

# Supported hardware

## Nano computers / Single-board computers

Batocera supports multiple single-board computers (SBC):

- Raspberry Pi Zero
- Raspberry Pi (aka 1), including RetroFlag GPi Case
- Raspberry Pi 2
- Raspberry Pi 3, as well as CM3
- Raspberry Pi 4
- Odroid C2
- Odroid C4
- Odroid XU3, XU4, XU4Q
- Odroid N2 and N2+
- Odroid Go Advance
- RK2020
- Abernic RG351P
- RockPro64
- Asus Tinkerboard
- MQmaker MiQi
- Amlogic S905 and variants
- Khadas VIM2
- Khadas VIM3
- Libretech H5

You can download the last stable version for each of these SBCs from [the download section of the website](#).

If you don't know which one to buy, [this page \(under construction\)](#) will give you some hints.

## Intel-based Computers

The vast majority of PC are supported. Any PC that has been manufactured in or after 2010 should use the 64-bit version (x86\_64). Very old PCs with a 32-bit only CPU - i.e. up to the Intel "Core Solo"/"Core Duo" generation - should use the 32-bit version (x86), as those processors are 32-bit only.

The main component which can make your computer not supported is the graphic card (GPU). In case your graphic card is not supported, the system will be very slow and unplayable.

- Most graphic cards are supported - even integrated GPUs on modern Intel CPUs give decent results
- Supported GPUs are all those compatible with Linux OpenGL implementation.

If you have to choose a new GPU, recent nVidia cards are supported in the main Batocera image, and usually give very good results. A combination of an Intel i5 4xxx CPU + Nvidia GT1030 GPU will support all emulators up to the PS2 for a reasonable cost.

## Nvidia drivers

Batocera.linux includes the latest Nvidia drivers available at the time of a new release.

Nvidia accelerated drivers **are not enabled by default**. To enable or disable them, plug your SDcard/USB drive into a computer, and at the top level, find the `batocera-boot.conf` file and uncomment (i.e. remove the initial `#`) or comment (add the `#` back) the `nvidia-driver=true` line. If the line is not present it, add it without/with the leading `#`:

```
nvidia-driver=true
```

You can find the list of supported GPU models in

<https://www.nvidia.com/Download/driverResults.aspx/168347/en-us> (version 460.32.03 embedded in Batocera 30) .

If you edit the file under Windows, make sure you have an editor that respects Unix line terminators. Don't use Wordpad, use a **real** text editor like Notepad++ or Atom, that doesn't replace the Unix line terminations (LF) by DOS/Windows line terminations (CR/LF).

You can connect to [Batocera through SSH](#), remount the `/boot` partition on write mode [like explained here](#), and edit `/boot/batocera-boot.conf` with nano or vi as text editors.

If your card is not supported by the current branch, please check the following forum thread <https://forum.batocera.org/d/1851-batoceralinux-525-with-nvidia-legacy-drivers-390xx-discontinued>

If you use a laptop that has both an integrated Intel and a discrete Nvidia GPU (hybrid setup or "Optimus" technology), you need to enable Nvidia drivers with `batocera-hybrid-nvidia` from SSH or terminal access.

How can you tell if the NVidia driver is correctly set up? Go to **SYSTEM SETTINGS → INFORMATION** and see if the OpenGL version mentions **NVIDIA** in its version. If it does, you're all set. If it mentions **MESA**, that means that the Nvidia driver is not correctly activated.

## Ati / HDMI audio output

HDMI Audio is disabled by default due to a black screen issue on some monitors. To enable it, edit on the USB key both `boot/grub/grub.cfg` and `EFI/boot/grub.cfg` files by adding `radeon.audio=1` at the end of the `linux` line. For example:

```
menuentry "batocera.linux" {  
  linux /boot/linux label=BATOCERA console=tty3 quiet loglevel=0  
  vt.global_cursor_default=0  
  initrd /boot/initrd.gz  
}
```

becomes:

```
menuentry "batocera.linux" {  
  linux /boot/linux label=BATOCERA console=tty3 quiet loglevel=0
```

```
vt.global_cursor_default=0 radeon.audio=1
initrd /boot/initrd.gz
}
```

## Others

Other hardware issues can be diagnosed with the help of the [troubleshooting guide](#).

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