



# User Manual

English

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# ROM Files and System Hardware

1. Most ROM formats should work: headered, non-headered, and non-interleaved.
2. The SD2SNES is not compatible with certain games. Please refer to incompatibility list in this manual.
3. We offer no support if the user uses modified or hacked game files. Many of these modified or hacked game ROMs will only run on emulators and not original hardware.
4. Modified/over clocked SNES/SFC systems or clone SNES/SFC systems may or may not work. There is no guarantee the user's SD2SNES cart will work on a modified, over clocked, or clone SNES/SFC system.

## Basic Controls

Either Controller #1 or Controller #2 can be used to navigate operating system.

### File Browser

- **(A)** - Select / Enter Directory
- **(B)** - Back / Leave Directory
- **(X)** - Open Mein Menu
- **(Y)** - Open File Context Menu (coming soon...)
- **Start** - Open ROM History (recently played ROMs, currently only one is saved. will be expanded in future)
- **D-pad Left/Right** - Page through files
- **D-pad Up/Down** - Move file select up and down

### Menus

- **(A)** - Select
- **(B)** - Back / Leave Menu
- **D-pad Left/Right** - Change Values (where appropriate)
- **D-pad Up/Down** - Highlight Menu Item for Selection

### Clock Setting

- **(A)** - Confirm Input and Set Clock
- **(B)** - Leave Without Setting the Clock
- **D-pad Left/Right** - Select Date/Time Field
- **D-pad Up/Down** - Change Value

## In-game

- **SNES/SFC Reset Button** - Hold until all LEDs turn on to reset to menu. During this time is also saves SRAM content to SD card.

## File Browser

After powering on the SNES/SFC the File Browser is shown. If the clock isn't set the Clock Setting window will appear. The File Browser currently supports the following extensions:

- **SMC, SFC, FIG** (SNES/SFC cartridge ROMs)
- **BS** (BS memory pack ROM. Note that BS ROMs with SMC, SFC, or FIG extensions can also be loaded)

## Main Menu

To access the Main Menu use (X) button on the controller.

- **Set Clock**  
Allows setting of the on-board real-time clock (RTC).
- **System Information**
  - Shows various information, such as: Firmware version, SD card information, File System statistics, CIC states, and SNES/SFC master clock.
  - CIC States:
    - Original or no CIC - The host console either has original CIC, none at all, or it was modified with simple CIC pin mod.
    - Original CIC(failed) - The host console has an original CIC and the unlock sequence failed. This should never be visible because the console will shut down.
    - SuperCIC enhanced - The host console has SuperCIC inside, and the SD2SNES is utilizing its enhanced feature by setting 50/60hz mode via software. This mode will be enabled in the future.
    - SuperCIC detected, not used - The host console has SuperCIC inside, but its enhanced feature is not used.
  - SD access time provides measurement of the SD card's maximum and average access times. Not to be confused with throughput, short access times (< 1ms) are crucial for MSU1 auto+data games to work reliably. For all other games it does not matter.

# Errors

Errors can occur on several levels. They can be signaled by LEDs or on screen.

## **LED Error Codes:**

- **Ready is blinking slowly** - No firmware was found on internal flash and there is no firmware image on the card that can be flashed.
- **All LEDs blink slowly** - CIC unlock sequence failed. Push reset so the CIC close can retry with another region.
- **All LEDs are blinking rapidly** - FPGA communication failed. This should never happen. It can be caused by a corrupted FPGA configuration file.
- **Write LED stays lit during game play** - The automatic save feature cannot be used because RAM content is constantly changing (this game uses the battery RAM as working RAM). SD2SNES must be reset to save the current SRAM contents.
- **Write LED blinks rapidly during game play** - A write error occurred while trying to save the SRM file.

## **On-screen Errors / Boot Problems:**

- **"No SD Card found!"** - No SD card was detected. Verify that the card is properly seated in the SD slot and that its outer shape is unaltered. Try another card. If the problem persists there is a contact problem with the card slot then contact vendor.
- **"/sd2snes/menu.bin not found!"** - The menu ROM was not found in its expected location. Verify that the firmware was properly extracted on the card. A folder "sd2snes" should exist in the root directory. Also see **Files**.
- **The menu does not show up after the loading screen** - Most likely one or more required files are missing. Verify that the firmware was properly extracted on the card. A folder "sd2snes" should exist in the root directory. Also see **Files**.

# Files

The SD2SNES needs several files on the SD card to work properly. Some are created at runtime. All SD2SNES related files reside in the "sd2snes" directory in the SD card's root directory.

Required files:

- **menu.bin** - The menu ROM
- **firmware.img** - (Only needed once per firmware upgrade) contains the firmware that is written to internal flash.
- **fpga\_base.bit** - Contains the FPGA configuration for most features. The menu will not run without it. RLE compressed.
- **fpga\_cx4.bit** - Contains the FPGA configuration for the Cx4 core. RLE compressed.

Files created at runtime:

- **sd2snes.db** - Contains a file system footprint checksum (to detect file system changes) as well as all file names and directory names.
- **sd2snes.dir** - The file and directory tree structure.
- **sd2snes.cfg** - Various configuration settings.
- **lastgame.cfg** - List of recently played games.

Supplementary files are required to support enhancement chips with embedded ROMs. These files are not distributed with the firmware. They can be found on the internet.

- **dsp1.bin** - Data and program ROM dumps for DSP1 (optional, for Pilotwings. If dsp1.bin is not found SD2SNES will fall back to dsp1b.bin, breaking the attract mode - Airplane demo)
- **dsp1b.bin** - Data and program ROM dumps for DSP1B (all DSP1 games except Pilotwings)
- **dsp2.bin** - Data and program ROM dumps for DSP2
- **dsp3.bin** - Data and program ROM dumps for DSP3
- **dsp4.bin** - Data and program ROM dumps for DSP4
- **st0010.bin** - Data and program ROM dumps from ST-010
- **cx4.bin** - Data ROM dump from Cx4. This file is supplied with the firmware due to the trivial nature of its content.

# ROM Incompatibility

Any ROM should work (headered, non-headered, or non-interleaved), except the following:

- **Games with BS memory pak slots, other than BS-X BIOS** (e.g. Derby Stallion 96, any Tsukuruu)
- **Sufami Turbo games:**
  - Car Ranger
  - Crayon Shin Chan
  - Gegege No Kitarou
  - Gekisou Sentai Carranger: Zenkai Racer Senshi
  - Poi Poi Ninja
  - Sailor Moon Stars Panic 2
  - SD Gundam Generations: part 1
  - SD Gundam Generations: part 2
  - SD Gundam Generations: part 3
  - SD Gundam Generations: part 4
  - SD Gundam Generations: part 5
  - SD Gundam Generations: part 6
  - SD Ultra Battle: Seven Legend
  - SD Ultra Battle: Ultraman Legend
  - Sufami Turbo hardware
  - Tetris 2+ Bombliss
- **SuperFX games:**
  - Dirt Racer
  - Dirt Trax FX
  - Doom
  - Star Fox 2
  - Star Fox / Starwing
  - Stunt Race FX / Wild Trax
  - Super Mario World 2: Yoshi's Island
  - Vortex
  - Winter Gold / FX Skiing

- **SA-1 games:**
  - Daisenryaku Expert WWII: War in Europe
  - Derby Jockey 2
  - Dragon Ball Z: Hyper Dimension
  - Habu Meijin no Omoshiro Shōgi
  - Itoi Shigesato no Bass Tsuru No. 1
  - Jikkyou Oshaberi Parodius
  - J.League '96 Dream Stadium
  - Jumpin' Derby
  - Kakinoki Shogi
  - Kirby's Dream Land 3
  - Kirby Super Star
  - Marvelous: Mouhitotsu no Takarajima
  - Masters New: Haruka Naru Augusta 3
  - Mini 4WD Shining Scorpion Let's & Go!!
  - Pebble Beach no Hotou: New Tournament Edition
  - PGA European Tour
  - PGA Tour '96
  - Power Rangers Zeo: Battle Racers
  - SD F-1 Grand Prix
  - SD Gundam G NEXT
  - Shin Shogi Club
  - Shogi Saikyou
  - Shogi Saikyou 2
  - Super Bomberman Panic Bomber World
  - Super Mario RPG: Legend of the Seven Stars
  - Super Robot Taisen Gaiden: Masō Kishin - The Lord Of Elemental
- **S-DD1 games:**
  - Star Ocean (unhacked version)
  - Street Fighter Alpha 2 / Zero 2
- **ST-011 games:**
  - Hayazashi Nidan Morita Shougi
- **ST-018 games:**
  - Hayazashi Nidan Morita Shougi 2
- **SPC7110 games:**
  - Far East of Eden Zero
  - Momotaro Dentetsu Happy
  - Super Power League 4
- **OBC1 games:**
  - Metal Combat

BS support is not feature complete (does not simulate a lot of different satellite packet streams) so some BS games might not yet run as intended. Support for some enhancement chips may be added at later date.

# **SD2SNES FAQs**

Coming soon...