

# Sega Dreamcast

The [Dreamcast](#) is a sixth-generation console released by Sega on November 27, 1998 in Japan and later on September 9, 1999 in NA. The system is available in most builds, except for RPi1/Zero and 2. [Here's a fun page about it.](#)

This system scrapes metadata for the "dreamcast" group and loads the dreamcast set from the currently selected theme, if available.



## Quick reference

- **Accepted ROM formats:** .cdi, .cue, .gdi, .chd, .m3u
- **Folder:** /userdata/roms/dreamcast

Emulators
<a href="#">libretro: Flycast</a>
<a href="#">Flycast</a>
<a href="#">Redream</a>
<a href="#">Demul</a>

## BIOS

The "World" BIOS file and USA flash file which should work fine for the massive majority of games.

MD5 checksum	Share file path	Description
e10c53c2f8b90bab96ead2d368858623	bios/dc_boot.bin	Dreamcast BIOS file (World)
0a93f7940c455905bea6e392dfde92a4	bios/dc_flash.bin	Dreamcast system configuration file (USA)

Alternative BIOS files that are also acceptable:

MD5 checksum	Share file path	Description
d407fcf70b56acb84b8c77c93b0e5327	bios/dc_boot.bin	Dreamcast BIOS file (Region free)
d552d8b577faa079e580659cd3517f86	bios/dc_boot.bin	Dreamcast BIOS file (Region free)
93a9766f14159b403178ac77417c6b68	bios/dc_flash.bin	Dreamcast system configuration file (Region free)
74e3f69c2bb92bc1fc5d9a53dcf6ffe2	bios/dc_flash.bin	Dreamcast system configuration file (Region free)
23df18aa53c8b30784cd9a84e061d008	bios/dc_flash.bin	Dreamcast system configuration file (Europe)
69c036adfca4ebea0b0c6fa4acfc8538	bios/dc_flash.bin	Dreamcast system configuration file (Japan)

## ROMs

Dreamcast discs are a special form of CD named GD, which are capable of holding up to 1GB of data, compared to the ~700MB capacity of regular CDs. GDs were traditionally dumped off of the original console as GD-ROMs (which contains a `game.gdi` sheet, `info.txt` and `data.bin/iso/.raw` track(s)), but some more modern tools may use the more universal `game.cue` sheet and `data.bin` track format. Most emulators can load either sheet format fine. You should load the `.gdi` or `.cue` sheet and not the `.bin/iso/.raw` tracks. From Batocera v31 onwards, EmulationStation should avoid making duplicate entries for these files.

If you're currently missing the `.gdi` or `.cue` files, check out [the section on recovering them on this page](#).



WinCE games seem to not run on the RPi3B+.

## Disc compression

The recommended format for compressing disc images is [CHD](#).

If compressing the image into the CHD format ensure that you are using `chdman` version 0.230 or later, as earlier versions have issues with Dreamcast images. If your compressed ROMs are failing to launch in Batocera, users have reported having more success making `chdman` target a `.gdi` file instead of a `.cue` file. Most online `.bat` scripts only target `.cue` files. There is a custom version of `chman` that supports rolling to and from CUE/BIN files [here](#).

## Multi-disc games


To automatically load the next disc of a game, you can use a `.m3u` playlist file. To make one, simply create a text file with the same filename as your intended game name (it could be anything, really). Within that text file, write the names of the `.gdi` sheets or `.chd` files for your game discs. For instance, if your game's `.gdi` sheets were structured like

```
roms/  
└─ dreamcast/  
    └─ Shenmue (Disc 1).gdi  
       └─ Shenmue (Disc 1).bin  
          └─ Shenmue (Disc 2).gdi  
             └─ Shenmue (Disc 2).bin  
                └─ Shenmue (Disc 3).gdi  
                   └─ Shenmue (Disc 3).bin  
                      └─ Shenmue (Passport disc).gdi  
                         └─ Shenmue (Passport disc).bin
```

you would put the following as text into the `Shenmue.m3u` text file:

## Shenmue.m3u

```
Shenmue (Disc 1).gdi
Shenmue (Disc 2).gdi
Shenmue (Disc 3).gdi
Shenmue (Passport disc).gdi
```

Save the text file with the file extension .m3u and place it in the dreamcast folder along with the game's discs. When you get to the end of that disc, the next disc will be automatically loaded. In libretro cores, if this fails, you can utilize Retroarch's 'Disc Control' menu in the Quick Menu (Hotkey+ ) to manually eject a disc and insert another (Swap Disc is for legacy purposes and should not be used). Refer to [multi-disc games](#) for more info.

# Emulators

## Flycast

[Flycast](#) is a fork of [Reicast](#) (which itself is a fork of nullDC). A highly compatible and accurate standalone emulator.

Flycast can also be used to run [NAOMI arcade](#) games due to being nearly identical hardware.

### Flycast configuration

Standardized features available to all cores of this emulator: `dreamcast.videomode`, `dreamcast.videomode`, `dreamcast.bezel`, `dreamcast.bezel_stretch`, `dreamcast.hud`, `dreamcast.bezel.tattoo`, `dreamcast.bezel.tattoo_corner`, `dreamcast.bezel.tattoo_file`, `dreamcast.bezel.resize_tattoo`

ES setting name batocera.conf_key	Description → ES option key_value
<b>Settings that apply to all cores of this emulator</b>	
<b>SCREEN RATIO</b> <code>dreamcast.flycast_ratio</code>	Choose which screen ratio you want to use. ⇒ Default False, Widescreen True.
<b>RENDER RESOLUTION</b> <code>dreamcast.flycast_render_resolution</code>	Choose which internal rendering resolution you want to use. ⇒ 320×240 (Half) 240, 640×480 (Native) 480, 960×720 (x1.5) 720, 1280×960 (x2) 960, 1600×1200 (x2.5) 1200, 1920×1440 (x3) 1440, 2560×1920 (x4) 1920, 2880×2160 (x4.5) 2160.
<b>GRAPHICS API</b> <code>dreamcast.flycast_renderer</code>	Choose your graphics renderer. ⇒ OpenGL (Default) 0, Vulkan 4.


ES setting name batocera.conf_key	Description ⇒ ES option key_value
<b>ROTATE SCREEN 90 DEGREES</b> dreamcast.flycast_rotate	Rotate the screen by 90 degrees. ⇒ Normal False, Rotate True.

All other configuration must be done via the flycast-config in the Applications folder ([F1] on the systems screen).

## RetroArch

[RetroArch](#) (formerly SSNES), is a ubiquitous frontend that can run multiple “cores”, which are essentially the emulators themselves. The most common cores use the [libretro](#) API, so that's why cores run in RetroArch in Batocera are referred to as “libretro: (core name)”. RetroArch aims to unify the feature set of all libretro cores and offer a universal, familiar interface independent of platform.

### RetroArch configuration

RetroArch offers a **Quick Menu** accessed by pressing [HOTKEY] +  which can be used to alter various things like [RetroArch and core options](#), and [controller mapping](#). Most RetroArch related settings can be altered from Batocera's EmulationStation.

Standardized features available to all libretro cores: dreamcast.videomode, dreamcast.videomode, dreamcast.ratio, dreamcast.shader, dreamcast.smooth, dreamcast.integerscale, dreamcast.bezel, dreamcast.bezel\_stretch, dreamcast.hud, dreamcast.bezel.tattoo, dreamcast.bezel.tattoo\_corner, dreamcast.bezel.tattoo\_file, dreamcast.bezel.resize\_tattoo, dreamcast.ai\_service\_enabled, dreamcast.ai\_target\_lang, dreamcast.ai\_service\_url, dreamcast.ai\_service\_pause, dreamcast.integerscale, dreamcast.runahead, dreamcast.secondinstance, dreamcast.video\_frame\_delay\_auto, dreamcast.vrr\_runloop\_enable, dreamcast.video\_threaded


ES setting name batocera.conf_key	Description ⇒ ES option key_value
<b>Settings that apply to all cores of this emulator</b>	
<b>GRAPHICS BACKEND</b> dreamcast.gfxbackend	Choose your graphics rendering ⇒ OpenGL opengl, Vulkan vulkan.
<b>AUDIO LATENCY</b> dreamcast.audio_latency	Audio latency in milliseconds, turn it up if you hear crackles ⇒ 256 256, 192 192, 128 128, 64 64, 32 32, 16 16, 8 8.
<b>ALLOW ROTATION</b> dreamcast.video_allow_rotate	Allow cores to set rotation. ⇒ On true, Off false.
<b>CONTROLLER TO LIGHTGUN</b> dreamcast.lightgun_map	Map controller inputs to lightgun inputs ⇒ On true, Off false.

### libretro: Flycast

A fork of a fork of a fork... this is an identical version of standalone Flycast but inside of a libretro core. Makes use of RetroArch's features.

**libretro: Flycast configuration**

ES setting name batocera.conf_key	Description ⇒ ES option key_value
<b>Settings that apply to all systems this core supports</b>	
<p><b>SYNCHRONOUS RENDERING</b>  <b>global.reicast_synchronous_rendering</b></p>	<p>When threaded rendering is on (on by default), waits for the GPU to finish rendering the frame before dropping the current one. This can avoid certain emulation issues (flashing screens, glitchy video). Significant performance cost. Recommended "Off" for most games as they don't experience issues (or you have a weak machine), "On" if the game has these particular issues.                      ⇒ Off disabled, On enabled.</p>
<p><b>RENDERING RESOLUTION</b>  <b>global.reicast_internal_resolution</b></p>	<p>Enhancement. Increases the rendering resolution. Makes 3D objects clearer. Significant performance cost. Use 640×480 for native. Absurdly high values can degrade image quality (pixels beginning to shimmer).                      ⇒ 640×480 640×480, 800×600 800×600, 960×720 960×720, 1024×768 1024×768, 1280×960 1280×960, 1440×1080 1440×1080, 1600×1200 1600×1200, 1920×1440 1920×1440, 2560×1920 2560×1920, 3200×2400 3200×2400, 3840×2880 3840×2880, 4480×3360 4480×3360, 5120×3840 5120×3840, 5760×4320 5760×4320, 6400×4800 6400×4800, 7040×5280 7040×5280, 7680×5760 7680×5760.</p>
<p><b>TEXTURE MIP-MAPPING (BLUR)</b>  <b>global.reicast_mipmapping</b></p>	<p>Enables <a href="#">mip-mapping</a> to smooth out textures on distant 3D objects based on distance and angle. Dreamcast games natively utilized mipmapping to get extra performance out of the hardware, but the extra blurriness from doing this is more apparent on modern, higher fidelity screens. Has a minimal performance cost. enabled should be used in conjunction with anisotropic filtering to mitigate blurriness. Some users may prefer the "sharpness" of disabled better.                      ⇒ Off disabled, On enabled.</p>

ES setting name batocera.conf_key	Description → ES option key_value
<p><b>ANISOTROPIC FILTERING</b>  <b>global.reicast_anisotropic_filtering</b></p>	<p>Enables <a href="#">anisotropic filtering</a> to enhance perspective textures. Dramatically improves the clarity of textures on distant 3D objects when mip-mapping is turned on, especially at higher internal resolutions. Test Drive: Le Mans is the only Dreamcast game that natively utilizes this. Has a small performance cost. Generally safe to use 16x when mip-mapping is also enabled, leave on "Off" otherwise.                      ⇒ Off False, 2x 2, 4x 4, 8x 8, 16x 16.</p>
<p><b>TEXTURE UPSCALING (XBRZ)</b>  <b>global.reicast_texupscale</b></p>	<p>Enhancement. Applies <a href="#">xBRZ upscaling to textures</a> to improve their clarity. Improvements are subjective.                      ⇒ Off False, 2x 2x, 4x 4x, 6x 6x.</p>
<p><b>RENDER TO TEXTURE UPSCALING</b>  <b>global.reicast_render_to_texture_upscaling</b></p>	<p>Enhancement. Some 3D games would capture the screen output and render it as a 2D texture (eg. pause menu in Crazy Taxi and Dead or Alive), being unaffected by reicast_internal_resolution. This setting multiplies the resolution of that capture. Example <a href="#">here</a>. "Off" for native, "4x" for close-to 1080p rendering (only useful if also upscaling the internal resolution).                      ⇒ Off 1x, 2x 2x, 3x 3x, 4x 4x, 8x 8x.</p>
<p><b>FRAMESKIP</b> global.reicast_frame_skipping</p>	<p>Skip frames to improve performance, at the cost of choppy motion. Higher values can cause motion sickness if used for extended periods. Should only be turned up on weak hardware and if immune to motion sickness.                      ⇒ Off disabled, 1 1, 2 2, 3 3, 4 4, 5 5, 6 6.</p>
<p><b>FORCE WINDOWS CE MODE</b>  <b>global.reicast_force_wince</b></p>	<p>Some Dreamcast games (marked "Powered by Microsoft Windows CE" on the box, eg. Sega Rally 2) utilized the MMU Windows Compact Edition API on the Dreamcast to run. Batocera should automatically detect this but in case it doesn't you can manually override it here. Significant performance cost.                      ⇒ Off disabled, On enabled.</p>
<p><b>WIDESCREEN CHEAT (PRIORITY)</b>  <b>global.reicast_widescreen_cheats</b></p>	<p>Enhancement. Flycast has a database of cheats that can enable widescreen support in certain games, rendering them in  <a href="#">anamorphic widescreen</a> without changing the internal resolution. Some games also natively support widescreen in their in-game options. A 16/9 ratio must be used and bezels must be disabled.                      ⇒ Off disabled, On enabled.</p>

ES setting name batocera.conf_key	Description → ES option key_value
<b>WIDESCREEN HACK</b> global.reicast_widescreen_hack	Enhancement. Changes the internal resolution to a widescreen ratio (eg. 640×480 becomes 853×480). Somewhat glitchy. Some games also natively support widescreen in their in-game options. A 16/9 ratio must be used and bezels must be disabled. ⇒ Off disabled, On enabled.
<b>CONTROLLER 1 TYPE</b> global.controller1_dc	Chooses the controller plugged into port 1. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
<b>CONTROLLER 2 TYPE</b> global.controller2_dc	Same as above for port 2. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
<b>CONTROLLER 3 TYPE</b> global.controller3_dc	Same as above for port 3. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
<b>CONTROLLER 4 TYPE</b> global.controller4_dc	Same as above for port 4. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
<b>Settings specific to atomiswave</b>	
<b>SCREEN ORIENTATION</b> atomiswave.screen_rotation_atomiswave	Rotate screen for some arcade games ⇒ Horizontal horizontal, Vertical vertical.
<b>Settings specific to naomi</b>	
<b>SCREEN ORIENTATION</b> naomi.screen_rotation_naomi	Rotate screen for some arcade games ⇒ Horizontal horizontal, Vertical vertical.

All other settings can be configured from RetroArch's **Quick Menu** → **Options** ([HOTKEY] + ).

## Redream

Redream is a multi-platform standalone emulator. Has high compatibility with low system requirements. Lacks some options compared to Flycast.



You cannot exit Redream via controller as the Hotkey+Start shortcut opens the Redream menu instead and you cannot navigate to the close button unless you have a mouse.

## Redream configuration

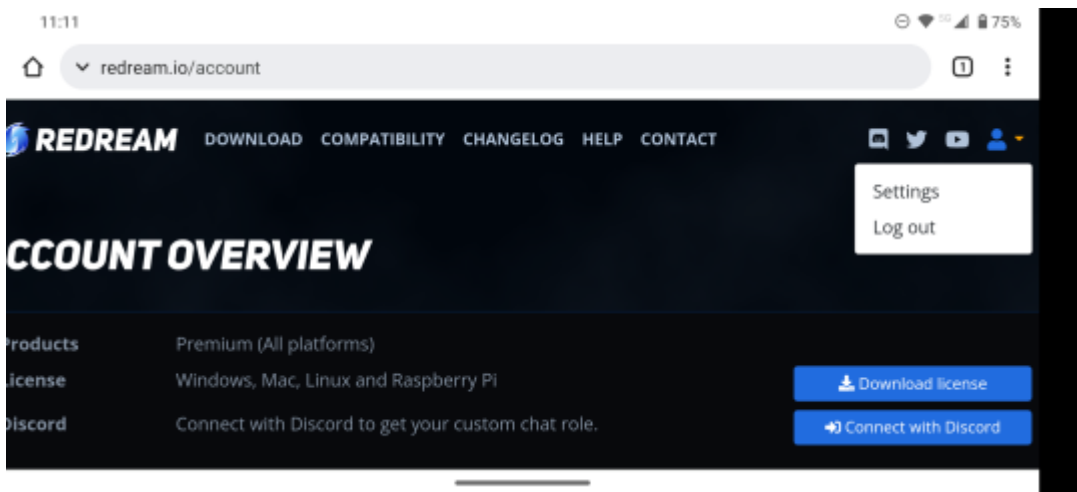
Standardized features available to all cores of this emulator: dreamcast.videomode, dreamcast.bezel, dreamcast.bezel\_stretch, dreamcast.hud, dreamcast.bezel.tattoo, dreamcast.bezel.tattoo\_corner, dreamcast.bezel.tattoo\_file, dreamcast.bezel.resize\_tattoo

<b>ES setting name batocera.conf_key</b>	<b>Description ⇒ ES option key_value</b>
<b>Settings that apply to all cores of this emulator</b>	
<b>RENDERING RESOLUTION</b> <code>dreamcast.redreamResolution</code>	Choose your render resolution (Requires personal redream.key file). ⇒ 640×480 1, 1280×960 (Default) 2, 1920×1440 3, 2560×1920 4, 3200×2400 5, 3840×2880 6.
<b>ASPECT RATIO</b> <code>dreamcast.redreamRatio</code>	Choose your preferred aspect ratio. ⇒ 4:3 (Default) 4:3, 16:9 16:9, Stretch stretch.
<b>FRAMESKIP</b> <code>dreamcast.redreamFrameSkip</code>	Enable auto frameskipping for performance on lower-end systems. ⇒ Off (Default) 0, On 1.
<b>VSYNC</b> <code>dreamcast.redreamVsync</code>	Enable vertical sync to avoid tearing in some cases. ⇒ Off (Default) 0, On 1.
<b>POLYGON SORT ACCURACY</b> <code>dreamcast.redreamPolygon</code>	Choose the amount of polygon sort accuracy (Higher may cause artifacts). ⇒ Per-strip (Default) 0, Per-pixel (32 layers) 32, Per-pixel (64 layers) 64.
<b>REGION</b> <code>dreamcast.redreamRegion</code>	Choose the Dreamcast console region. ⇒ USA (Default) usa, Europe europe, Japan japan.
<b>LANGUAGE</b> <code>dreamcast.redreamLanguage</code>	Choose the Dreamcast console language. ⇒ English (Default) english, German german, French french, Spanish spanish, Italian italian, Japanese japanese.
<b>BROADCAST</b> <code>dreamcast.redreamBroadcast</code>	Choose broadcast standard (for older TV's). ⇒ NTSC (Default) ntsc, PAL pal, PAL_M pal_m, PAL_N pal_n.
<b>CABLE</b> <code>dreamcast.redreamCable</code>	Choose cable type for the TV. ⇒ VGA (Default) vga, RGB rgb, Composite composite.

Redream can also be configured from its redream-config application ([F1] on the system list → **Applications**).

### Redream license key

On PC, Redream locks some of settings behind a one-time purchase of a premium license. Once purchase, this can be downloaded (it's just a text file) from <https://redream.io/account> after signing in:



Redream checks for its license key in `/userdata/system/configs/redream/redream.key`. If a valid license is found, additional rendering options (such as rendering resolution) will become unlocked.



This license is not required for ARM devices such as RPi.

## Demul

From their FAQ:

Demul is Sega's multi-system game console and automaton emulator, originally intended solely to emulate the Sega Dreamcast game console. Currently, the emulator also supports emulation of Sega Dreamcast-based slot machines: Naomi, Naomi 2 and Atomiswave . Support for Sega Model 3, Sega Hikaru, Sega Saturn is under development .

### Demul configuration

Standardized features available to all cores of this emulator: `dreamcast.videomode`, `dreamcast.bezel`, `dreamcast.bezel_stretch`, `dreamcast.hud`, `dreamcast.bezel.tattoo`, `dreamcast.bezel.tattoo_corner`, `dreamcast.bezel.tattoo_file`, `dreamcast.bezel.resize_tattoo`

ES setting name	batocera.conf_key	Description ⇒ ES option key_value
<b>Settings that apply to all cores of this emulator</b>		
<b>GAME ASPECT RATIO</b>	<code>global.demulRatio</code>	⇒ Stretch 0, 4:3 (Default) 1, 16:9 2.
<b>VSYNC</b>	<code>global.demulVSync</code>	Fix screen tearing. ⇒ Off 0, On 1.

## Texture packs

Flycast supports custom texture packs for games. To use them:

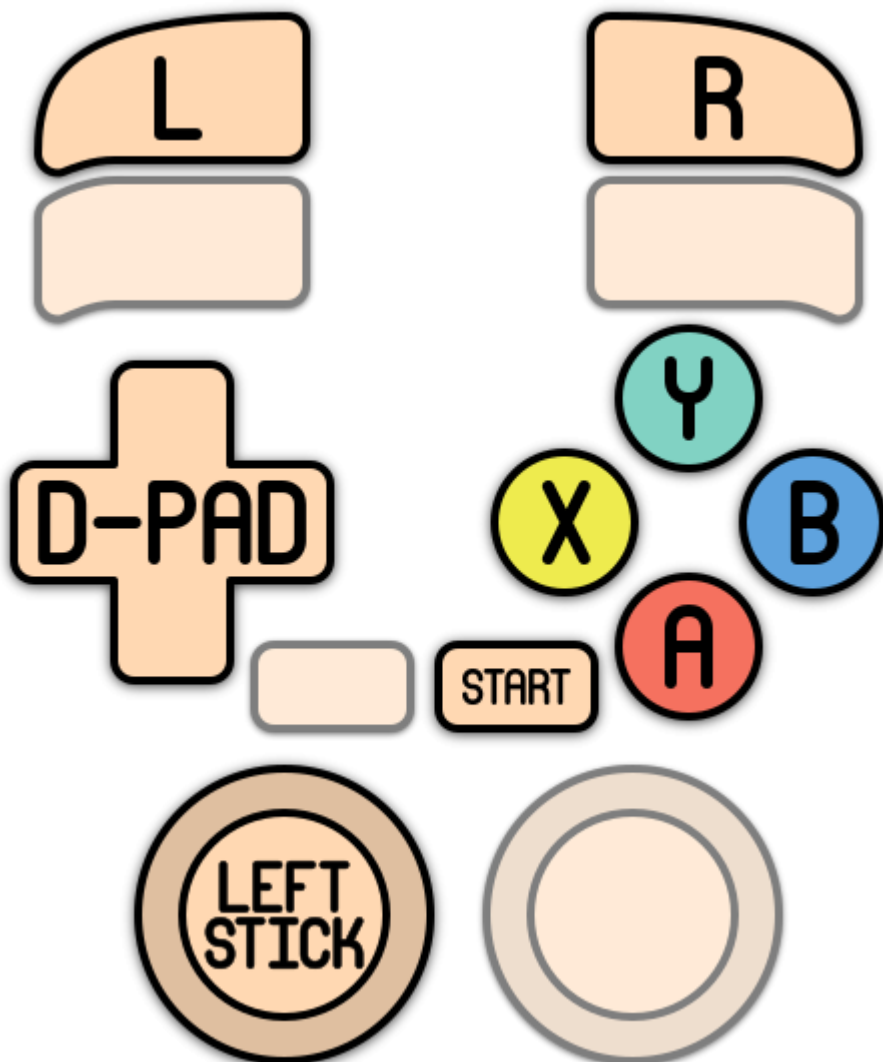
1. Copy the unzipped texture pack folder to saves/dreamcast/flycast/textures/ (it should already be titled the proper game ID for the game that it supports)
2. In Batocera, launch flycast - config from the file manager → Applications
3. Navigate to **Settings** → **Video** and tick "Load Custom Textures"



4. Exit with [Alt] + [F4] and then launch the game from Batocera

## Controls

Here are the default Sega Dreamcast's controls shown on a [Batocera Retropad](#):



Each Dreamcast emulator handles the [HOTKEY], its chords and the [SELECT] button differently.

- libretro/flycast
  - [HOTKEY] by itself does nothing.
  - [HOTKEY] + [START] closes the emulator.
  - [SELECT] does nothing.
- Flycast standalone
  - [HOTKEY] by itself opens Flycast's quick menu.
  - [HOTKEY] + [START] closes the emulator.
  - [SELECT] does nothing.
- Redream
  - [HOTKEY] by itself opens Redream's menu.
  - [HOTKEY] + [START] does nothing.
  - [SELECT] toggles fast-forward.



The [HOTKEY] + [L1] shortcut, which ordinarily takes a screenshot, will instead eject the disc in [libretro/Flycast](#). Practice caution!

## Troubleshooting

For further troubleshooting, refer to the [generic support pages](#).

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