
ActDuino S500_Modify Tool Use Guide

Version: 1.0
2015-05-08

1 Content

| | | |
|-----|--|----|
| 1 | Content | 2 |
| 2 | Introduction..... | 3 |
| 2.1 | Writing purpose | 3 |
| 2.2 | Terms and abbreviations..... | 3 |
| 3 | Tool instruction..... | 4 |
| 3.1 | summary..... | 4 |
| 3.2 | Firmware upported..... | 4 |
| 3.3 | Installation requirements..... | 4 |
| 3.4 | Software installstion..... | 5 |
| 3.5 | Software uninstall | 6 |
| 4 | Firmware modification process instruction..... | 7 |
| 5 | Modify F W file..... | 8 |
| 5.1 | Run the tool..... | 8 |
| 5.2 | Add FW file..... | 8 |
| 5.3 | Modify FW file..... | 9 |
| 6 | Reference..... | 20 |
| 7 | Version history | 20 |
| 8 | Disclaimer | 21 |

2 Introduction

2.1 Writing purpose

This article is used to illustrate how to install and use the Tool to modify the firmware.

Target readers: FAE project ActDuino team, agents, program, such as solution providers engineer.

2.2 Solution providers engineer

| Terms | Explain |
|----------------|--|
| md5 | A hash function widely used in the field of computer security to provide data integrity protection. |
| ADFU | Actions Device Firmware Upgrade |
| Small firmware | Multiple image firmware: .fw + recovery.img + misc.img + system.img |
| Big firmware | Package multiple mirror images into a large file: xx-large.fw, Mass production with the production of image firmware is the same, the production of large firmware support production cards. |

3 Tool instruction

3.1 Summary

Pad Firmware Modify Tool is a tool used to directly modify the firmware file. The user can be base on demand to add: base information, USB information, resource modification, built-in APK, advanced option settings and so on. At the same time can be preset to the factory data into the tablet, which is a clone of the small machine is the data.img to read the PC, when the firmware insert data.img insert the original firmware to generate a new firmware.

3.2 Supported firmware

Support ActDuino project firmware format (multiple image firmware components: **.fw + recovery.img + misc.img + system.img**) And the big firmware format (the multiple image firmware is packaged into a large file: **xx-large.fw**)

3.3 Installation requirements

3.3.1 Software environment

Before using the tool, we should do some prepares to make sure that the work of modify can be carried out smoothly and orderly.

PC environment:

| | |
|----|--|
| OS | <p>WINXP SP2 or above Unpack the operating system in win7 and above, Because win7 and above operating system permissions mechanism</p> <p>Only the administrator login users have permission to modify the file after unpacking, Ordinary users need to modify the unpacked files, run as administrator and then open the unpacking file editing tools can be modified.</p> |
|----|--|

ActDuino S500_Modify Tool Use Guide

| | |
|-------------------------------|--|
| | |
| PC Configuration requirements | <ol style="list-style-type: none">1. 2.2GHz CPU or above2. Memory 2G or above3. C drive have more than 5GB of the remaining space |
| PC Drive installation | <p>To install the ADB driver, tools to support the cloning function Prompt:</p> <p>Windows under the drive of the storage path (applicable to 2000/xp/win7) Please see the release package: release\leopard\tools\adb_drv\usb_driver_r04-windows</p> <p>When installing the inf file can be selected. Or contact FAE to provide.</p> |

After meeting above requirement, you can click on the tool to install modify tools installation tool.

3.3.2 Support language

The tool supports running on the operating system with simplified Chinese, English or traditional Chinese.

3.4 Software installation

Pad Firmware Modify Tool installation is convenient, simple and quick, Open “Pad Firmware Modify Tool” installation package, Double click Run “Setup” file, After entering the installation interface in accordance with the prompt click next step can be installed correctly.

3.5 Software uninstall

3.5.1 Uninstall in control panel

After installing Pad Firmware Modify Tool, By entering [control panel] select [add or remove programs], Selected “Pad Firmware Modify Tool”, Click the “delete” button to uninstall it.

3.5.2 Uninstall the program group

Tools support self unloading, enter [program] select “Pad Firmware Modify Tool”, click “Uninstall”

4 Firmware modification process instruction

In order to make the correct firmware, follow these steps to modify the firmware:

- 1、At first prepare the original firmware file (Just execute "make", no data.img firmware)
- 2、Load the original firmware with modify and start to do some basic changes.

For example: basic information, resource file replacement, program files, USB information label, logo, boot animation and so on

- 3、After the modification, click "save" to generate a new firmware.。

4. Burn the firmware in step 3 with the production tool to save the firmware to Guitar

- 5、After the small machine is fully operational, according to the requirements of the operation of small machines

For example: adjust the desktop layout, replace the desktop background, set the font size, set the default language, set the browser default page (home page), pre installed APK and so on.

- 6、According to the needs of the completion of the operation, the need for normal shutdown, restart the small machine

- 7、Load on the modify just burn and write the firmware (step 4), after the small machine is fully boot, USB debug mode to connect PC

- 8、When the modify tool is properly connected to the small machine ("clone" button highlighted), you can click the clone button to clone (in order to ensure that the clone function is correct, clone is prohibited for any operation on the tablet).

- 9、After the completion of the clone, click the "save" button, you can generate more than all the modifications and the operation of the effect of the firmware.

Remind:

- 1、If the tool is judged to be loaded with data.img and the file is generated via the clone function, it is prohibited to "default".Recognition of the language change function, because the function of the modification may be cloned into the data.img user defined data conflict, Causes the modification to be invalid.

- 2、SELinux leads to the GMS firmware data division changes will lead to some unpredictable problems, so from v1.10 began to temporarily support GMS firmware cloning, built-in APK. Non GMS firmware from v1.15 began to default does not support functional cloning, we do not recommend using the function, but if you do need to use this feature, please contact Customer Manager Department.

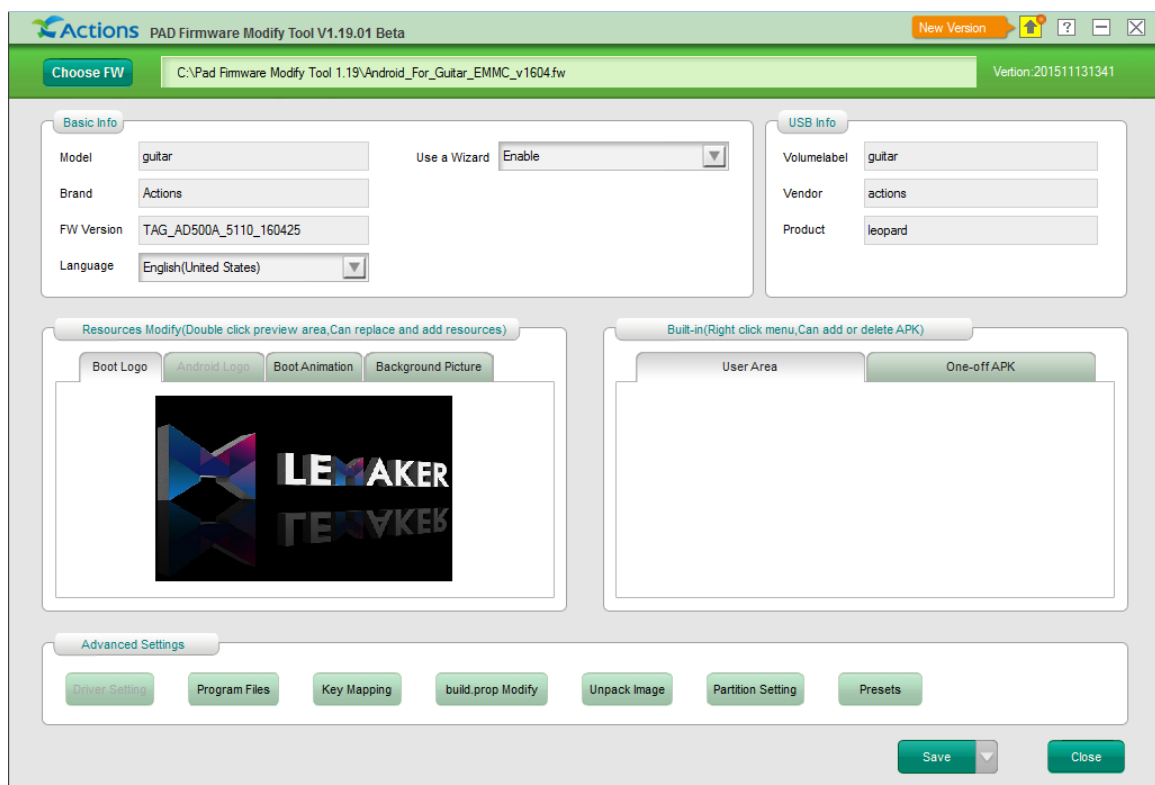
5 Modify FW file

5.1 Run the tool

Click [start] button, enter the [program] Select “Pad Firmware Modify Tool” , Select Click “Pad Firmware Modify Tool” run Modify tool.

5.2 Add FW file

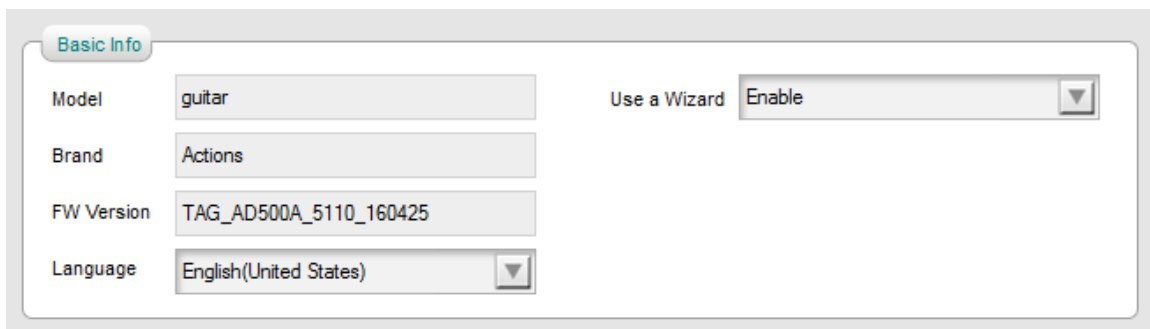
Click the “Select the firmware” button on the tool interface, pop open document window, selected to modify the FW file (extension is *.fw file or *.fwu file) click on the” open” button, add FW files and tools in the” firmware ”column, choose show the path to FW file, as shown in the diagram below:



5.3 Modify FW file

5.3.1 Basic information interface

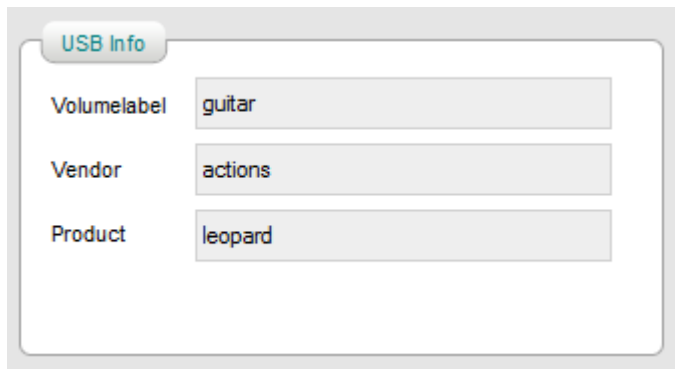
In the basic information interface, can modify a number of information, including product models, the company name, the firmware version, the default language, Using the wizard, as shown below:



| Basic Info | |
|--------------|------------------------|
| Model | guitar |
| Brand | Actions |
| FW Version | TAG_AD500A_5110_160425 |
| Language | English(United States) |
| Use a Wizard | Enable |

5.3.2 USB information interface


Information on the USB interface, can modify the number of information, including the U disk label, manufacturer name, product name, as shown below:



| USB Info | |
|-------------|---------|
| Volumelabel | guitar |
| Vendor | actions |
| Product | leopard |

5.3.3 Resource modification interface

Modify the information interface in the resource, modify the default background image, you can modify the information, including Androidlogo, BootLogo, boot animation, the default background image

Androidlogo, boot animation, support delete function, click “” Function button to delete Androidlogo,

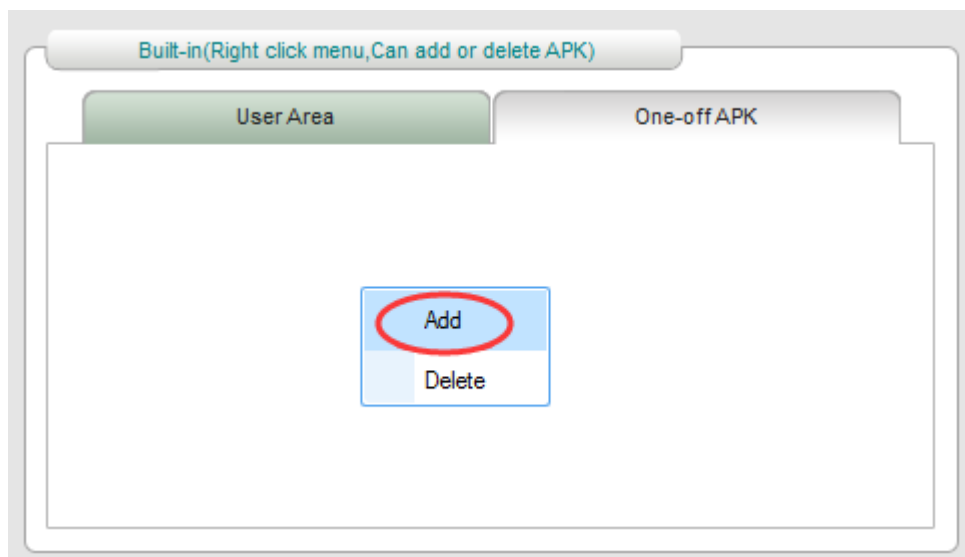
5.3.4 Built in APK interface

In the built-in APK interface, modify the user area and one-time APK.

e. g:

User area: the right mouse button menu, you can add or delete APK, as shown below:

Add APK:



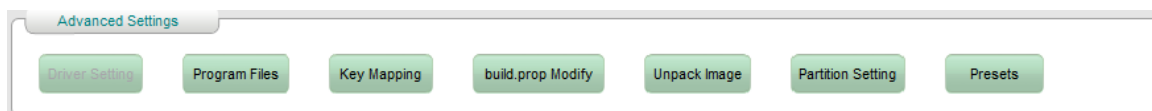
Prompt:

A、User zone preset APK and one-time APK storage location: add to the data/app under the data.img, After startup, a small opportunity to scan and automatic installation; users can delete their own, if by restoring the factory settings, all APK in the data will be deleted

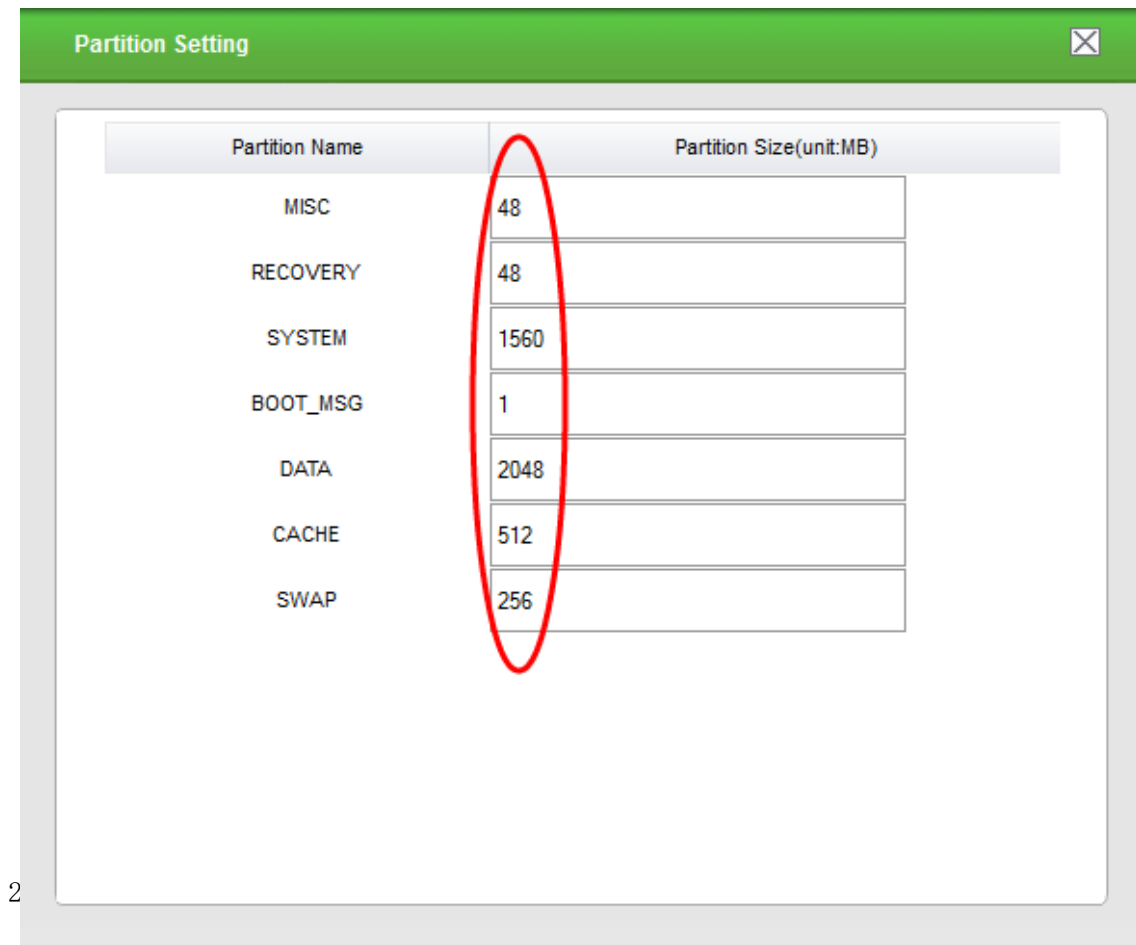
B、Disposable preset APK, modify, will in the APK former increase "actltinstall_ field for different user preset APK; if small machine with preset disposable APK, settings in the application will delete one-time preset APK" menu item. Perform this menu item will only delete except for disposable preset APK, user area of the APK is not deleted. This function which can be used to built some of the production line test of the APK, test and don't want to end users see and use. At this time, you can through the settings "delete one-time preset APK" menu to separate delete the APK.

5.3.5 Advanced settings options interface

In advanced settings interface, you can modify the information, including driver configuration, program files, key mapping, modify the buildprop, cloning unpack the image, the configuration partition, as shown in the following picture in the advanced settings interface, can modify the information, including driver configuration, program files, key mapping, buildprop Modify, clone, unpack image, partitioning configuration, as shown below:




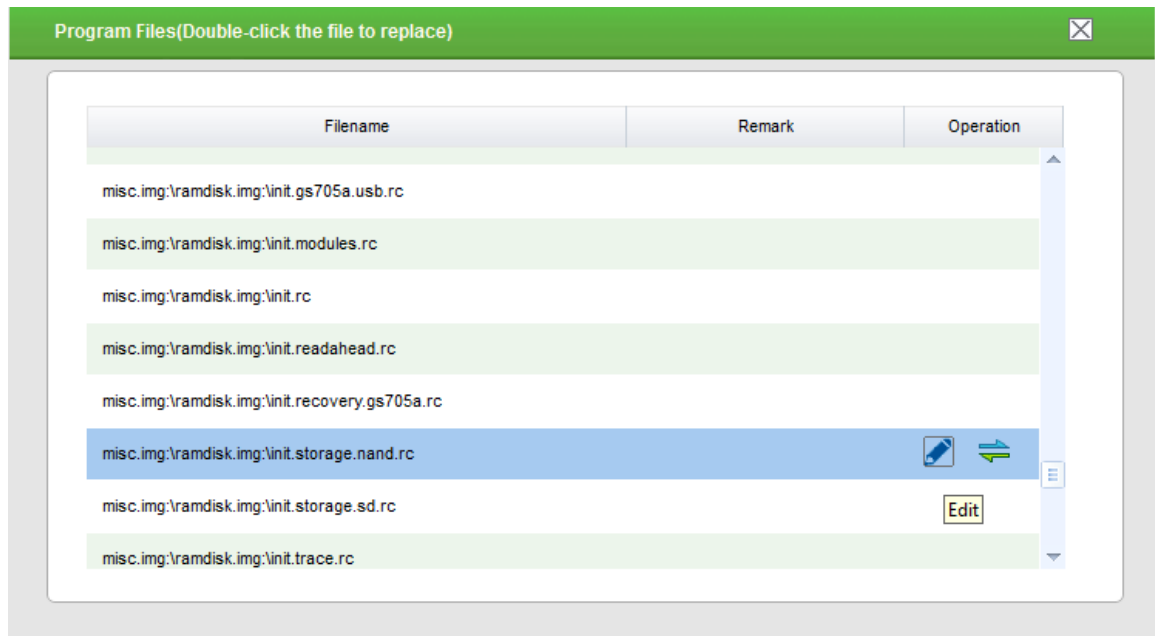
1、The mouse click on the "driver configuration": tools to resolve config.xml and bin_cfg.xml files, and set out the configuration items for the user to change.



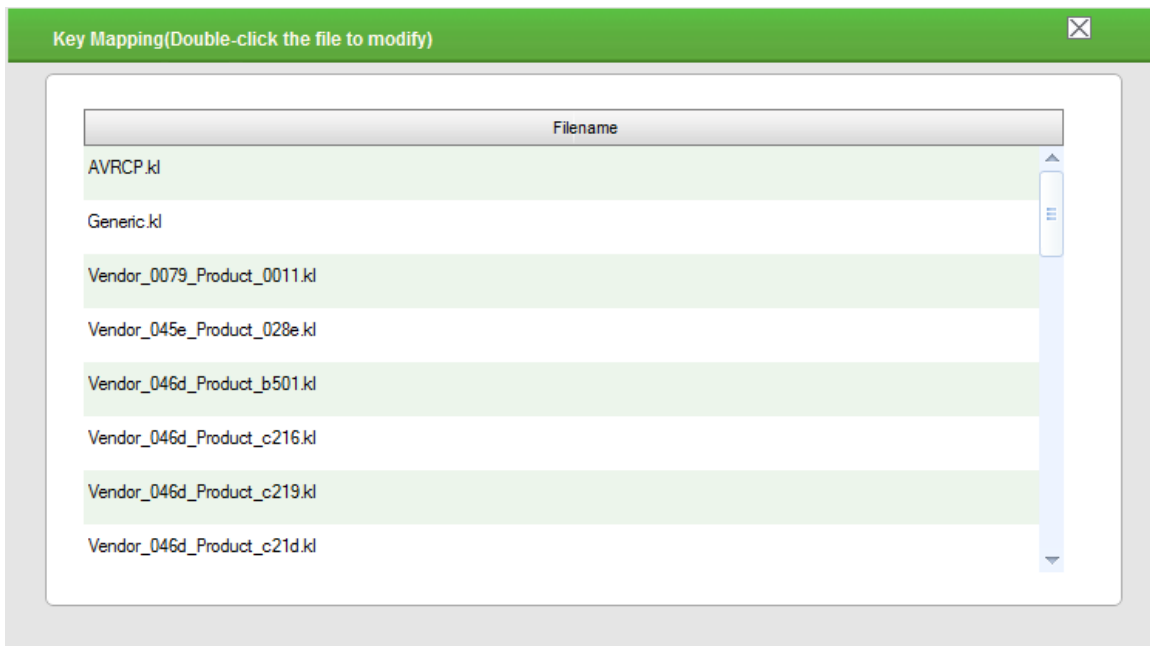
Click “” Can replace the file, as shown below



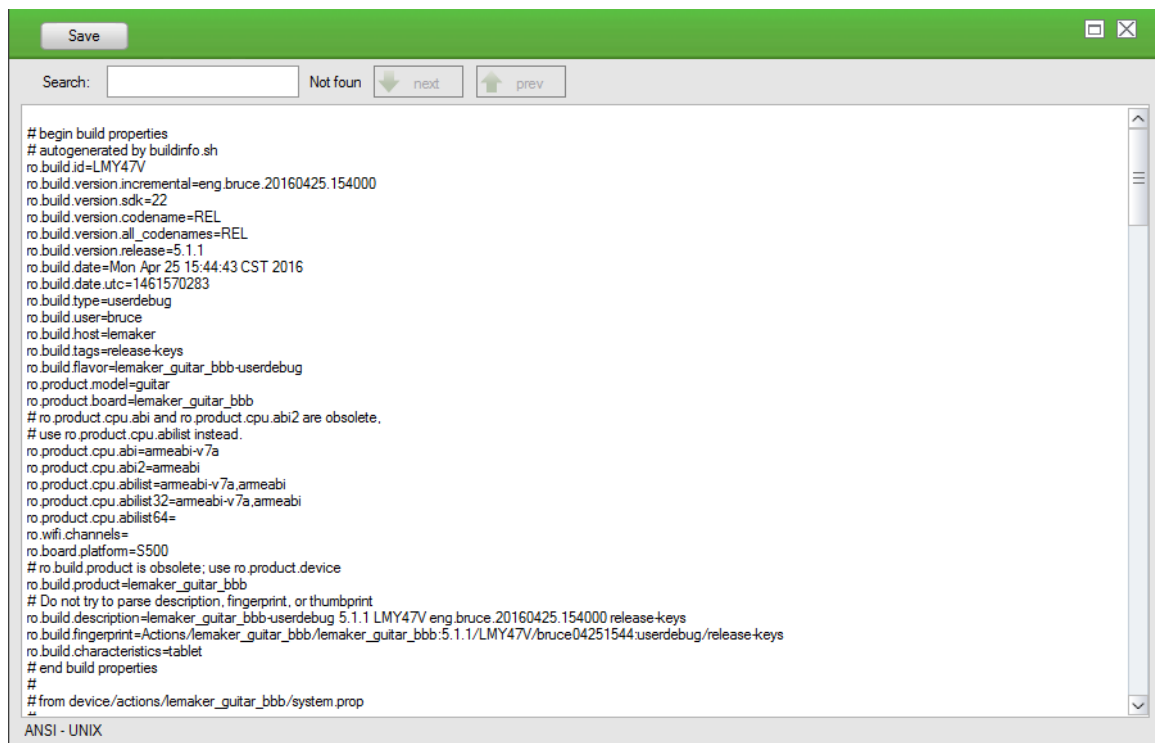
Program file support text editing function, click  Edit button pop-up text editor for user editing This function is similar to the edit function of the button mapping A file is replaced, edited, or replaced, and can be replaced and edited, depending on the configuration in the FMTool.cfg.



3、Mouse click on the "key mapping entry: tools to a text file open build.prop file, for users to edit, modify (note to UNIX format editing, avoid the problem of inconsistent newline formats)



4、The mouse click "build.prop modify" entry: open the build.prop file for the user to edit, modify.



5、Small machine for U disk device firmware clone function

ActDuino S500_Modify Tool Use Guide

The clone will put all the information on the device side, including the user installed APK, the default bookmark / home page of the web browser, and the desktop interface. Layout, system settings, and so on information will be cloned into the new firmware (stored in the data.img file).

Specific cloning steps:

Step 1: before cloning, the contents of the hope that the cloning of the first to change the small machine (such as the default language, time zone, the default input method, Table layout and so on first set up.

Step 2: the small machine will be changed to normal shutdown (to ensure that the changes can be cloned before, please perform this operation!)

Step 3: boot, and then on the way to connect USB PC, "clone" button highlighted, the connection is successful (to ensure that the clone function correctly, clone prohibit any operation on the tablet).

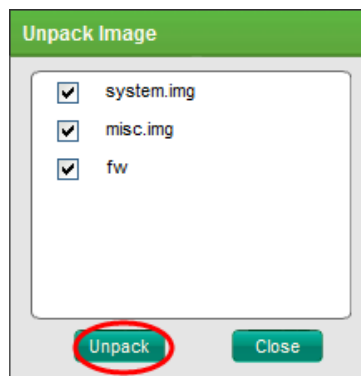
Step 4: click the "clone" button and start cloning.

Step 5: "save" the firmware.

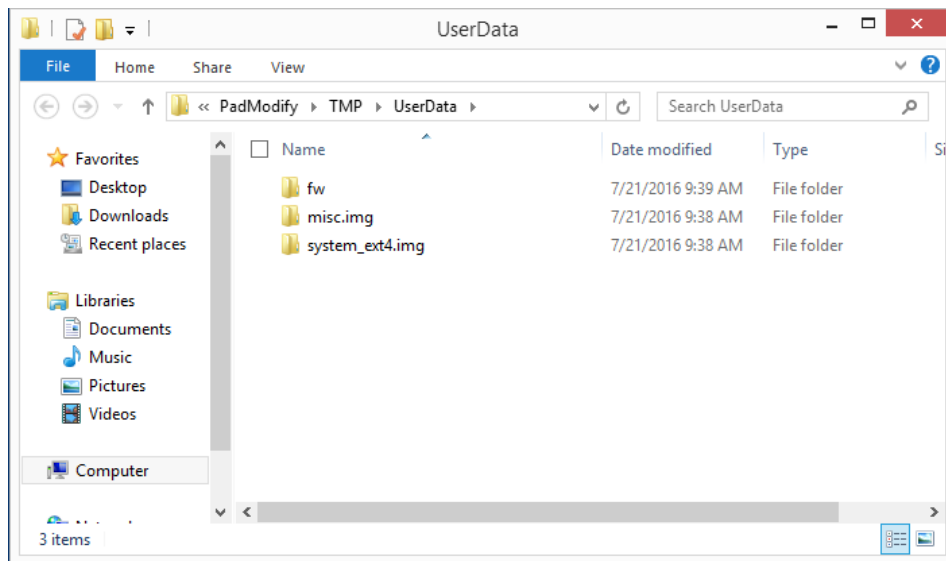
After saving the firmware, firmware file will be more cloned the data.img and data Data_bak.img two files. Production firmware will data.img and data Data_bak.img are selected and burn to small machine can be.

,

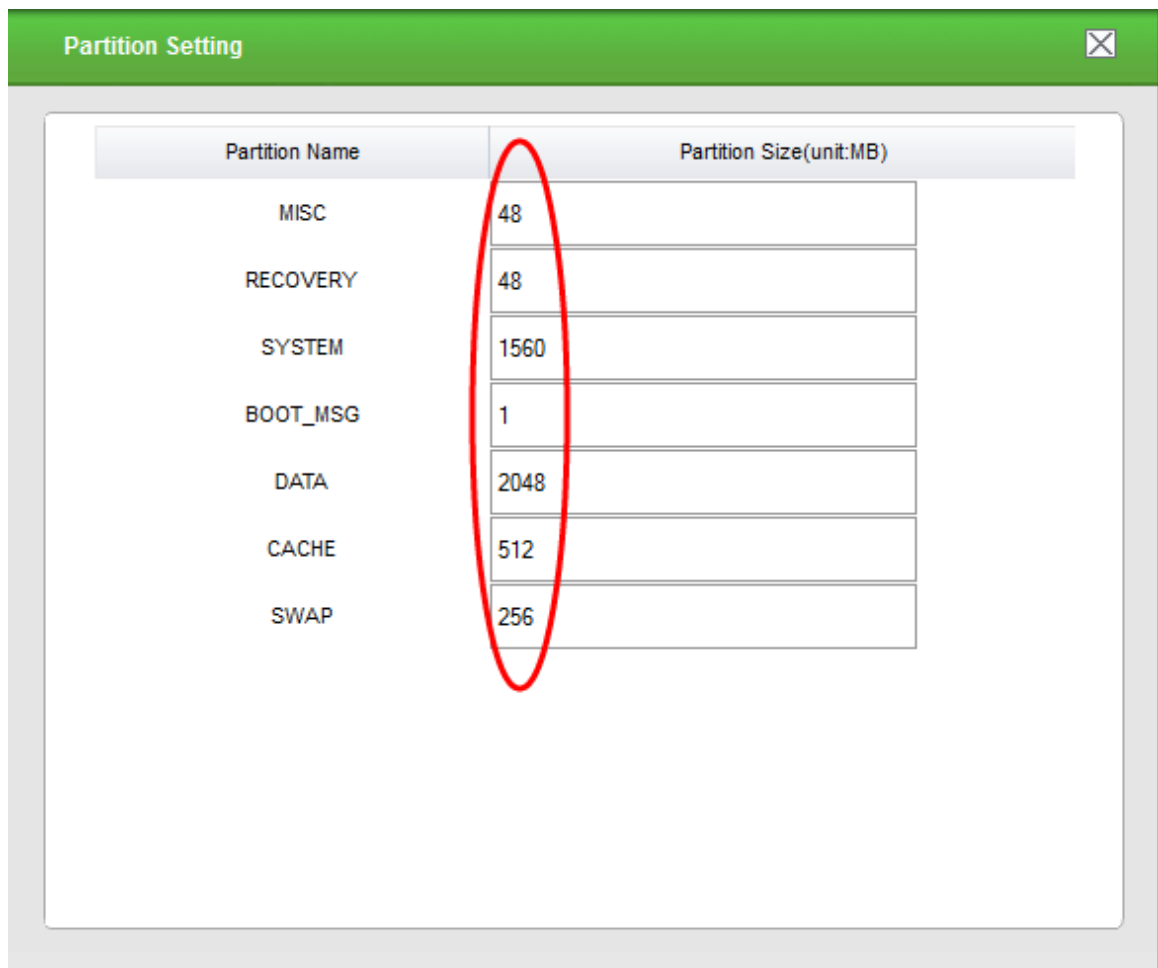
6、A mouse click on the "mirror" unpacking: Windows environment pack / unpack ext4 image file.



After the success of the open file directory path C:\Document and Settings\user\Application Data\TMP\UserData,



7、The mouse click on the partition configuration item: click the 'partition' button on the tool interface.



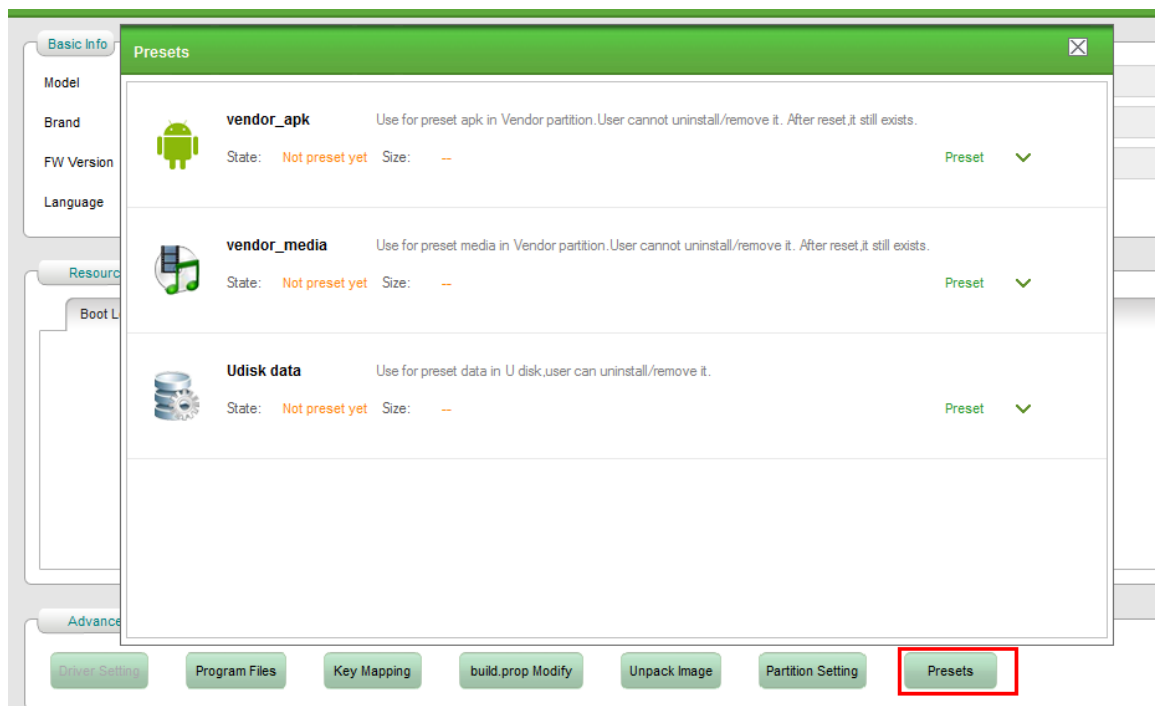
5.3.6 Factory preset function instructions

At present, there are two types of organization forms of the firmware.

1. The firmware file has only one ".FW" file, and the file is preset by modify.
2. The firmware file is composed of multiple files (one ".FW" and ".Img" components).

To preset.

Preset VENDOR_MEDIA, VENDOR_APK and U disk factory data, after the success of the preset to play together to save changes Package to the FW firmware, through the production tool to burn the tablet PC.。



1. Preset data: click "I want to preset" function, select the preset data input directory, click on the "preset" function

Button to initialize data

With pre vendor_apk data as an example:

6 Reference

7 Version history

| Date | Version | Note | writer |
|----------|---------|---------------------------|----------|
| 2015-5-8 | 1.0 | Create an initial version | ActDuino |
| | | | |
| | | | |

8 Disclaimer

Disclaimer

Information given in this document is provided just as a reference or example for the purpose of using Actions' products, and cannot be treated as a part of any quotation or contract for sale.

Actions products may contain design defects or errors known as anomalies or errata which may cause the products' functions to deviate from published specifications. Designers must not rely on the instructions of Actions' products marked "reserved" or "undefined". Actions reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.

ACTIONS DISCLAIMS AND EXCLUDES ANY AND ALL WARRANTIES, INCLUDING WITHOUT LIMITATION ANY AND ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY, ACCURACY, SECURITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY AND THE LIKE TO THE INFORMATION OF THIS DOCUMENT AND ACTIONS PRODUCTS.

IN NO EVENT SHALL ACTIONS BE LIABLE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL PUNITIVE, OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING, WITHOUT LIMITATION FOR LOSS OF DATA, PROFITS, SAVINGS OR REVENUES OF ANY KIND ARISING FROM USING THE INFORMATION OF THIS DOCUMENT AND ACTIONS PRODUCTS. REGARDLESS OF THE FORM OF ACTION, WHETHER BASED ON CONTRACT; TORT; NEGLIGENCE OF ACTIONS OR OTHERS; STRICT LIABILITY; OR OTHERWISE; WHETHER OR NOT ANY REMEDY OF BUYER IS HELD TO HAVE FAILED OF ITS ESSENTIAL PURPOSE, AND WHETHER ACTIONS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR NOT.

Actions' products are not designed, intended, authorized or warranted for use in any life support or other application where product failure could cause or contribute to personal injury or severe property damage. Any and all such uses without prior written approval of an Officer of Actions and further testing and/or modification will be fully at the risk of the customer.

Ways of obtaining information

Copies of this document and/or other Actions product literature, as well as the Terms and Conditions of Sale Agreement, may be obtained by visiting Actions' website at: <http://www.actions-semi.com> or from an authorized Actions representative.

Trademarks

The word "Actions" and the logo are the trademarks of Actions Semiconductor Co., Ltd, and Actions (Zhuhai) Technology Co., Limited is authorized to use them. Word "炬芯" is the trademark of Actions (Zhuhai) Technology Co., Limited. Names and brands of other companies and their products that may from time to time descriptively appear in this document are the trademarks of their respective holders, no affiliation, authorization, or endorsement by such persons are claimed or implied except as may be expressly stated therein.

Rights Reserved

The provision of this document shall not be deemed to grant buyers any right in and to patent, copyright, trademark, trade secret, know how, and any other intellectual property of Actions or others.

Miscellaneous

Information contained or described herein relates only to the Actions products and as of the release date of this publication, abrogates and supersedes all previously published data and specifications relating to such products provided by Actions or by any other person purporting to distribute such information.

Actions reserves the rights to make changes to information described herein at any time without notice. Please contact your Actions sales representatives to obtain the latest information before placing your product order.

Additional Support

Additional products and company information can be obtained by visiting the Actions website at: <http://www.actions-semi.com>