PCSP DOCUMENTATION

Based on rev 1914

Official Version v0.5.5

Contents

1 Generally

PCSP is a WIP psp emulator for windows.

2 Changelog

2.1 v0.5.5

Fixed issues with VEH. Now emulator crashes a lot less than before

2.2 V0.5.4 (last version until rewrite, released version 04/10/2011)

General

Experimental Dynamic shaders . A lot faster works in a few demos – use it at your own risk
Added VEH handler for win32
New portable fiber implementation for win, linux and macosx 32/64-bit.
GLEW is now used instead of GLEE
Better thread behavior for KernelVsync
Fix a bug with opengl renderer when trying to unbind a shader program never binded

HLE

Implementation of sceRtcSetDosTime ,sceRtcIsLeapYear ,sceRtcCompareTick
Implemented adding of ticks. (11 syscalls)
Fix sceRtcGetCurrentTick()
Fixed sceKernelLibcTime()
Implementation for sceKernelPollSema()
Fixes in KernelEventFlag
added loading of files after resetting emu. (sceKernelLoadExec case)
Improved and refactored module management code into sceKernelModule.
Started implementation of restarting features for PCSP.
Partially implemented sceKernelLoadExec

GE

Partial implementation for CMD_SIGNAL
Fixed pc address and stall address
Added LogicalOperation, corrected StencilTest
CMD_TLEVEL was wrong
Implementation of spline decoding
fix LOD issues in micromachines
fix a bug with DXTn compressed textures

sound

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sceAtrac3plus: source cleanup

2.3 V0.5.2 (released date 05/02/2011)

General

- Fix a bug in audio that was preventing single core cpus to run (now they should work fine)
- Added PRX1-PRX2 decryption. Now you can run encrypted games without the need to provide external decrypted file. You need to enable the Decryptor in settings in order to use it. (Settings->Settings->Hack Settings->Enable Decryptor)

2.4 V0.5.1

General

- added gl_Core : now occlusion_query, vertex_buffer_object and framebuffer_object are now correctly detected to fill core functions if not
- added a software version of BBOX in gl_OcclusionQuery
- correct handling 32-bit overflow of timer seems to fix the "freeze" bug with some games when vsync is ON

2.5 V0.4.0

General

- Fixed a bug in PSF reading.
- Fixed refer ms free size command in sceIoDevctl and implemented a basic Memory Stick manager
- OSK implementation
- sceMsgDialog implementation
- Total rewrite on save system. Now it supports save modes 1,2,3,4,5,8,12,13,14,15,16,17,18,22. List Save and List Load dialogs are working too as well.
- Loader now loads ms0 device in UMD mode
- IoFileMgrForUser getStat now scans for files and dirs as well before return an error
- memstick statfile can now fill scePSPDateTime struct with proper values
- Memory: pcsp was crashing when accessing the end of psp vram
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GE

- NREV implementation was missing for OpenGL version w/ shader
- GE - vertex shader : attempted to get a more accurate shade mapping
- Fixed lighting in many games

- sceDisplay/sceAudio: a new vsync thread which allows to limit fps to 60. No more need for the hacky opengl vsync anymore.

Audio

- Implemented most of sceAudio functions.
- Implemented partial scelibSasCore. Some games now have sound effects some others get bad sound
- Implemented sound output using portaudio API.

2.6 V0.3.0

General

- Fiber support in threadman
- Fixed analogue pad emulation
- Added joystick/joypad support
- Fixed QPspScreen size
- Better way to use QGLFormat
- QPspScreen : now uses QGLWidget instead of QWidget (a.k.a we now use QT's opengl)
- Added screenshot support
- Added argument for being able to open debugger from pcsp-udb
- Added partial save support. Some games can now save their status (puzzle bobble for instance and few more).
- PSF loader rewrite to support proper saves.
- Fixed an old bug in memory card manager (wasn't recongnize kxpoit files correctly)
- Dynamic change between shader and opengl version. From menu option you can enable/disable shaders dynamically while pcsp is running

HLE improvements

- Fixes for Atrac3plus
- correcting sceKernelFreeHeapMemory

New HLE implementations
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sceKernelVolatileMemLock,sceKernelVolatileMemTryLock,sceKernelVolatileMemUnlock implementations
Implemented sceIoDevctrl 0x02025801 instruction
Added scePsmf and scePsmfPlayer basic faking

GE
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-improve loops in Decoder
-texture are better rendered
-added mipmapping support
-added viewport command - compatible with window resizing

-fixed scissor bug so it is compatible with window resizing
-Now compressed textures can use mipmapping as expected
-Fix alignment for CLUT indexed textures
-DrawPrimitives advances vertex or index adddress so we can execute several PRIM after one VTYPE : Skate Park City and Obscure
-Improved Texture caching using a XOR based key because Lemmings and Worms had issues with it
-Added vertex and fragment shaders
-A lot more fixes to opengl and shaders renderers

2.7 v 0.2.0

Full VFPU support (many with some bugs and not optimized)
Added command line parser to pcsp so it can be used with pcsp-xmb and pcsp-udb.
Added a critical message when trying to run the emulator with a CPU without SSE/SSE2 instruction set
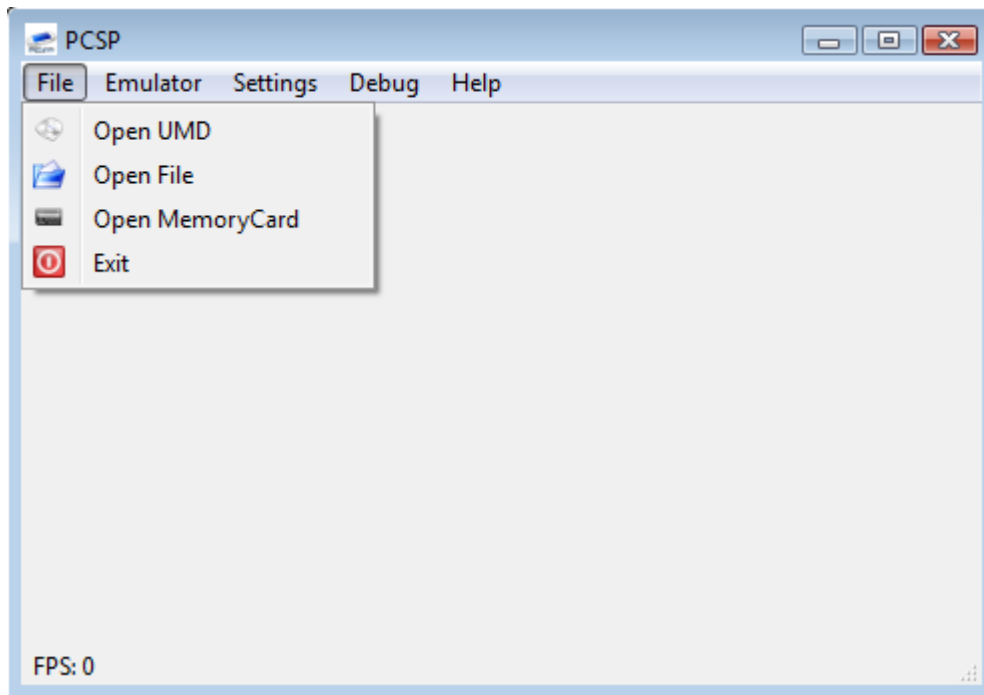-New texture system
  -Now supports correct DXT and other formats that used to be wrong.
   -Also does correct blending, texture states etc.
  -Better clear function.
-Implementation of the NREV ge command (normal reverse)
-Implementation of CMD_XPOS1, CMD_XPOS2 and CMD_XSIZE
-Implementation of sceDisplayAdjustAccumulatedHcount,sceDisplayGetVcount,sceDisplayGetCurrentHcount,sceGeEdramGetAddr
-Fixed sceGeEdramGetSize
-Implementation of sceImposeGetBatteryIconStatus .
-New IO system
  -Supports directory reading , raw sector reading , correctly memcard IO operations and a lot more fixes
-Fixed some alloc/dealloc mismatches
-Intergrated debugger
  -Logger/Stdout/Stderr tabs in Debugger
  -Sysmem viewer
  -Added window menu so each dock window can toggleview
-Implementation of sceKernelGetSystemTime , sceKernelSysClock2USec
-Correct implementation for sceKernelGetSystemTimeLow,sceKernelGetSystemTimeWide ,sceKernelUSec2SysClock
-Complete rewrite of Kernel VPL and Kernel FPL HLE instruction set.
-Implementation of sceImposeSetLanguageMode,sceImposeGetLanguageMode
-Implementation of sceIoDevctl 0x02025806 and 0x02425823 cmd commands
-Always On Top option in menu
-Added messageboxes for encrypted games (pcsp will report now if you try to load an encrypted game).
-No more flickering when interacting with menus
-A workaround to fix memory allocation issues. Pcsp should now work with aero enabled.
-More logging to Attrac3 HLE .No implementation at the time
-Rewrote detection of Boot files.They now report ok. (some games used to reported that they are encrypted and they weren't)

2.8 v 0.1.1

-Added CRT libs with release. That will fix problems with people that doesn't have vc regist installed on their pc.
-Fixed the issue with controller image doesn't appear in config dialog
-A better way to handle fakesyscalls . For issue 14 :
http://code.google.com/p/pcsp/issues/detail?id=14 . Enabling hle misc will give the unknown NID number.
-Added dummy Kernel_Library module . Tested with Resistance game
-Implemented the following scePower module functions:
-scePowerGetCpuClockFrequency
-scePowerGetCpuClockFrequencyInt
-scePowerGetBatteryFullCapacity
-scePowerIsLowBattery
-scePowerGetBusClockFrequencyInt
-scePowerGetLowBatteryCapacity
-scePowerSetBusClockFrequency
-scePowerGetBatteryChargingStatus
-scePowerGetBatteryRemainCapacity
-scePowerGetBatteryLifeTime
-scePowerSetCpuClockFrequency
-scePowerSetClockFrequency
-scePowerGetBatteryVolt
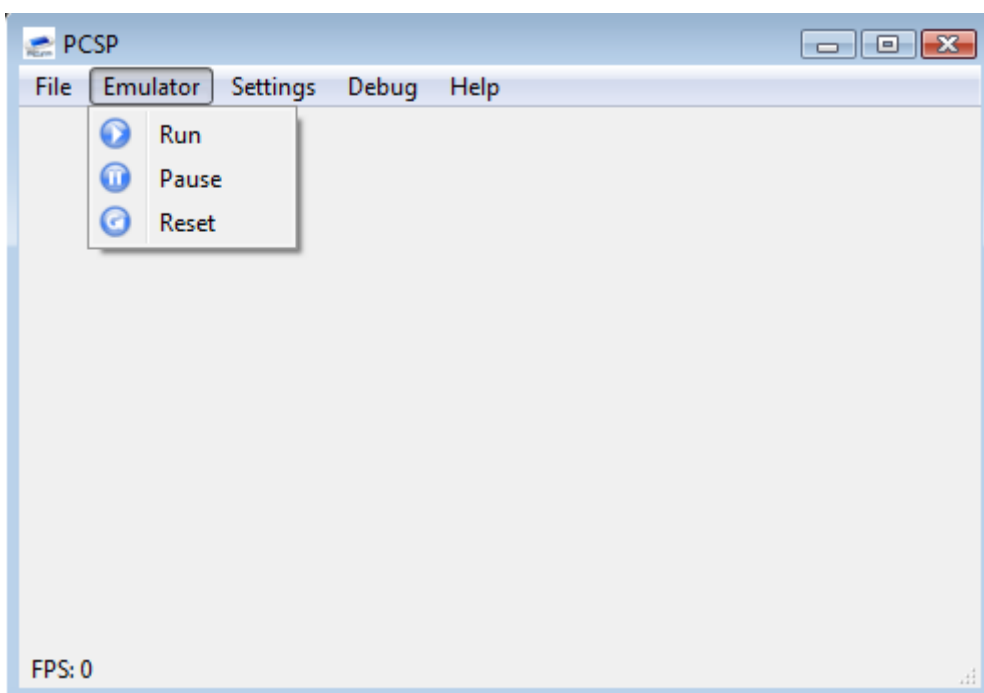-scePowerGetBacklightMaximum
-scePowerGetBatteryTemp
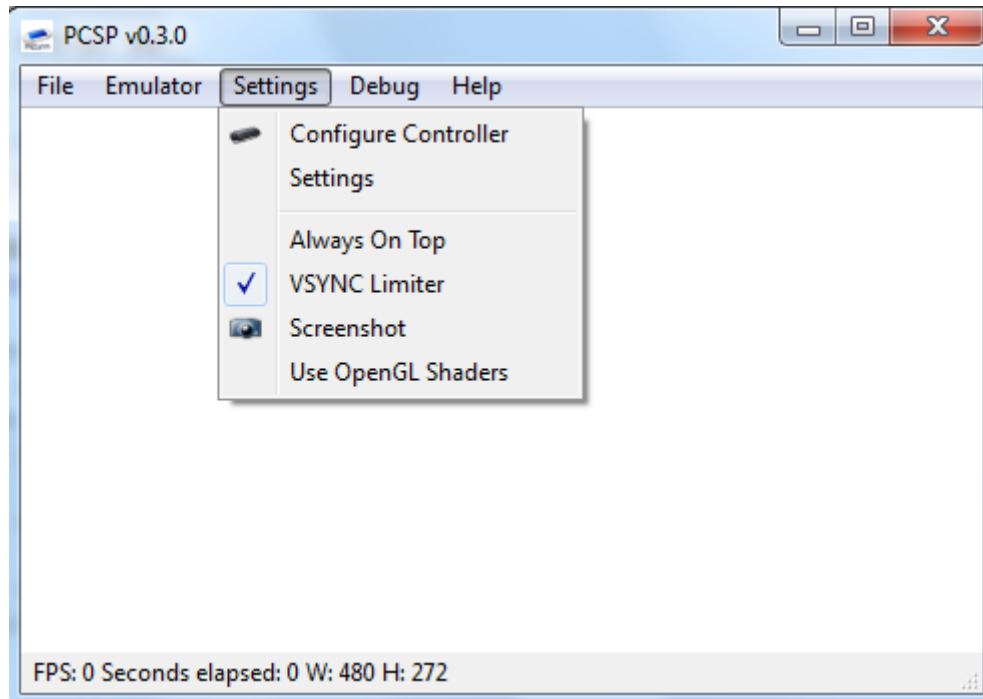
3 Configuration

3.1 General Configuration

File menu has generaly 4 options.
1. Open UMD option for opening UMD files . Pcsp supports iso and cso images
2. Open File option. Used for opening independent files. Usualy it is NOT the recommended way to open files
3. Open MemoryCard. Opens the memory card broswer. The use of it explained below
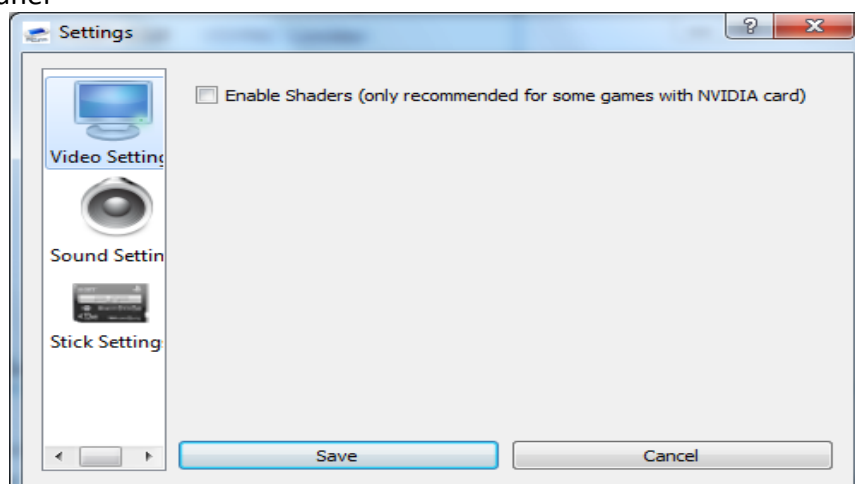4. Exit. Closes pcsp

Emulator menu has 3 options.

1. Run option. After something is loaded from File menu then run is used to start emulation
2. Pause option. You can pause a game
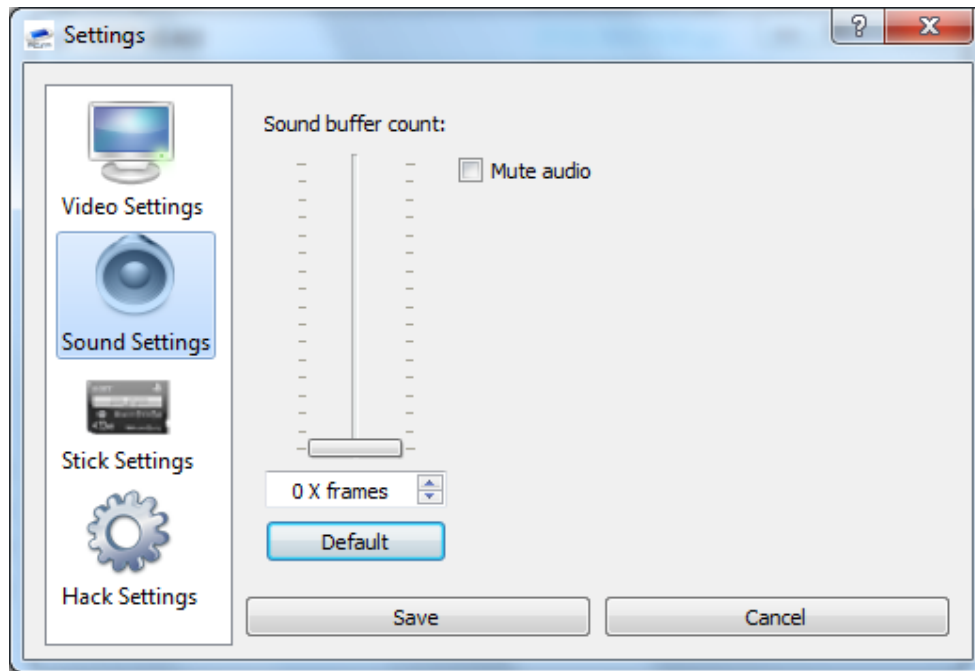3. Reset option. NOT implemented for v0.2.0

Settings menu has 2 options

1. Configure Controller. Opens the controller dialog for configuring keys
2. Settings : open Settings options
3. Always On Top: Keep windows always on Top. Useful when you have pcsp running with debugger On.
4. VSYNC Limiter. If a game runs too fast you can enable it so OpenGL can sync to 60fps
5. Screenshot: Take screenshot of the current screen
6. Use Opengl Shaders: Dynamic change between opengl and shaders renderers. Some games works better with opengl and some games works better with shaders.
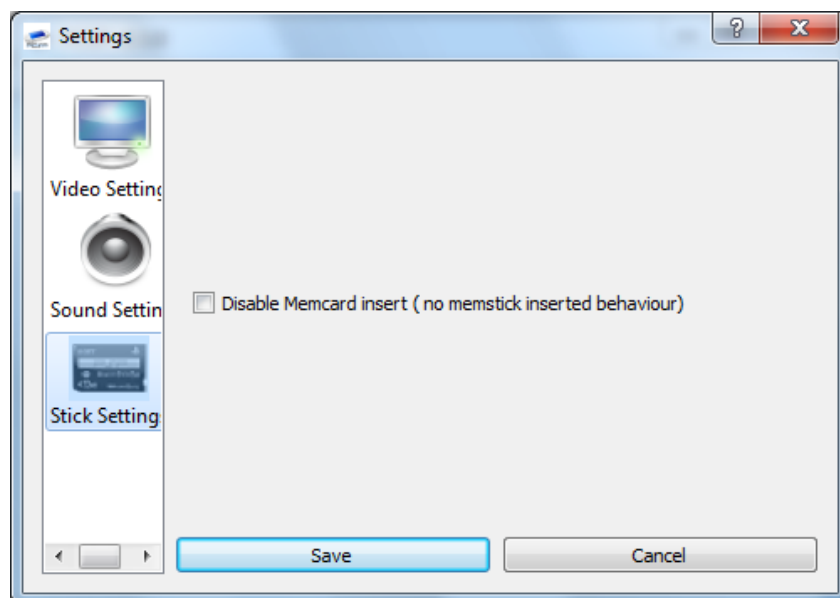
Settings Panel

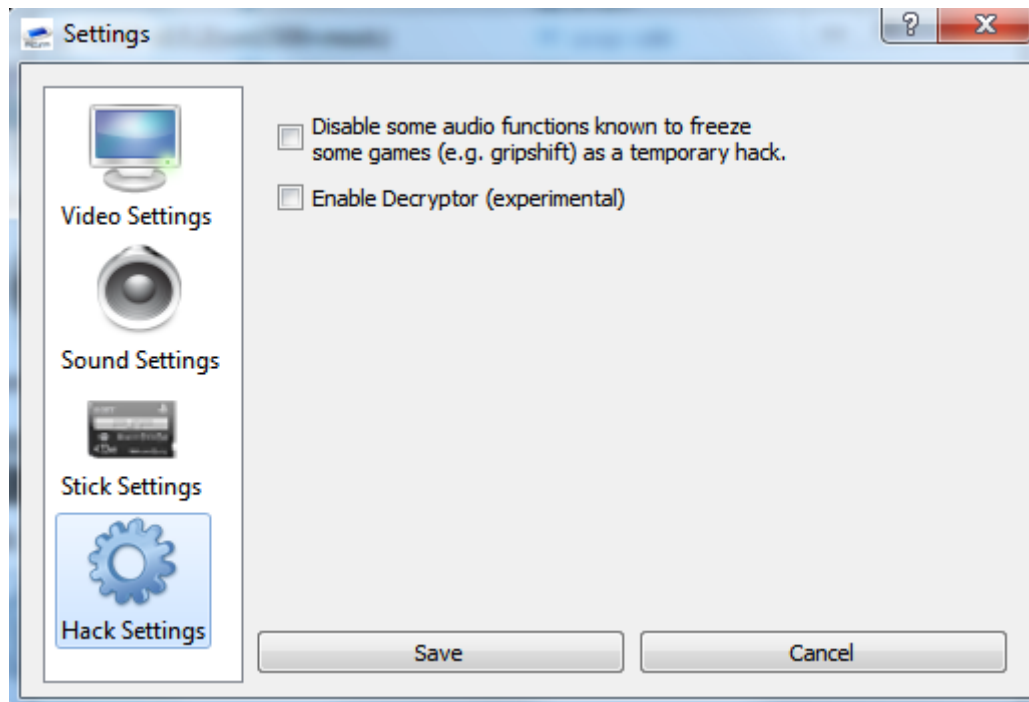Enable shaders: same effect like using option 6 from previous menu

Sound buffer count : increase it if you get crappy sound. The normal value for getting nice sound with vsync on is 3X or 4X.
Mute audio: disable sound output. Useful if sound is crappy

Disable Memcard insert : Make emu believes that there isn't a memstick inserted. Useful for games that pcsp doesn't support saving. It can make games process further.
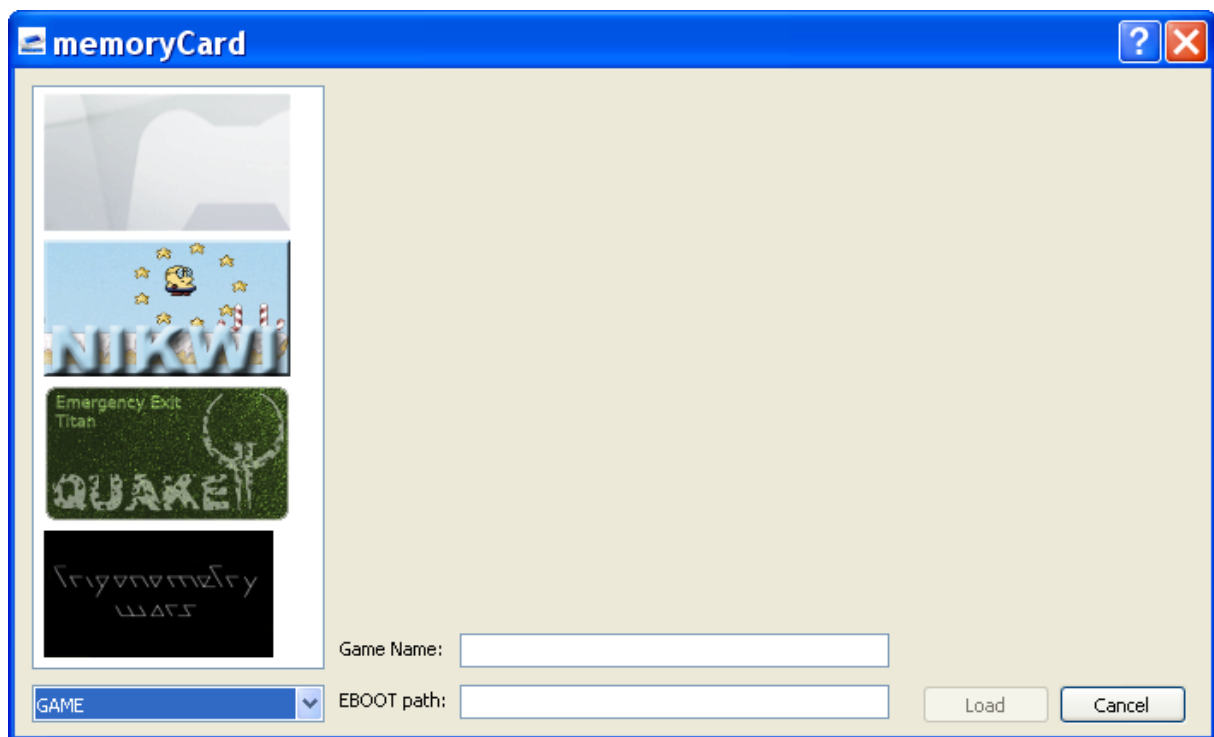
Disable audio : Some games doesn't like pcsp's sceAudio functions : In v0.4.0 some games will require this option on or off. (e.g gripshift)

Enable Decryptor : It allows to run encrypted games without the need to decrypt them (they decrypted from emulator on fly). Still experimental use it on your own risk.

3.2 Memory Card Manager

Memory card Manager simulates the XMB browser of PSP firmware in order to run homebrew games and demos. The use of it is required since IO needs to parse the path of the external files in order to work correctly (e.g if a demo has an external file e.g a texture.png it will not be able to load it correctly if demo doesn't load from memory card manager).

Memory card manager requires the following path structure.

pcsp.exe

ms0 folder

--PSP folder

---GAME folder

Demos and homebrew should be put there. Each demo should be in the following structure

Demoname/EBOOT.PBP

For example

ms0/PSP/GAME/testdemo/EBOOT.PBP is a valid demo path.

It is also able to create more GAME folders in ms0/PSP/ in order to organize categories.

Folders is necessary to start with GAME (any other name will be ignored)

Valid names:

GAMEsdk

GAME1

GAME2

The following will not work

game1

game2

somethingelse

Choose the category

Boot path