# Sega Megadrive/Genesis

The Sega Megadrive, known as the Sega Genesis in the US, is a 16-bit fourth-generation console released by Sega in Japan on October 29, 1988 and in the US on August 14, 1989. It retailed for $189.99.

The design of the console differs between regions, newer EmulationStation themes may have an option in their theme configuration to select which one to show in the system menu, but many older ones may just have two 'region variations' to download which have different images, the Megadrive/Genesis just being one of the consoles changed.

| **shortname** | `megadrive` |
|---|---|
| **emulator/core(s)** | libretro/genesisplusgx libretro/genesisplusgx-wide libretro/picodrive |
| **rom format(s)** | `.bin .gen .md .sg .smd .zip .7z` |

## Emulators

### GenesisPlusGX

A good all-around emulator. It can run Sega Genesis/Megadrive, Sega Master System, Sega/Mega CD and Game Gear games, but lacks 32X and Pico support. It is also the only emulator to support Lock-On technology, but as of v31 can only be activated in Retroarch's Quick Menu (hotkey+south). After resetting the game, Lock-On will be activated. By default, Batocera will reset this setting after exiting the game. There are ROMs that already have flags set to boot into their Lock-On ROMs instead, so this is not strictly required to play those games.

#### Configuration

| **setting** | **description** | **recommendation** |
|---|---|---|
| Reduce sprite flickering | The Megadrive can only draw ~80 sprites per horizontal line at a time, and any more will be mitigated by rapidly flickering between them each frame. This setting removes that limitation. Some games rely on this to mask certain sprites, but is generally not noticeable when the limit is removed. | Off |
| NTSC filter | GenesisPlusGX has the Blarg NTSC filter built-in as a feature, unrelated to the Shader selected within Batocera. | Off, Batocera's shaders can be used instead. |
| Show Lightgun crosshair | Shows an on-screen crosshair for lightgun devices. | Off |
| Controller 1 type | The Megadrive had many types of controllers, notably a 6-button controller that some games require to be fully functional. This is also where you would set your multi-tap on, if required. | Joypad auto |

### GenesisPlusGX-wide

A patched version of regular GenesisPlusGX that allows for widescreen video out. It is a bit buggier than the regular version but works fine in most games. Expect visual glitches when using this. The functions of this patch are slowly being integrated into the main build itself, but as of v31 they are still separate. Does not support Sega/Mega CD.

### Picodrive

A lighter emulator which although not as accurate as GenesisPlusGX, can be run on much weaker hardware. This should be the default for devices such as the Raspberry Pi Zero and other sub-1GHz CPUs. Currently the only cross-architecture option for 32X and Pico games.

## ROMs

Fix Me!

Place your Sega Megadrive/Genesis ROMs in `/userdata/roms/megadrive/`.

.md, .bin, .gen, .sg, .smd, .gg and .sms are catridge-based ROMs. .iso, .cue+.bin and .chd are disc-based images.

## Region

The Megadrive/Genesis is special in that it was *technically* region-free, but the design of the cartridge prevented them from being inserted into consoles from other regions. If you could manage to insert them, however, the console would run the game mostly fine.

NA/JP games were typically coded first and are designed to run at 60Hz natively, whethers PAL games would run at 50Hz. Sometimes the game was simply slowed down by ~17% to match that frame-rate (inadvertently lowering the pitch of the music/sound effects) eg. Sonic 1, other games had additional logic to detect their region and adjust the music playback speed accordingly but otherwise slowed the gameplay down eg. Sonic 2, and a few games would alter both aspects to makes NA/JP/PAL all play identically.

In order to play a PAL game at 50Hz, first configure Batocera's video mode to be one of the '50Hz' modes eg. 1920×1080 50Hz (1920×1080). This can be done in the game's advanced options on a per-game basis within EmulationStation. Then, when in-game, the core region must be set to 'pal' in Retroarch's Quick Menu > Options > Region. This can be saved via Quick Menu > Overrides > Save Game Overrides. Restart the game to apply.

## Controls

The default button mappings are as follows:

| Retropad | MD Joypad 3 button | MD Joypad 6 button | MS 2 button | MS Paddle Control | MS Sports Pad |
|---|---|---|---|---|---|

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|---|---|---|---|---|---|
| D-Pad Up | D-Pad Up | D-Pad Up | D-Pad Up | | |
| D-Pad Down | D-Pad Down | D-Pad Down | D-Pad Down | | |
| D-Pad Left | D-Pad Left | D-Pad Left | D-Pad Left | | |
| D-Pad Right | D-Pad Right | D-Pad Right | D-Pad Right | | |
| Start | Start | Start | Start | Start | Start |
| Select | | Mode | | | |
| Y (West) | A | A | | | |
| B (South) | B | B | 1 | 1 | 1 |
| A (East) | C | C | 2 | | 2 |
| L1 | | X | | | |
| X (North) | | Y | | | |
| R1 | | Z | | | |
| Left stick | | | | Paddle | Trackball |

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