EverDrive-64 X7
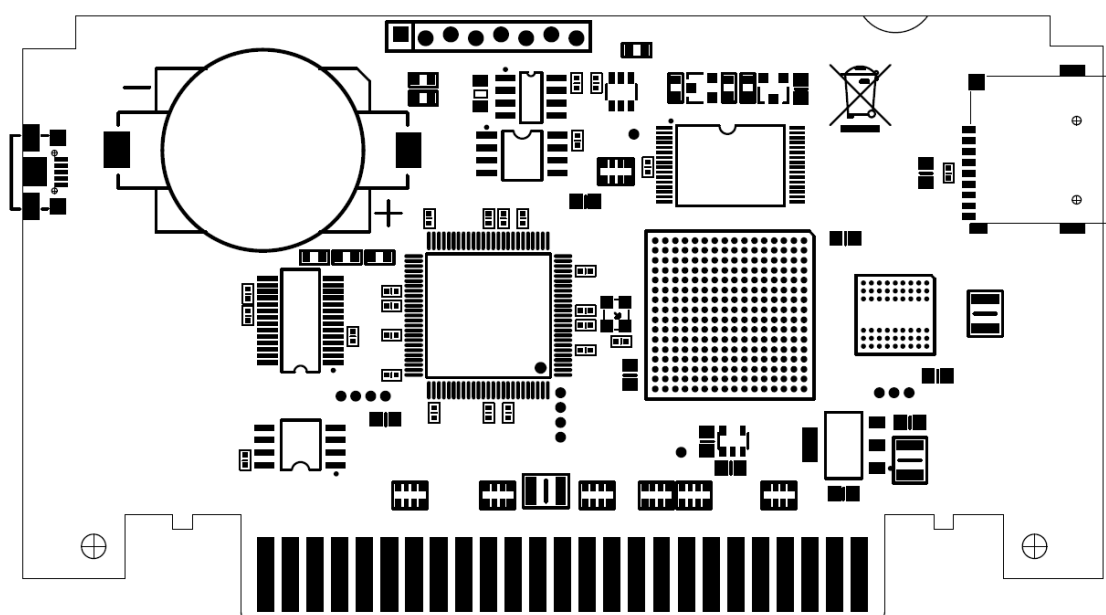
User Manual

## Features

- Cyclone IV FPGA
- 64MB SDRAM
- 128KB battery backed ram
- High quality 4-layers PCB with hard gold surface finish
- USB port for development
- Supports both PAL and NTSC systems
- UltraCIC III with region auto detection
- RTC support
- Fast loading. Speed up to 23 Mbyte/s
- Up to 1024 files per folder
- Supports nes ROM format via built-in emulator
- Gamepak saves support (SRAM, SRAM128Kbyte, EEPROM16k, EEPROM4k, FlashRam)
- GameShark cheats
- IPS/APS patches

Initial setup

- Format SD card
- Download OS-V3.xx.zip from http://krikzz.com
- Unzip OS files to SD card
- Copy ROM files to SD card. ROM files should be located outside of system folder (ED64)
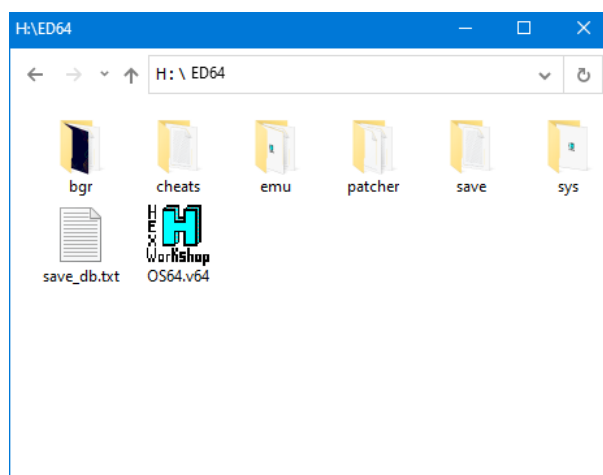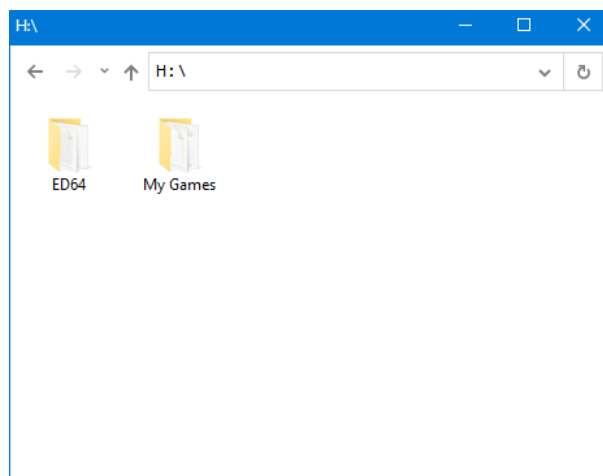
File Manager

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

Upper bar shows current page and total number of pages in the current folder.
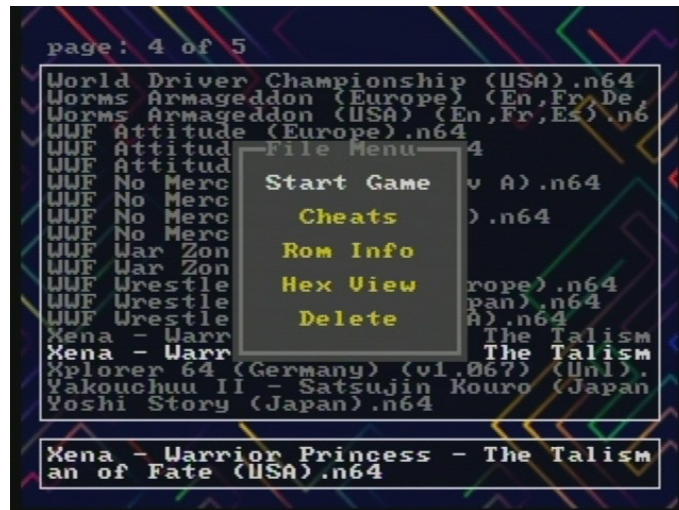Bottom bar shows the full name of selected file.

File Menu

File menu is used for file manipulating on SD card. Menu content is different depending on file type.

Rom file menu
This menu is applied to v64, n64, z64 and ROM file extensions.

Start Game
Cartridge will be configured to play selected game. Right after configuration game will be executed. After reset or power cycle the last selected game can be launched with START button.

Cheats
Edit cheat codes for selected file.

Rom Info
Show ROM configuration: save type, ROM region, checksum, etc.

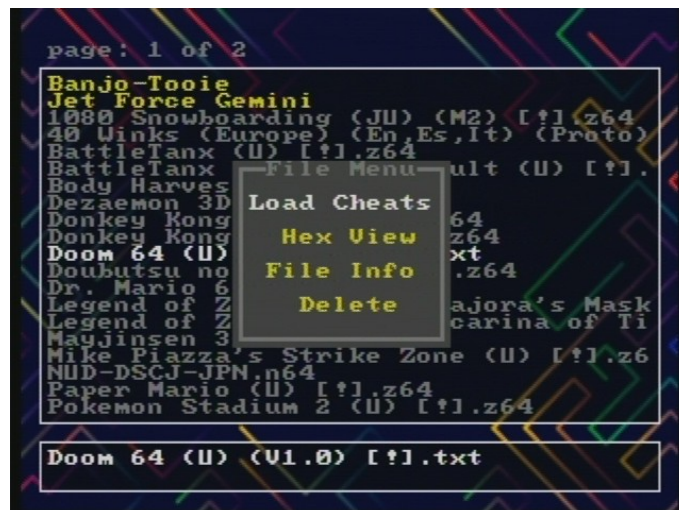**Hex View**
Open selected file in hex viewer.

Delete
Delete 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.

Save-ram file menu

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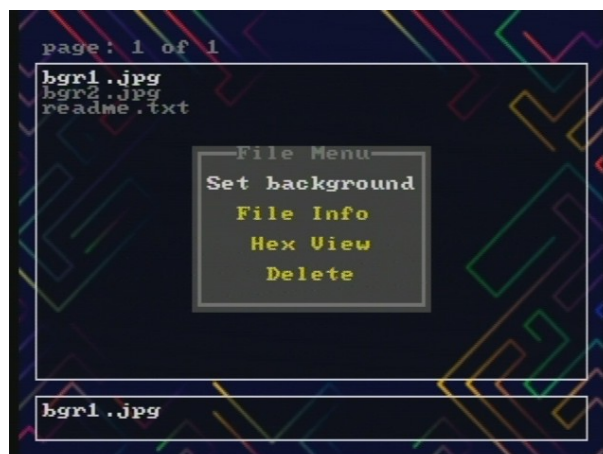

Controller PAK file menu

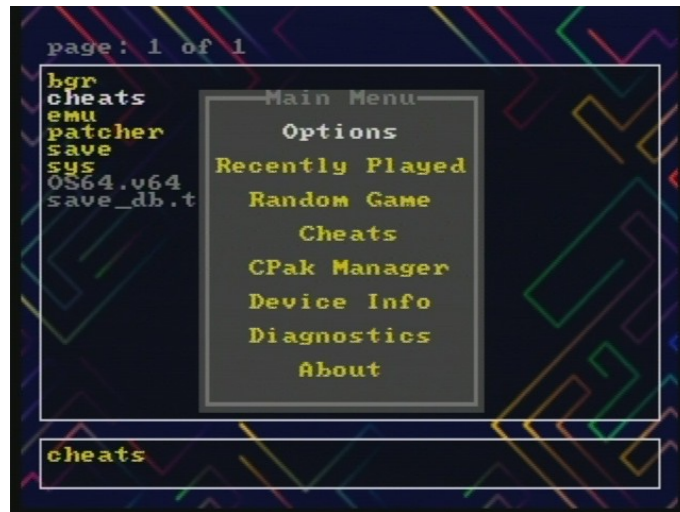Allows to copy data from controller pak to file or visa versa.

Image file menu

Allows to set background from image file. File format should be jpg, 320x240, 150KB max size.
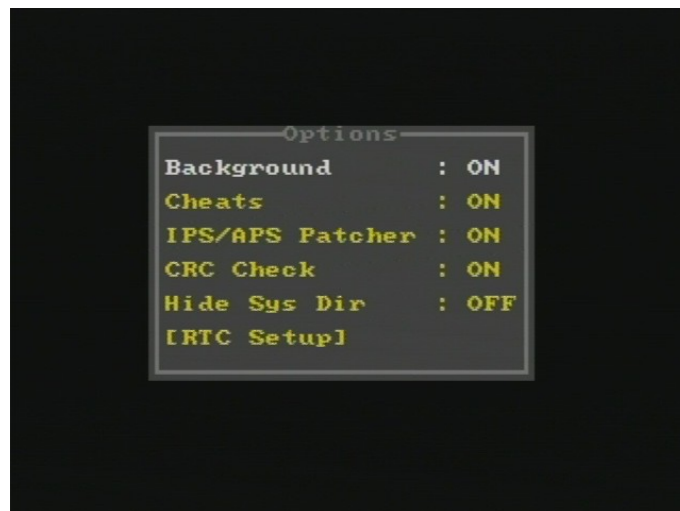
Main Menu

Push Z to open Main Menu.

Options

Options->Background
Switch on/off background image.

Options->Cheats
Switch on/off cheat functions. This function requires expansion pak to be installed.

Options->IPS/APS
Switch on/off automatic ips/aps patcher.

Options->CRC Check
This function checks rom checksum and fix it if incorrect. Console refused to boot ROMs with broken checksum. Increases ROM loading time a bit if enabled.

Options->Hide Sys Dir
Make ED64 folder invisible in file browser.

Options->RTC Setup

Setup system time. It is used for games with RTC support and for save files dating.

Recently Played
List of recently played games for fast access.

Random Game
Run random game. Game seek will begin from currently open folder.

Cheats

Edit cheat codes for the last played game. Bottom bar shows the name of game codes will be applied to. Each code may have description, it is displayed at the top bar. To add description just put some text in txt file right after code or enter it manually in code editor. Each game may have its own set of codes, they are saved in ED64/cheats folder as text file and load automatically when game is played. The file name matches ROM name the codes are related to. Up to 34 codes can be applied at the same time. Alternative way to edit the codes for certain game is file menu, just hit the game in file manager. Cheats also can be loaded from text file selected in file manager. Cheats function requires expansion pak to be installed.
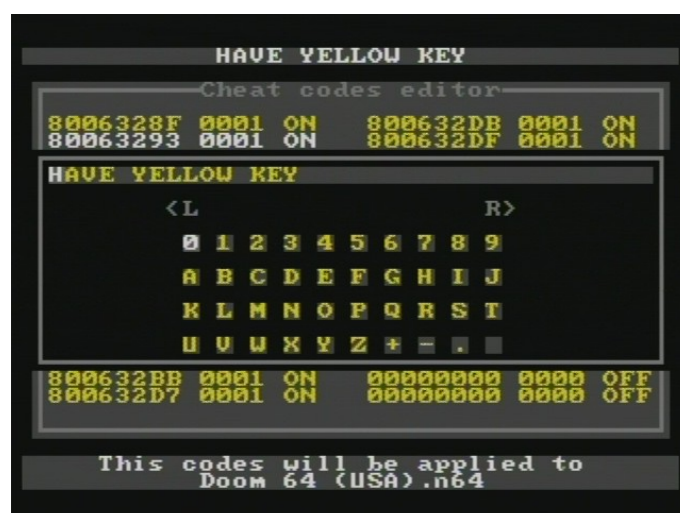
CPak Manager
Copy data from controller pak to the file.
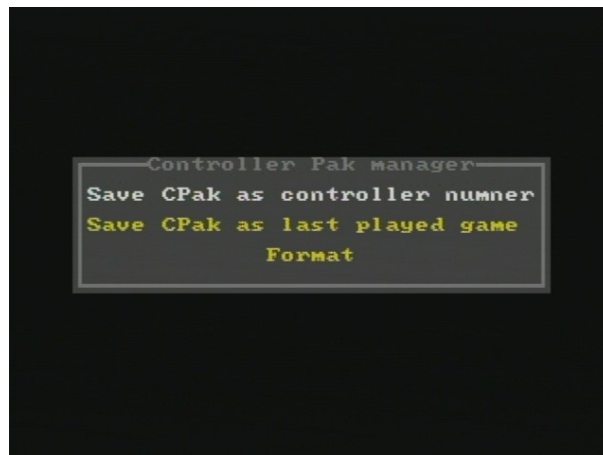
CPak Manager->Save Cpak as controller number
Save data from controller pak to the ED64/save/controller-X.mpk where 'X' matches to the controller number.

CPak Manager->Save Cpak as last played game
Save data from controller pak to the ED64/save/XXX.mpk where 'XXX' matches to the name of last played game.

CPak Manager->Format
Erase all data from controller pak.

Data from .mpk files can be loaded back to controller pak using file menu.

Device Info
Information about the system.

Diagnostics

Diagnostics menu checks cartridge health. All tests should be passed successfully if everything is fine.

Special ROM configuration using save_db.txt

Default ROM settings can be changed in ED64/save_db.txt file.
Setting listed below can be changed:
1. Save type.
2. RTC. Enable RTC function for certain ROM.
3. Specify ROM region as "region free". Allows to use native system region for ROM launch. Can be applied only to the ROMs without region lock.

Configuration records consist of two parts:
1. ROM identificator. It can be ROM ID or CRC HI, both can be obtained in Rom Info menu.
2. Config number. It consists of two digits, first digit specify **save type**, second specify **ROM config** (RTC and region settings). **ROM config** values can be mixed by using addition (1+2=3 for rtc+region). Config number values listed below.

Save types values:
0 - OFF
1 - EEPROM 4k
2 - EEPROM 16K
3 - SRAM
4 - SRAM 768K
5 - FLASHRAM
6 - SRAM 128K

ROM config values:
1 - Force RTC
2 - Region free

Examples:
0xABA51D09=12   Save type=EEP4K, region free, ROM identification using CRC HI
AF=51   Save type=FLASHRAM, RTC, ROM identification using ROM ID

IPS/APS patcher

Built-in auto patcher engine allows to use ips and aps patches without using patching software. ROM stays unchanged on disk but patched in cart RAM.
There two ways for path and ROM association:
1. Patch name should match the ROM CRC HI and patch file should be located in ED64/patcher folder. CRC HI can be obtained in "Rom Info" menu.
2. Patch name should match the ROM name and patch file should be located at the same folder with ROM.

Third party emulators

Cartridge supports using third party emulators for playing games from other platforms. Emulator should be located in ED64/emu folder, file name should match the ROM extension from target platform. For example emulator for nes files should be stored as ED64/emu/nes.v64

Special ROM ID for homebrew devs

Using special ROM ID allows developers to specify ROM setting for their application. ROM ID should be set to 'ED' and then ROM settings can be specified in byte at offset 0x3F. Settings values matches the values in save_db.txt (0x12 for EEP4K+region free).

Development resources

Please visit ED64 repository at github for reference source that can be used by homebrew developers to utilise SD card and USB capabilities via an ED64.
https://github.com/krikzz/ED64

System folder structure

/ED64	system root
/ED64/cheats	Cheat files are located in this folder
/ED64/emu	Emulators
/ED64/patcher	Patch files for ips/aps auto patcher
/ED64/save	All save data are located in this folder
/ED64/sys	Cartridge system files
/ED64/save_db.txt	Special ROM configurations
/ED64/OS64.v64	ED64 OS core

Limitations

- Cheat codes do not work without expansion pak

- ROM region should match console region for best result. PAL ROM on NTSC system or NTSC rom on PAL system will produce not standard video mode, typically it causes color distortions or grayscale image, in some cases no image at all. This limitation is not affect region-free ROMs without region locks (homebrew mostly).

- Menu can display up to 1024 files per folder. Files over this limit will not be displayed.