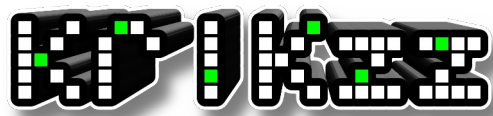
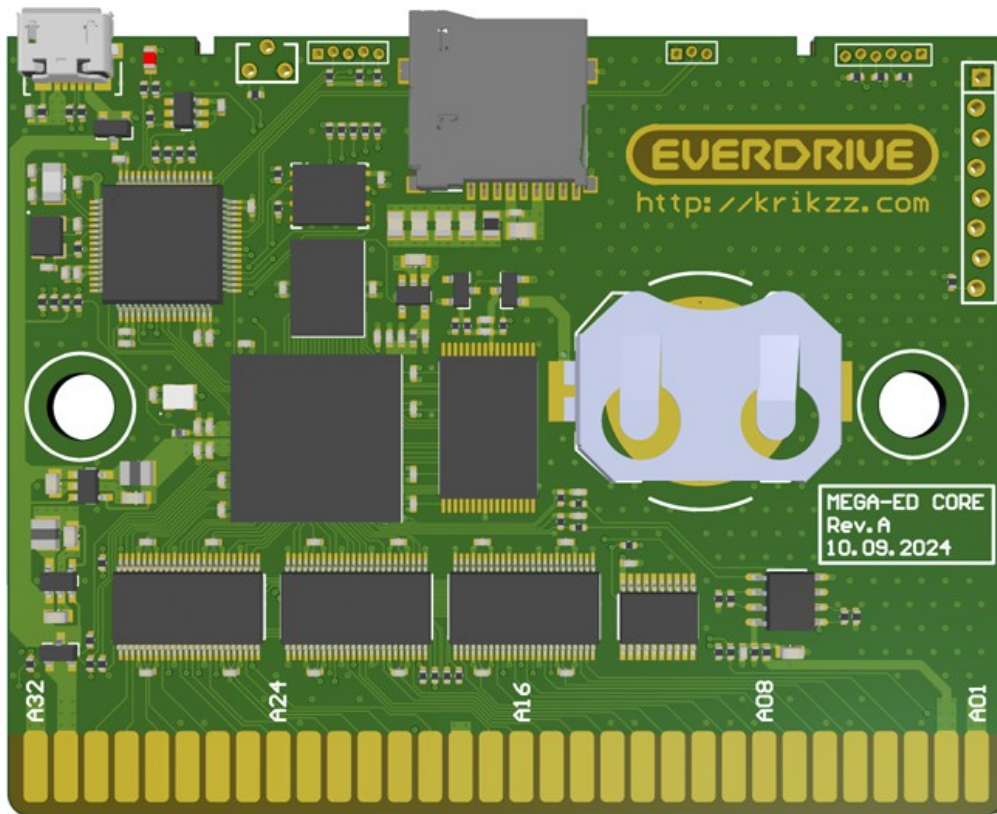


MEGA EVERDRIVE CORE

User Manual



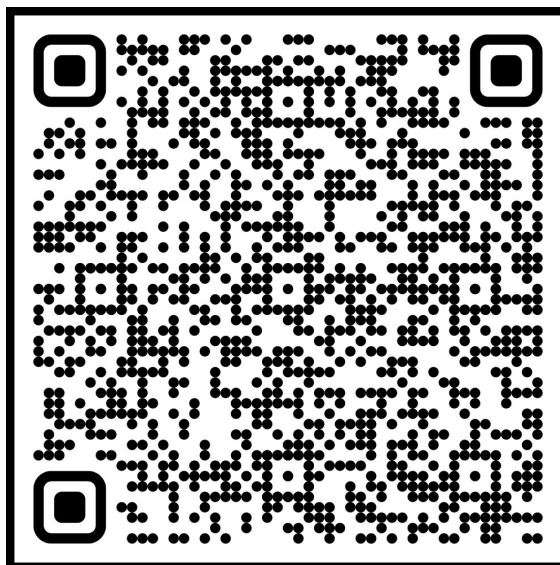
WWW.krikzz.com

17.01.2025

Features

- Cyclone 10 FPGA
- 8MB PSRAM and 128KB SRAM memory
- High quality 6-layer PCB with hard gold surface finish
- Supported ROM formats: Genesis, 32X, Master System
- Ram cart for Mega-CD
- CD bios swap function turns off region locks for Mega-CD games
- Hardware MegaKey turns off region locks for Genesis games
- YM2413 core for Master System games
- SVP core support
- In-game menu. You can save game or return to system menu without physical reset
- In-game menu supported for Genesis and Master System modes
- EEPROM saves support
- Real time clock for logging date and time of saves
- Up to 800 files per folder or unlimited if file sorting is disabled
- Multi slot save states. 98 independent slots for save states
- Instant ROM loading
- USB port for development
- Battery voltage monitoring. Battery can be replaced in time if it runs dry
- Cheats functions
- IPS patches
- Custom menu themes
- MD+ audio enhancements

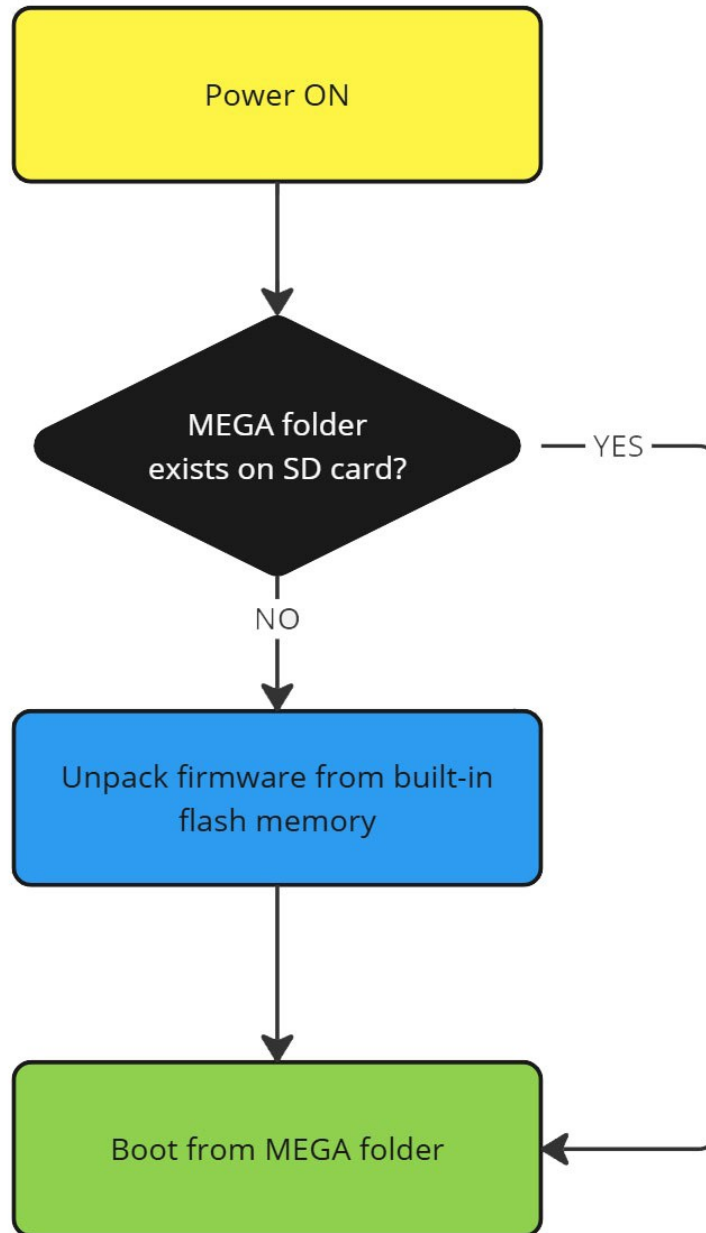
In new firmware versions, some features may be added, changed or removed. Please refer to the latest online manual for the latest information.



<https://krikzz.com/pub/support/mega-everdrive/core-series/mega-ed-core-manual.pdf>

Boot Sequence

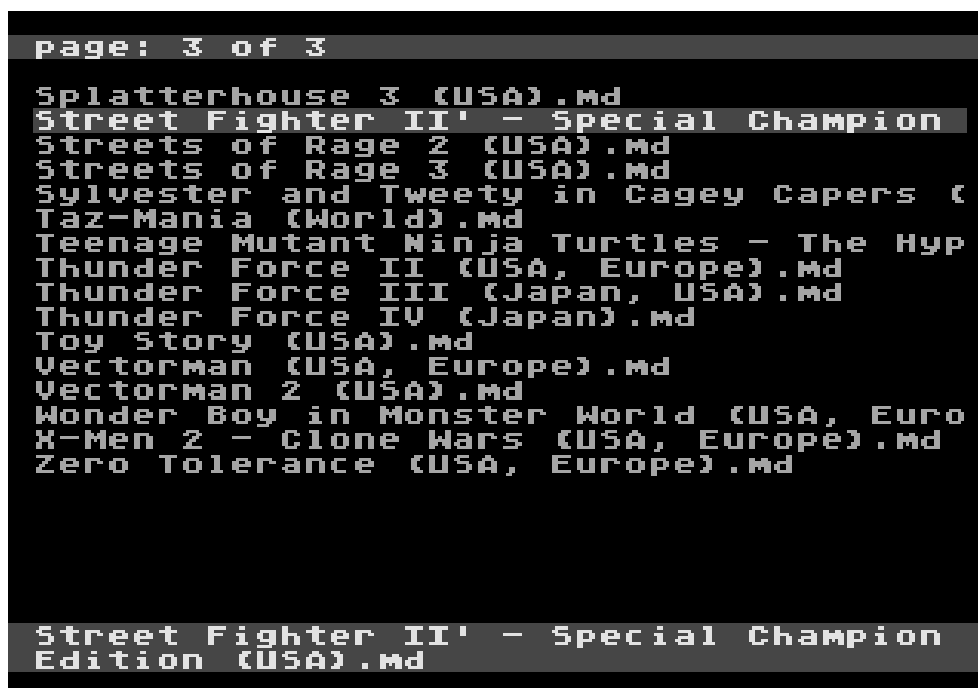
If there is no MEGA folder on the SD card, cartridge will unpack the firmware from the built-in flash memory.



File Manager

- A – Open directory or file menu
- B – Back or Close
- C – Open main menu
- Start – Run last played game
- Left/Right – Switch page during file navigation

The upper bar shows the current page and total number of pages in the current folder.
The bottom bar shows the full name of the selected file.



File Menu

The file menu is used for manipulating files on the SD card. The menu content is different depending on the file type selected.

Rom file menu

This menu is applied to gen, md, bin, smd, rom, 32x, sms, sg, gg file extensions.



Start Game

The cartridge will be configured to play the selected game. Right after the configuration is completed the game will be executed. After reset or power cycle of the console the last selected game can be launched with the START button.

Cheats

Edit cheat codes for the selected file.

Game Data

Open folder where stored saves and cheats of the selected ROM.

Rom Info

Shows the ROM configuration including: mapper type, checksum, memory configuration, etc.



Configure

Manual ROM Setting: Allows you to manually set the ROM region and saves type in case the cartridge does not detect the correct settings automatically.



Hex View

Opens the selected file in a hex viewer.



Delete

Deletes file from disk.

Text file menu

This menu is applied to *.txt file extension.

It is used for loading cheats from text file. Loaded cheats will be applied to last selected game.



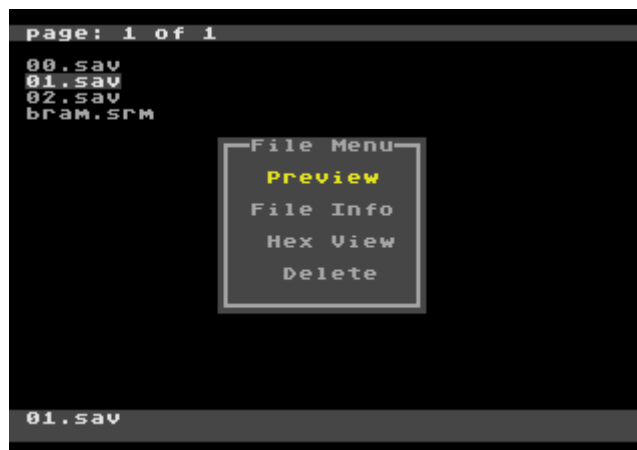
Backup memory file menu

Allows to copy current save-ram content to a file, copy the file to save-ram, check file date and size, delete file.



Save-state file menu

This menu supports preview for Genesis save state files. User can view the screenshot of the point where the state was saved.



Main Menu

Push C to open Main Menu.



Options



Options->In-Game Menu

Controls in-game menu and save state functions.

Options->MegaKey

Bypass region locks. Turn it off for Mega-SG, the console will use its own region bypass functions.

Options->Cheats

Switch on/off cheat functions.

Options->SMS Bios

System may load SMS bios for Master System games, just like the original system. For using this function user should supply bios file. Expected file path: MEGA/bios/smsbios.sms
SMS bios isn't required for Master System games.

Options-> SMS YM2413

Audio enhancement for Master System games. Mostly was used by some japanese games.

Options->Reset To Menu

ON: System will return back to the menu after reset.

OFF: Stay in game after reset.

Options->Last Game Autoboot

At cold system start the menu will be skipped and the last played game will be launched automatically, just like the boot with regular cart. Hold C during system start to jump in the menu. Also return to the menu can be performed using reset or in-game menu if these functions are turned on.

Options->File Sorting

Controls file list sorting. Max amount of files per folder is 800 if sorting is enabled or unlimited if disabled. Sorting may slow down while entering the folders with large amount of the files inside.

Options->Warnings

OS checks system configuration and refuses to launch the game if current configuration isn't compatible with selected game. For example: attempt to launch 32X game without 32X add-on. Turn off this function to try to launch it anyway. It is recommended to keep this option turned on.

Options->In-Game Combo



The controller hot-keys for In-Game menu and save state can be changed here. Two or more buttons can be used for the combo. Keep START to switch-off combo.

"Save Key" and "Load Key" are used for quick save/load in Genesis games. This type of saves skips in-game menu. The quick mode isn't available for SMS games.

"Menu SMD" is used for in-game menu in Genesis games.

"Menu SMS" is used for in-game menu in SMS games. For SMS menu combo can be used only B,C and D-pad arrows.

In-Game Menu option must be enabled for using any save state functions including quick saves.

Options->RTC Setup

Sets system date and time. RTC is used for dating of created and modified files.

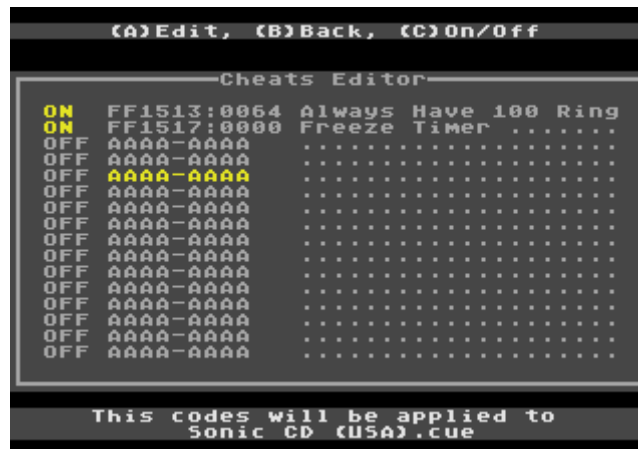
Recently Played

Lists recently played games for fast access.



Cheats

Edits cheat codes for the last played game. The bottom bar shows the name of the ROM that game codes will be applied to. Both GG and PAR codes is supported, each code has field with small text description. Each game may have its own set of codes, they are saved in MEGA/gamedata folder as a text file and loaded automatically when game is played. Up to 16 codes can be applied at the same time. An alternative way to edit the codes for a certain game is to use file menu, just select the game in file manager. Cheats also can be loaded from a text file selected in file manager.



System Folder

Go to the system folder. The system folder is hidden in the file list, this is the only way to open the system folder using the cartridge menu.



Run Mega-CD

Runs external CD addon without cartridge removing. The ram cart function is activated for this mode.

Device Info

Information about the system.



- MegaKey Mode: Hardware mode if possible, software otherwise
- SEGA CD: External Mega-CD addon status
- SEGA 32X: External 32X addon status
- Battery: On-board battery voltage monitoring
- Build Date: Cartridge manufacturing date
- Serial Num: Unique serial number
- Games Played: Played games counter

Diagnostics

The diagnostics menu checks cartridge health. All tests should be passed successfully if everything is fine. MegaKey test will fail if the cartridge is used with 32x. Also MegaKey does not work with some modern clones, Mega-SG for example.



In-Game menu

Allows to return to menu or save the game at any point. During game play hit Save-State combo on the controller to open In-Game menu. Push **C** for selected Save-state preview.



- **Save State:** Save game state. System snapshot will be immediately saved on SD card in MEGA/gamedata folder
- **Load State:** Load game state
- **Restore Last Save:** Load from backup the state file that was overwritten by the last "Save State" operation. Useful in case a save file has been accidentally overwritten.
- **Restore Last Load:** Load the state that was before the last "Load State" operation. Useful if the "Load State" operation was performed by accident.
- **Cheats:** Editing cheat codes for the current game
- **Reset Game:** Reboot the game
- **Exit Game:** Return to cartridge menu

MD+ Games

The MD+ audio enhancement format allows you to use CD-quality audio for regular cartridge games. To play MD+ games you need to put CD image and patched ROM in same folder.

CD bios loading function

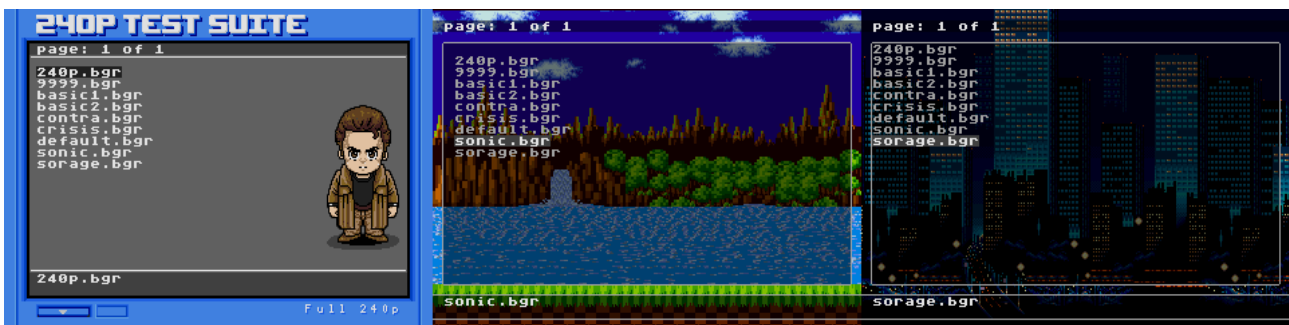
This function is related to the external Mega-CD and designed to play multi region CD images. Simply it can swap the internal CD bios to the file loaded from SD card. Just select required bios file in the file browser and launch it like any other game. Along with this function cartridge will activate the ram cart function for your Mega-CD.

IPS patcher

The built-in auto patcher engine allows you to use IPS patches without using patching software. The ROM stays unchanged on the SD card but patched in cart RAM. Patch file should be located in the same folder with ROM file and ips file name should match to the ROM name.

Menu Themes

Cartridge supports user interface customization. Few basic themes stored in the system folder. Use the theme maker tool to create your own themes: <https://krikzz.com/pub/support/mega-everdrive/pro-series/megatheme/>



Limitations

- Always use ROMs which match the console region if possible. Using PAL ROMs on NTSC systems or visa versa may cause various glitches. PAL ROMs were designed for European system, NTSC ROMs are for US and Japanese systems.
- There is no cartridge audio channels on Nomad and Genesis3 due the lack of audio inputs on cartridge port.
- SMS games do not work in pair with 32X due the SMS mode lock by the 32X hardware.
- SMS games do not work on Nomad and Genesis3 due the lack of SMS mode on these systems.
- In-game menu in SMS games does not work on One-chip Genesis because controllers state is invisible for cartridge on this system. One-chip ASIC was used mostly on Genesis3 and very late Genesis2 revision.
- Some SMS games may refuse to work if external Mega-CD is installed.

- 32X games require 32X addon to be installed.
- Hardware MegaKey does not work with Mega-SG or if 32X is installed.
- Genesis hardware wasn't designed for using such functions as save states, there is basically no way to save audio subsystem state. By this reason using save state function in some games may result glitches or even hangs. That's why this function is provided as is and it can not be improved to be fully stable. However few simple steps may help to reduce glitches rate:
Do state saving during the pause when audio is muted.
Do not load state created in the game level if you have not enter the level yet, from the title screen for example. In this case the game will have a chance to initialize audio driver properly before state will be loaded. Save state system completely ignores audio subsystem initialization.
- In-Game menu does not work for games which do not use v-blank handler.
- In-Game menu does not work if 32x addon is installed.

System folder structure

/MEGA	system root
/MEGA/bios	folder for storing Mega-CD and SMS bios files
/MEGA/bios/mcd-ex.bin	Bios dumped from external Mega-CD addon
/MEGA/bios/smsbios.sms	Master System bios
/MEGA/mappers	FPGA cores
/MEGA/gamedata	Saves, cheats, game configs
/MEGA/syscore	System core files
/MEGA/sysdata	System data files
/MEGA/themes	Preinstalled GUI themes
/MEGA/edapp	Emulators and some other external applications
/MEGA/megaos.dat	menu application