VT8500

Software update tools user's guide

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1 Abstract

1.1 Function

VT8500 software update tools package is used for Update VT8500 low layer software including:

- U-boot
- SPI image, including v-load, u-boot and parameter of u-boot;
- Boot up logo
- Kernel
- File-system

1.2 Directory

The structure of directory of software update tools is:

VT8500 Software Update Tools

|__ kernel
|__ kernel_rootfs
|__ logo
|__ nand
|__ nand_mp
|__ rootfs
|__ spi
|__ uboot

- Kernel: update OS kernel
- kernel_rootfs: update OS kernel, also root file-system
- logo: update boot-up logo
- nand: update boot-up logo, OS kernel, and root file-system
- nand_mp: the function is similar to tool "nand", but it will erase the whole nand flash before further update
- rootfs: update root file-system
- spi: update SPI image, including v-load, u-boot, and parameter of U-boot
- uboot: update u-boot

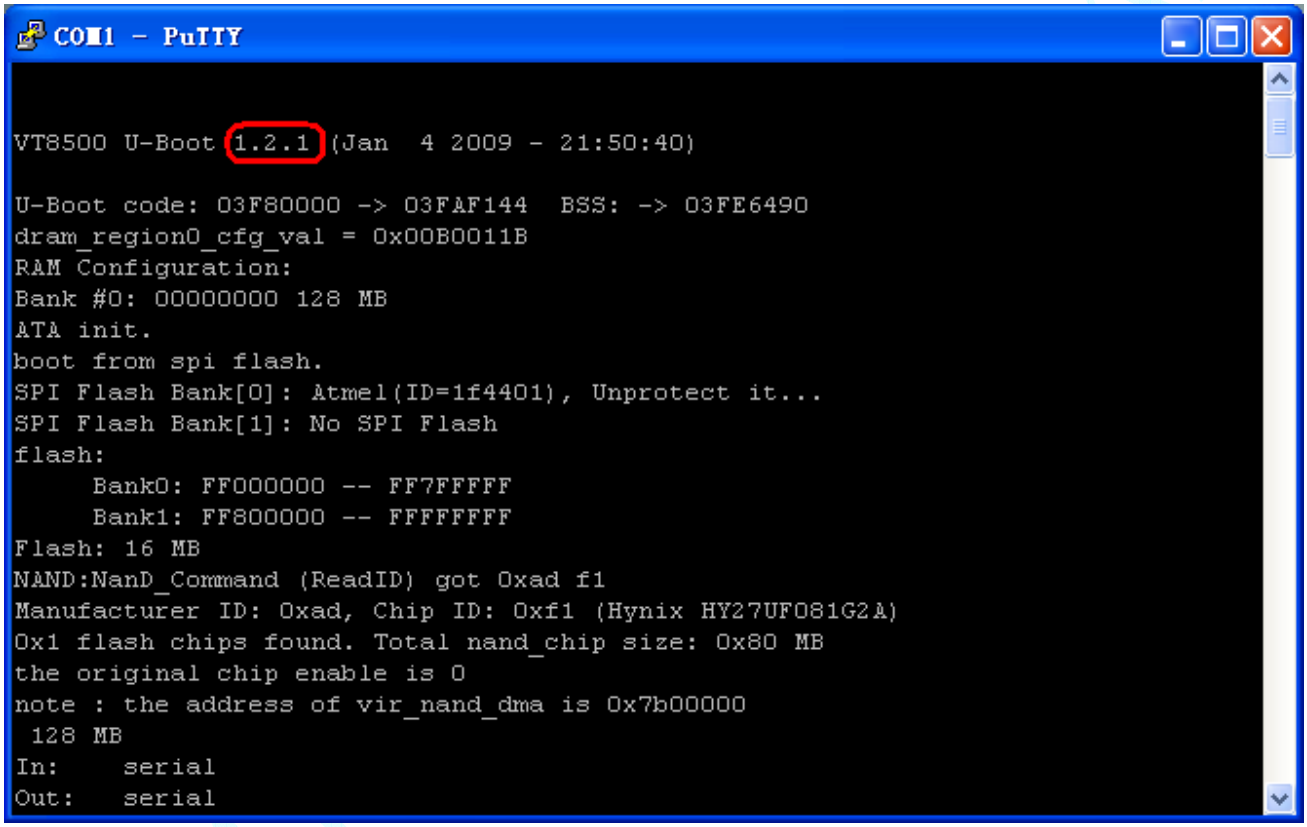
1.3 Condition

If user wants to use update tools, the following condition must be met.

- The version of u-boot is higher than 1.1.8
- One SD card which is in FAT format, and contain one update tool. The update tool will be introduced in the following section.

1.4 U-boot version

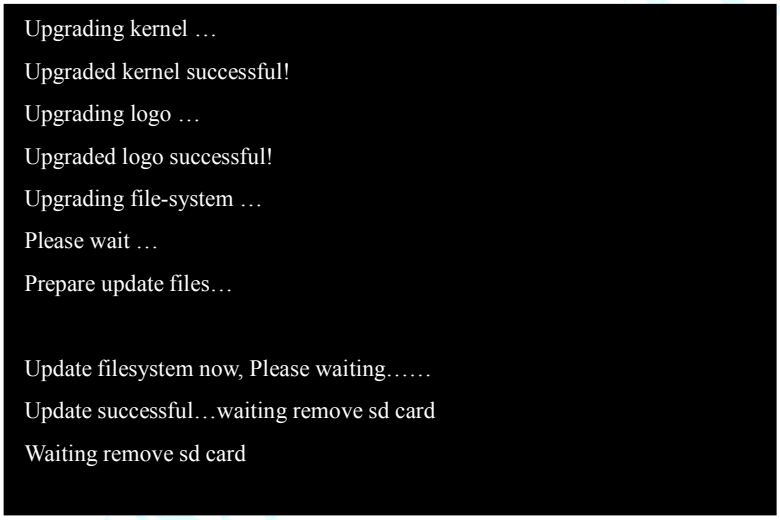
The first line of log from COM when boot-up, displays the version of u-boot. For example:



2 Mass production program

2.1 Operation

1. Copy the whole "script" directory in "nand_mp", that is nand_mp\script, to the root directory of SD card.
2. power down the board
3. Insert SD card to the board
4. power up the board
5. Don't kit any key to stop the "autoboot". For the SD card is inserted, the process of update starts. If VGA is connected, or LCD is connect, User can see that the log is printed on them, such as:



This process will take about 2-3 minutes.

6. When "waiting remove sd card" is printed, user should remove the SD card from the board.
7. The board will reboot immediately.
8. If everything is OK after reboot, the update successes, if not, please check if the operation is correct and if the condition listed in 1.3 is met.

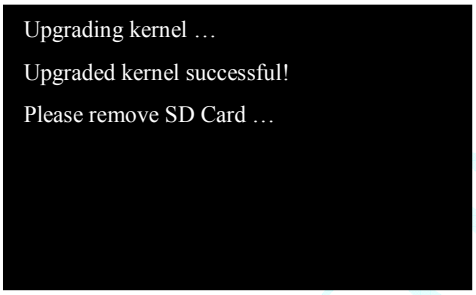
2.2 The content of "Script" DIR

file	function
scriptcmd	Script image, which is used to control the process of update, can't be modified.
upRamdisk.gz	Ram disk file system, is a temporary file system used in the process of update.
logo.bin	Logo. User can use translation tool, such as bmp_array.exe to get other logos.
rootfs.tgz	Root file-system. User should replace it when new version releases.
uzImage.bin	OS kernel. User should replace it when new version releases.
uboot.bin	U-boot, User should replace it when new version releases.
spi.img	SPI image, including v-load, u-boot and parameter of u-boot.

3 Updates separate software

3.1 Kernel

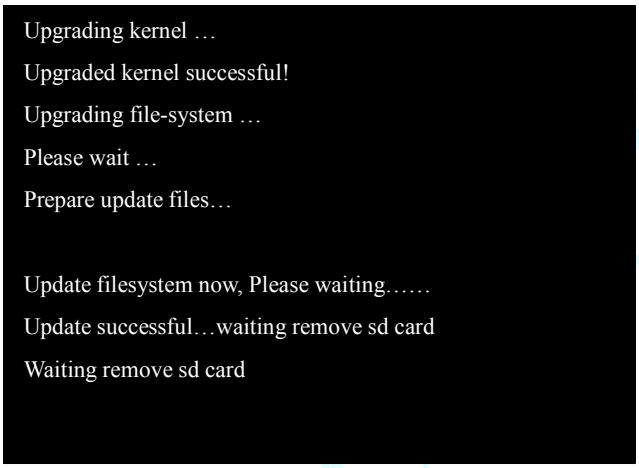
1. Copy the whole "script" directory in "kernel", that is kernel\script, to the root directory of SD card.
2. power down the board
3. Insert SD card to the board
4. power up the board
5. Don't kit any key to stop the "autoboot". For the SD card is inserted, the process of update starts. If VGA is connected, or LCD is connect, User can see that the log is printed on them, such as:



6. When "waiting remove sd card" is printed, user should remove the SD card from the board.
7. The board will reboot immediately.
8. If everything is OK after reboot, the update successes, if not, please check if the operation is correct and if the condition listed in 1.3 is met.

3.2 Kernel and root file-system

1. Copy the whole "script" directory in "kernel_rootfs", that is kernel_rootfs\script, to the root directory of SD card.
2. power down the board
3. Insert SD card to the board
4. power up the board
5. Don't kit any key to stop the "autoboot". For the SD card is inserted, the process of update starts. If VGA is connected, or LCD is connect, User can see that the log is printed on them, such as:



6. When "waiting remove sd card" is printed, user should remove the SD card from the board.
7. The board will reboot immediately.
8. If everything is OK after reboot, the update successes, if not, please check if the operation is correct and if the condition listed in 1.3 is met.

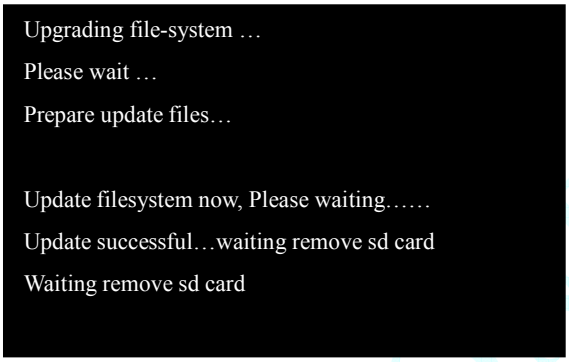
3.3 Boot-up logo

1. Copy the whole "script" directory in "logo", that is logo\script, to the root directory of SD card
2. power down the board
3. Insert SD card to the board
4. power up the board
5. Don't kit any key to stop the "autoboot". For the SD card is inserted, the process of update starts. If VGA is connected, or LCD is connect, User can see that the log is printed on them, such as:

6. When "waiting remove sd card" is printed, user should remove the SD card from the board.
7. After "Done" is printed, the board will reboot.
8. If everything is OK, the update successes, if not, please check if the operation is correct and if the condition listed in 1.3 is met.

3.4 root file system

1. Copy the whole "script" directory in "rootfs", that is rootfs\script, to the root directory of SD card
2. power down the board
3. Insert SD card to the board
4. power up the board
5. Don't kit any key to stop the "autoboot". For the SD card is inserted, the process of update starts. If VGA is connected, or LCD is connect, User can see that the log is printed on them, such as:



6. When "waiting remove sd card" is printed, user should remove the SD card from the board.
7. The board will reboot immediately.
8. If everything is OK, the update successes, if not, please check if the operation is correct and if the condition listed in 1.3 is met.

3.5 SPI image

User may use command "tftpfile" to get the SPI image of the current board. For VT8500, command "tftpfile –p spi_image fff90000 70000" can write the whole SPI image from the current board to TFPT server.

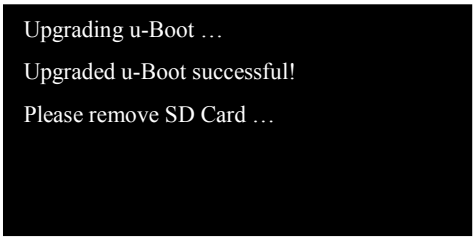
```
VT8500-01.00 # tftpfile -p spi_image fff90000 70000
TFTP to server 10.1.8.240; our IP address is 10.1.8.241
Filename: spi_image     Saved Start Addr:0xfff90000      Len:0x00070000(458752)bytes

Sending: ################################################
         ################################################
         ################################################
         ################################################
         ################################################
         ################################################
         ################################################
         ##############################################

 458752 bytes(0x70000) done
```

The TFPT server must be up, so one TFTP tools on server is needed. Note that user can give other name for the file to be saved, in the example is "spi_image". And the start address "fff90000", length "70000" is fit for any size SPI flash in VT8500 in u-boot, so there is no need for user to concert it.

And user can program that SPI image to other SPI using special program tool.

3.6 U-boot

1. Copy the whole "script" directory in "uboot", that is u-boot\script, to the root directory of SD card
2. power down the board
3. Insert SD card to the board
4. power up the board
5. Don't kit any key to stop the "autoboot". For the SD card is inserted, the process of update starts. If VGA is connected, or LCD is connect, User can see that the log is printed on them, such as:

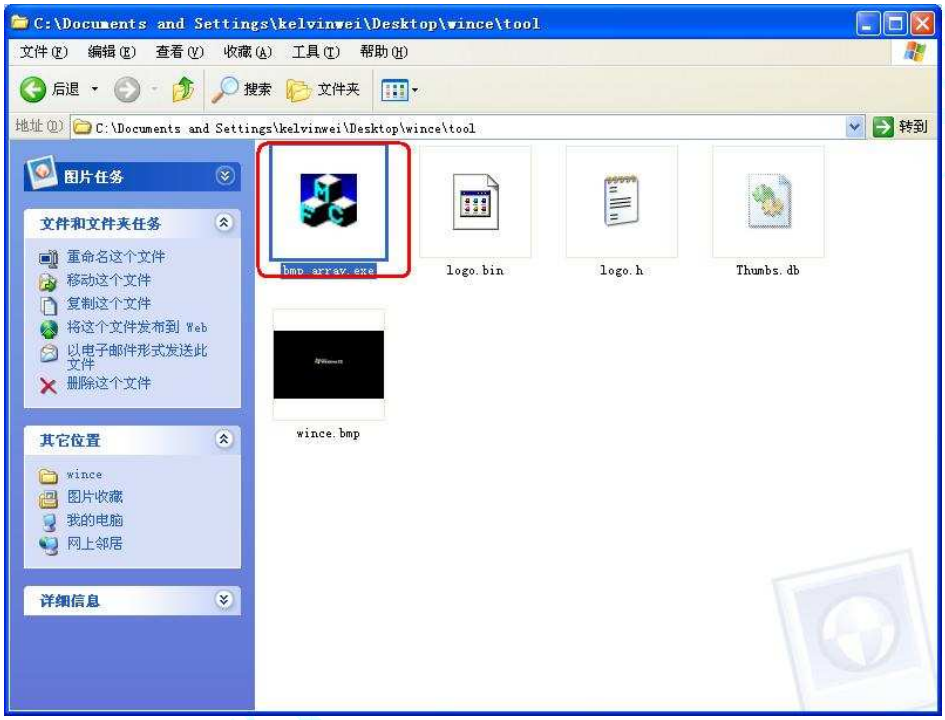


6. When "waiting remove sd card" is printed, user should remove the SD card from the board.
7. After "Done" is printed, the board will reboot.
8. If everything is OK, the update successes, if not, please check if the operation is correct and if the condition listed in 1.3 is met.

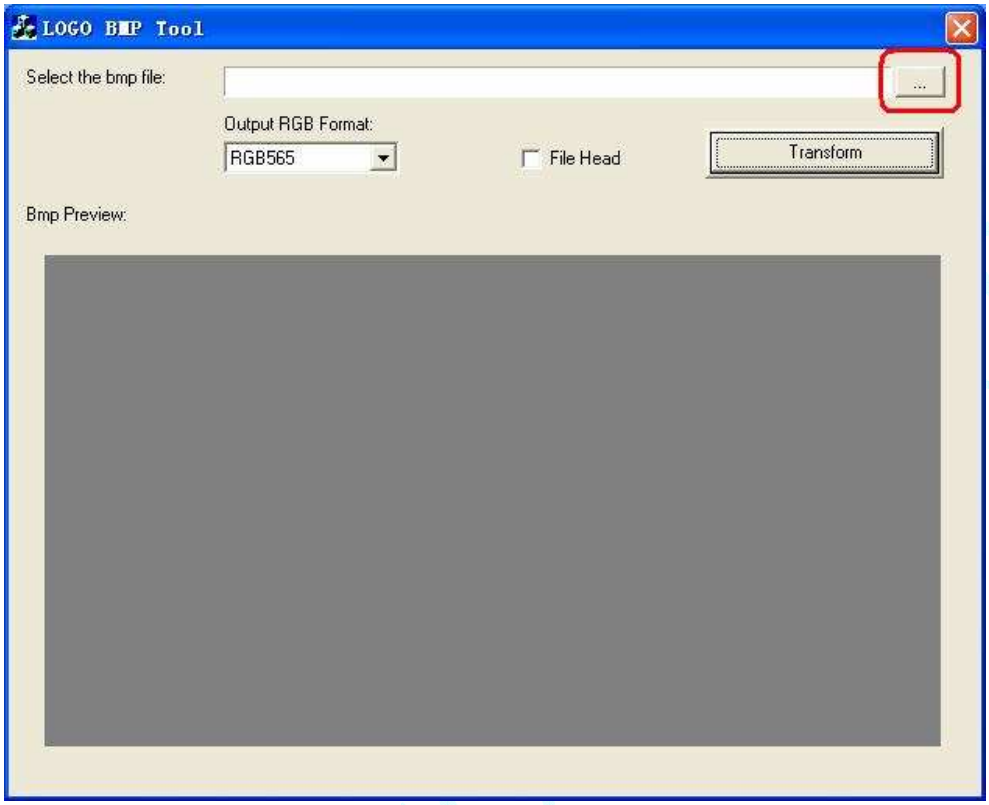
4 create logo file

This chapter introduce how the create logo file in RGB format used to show as immediately as boot up. Assure that translate tool "bmp_array.exe" is available.

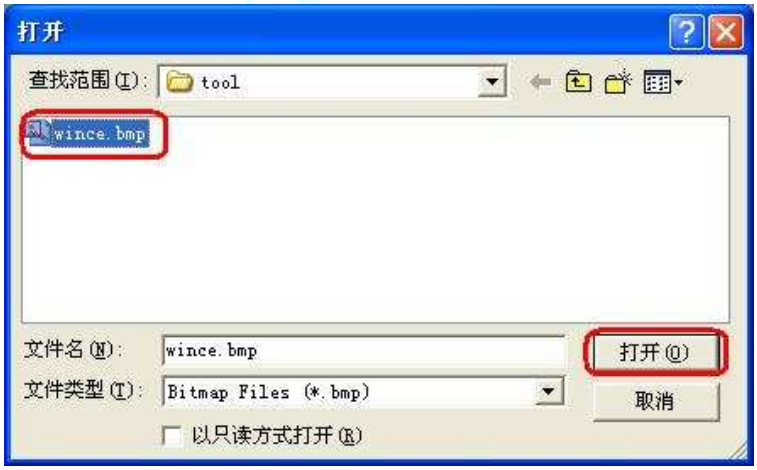
1. Copy bmp_array.exe and picture in BMP format to PC. (Size of the picture is 800*480). Double kick bmp_array.exe



2. Select RGB format, "RGB565", "RGB666" or "RGB888". Then Kick view button "…"



3. select BMP picture XXXX.bmp，then kick "open".



4. Kick "Transform". After completion of transform， one dialog will pop up. Just kick the button to finish the process.