GATT Server...", "Getting BlueRetro Service...", "Get ED_ADDR CHRC...", "Reading BD_ADDR...", "BD_ADDR: 98 03 2a 73 62 76", "Get api version CHRC...", "Reading App version...", "App version: 4b058a3-dirty", and "Init FW ROM". The final line of the log, "FW upload done. Took: 467.1805999999994 sec", is highlighted with a red box and pointed to by a red arrow. The log ends with "Bluetooth device disconnected".

BlueRetro OTA FW update

[Index](#) | [View on GitHub](#)

Connect BlueRetro

Disconnect all controllers from BlueRetro before connecting for update

Live Output


```
Requesting Bluetooth Device...
Connecting to GATT Server...
Getting BlueRetro Service...
Get ED_ADDR CHRC...
Reading BD_ADDR...
BD_ADDR: 98 03 2a 73 62 76
Get api version CHRC...
Reading App version...
App version: 4b058a3-dirty
Init FW ROM
FW upload done. Took: 467.1805999999994 sec
Bluetooth device disconnected
```


Buttons mapping reference


MD / Genesis	PS3	PS4/PS5	Xbox One S/XS	WiiU / Switch Pro
	Left stick left	Left stick left	Left stick left	Left stick left
	Left stick right	Left stick right	Left stick right	Left stick right
	Left stick down	Left stick down	Left stick down	Left stick down
	Left stick up	Left stick up	Left stick up	Left stick up
	Right stick left	Right stick left	Right stick left	Right stick left
	Right stick right	Right stick right	Right stick right	Right stick right
	Right stick down	Right stick down	Right stick down	Right stick down
	Right stick up	Right stick up	Right stick up	Right stick up
D-pad left	D-pad left	D-pad left	D-pad left	D-pad left
D-pad right	D-pad right	D-pad right	D-pad right	D-pad right
D-pad down	D-pad down	D-pad down	D-pad down	D-pad down
D-pad up	D-pad up	D-pad up	D-pad up	D-pad up
Y	Square	Square	X	Y
C	Circle	Circle	B	A
B	X	X	A	B
*Y	Triangle	Triangle	Y	X
Start	Start	Options	Menu	"+"
*Mode	Select	Share	View	"-"
	PS	PS	Xbox	Home
		touchpad	Share	Capture
*X	L2	L2	LT	ZL
*X	L1	L1	LB	L
	L3	L3	Left stick	Left stick
*Z	R2	R2	RT	ZR
*Z	R1	R1	RB	R
	R3	R3	Right stick	Right stick

MD / Genesis	Switch Joycon	8bitdo Pro2	Retro-bit Saturn
	Stick left (H)	Left stick left	
	Stick right (H)	Left stick right	
	Stick down (H)	Left stick down	
	Stick up (H)	Left stick up	
		Right stick left	
		Right stick right	
		Right stick down	
		Right stick up	
D-pad left		D-pad left	D-pad left
D-pad right		D-pad right	D-pad right
D-pad down		D-pad down	D-pad down
D-pad up		D-pad up	D-pad up
Y	B D-pad up	Y	A
C	X D-pad down	A	C
B	A D-pad left	B	B
*Y	Y D-pad right	X	Y
Start	"*" Capture	Start	Start
*Mode	"-" Home	Select	Select
		Home	Home
*X	SL	L2	L
*X	L R	L	X
	Stick click	L Stick	
*Z	SR	R2	R
*Z	ZL ZR	R	Z
		R Stick	



 RetroScaler

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