



Memory Stick Utility

Table of Contents

1. Introduction3

2. Feature Summary.....3

3. Recommended System Requirements.....3

4. Feature Descriptions4

Inject IPL to Memory Stick4

Erase IPL from Memory Stick4

Check Current Memory Stick IPL.....4

Extract Current Memory Stick IPL.....4

5. Support.....4

Frequently Asked Questions4

Known Problems and Issues5

Contributors and Thanks.....5

Change Log.....6

Warranty Information.....6

Contact Information.....6

1. Introduction

Memory Stick Utility is a multi-purpose application designed for the PlayStation Portable console to perform various actions with the IPL of the Memory Stick. One of the main benefits of this software is it allows users to extract the IPL from the Memory Stick, this is useful if the IPL is not obtainable through a file. An example is the Datel Action Replay PSP 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.

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. I have also included the source code of this application for reference in assisting me fix the issues or for use in your own application. If you are to use any source in your own application it would be greatly appreciated. Any assistance provide in fixing the issues will earn you a place in the contributors list.

2. Feature Summary

Memory Stick Utility allows you to do the following:

- Inject a variety of included IPLs or an IPL from a file to the Memory Stick
- Erase the IPL injected on the Memory Stick
- Check the IPL injected on the Memory Stick or a file located on the Memory Stick
- Create a checksum of the IPL injected on the Memory Stick or a file located on the Memory Stick
- Extract the IPL injected on the Memory Stick to a file

3. Recommended System Requirements

- Custom Firmware 5.00 M33-3 (not compatible with Sony Official Firmware)
- A correctly formatted Memory Stick with 10MB~ of free space to store the application and extracted IPL

4. Feature Descriptions

Inject IPL to Memory Stick

Inject IPL to Memory Stick allows for a variety of included IPLs or an IPL from a file on the Memory Stick to be injected to the IPL sector of the Memory Stick. The IPLs which are included are:

- Time Machine IPL
- Boosters Multi IPL
- Z3ros0ul Single IPL (Sleep Fix)
- Z3ros0ul Multi IPL (Sleep Fix)
- Classic Pandora IPL

Erase IPL from Memory Stick

This function removes the IPL currently injected to the Memory Stick. This may not remove the whole IPL as it stops once it reaches a block (4,096 bytes) of blank data. This will however remove all traces of most IPLs. The only presently known IPL which won't be completely erased is the Pandora IPL, currently only the first 12,288 bytes will be erased. This is due to the blank block of data being included after the first 12,288 bytes of the IPL. It is important to note that a deleted IPL cannot be recovered and you should always extract the IPL before you erase it.

Check Current Memory Stick IPL

This function reads the first block (4,096 bytes) of the currently injected IPL generates a SHA1 hash of those bytes, compares that hash to an array of pre-computer hashes which are associated with a name and size of the IPL and displays this information on the screen, this function is also used when extracting the IPL to help ensure a more accurate IPL is extracted from the Memory Stick. IPLs which are less than 4,096 bytes will not be able to always be correctly detected for a number of reasons these are, the IPL is not erased before injecting a new IPL, when an IPL is injected some extra data is written from memory to the IPL section to allow for the IPL to be written.

Extract Current Memory Stick IPL

This function extracts the IPL using a number of methods, these include:

- Reading the IPL one block (4,096 bytes) at a time until either a blank block is reached or the amount of extracted data is 2MB in size (this is to help reduce the chance of the PSP crashing).
- Extracting a specific number of bytes all at once based on the IPL which was detected.

5. Support

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.

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: 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 with a TA-088v3 motherboard, the IPL is also packaged with Memory Stick Utility and can be injected without a dump of the IPL.

Known Problems and Issues

- Erasing the IPL from the Memory Stick may not work as intended, it may delete too little data (Classic Pandora IPL) or too much data if the application cannot find a blank block (4,096 bytes).
- This application cannot correctly detect IPLs which are smaller than one block (4,096 bytes) (z3ros0ul Single IPL), this is due to the checksum being created on the first block (4,096 bytes) of the IPL. This would not be an issue if the extra data injected was blank instead of from memory.
- Extra data is written from memory when injecting an IPL, this is caused by the IPL having to be a multiple of 512 bytes and the lack of my knowledge to inject blank data.

Contributors and Thanks

RainMotorsports aka Rain

He helped me remove the need to read rubbish data before the IPL, assisted me in creating more accurate IPL dumps by reading the IPL sector in block of 4,096 bytes instead of reading a pre-defined number of bytes. He also gave me ideas of features to include in my application from his application. He has also created an application with ThievingSiz which can do a number of things with the IPL called [Rain's IPL & Memory Stick Tool](#).

Team C+D aka Prometheus Team

This group composed of the biggest names in the PSP homebrew scene deserve all the thanks they get, they were the ones who discovered the exploit associated with the Pandora's battery and created the initial downgrader using this exploit. The group members of this team are:

- Adrahil (VoidPointer)
- Booster
- Cswindle (Caretaker)
- Dark_AleX (Malyot)
- Ditlew
- Fanjita (Fullermonty)
- Joek2100 (CosmicOverSoul)
- Jim
- Mathieulh (WiseFellow)
- Nem (h1ckeyph0rce)
- Psp250
- Skylark
- TyRaNiD (bockscar)

Sony Computer Entertainment

They created the PSP and are constantly updating the PSP System Software to combat homebrew although in doing so they are actually keeping the homebrew scene alive.

Change Log

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
- Fixed: Increased accuracy of IPL dumps

0.1 (Friday, 31 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.

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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