USER GUIDE

DS2 Products

Auto-Update Tool BSP

V1.3

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Revision History

Version	Date	Remarks
1.0	2014/01/09	Initial external release.
1.1	2014/02/06	Typesetting and updating
1.2	2014/06/30	Modify content for Android Image Auto-Update Installation (1) Modify Chapters 1 and 2 for Android Image Auto-Update Installation mechanism (2) Remove some redundant content in Chapter 3
1.3	2014/08/29	Separate flashing Bootloader and Android Image part.

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1. Package Contents

1.1. Auto-Update Tool Kit:

1.1.1. vbspinst_emmc_bootloader.tar.tgz

Binary: u-boot.bin, e-loader.bin

Uboot scripts: bootloader_setup.uimg, scriptcmd, other_env.uimg

1.1.2. vbspinst_emmc_android_4_3_img.tar.tgz

Android Image: boot.img, system.img, cache.img, userdata.img, recovery.img

Uboot scripts: scriptcmd, other_env.uimg

Android Image Installation scripts: img_setup.uimg

2. How to Install Android BSP by auto-update tool

2.1. Preparation

(1) EXT2-formatted SD-Card

<<SD-Card_DIR>>: SD-Card root directory

(2) Auto-Update tool

(3) Bootloader Image (ex. vbspinst_emmc_bootloader.tgz)

<< Bootloader BSP >> : Android Boot-Loader file directory

(4) Android BSP Image (ex. vbspinst_emmc_android_4_3_img.tgz)

<< Android OS BSP >> : Android rootfs BSP file directory

(5) Ubuntu 12.04 BSP (ex. ubuntu-desktop-s3g_16.00.09a.tar.bz2)

<<Ubuntu OS BSP>>: Ubuntu BSP file directory

2.2. Flashing Bootloader to SPI ROM

A. Preparation:

(1) EXT2-formatted SD-Card

(2) Update Package for bootloader (vbspinst_emmc_bootloader.tgz)

B. Installation Steps:

Step1. Format the SD Card to EXT2-format.

Step2. Extract the compress file into SD card

```
tar zxvf vbspinst_emmc_bootloader.tgz  - C <<SD-CARD_DIR>>
```

Step3. Eject SD card from PC side.

Step4. Insert SD card to platform which is connected with HDMI monitor and boot the MB.

Step5. Wait until the Console shows "BSP updated done!! PLEASE REBOOT SYSTEM!!"

(Please power-off system manually)

2.3. Install Android to EMMC Boot:

A. Preparation:

(1) EXT2-formatted SD-Card

(2) Update Package for Android Image (vbspinst_emmc_android_4_3.img.tgz)

B. Installation Steps: (Make you have flashing bootloader already.)

(1) Make sure you have burned the EMMC-based U-Boot to SPI ROM

(2) Un-tar the EMMC version "Android auto-update tool" files to the Root of SD-Card

```
$ cd <<SD-CARD_DIR>>/
$ tar -zxvf vbspinst_emmc_android_4_3_img.tgz
```

(3) Insert SD-Card to the Target Elite1000 platform Board and Cold-Boot

(4) Now the Auto-Update Tool will start flashing Android BSP Image to EMMC.

(5) Wait until the Console shows "BSP updated done!! PLEASE REBOOT SYSTEM!!"

(Please power-off system manually)

(6) Remove SD Card and power-up the system

(7) Now the Android BSP should be booted from EMMC

Note:

If Elite1000 platform you used does not include EMMC storage. Please refer to Development Guide for specific platform to get further details of auto-update steps.

Develop Guide for Setting Environment

The auto-update tool can flash OS BSP to NAND flash or EMMC. However, the tool needs to act in concert with U-Boot. This Chapter will describe how to set the U-Boot shell environment in order to make sure auto-update tool doesn't work.

2.4. Setup U-Boot additional environment variables

U-Boot already has its own default environment variables after erasing and flashing u-boot.bin to SPI ROM. If you want to add your own additional variables with auto-update tool, you could modify the script file 'other_env.uimg' of auto-update tool package. So, please prepare an Ubuntu working system and make sure that has installed 'apt-get install uboot-mkimage'.

2.4.1. How to make 'other_env.uimg'?

Please follow U-Boot command rules and store the commands in a plain text file. For example, create a *<my_other_env>.txt* file as follows:

```
1 ##VIA uboot_env_script##
2
3 #setenv <env_name> '<env_contents>'
4 #saveenv
5
6 echo *** VIA UBoot Other ENV Setting Done ***;
```

U-Boot image script file can be created using the following command:

mkimage -A arm -T script -C none -d <script.scr> <script.uimg>
For example:
mkimage -A arm -T script -C none -d <my_other_env>.txt other_env.uimg

Now you could replace the "other_env.uimg" into package.

Appendix A: Definitions

Ubuntu	Ubuntu is a Debian-based Linux operating system
Android	Android is a trademark of Google Inc.
ARM	ARM is a trademark of ARM Inc.
BSP	Board Support Package
SD	Secure Digital Multimedia Card
VT6080	Target Product Name
VIA	VIA Technologies, Inc.