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 libretro/blastem
rom format(s)	`.bin .gen .md .sg .smd .zip .7z`

Emulators

libretro/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 can only be activated in RetroArch's Quick Menu (Hotkey+) (correct as of v31). After resetting the game, Lock-On will be activated. By default, Batocera will reset this setting after exiting the game. This can be changed on a per-game basis by using RetroArch's Overrides. There are patches available for ROMs that set the flag to boot into their Lock-On ROMs instead, so this is not strictly required to play those games.

Configuration

setting	**description**	**recommendation**
`megadrive.gpgx_no_sprite_limit`	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.	`disabled` Some games rely on the limit to mask certain sprites, but is generally not noticeable when removed.
`megadrive.gpgx_blargg_filter_md`	GenesisPlusGX has the Blarg NTSC filter built-in as a feature, unrelated to the shader selected within Batocera. Values: `False`, `composite`, `svideo` and `rgb`	`False` Batocera's or RetroArch's preset shaders can be used instead.
`megadrive.gun_cursor_md`	Shows an on-screen crosshair for lightgun devices.	`disabled` Off.

setting	description	recommendation
megadrive.controller1_md	The Megadrive has many types of peripherals, notably a 6-button controller that some games require to be fully functional and a few lightguns. This is also where you would set your multi-tap on, if required. 1 for Joypad Auto, 257 for 3 button controller, 513 for 6 button controller, 1025 for 3 button 4-way Play, 1281 for 6 button 4-way Play, 1537 for 3 button EA Team Player multitap, 1793 for 6 button EA Team Player multitap and 2 for the Mega Mouse.	1 Joypad auto.
megadrive.controller2_md	Same as above in addition to 772 for Konami Justifiers and 516 for Menacer Lightguns.	1 Joypad auto.

libretro/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 they are still separate (correct as of v31). Does not support Sega/Mega CD.

This core has no core-specific options adjustable from within Batocera. It will ignore the settings that libretro/genesisplusgx ordinarily uses. That being said, you can still change most of its configuration within RetroArch's Quick Menu > Options (Hotkey+). To enable the widescreen hack, change “Extra columns to draw in H40 for widescreen” to a higher value. 10 works well for 16:9 screens. This may need to be adjusted on a per-game basis.

libretro/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.

Configuration

setting	description	recommendation
megadrive.picodrive_sprlim	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.	disabled Some games rely on the limit to mask certain sprites, but is generally not noticeable when removed.

setting	description	recommendation
`megadrive.picodrive_controller1`	Picodrive only supports the following two values: `3 button pad` and `6 button pad`	Auto, as in remove the line. Not all games are compatible with both controllers.
`megadrive.picodrive_controller2`	Same as above.	Auto, as in remove the line. Not all games are compatible with both controllers.

libretro/blastem

An emulator aiming to be cycle-accurate while still having modest system requirements. Very high compatibility.

This core has no core-specific options available (correct as of v31).

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 and should be used with the CD system instead.

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 make NA/JP/PAL all play identically. Some ROMs use a universal (world) version that would rely on the console to detect its region, others have separate versions per region (US, JP, PAL, etc.) that may malfunction if played on a console of a different region.

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 or in a custom collection 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
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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