

# Vectrex

The Vectrex is a second-generation home console developed by Smith Engineering and manufactured by GCE, followed by Milton Bradley. It was released in 1982, retailing for \$199 USD (\$569 in 2021).



The Vectrex features an integrated monochrome CRT monitor, but this isn't just any CRT monitor that scans left-to-right, top-to-bottom. Instead, the electron beam is able to shoot freely across the face of the entire phosphor screen, from any angle, up to the length of the monitor. In essence, this is producing vector graphics as they are literally being generated on the machine. To this date, the Vectrex is the only vector display-based console released for the home market ever.



The Flatten-glow [shader set](#) is highly recommended to recreate this effect as it would have originally appeared.

Every game came with a color overlay sheet to be placed in front of the screen, adding static areas of color and/or on-screen decorations/HUD elements.

Being released one year before the NA videogame crash of '83 doomed its fate, being discontinued entirely by 1984 with Milton Bradley (the then current manufacturers of the Vectrex) merging with Hasbro. The Vectrex is considered a commercial failure, however despite this the system was praised for its software library, unique and novel method of rendering graphics, and built-in monitor. It was technically also the first console to feature a 3D-based peripheral.

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

## Quick reference

- **Emulator:** [RetroArch](#)
- **Core:** [libretro: vecx](#)
- **Folder:** /userdata/roms/vectrex
- **Accepted ROM formats:** .bin, .gam, .vec, .zip, .7z

# BIOS

BIOS is not required for libretro: vecx, the default emulator.

For MAME emulator, BIOS is required:

MD5 checksum	Share file path	Description
ab082fa8c8e632dd68589a8c7741388f	bios/vectrex.zip	exec_rom.bin
a9c238473229912eb757ff3dfe6f4631	bios/vectrex.zip	exec_rom_intl_284001-1.bin

# ROMs


Place your Vectrex ROMs in /userdata/roms/vectrex.

# 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: vectrex.videomode, vectrex.ratio, vectrex.smooth, vectrex.shaders, vectrex.pixel\_perfect, vectrex.decoration, vectrex.game\_translation

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> vectrex.gfxbackend	Choose your graphics rendering ⇒ OpenGL opengl, Vulkan vulkan.
<b>AUDIO LATENCY</b> vectrex.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>THREADED VIDEO</b> vectrex.video_threaded	Improves performance at the cost of latency and more video stuttering. Use only if full speed cannot be obtained otherwise. ⇒ On true, Off false.

## libretro: vecx

A [libretro port](#) of the open-source [vecx](#) emulator. Originally created by Valavan Manohararajah.

### libretro: vecx configuration

ES setting name batocera.conf_key	Description ⇒ ES option key_value
<b>Settings that apply to all systems this core supports</b>	
<b>RESOLUTION MULTIPLIER</b> global.res_multi	Resolution multipliers to smooth vectors. ⇒ Off 1, 2 2, 3 3, 4 4.

## Resolution multiplier

Translating vector-based games to a traditional pixel grid screen is never going to be 1:1 perfect, as the nature of how vectors are drawn versus pixels are incompatible. There will always be a level of “staircase” effect with any lines that aren't perfectly perpendicular with cardinal directions.

Setting the resolution multiplier to 4 and using the Flatten-glow shader is an easy way to get a close approximation of the original rendering effect.

## Controls

The Vectrex features a built-in four-button controller.

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



## Troubleshooting

### Further troubleshooting

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

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