Atomiswave

The Atomiswave is a arcade developed by the Sammy Corporation. It was released in 2003. It is based on Sega's Dreamcast console, and thus shares a lot of its hardware with it. Because of this, emulation of NAOMI games is usually best done with a Dreamcast emulator (modifications have already been made to allow for this in Flycast, for instance).

The Atomiswave is known for using interchangeable game cartridges for its games, allowing for easy switching between them. In this same vein, the cabinet's control panel could be swapped out as well, allowing for a variety of sticks, lightguns and steering wheel JAMMA peripherals to be used by a single system. This made it a very attractive option for arcades wanting to make the most of their purchase.

With the retirement of the Neo Geo MVS, SNK chose to use the Atomiswave as its next system to develop games for. However, after the release of Metal Slug 6, SNK moved onto other systems. Sammy itself would develop the majority of titles for its arcade system. In 2004, Sammy would end up merging with Sega.

This system scrapes metadata for the “atomiswave” and “arcade” groups and loads the `atomiswave` set from the currently selected theme, if available.

Quick reference

- **Accepted ROM formats:** `.lst`, `.bin`, `.dat`, `.zip`, `.7z`
- **Folder:** `/userdata/roms/atomiswave`

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BIOS

MD5 checksum	Share file path	Description
`0ec5ae5b5a5c4959fa8b43fcf8687f7c`	`bios/awbios.zip`	

ROMs

Place your Atomiswave ROMs in `/userdata/roms/atomiswave`.

Emulators

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: `atomiswave.videomode`, `atomiswave.ratio`, `atomiswave.shaderset`, `atomiswave.smooth`, `atomiswave.integerscale`, `atomiswave.bezel`, `atomiswave.bezel_stretch`, `atomiswave.hud`, `atomiswave.bezel.tattoo`, `atomiswave.bezel.tattoo_corner`, `atomiswave.bezel.tattoo_file`, `atomiswave.bezel.resize_tattoo`, `atomiswave.ai_service_enabled`, `atomiswave.ai_target_lang`, `atomiswave.ai_service_url`, `atomiswave.ai_service_pause`, `atomiswave.integerscale`, `atomiswave.runahead`, `atomiswave.secondinstance`, `atomiswave.video_frame_delay_auto`, `atomiswave.vrr_runloop_enable`, `atomiswave.video_threaded`

ES setting name `batocera.conf_key`	**Description ⇒ ES option `key_value`**
Settings that apply to all cores of this emulator	
GRAPHICS BACKEND `atomiswave.gfxbackend`	Choose your graphics rendering ⇒ OpenGL `opengl`, Vulkan `vulkan`.
AUDIO LATENCY `atomiswave.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.
ALLOW ROTATION `atomiswave.video_allow_rotate`	Allow cores to set rotation. ⇒ On `true`, Off `false`.
CONTROLLER TO LIGHTGUN `atomiswave.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

Standardized features for this core: `atomiswave.autosave`

ES setting name `batocera.conf_key`	Description ⇒ ES option `key_value`
Settings that apply to all systems this core supports	
SYNCHRONOUS RENDERING **`global.reicast_synchronous_rendering`**	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`.
RENDERING RESOLUTION **`global.reicast_internal_resolution`**	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`.
TEXTURE MIP-MAPPING (BLUR) **`global.reicast_mipmapping`**	Enables mip-mapping 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 bluriness 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 bluriness. Some users may prefer the 'sharpness' of `disabled` better. ⇒ Off `disabled`, On `enabled`.

ES setting name `batocera.conf_key`	Description ⇒ ES option `key_value`
ANISOTROPIC FILTERING **`global.reicast_anisotropic_filtering`**	Enables anisotropic filtering 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.
TEXTURE UPSCALING (XBRZ) **`global.reicast_texupscale`**	Enhancement. Applies xBRZ upscaling to textures to improve their clarity. Improvements are subjective. ⇒ Off `False`, 2x 2x, 4x 4x, 6x 6x.
RENDER TO TEXTURE UPSCALING **`global.reicast_render_to_texture_upscaling`**	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 here. “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.
FRAMESKIP **`global.reicast_frame_skipping`**	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.
FORCE WINDOWS CE MODE **`global.reicast_force_wince`**	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`.
WIDESCREEN CHEAT (PRIORITY) **`global.reicast_widescreen_cheats`**	Enhancement. Flycast has a database of cheats that can enable widescreen support in certain games, rendering them in anamorphic widescreen 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`.

ES setting name `batocera.conf_key`	Description ⇒ ES option `key_value`
WIDESCREEN HACK **`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`.
CONTROLLER 1 TYPE **`global.controller1_dc`**	Chooses the controller plugged into port 1. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
CONTROLLER 2 TYPE **`global.controller2_dc`**	Same as above for port 2. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
CONTROLLER 3 TYPE **`global.controller3_dc`**	Same as above for port 3. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
CONTROLLER 4 TYPE **`global.controller4_dc`**	Same as above for port 4. ⇒ Gamepad 1, Keyboard 3, Mouse 2, Light Gun 4.
Settings specific to atomiswave	
SCREEN ORIENTATION **`atomiswave.screen_rotation_atomiswave`**	Rotate screen for some arcade games ⇒ Horizontal `horizontal`, Vertical `vertical`.
Settings specific to naomi	
SCREEN ORIENTATION **`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]` + ).

Flycast

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

Flycast can also be used to run Atomiswave arcade games due to being nearly identical hardware.

Flycast configuration

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

ES setting name `batocera.conf_key`	Description ⇒ ES option `key_value`
Settings that apply to all cores of this emulator	

ES setting name `batocera.conf_key`	**Description ⇒ ES option `key_value`**
SCREEN RATIO `naomi.flycast_ratio`	Choose which screen ratio you want to use. ⇒ Default `False`, Widescreen `True`.
RENDER RESOLUTION `naomi.flycast_render_resolution`	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`.
GRAPHICS API `naomi.flycast_renderer`	Choose your graphics renderer. ⇒ OpenGL (Default) `0`, Vulkan `4`.
ROTATE SCREEN 90 DEGREES `naomi.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).

Demul

Demul has its own page. Refer to it for further information and configuration.

Controls

How does this even work?

Here are the default Atomiswave's controls shown on a Batocera Retropad:

Troubleshooting

Further troubleshooting

For further troubleshooting, refer to the generic support pages.