Sega Chihiro

The **Sega Chihiro** is an arcade system board developed by **Sega** in collaboration with **Microsoft**, released in **2002**. It is based on the original Xbox hardware with doubled RAM (128 MB vs 64 MB) and additional arcade-specific boards for GD-ROM loading, JVS I/O, and VGA output. It was Sega's last arcade board derived from a home console. Notable games include *The House of the Dead III*, *OutRun 2*, *Virtua Cop 3*, *Ghost Squad*, and *Wangan Midnight Maximum Tune*.

Quick reference

- **Emulator:** xemu
- **Folder:** `/userdata/roms/chihiro`
- **Accepted ROM formats:** `.iso`

Sega Chihiro emulation requires an **x86_64** system. ARM devices (Raspberry Pi, Odroid, etc.) are not supported.

Only a handful of Chihiro games are currently playable through xemu. See the game compatibility section below.

BIOS

The following BIOS files are required and must be placed in `/userdata/bios/`:

File	MD5	Description
`mcpx_1.0.bin`	`d49c52a4102f6df7bcf8d0617ac475ed`	Xbox/Chihiro boot ROM (MCPX)
`cerbios.bin`	`f23d7e00ae8fbf88908ed1f9165f35eb`	Cerbios custom flash ROM

Unlike regular Xbox emulation which uses `Complex_4627.bin`, Chihiro requires **Cerbios** (`cerbios.bin`) as its flash ROM. Batocera handles this automatically.

ROMs

Place your ROM files in:

`/userdata/roms/chihiro/`

ROMs must be in **XISO format** (`.iso` extension). These are Xbox-compatible patched versions of the original Chihiro GD-ROM disc images. Standard MAME ROM sets (.zip / .chd) are **not** used for this

system.

Game compatibility

Only a few Chihiro games have been converted to work with xemu. The following games are known to be supported in Batocera:

Game	Year	Input type	Status	Note
Ghost Squad	2004	lightgun	Playable	Light gun not supported in xemu. Only controller.
OutRun 2	2003	steering wheel / pedals	Playable	Steering wheel not supported in xemu. Only controller.
Virtua Cop 3	2003	lightgun	Playable	Light gun not supported in xemu. Only controller.

Full Chihiro game library

The complete Chihiro arcade library includes the following titles. Most of these are **not yet playable** through xemu in Batocera.

Lightgun games

Game	Year	Notes
The House of the Dead III	2002	2-player lightgun + reload button
Virtua Cop 3	2003	2-player lightgun + foot pedal (bullet time)
Ghost Squad	2004	2-player lightgun + weapon/mode switch buttons

Racing games

Game	Year	Notes
Crazy Taxi High Roller	2003	Steering wheel + pedals
OutRun 2	2003	Steering wheel + pedals + gear shift
OutRun 2 Special Tours	2004	Steering wheel + pedals + gear shift
Wangan Midnight Maximum Tune	2004	Steering wheel + pedals + 6-speed shift (Namco)
Wangan Midnight Maximum Tune 2	2005	Steering wheel + pedals + 6-speed shift (Namco)

Other games

Game	Year	Notes
Ollie King	2003	Skateboard controller
Sega Golf Club Network Pro Tour 2005	2004	Joystick + buttons, network game
Sega Club Golf 2006 Next Tours	2005	Joystick + buttons, network game
Quest of D	2004	Card reader + joystick, network RPG
Quest of D Ver. 3.02	2007	Card reader + joystick, network RPG
Quest of D The Battle Kingdom	2007	Card reader + joystick, network RPG
Sega Network Taisen Mahjong MJ 2	2005	Mahjong panel, network game
Sega Network Taisen Mahjong MJ 3	2006	Mahjong panel, network game
Sega Network Taisen Mahjong MJ 3 Evolution	2007	Mahjong panel, network game
Gundam Battle Operating Simulator	2005	Special cockpit controls (Banpresto)

Game	Year	Notes
Mobile Suit Gundam 0079 Card Builder	2005	Card reader + joystick (Banpresto)
Mobile Suit Gundam 0083 Card Builder	2007	Card reader + joystick (Banpresto)

Emulators

xemu

xemu is an open-source Xbox emulator that also supports Chihiro arcade hardware. It is the only emulator available for Chihiro in Batocera.

Batocera automatically applies Chihiro-specific settings when launching games from the Chihiro system:

- Memory is set to **128 MiB** (double the standard Xbox 64 MiB)
- Flash ROM is set to **Cerbios** instead of the standard Xbox flash
- Renderer is forced to **OpenGL** due to a known Vulkan bug with Chihiro games

xemu configuration

ES setting name `batocera.conf` key	Description ⇒ ES option key `value`
EMULATOR `chihiro.emulator`	Emulator to use. ⇒ `xemu` (default)
RENDERING RESOLUTION `chihiro.rendering_resolution`	Internal rendering resolution multiplier. ⇒ `1x` (default) through `10x`
SCALING MODE `chihiro.scaling_mode`	How the image is scaled to fit the screen. ⇒ `scale` (default), `center`, `stretch`
ASPECT RATIO `chihiro.aspect_ratio`	Display aspect ratio. ⇒ `native` (default), `4:3`, `16:9`
VSYNC `chihiro.vsync`	Vertical sync. ⇒ `on` (default), `off`
BIOS BOOT LOGO `chihiro.skip_bios`	Show or skip the boot animation. ⇒ `show` (default), `skip`

Controls

Chihiro games use a wide variety of input devices. Standard gamepad mapping works for most titles.

Lightgun games (House of the Dead III, Virtua Cop 3, Ghost Squad) require a compatible lightgun device (not supported yet). See the lightgun setup guide for configuration. Virtua Cop 3 additionally uses a **foot pedal** for the bullet time feature — this can be mapped to a button.

Racing games (OutRun 2, Crazy Taxi, Wangan Midnight) benefit from an **analog steering wheel and pedals** (not supported yet), but can also be played with an analog gamepad.

Specialized controllers (mahjong panels, card readers, skateboard controllers) used by some

Chihiro games are difficult to emulate with standard input devices. Games requiring these controllers may not be fully playable.

Hardware specifications

Component	Specification
Manufacturer	Sega / Microsoft
Year	2002
CPU	Intel Pentium III @ 733 MHz
GPU	NVIDIA NV2A (GeForce 3-class) @ 200 MHz
RAM	128 MB DDR (shared, 2× Xbox)
Extended RAM	Up to 512 MB or 1 GB (DIMM board)
Sound	MCPX AC'97 + Motorola DSP56362 coprocessor
Media	GD-ROM (loaded entirely into DIMM RAM)
Display	640×480 VGA @ 60 Hz
Polygon performance	125 million polygons/sec
I/O	JVS (Japan Video Standard)
Based on	Microsoft Xbox

Board variants

- **Type 1** — Uses a removable NAOMI-style DIMM board. Less common.
- **Type 3** — Integrated DIMM board in a compact cube form factor, 512 MB or 1 GB RAM. Most common variant. Some early games (Crazy Taxi High Roller, House of the Dead III) are reportedly incompatible with Type 3 hardware.

Games are copied entirely from GD-ROM into DIMM RAM before execution, eliminating disc loading times during gameplay.

Troubleshooting

"BIOS file not found" error

Make sure both BIOS files are present in `/userdata/bios/`:

- `mcpx_1.0.bin`
- `cerbios.bin`

You can verify BIOS files via the Batocera menu: *System Settings* → *Missing BIOS*.

Game doesn't boot or shows black screen

- Verify your `.iso` file is a valid XISO-format image. Standard ISO-9660 images will not work.
- Ensure the file is a Chihiro-patched version, not a raw GD-ROM dump.
- Try toggling *BIOS Boot Logo* to `skip` in the per-game settings.

Graphical glitches

Batocera forces OpenGL for Chihiro due to a known Vulkan bug. If you experience graphical issues, ensure no manual override is set in `batocera.conf`:

```
# Remove or comment out this line if present:
# chihiro.gfxbackend=vulkan
```

No sound

Audio emulation in xemu for Chihiro games may be incomplete. Some games may have missing or distorted audio. This is a known limitation of the emulator.

Performance is poor

Chihiro emulation is demanding. Ensure you are running on an **x86_64** system with:

- A modern multi-core CPU (Intel Core i5/i7 or AMD Ryzen recommended)
- A dedicated GPU with OpenGL 4.0+ support
- At least 4 GB system RAM

Why can't I use MAME for Chihiro?

The MAME Chihiro driver (`chihiro.cpp`) has **preliminary** status for all games — no game is playable, sound is completely unemulated, and 3D rendering is non-functional. This is due to the extreme complexity of emulating the Xbox-derived hardware (NV2A GPU, MCPX APU, modified Xbox kernel). Batocera uses xemu instead, which provides significantly better compatibility through its Xbox-focused emulation approach.

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Last update: **2026/03/04 00:37**