



PSP Tool

User's Manual

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1. Introduction

PSP Tool is a multi-purpose application designed for the PlayStation Portable console to perform various general management functions with the console. One of the main benefits of this software which is not available in most other homebrew applications is the ability to extract the IPL from the Memory Stick, this is useful if the IPL is not obtainable through a file and you wish to make a full backup of your Magic Memory Stick. An example of when this is beneficial is extracting the Datel Action Replay PSP IPL which comes pre-injected with the Memory Stick included with the product. This application allows the user to extract that IPL and use it with another Memory Stick or for backup in case the Memory Stick becomes corrupt.

This application currently has a number of known problems which I have been unable to fix. These problems are listed in a later section of this documentation, if anyone can assist in fixing these problems please e-mail me at the address included in this documentation, private message me or post a reply on a forum which I have posted this application. Any assistance provided in fixing the issues will earn you a place in the contributors list in the application.

2. Feature Summary

PSP Tool allows you to do the following:

- Backup and Restore the IdStorage of the PSP
- Check the IPL injected on the Memory Stick or a file located on the Memory Stick
- Check, Backup, Restore and change the battery EEPROM
- Connect various devices through a USB cable
- Create a checksum of the IPL injected on the Memory Stick or an IPL located on the Memory Stick
- Create a variety of different Magic Memory Sticks
- Erase the entire IPL space of the Memory Stick
- Extract the IPL injected on the Memory Stick to a file
- Format the Memory Stick
- Inject a variety of included IPLs or an IPL from a file to the Memory Stick

3. Recommended System Requirements

- Custom Firmware 3.40 OE-A to 5.00 M33-4 (not compatible with Sony Official Firmware)
- A correctly formatted Memory Stick with 512MB~ of free space to store the application, temporary files and extracted data. Less space may be required if not all features are utilized ie. Magic Memory Stick Creation.

4. Feature Descriptions

USB Connection

Allows for various devices to be connected through a USB cable. This function will only mount the Memory Stick when using a firmware through Time Machine or a firmware which does not contain the Dark_AleX custom firmware USB module. The devices which can currently be connected through USB mode are:

- Memory Stick
- Flash 0
- Flash 1
- Flash 2
- Flash 3
- UMD Disc



Memory Stick Options

This menu contains the following further choices:

- **Inject IPL to Memory Stick**
Allows for injection of a variety of IPLs which can then be used to boot the PSP into service mode. The following IPLs can be injected: Time Machine IPL, Boosters Multi IPL, z3ros0ul Single IPL, z3ros0ul Multi IPL, Classic Pandora IPL and an IPL from a file on the Memory Stick.
- **Erase IPL from Memory Stick**
This function erases the entire reserved IPL area. Once this data has been erased it cannot be recovered.
- **Check Memory Stick Information**
The features available here allow for verification of IPLs, the amount of reserved IPL space and advanced information about the Memory Stick.
- **Extract Memory Stick Data**
Using these options you can extract the Memory Stick IPL based on detection of the IPL (or if the IPL is unknown approximate size detection), extract the entire IPL space or extract the MBR of the Memory Stick to a file.
- **Format Memory Stick**
This function allows you to format and repartition the Memory Stick to allow for IPLs up to 1MB to be injected into the Memory Stick. Once the Memory Stick has been formatted the game will exit to reduce the risk of system instability as the EBOOT of the application will no longer be available and is needed for many of the functions to work correctly.
- **Create Magic Memory Stick**
Allows for creating a number of different Magic Memory Sticks. This feature is explained in more detail further on in the manual.



Battery Options

This mode allows for manipulation of the battery EEPROM, the functions included are:

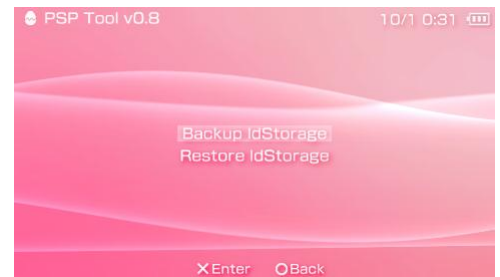
- **Check Battery Serial**
Shows the EEPROM serial of the battery and the mode which is associated with that serial.
- **Backup Battery EEPROM**
Extracts the entire battery EEPROM to ms0:/eeprom.bin.



- **Restore Battery EEPROM**
Restores the entire EEPROM file from ms0:/eeprom.bin to the battery.
- **Restore Battery Serial**
Restores the serial of the EEPROM from the file ms0:/eeprom.bin to the battery.
- **Convert to Normal Battery**
Changes the serial of the battery to a randomly generated serial (excluding 0x00000000 and 0xFFFFFFFF).
- **Convert to Service Mode Battery**
Changes the serial of the battery to 0xFFFFFFFF to unlock service mode.
- **Convert to AutoBoot Battery**
Changes the serial of the battery to 0x00000000.

IdStorage Options

WARNING: Restoring IdStorage keys from another PSP console has the potential of permanently bricking your PSP console or result in loss of almost all function. Invalid IdStorage keys can also cause issues with the PSPs Serial, MAC address, UMD, WLAN and region. The author of this software nor any other developer cannot be held liable for your actions and you agree to use these functions at your own risk knowing that it may be impossible to restore your IdStorage keys once they have been altered. You should also use another application to create a backup of your entire NAND.



This mode allows for backing up the consoles IdStorage keys to a single file on the Memory Stick. This file can later be restored to fix various issues which may arise due to corruption of the IdStorage keys. This size of this file is also checked to help ensure safety and a checksum is appended to the end of the file to ensure the file was copied correctly to the Memory Stick however the user has the option to override this safety measure.

Magic Memory Stick Options

The functions available in this mode allow you to create a variety of different Despertar del Cementerio Magic Memory Sticks to allow for installation and booting from a service mode enabled console. Before a Magic Memory Stick can be created the custom theme must be disabled. All of the Magic Memory Stick installers can be loaded using the Time Machine IPL and during creation of the Magic Memory Stick you will be prompted to inject the Time Machine IPL and set the battery serial to 0xFFFFFFFF if they are not already. The following Magic Memory Sticks can be created:



- **1.50 Update Flasher (Original Pandora)**
This Magic Memory Stick software can install any Official Firmware between 1.50 and 2.71 onto all PSP-1000 units.
Requires a 1.50 update EBOOT at the root of the Memory Stick called UPDATE.PBP. After creation that EBOOT can be replaced with any update EBOOT between 1.50 and 2.71.
- **Despertar del Cementerio v3 (3.71 M33-2)**
This firmware is incompatible with some Memory Stick IPLs and will not boot if they are injected in the Memory Stick and the battery serial is set to 0xFFFFFFFF.
Requires 150.PBP, 340.PBP, 371.PBP at the root of the Memory Stick. 150.PBP and 340.PBP can be deleted after creation as they are not needed for the restoration process.
- **Despertar del Cementerio v4 (3.80 M33-5)**
This firmware is incompatible with some Memory Stick IPLs and may not boot if they are injected in the

Memory Stick and the battery serial is set to 0xFFFFFFFF.

Requires 150.PBP, 340.PBP, 380.PBP at the root of the Memory Stick. 150.PBP and 340.PBP can be deleted after creation as they are not needed for the restoration process.

- **Despertar del Cementerio v5 (3.90 M33-3)**

Requires 150.PBP, 340.PBP, 390.PBP at the root of the Memory Stick. 150.PBP and 340.PBP can be deleted after creation as they are not needed for the restoration process.

- **Despertar del Cementerio v7 (4.01 M33-2)**

Requires 401.PBP at the root of the Memory Stick.

- **Despertar del Cementerio v8 (5.00 M33-4)**

Requires 500.PBP at the root of the Memory Stick.

5. Support Information

Thanks

Chilly Willy: The IdStorage backup and restore functions are based on his IdStorage Manager.

cory1492: The battery functions are based on his Open Source Pandora Battery Tool.

Dark_AleX: Created the VLF library, custom firmware, Time Machine, Despertar del Cementerio and is the PSP developer constantly working to bring us freedom in using our PSPs.

Hellcat: The Memory Stick format functions used are based on the format functions used in Pandora Installer.

RainMotorsport: Helped me implement and fix issues regarding the dumping of the IPL from the Memory Stick and the features of his application formed the basis of the IPL functions of this application.

Team C+D: The amazing work of each individual of this group was the basis of probably the biggest exploit ever found in the PSP and formed the basis of all of the Pandora software which has in turn led to most PSPs being able to run custom firmware without Sony being able to patch this exploit in any future updates of their firmware.

Torch: Helped me correct issues which caused corruption of the Memory Stick when injecting an IPL larger than the reserved space.

Frequently Asked Questions

Q: This software does not create a full dump of my IPL?

A: Your IPL may have a blank block (4,096 bytes) within the IPL which causes the application to stop dumping it. Please send the IPL to my e-mail address so I can add detection of the IPL to the next release or send me a checksum of the IPL, the name of the IPL and the original size of the IPL.

A2: Use the second dump method to dump the entire IPL space.

Q: The application freezes when dumping/injecting/erasing/checking the IPL?

A: Your Memory Stick may not be formatted correctly please reformat your Memory Stick using MSPFormat.

Q: The application freezes when I try to use a function or the function does not work?

A: There are a number of plugins which are incompatible with the software and interfere with a number of functions or prevent the software from working at all.

Q: This software does not detect my IPL?

A: Your IPL may not be the size of a full block (4,096 bytes).

A2: The application may not have a definition for the IPL please send the IPL to my e-mail address so I can add detection of the IPL to the next release or send me a checksum of the IPL, the name of the IPL and the original size of the IPL.

Q: What is the IPL?

A: The IPL is the startup process of the PSP, when using a Memory Stick injected with an IPL and a battery with the serial 0xFFFFFFFF the PSP can be booted into service mode allowing for the installation of custom firmware and unbricking of a PSP console.

Q: Can this application extract the Datel Action Replay IPL from a Memory Stick?

A: Yes it can, the IPL has also been tested with Memory Sticks of different brands and sizes and has been compatible, however the user must still have Official Firmware and a PSP-1000 unit or PSP-2000 unit without a TA-088v3 motherboard and a compatible battery.

Q: The application detects that I have sufficient space to inject an IPL but when I attempt to inject that IPL I get an error saying there is not enough reserved sector space, why?

A: When the IPL is injected it must be written in blocks of 512 bytes and therefore if the IPL size is not a multiple of 512 it is rounded up.

Q: The application keeps corrupting my Memory Stick when I inject an IPL?

A: This issue should not arise due to the reserved IPL space being verified before injecting an IPL however if it does please use MSPFormat to format the Memory Stick and try injecting the IPL again.

Q: The application freezes on load and my console powers off after a few seconds?

A: This application requires a large amount of free RAM and too many plugins in game mode can cause a crash.

A2: Your firmware may not support PSP Tool please update to a custom firmware which is compatible.

Q: I created a Magic Memory Stick, installed the firmware and now my PSP will not boot?

A: DC3 and DC4 Magic Memory Sticks are not compatible with some IPLs including the Time Machine IPL and if the battery serial is set to 0xFFFFFFFF and one of these IPLs are injected onto the Memory Stick the PSP will not boot. To fix this boot the PSP with the battery out using the AC adapter and either change the battery serial, inject a compatible IPL or install a firmware compatible with the IPL.

Q: Before I updated PSP Tool everything worked fine but now errors are appearing or the application crashes?

A: Once of the PRX modules might have been modified but the size of that PRX may not have changed. The PRX files are only overwritten if they are not the same size as the once stored in the EBOOT to increase the life Memory Stick and still make it only necessary to copy one file to the Memory Stick. The simplest way to fix this error is delete the PRX files in ms0:/PSP/GAME/PSP Tool.

A2: There may be an incompatibility with your PSP model, please let me know about this.

Q: Is it possible to change the wave colours which are shown?

A: Yes. To change the wave colours first design the waves you wish to use (each wave must be a 6,176 bytes bitmap and the total file size must be 5,237,248 bytes or less which is equivalent to 848 different wave colours, obviously the larger the wave file the longer it will take to change the background however.) next extract the PSAR section of the EBOOT (using PBP Packer, a hex editor or another application). Now replace the background.bmp file in the ZIP archive with your newly created one and repack the EBOOT.

A2: If you don't wish to manually pull the EBOOT apart to change the wave colours you can press SQUARE while using the application to change to a different random wave colour. You can also toggle between a random flash0 wave or a random wave in the ZIP archive by holding down the L trigger before pressing square. To disable the randomization of the colours and use the current system wave colour simply hold down the L trigger while booting the application.

Known Problems and Issues

- Extracting IPLs with blocks of blank data larger than 4,096 bytes within the IPL causes the application to stop dumping the IPL, to dump the full IPL in this case you must currently use the Extract Entire Memory Stick IPL Space option.

- I haven't added detection of all of the known PSP motherboards as I am unsure what the Tachyon and Baryon versions are of some motherboards.
- The following plugins are incompatible with PSP Tool:
RemoteJoyLite: Causes major issues with most of the functions of the software.
ScreenShotPNG_Speady_Plugin: Prevents the use of USB connection and prevents the plugin from saving screenshots.
TweakDISPLAY: USB connection does not work.

Change Log

0.8 (Saturday, 10 January, 2009)

- Added: Creation of a variety of the following Magic Memory Sticks: DC3, DC4, DC5, DC7, DC8 and the original 1.50 Update Flasher by Team C+D.
- Added: A Memory Stick format function to increase the amount of available IPL writable space to 1,024 KB (based on Pandora Installer by Hellcat).
- Added: Customizable and randomized wave colour.
- Fixed: Multiple minor alterations and fixes.
- Fixed: Crash when trying to use any of the flash devices over USB under DC.
- Other: Files are now stored compressed in a zip archive contained within the PSAR section of the EBOOT.
- Other: Sources are no longer included to reduce file size.
- Updated: IdStorage keys are now saved and restored to and from a single file and the integrity of the file is validated before restoration.
- Updated: Updated the information shown in the System Information panels.

0.7 (Wednesday, 26 November, 2008)

- Added: Options to check, change, backup and restore the EEPROM of the battery (based on Open Source Pandora Battery Tool by cory1492).
- Added: IdStorage backup and restore options (based on IdStorage Manager by Chilly Willy)
- Added: System information panel.
- Fixed: If the IPL was unknown it was not shown to be unknown if various IPL functions were performed prior to checking the IPL.
- Fixed: Issue injecting an IPL from a file if the file was changed through the USB connection prior to injecting the IPL.
- Fixed: Improved detection of IPLs smaller than 4,096 bytes.

0.6 (Tuesday, 18 November, 2008)

- Added: Option to extract Memory Stick MBR.
- Added: Detection of available IPL space and Memory Stick information (thanks to Torch).
- Added: Option to extract entire IPL space from Memory Stick (thanks to Torch).
- Fixed: Bug which caused corruption of Memory Stick when injecting an IPL larger than the reserved space (thanks to Torch).
- Fixed: Entire IPL Area is now erased from the Memory Stick (thanks to Torch).
- Fixed: Issue detecting injected IPLs smaller than 4,096 bytes.
- Fixed: The IPL size is only rounded up to the nearest multiple of 512 if it is not already a multiple of 512.
- Other: PRXs are now stored internally for easier installation of application.
- Other: Reverted IPL injection back to style from 0.4.

0.5 (Tuesday, 11 November, 2008)

- Added: Added VLF (XMB) style interface.
- Added: USB Connection of Memory Stick, Flash 0, Flash 1, Flash 2, Flash 3 and UMD Disc.

- Fixed: Minor bug fixes and changes.
- Other: Removed the last 4,096 blank bytes from the Time Machine IPL to reduce size.

0.4 (Tuesday, 4 November, 2008)

- Fixed: Issue injecting ms0:/ipl.bin twice in the same session.
- Fixed: IPL extraction for unknown IPLs.
- Other: Multiple minor alterations.

0.3 (Saturday, 1 November, 2008)

- Added: Support for injecting an IPL from ms0:/ipl.bin.
- Added: Support for injecting Boosters Multi IPL, z3ros0ul Multi IPL and z3ros0ul Single IPL.
- Added: Detection of 8 IPLs.
- Added: Another method of extracting IPLs based on detection of the IPL.
- Added: Option to create a checksum of the first block (4,096 bytes) of the injected Memory Stick IPL.
- Added: Callbacks are now created to allow for exiting the application via the HOME button.
- Added: Support for erasing the IPL from the Memory Stick.
- Fixed: Increased accuracy of IPL dumps.

0.2 (Friday, 31 October, 2008)

- Added: Basic menu for navigating available operations.
- Added: Support for injecting Time Machine IPL and Classic Pandora IPL.
- Fixed: Now seeks directly to the IPL instead of reading rubbish data before dumping the IPL (thanks to Rain).
- Fixed: Increased accuracy of IPL dumps (thanks to Rain).

0.1 (Saturday, 21 October, 2008)

- Other: Initial Release.

Warranty Information

This software is distributed “as is”. No warranty of any kind is expressed or implied. You can use it at your own risk. The authors and the copyright holder will not be liable for data loss, damages, loss of profits or any other kind of loss while using or misusing this software. It is important to carefully read and understand the use of the functions as some functions if used incorrectly can brick the PSP console and the use of any homebrew application is against the End User License Agreement of the Sony Firmware and will void the consoles warranty.

Contact Information

If you are experiencing difficulties with any aspect of this software please ensure that you have read and understood the contents of this user manual and attempted re-installing the software before contacting technical support for further help.

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