



Marvell PXA Platforms

SWDownloader 4.x.x.x

User Guide

v4.0

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Warning: Indicates a risk of personal injury.

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1 About This Document

1.1 Purpose

Describe the guide of SWDownloader tool

1.2 Abbreviations and Acronyms

Table 1.1: Abbreviations and Acronyms

Acronym	Description
SWD	Software Downloader
UE	User Equipment

1.3 Hardware Requirements

Table 1.2 Hardware Requirements

Communication Ports	USB port must be available on PC
Cables and Connectors	USB cable

1.4 Software Requirements

Table 1.3 Software Requirements

Operating Systems	MS Windows XP/win7/win8
Applications	Not relevant
Drivers	Marvell Wtptp driver

1.5 Features List

Table 1.4 Features Description

Feature name	Description
Initial download	Download on UE with empty flash.
Full download	Download all images for full system
Partial download	Download partial images for a system
Single UE download	Download to a UE per PC one time
Multi-UE download	Download to multi-UEs parallel per PC
Upload Data from UE	Upload data from UE
Erase all Flash before download	Erase all flash before burning flash
Reset BBT	Reset BBT in burning flash

Erase all Flash only	Erase all flash only without burning flash
Reset UE after burning	Enable this option to let UE auto boot up
Enable Jtag	Enable Jtag via wpttp download

1.6 Components

Table 1.5 Windows Components Description

Windows Components	Description	UserGuide
SWDownloader.exe	Executable program to download images	SWDownloader_UserGuide.pdf
IFLSWD_Sample.exe	Sample executable program based dlls for customer reference	IFL SWD UserGuidev1_0.pdf
TimBuilder.exe	Generate (D)Tim files	TimBuild_Readme.txt
FBFMake.exe	Generate FBF format download file	FBFMake_Readme.txt
FBFMake_WEB.exe	Generate FBF format file for WebUI to do upgrade	FBFMake_WEB_Readme.txt
IMEIGenerator.exe	Generate IMEI file	ReliableData_Tools_UserGuide.pdf
MEPGenerator.exe	Generate MEP file	ReliableData_Tools_UserGuide.pdf
RDGenerator.exe	Generate marvell RD format reliable Data file in GUI	ReliableData_Tools_UserGuide.pdf
RDGenerator_dos.exe	Generate marvell RD format reliable Data file in commandline	RDGenerator_readme.txt
RDParse.exe	Unpack entry files in ReliableData into a set folder	ReliableData_Tools_UserGuide.pdf
MakeDownloadPackage.exe	Generate download package for MPMD tool	MakeDownloadPackage_readme.txt
WebDataGenerator.exe	Generate WebData file for WebUI	WebDataGenerator_readme.txt
MakeRomcDLPackage.exe	Generates a *.zip package from blf file and flash all partition files,then MPMD can download this zip package to board	MakeRomcDLPackage_Readme.txt
RomCopy.exe	Generates a burned image for each partition	RomCopy_Readme.txt
SWDConsole.exe	Commandline tool is used to automatically download software to device	SWDConsole_Readme.txt

Table 1.6 Linux Components Description

Linux Components	Description	User Guide
swdl_linux	Executable binary to download images	SWDownloader_Linux_UserGuide.pdf
TimBuilder	executable binary to generate (D)Tim files	TimBuild_Readme.txt
FBFMake	Executable binary to generate FBF format download file	FBFMake_Readme.txt
RDGenerator_linux	Executable binary to generate marvell RD format reliable Data file	ReliableData_Tools_UserGuide.pdf



MakeDownloadPackage	Executable binary to generate download package for MPMD tool or DownloadZipPackage binary	MakeDownloadPackage_readme.txt
DownloadZipPackage	Executable binary to download package made by MakeDownloadPackage	DownloadZipPackage_readme.txt
RomCopy_linux	Generates a burned image for each partition	RomCopy_Readme.txt
WebDataGenerator_linux	Generate WebData file for WebUI	WebDataGenerator_readme.txt

2 Installation

Unzip SWDownloader release package

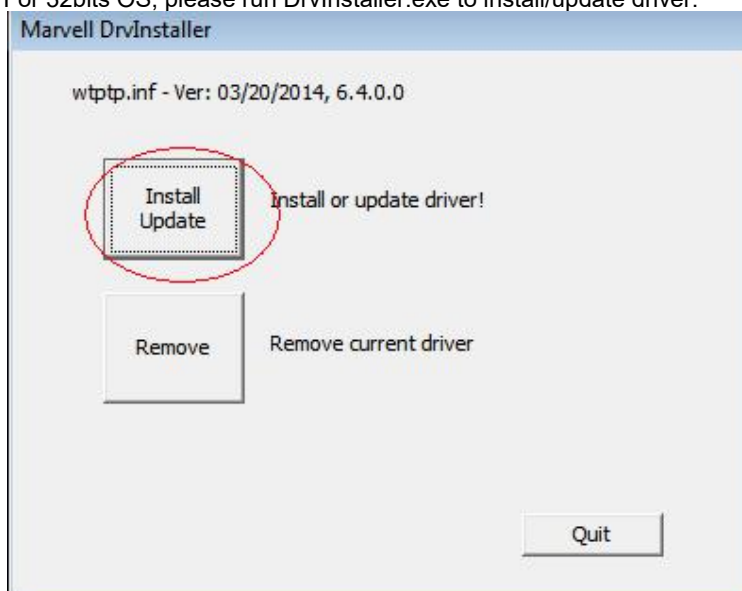
2.1 How to pre-install wtptp driver on windows PC

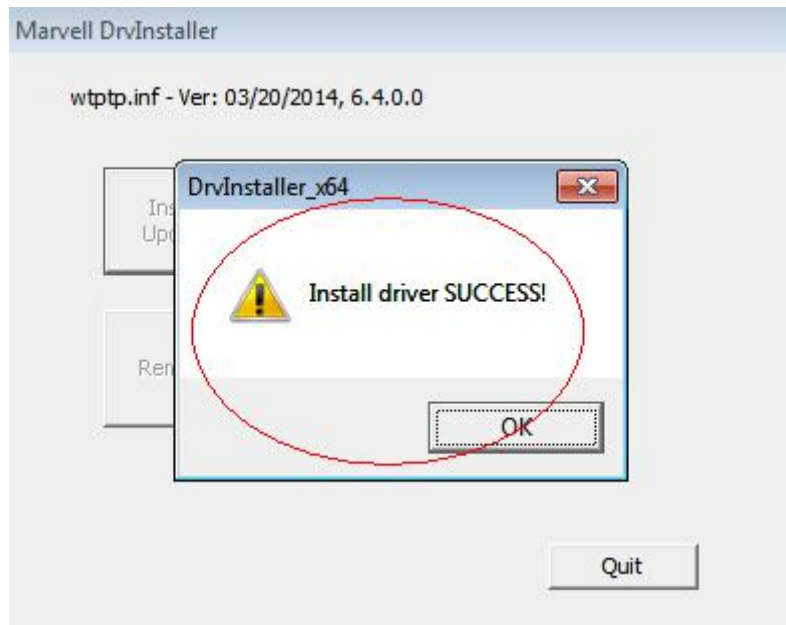
First select install/update the driver automatically for convenience, select manual install/update if automatic installation failure.

2.1.1 Automatically install/update the driver

For 64bits OS, please run DrvInstaller_x64.exe and then click "Install Update" button to install/update driver, it will popup "Install driver SUCCESS" message box when install/update successfully.

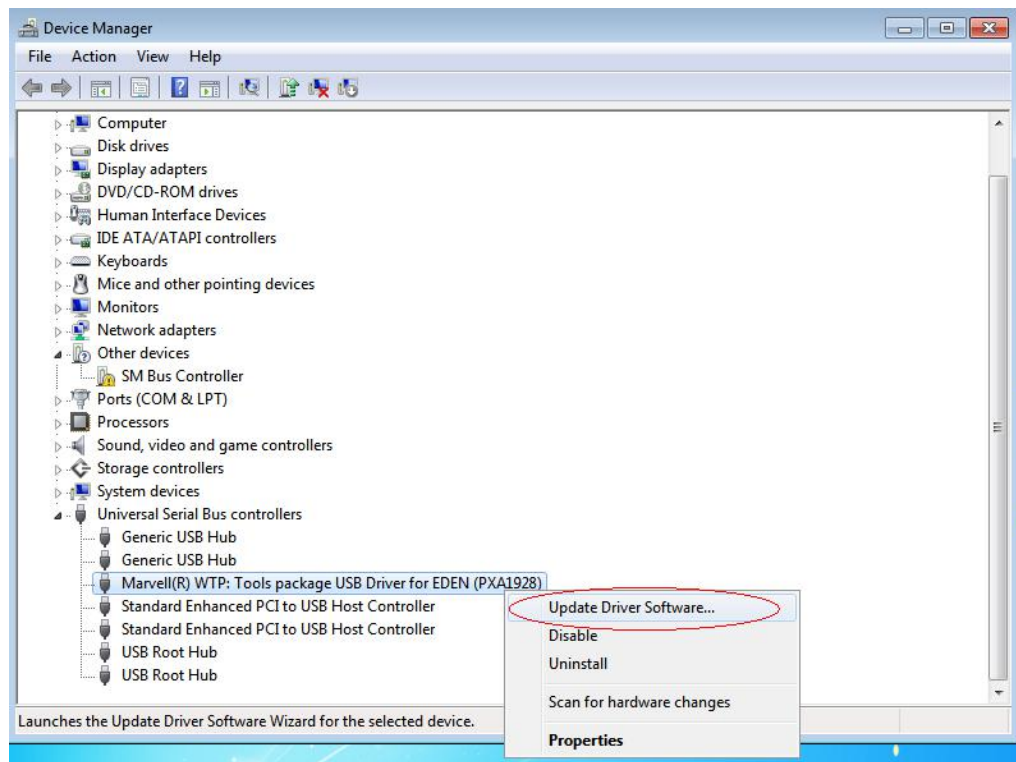
For 32bits OS, please run DrvInstaller.exe to install/update driver.



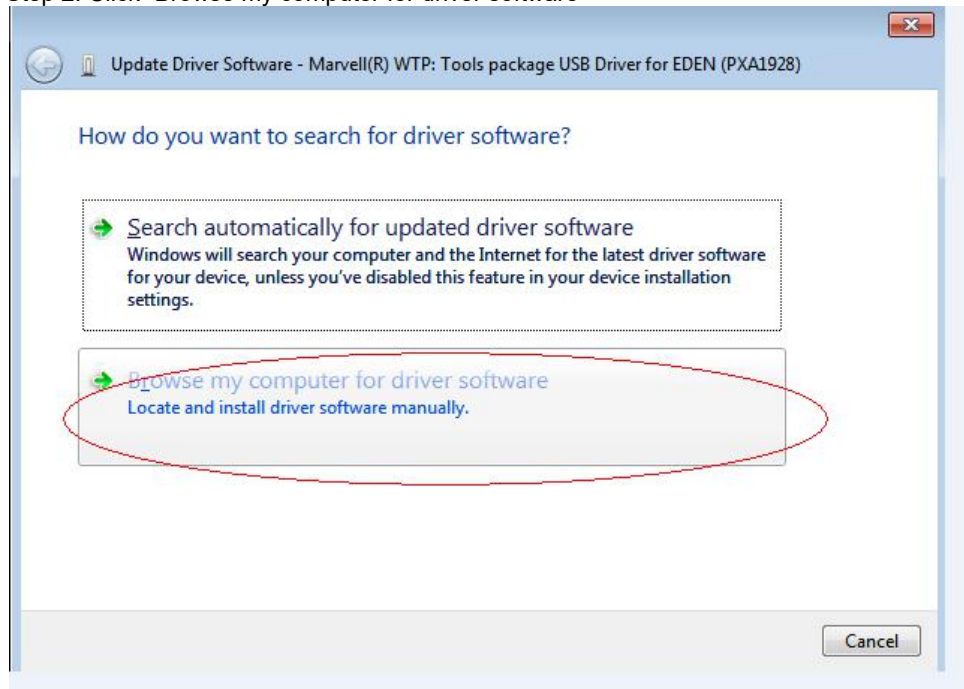


2.1.2 Manually install/update the wtpdp driver on Win7 OS

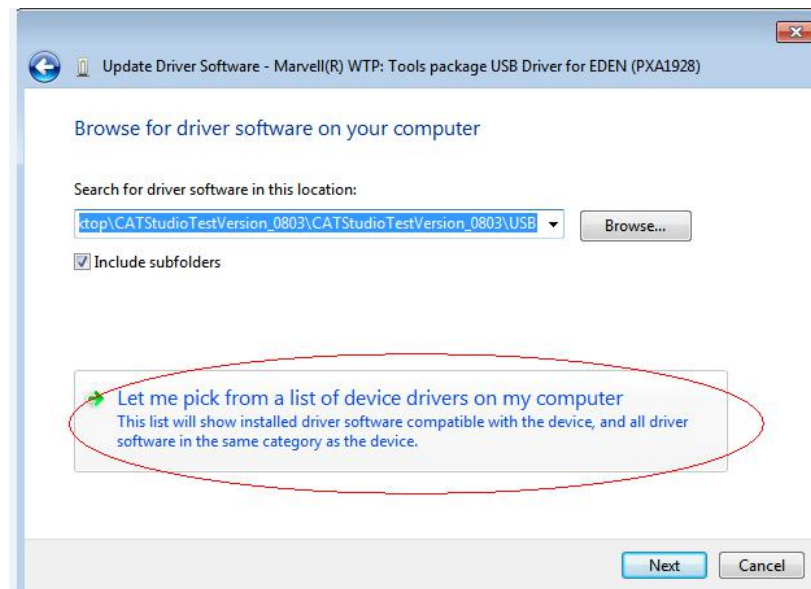
Step 1. Reset device and click right button on wtpdp driver, then select "Update Driver Software"



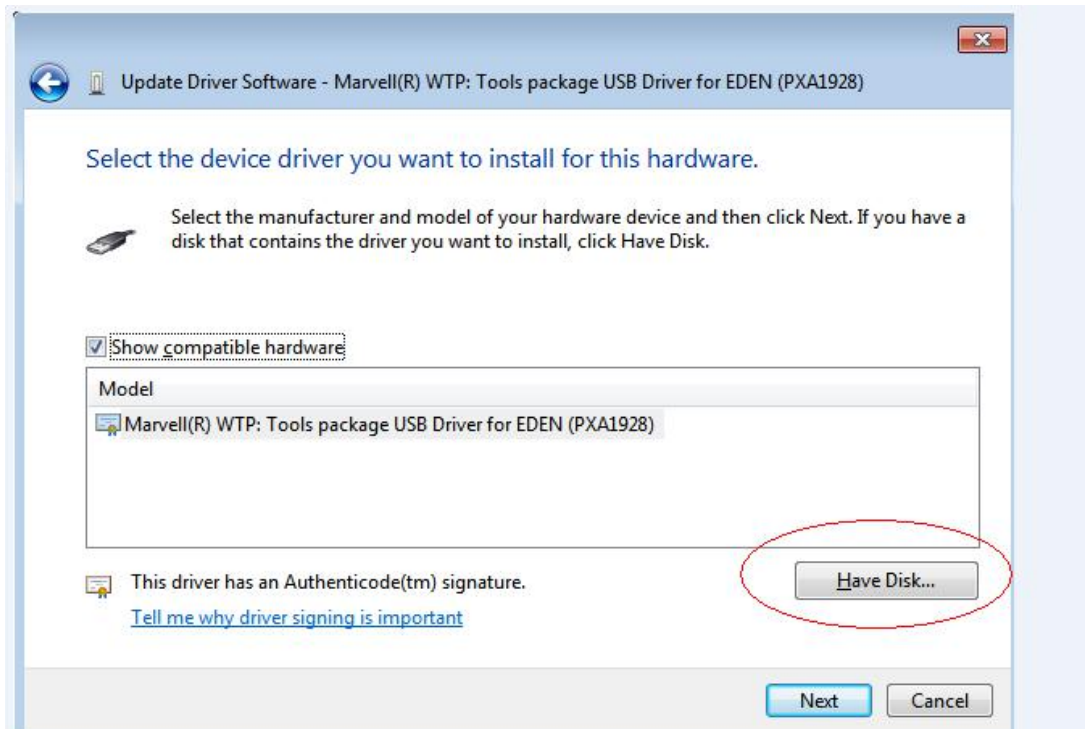
Step 2. Click “Browse my computer for driver software”



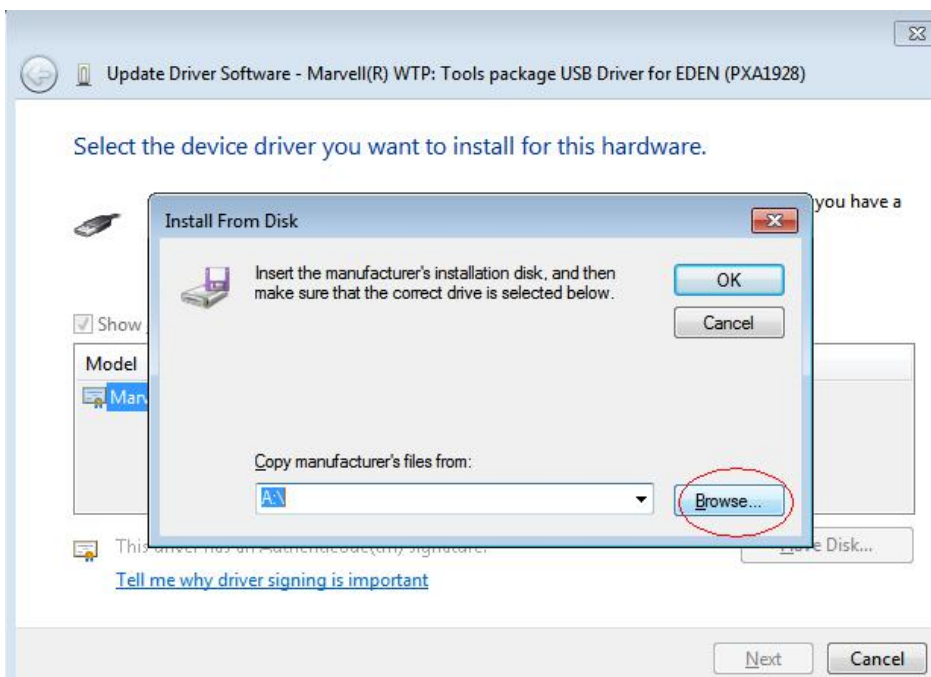
Step 3. Click “Let me pick from a list of device drivers on my computer.”, and click Next.

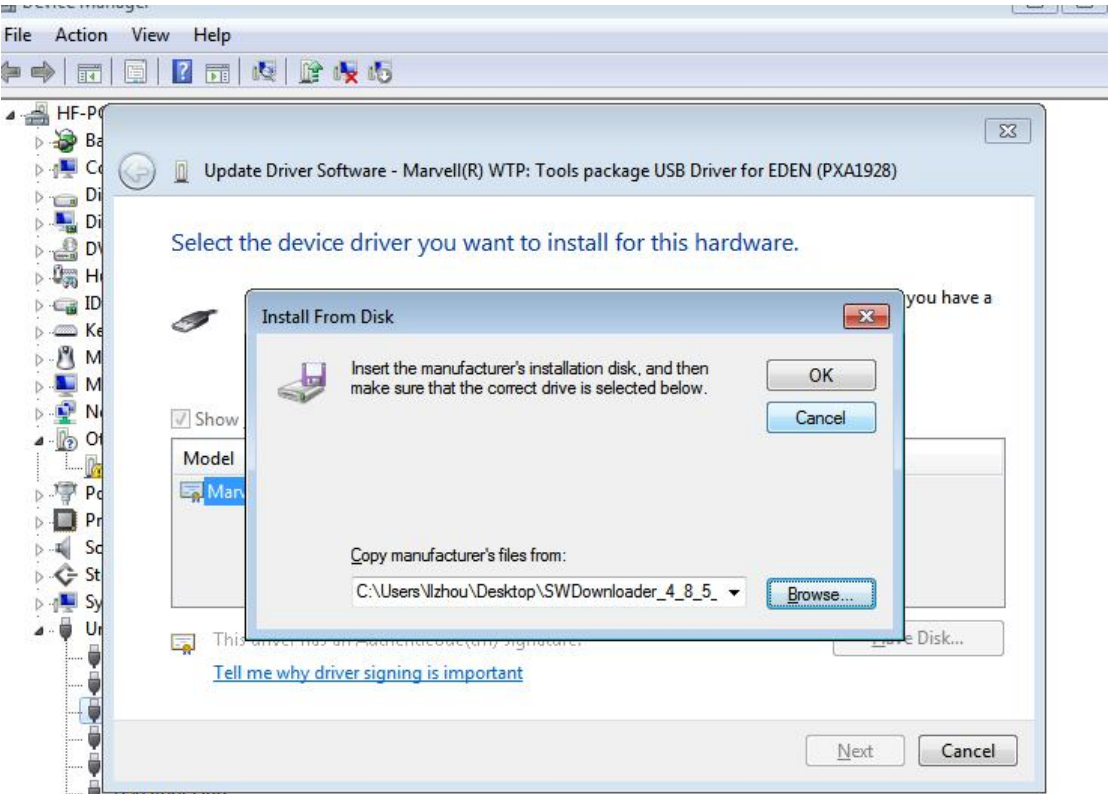
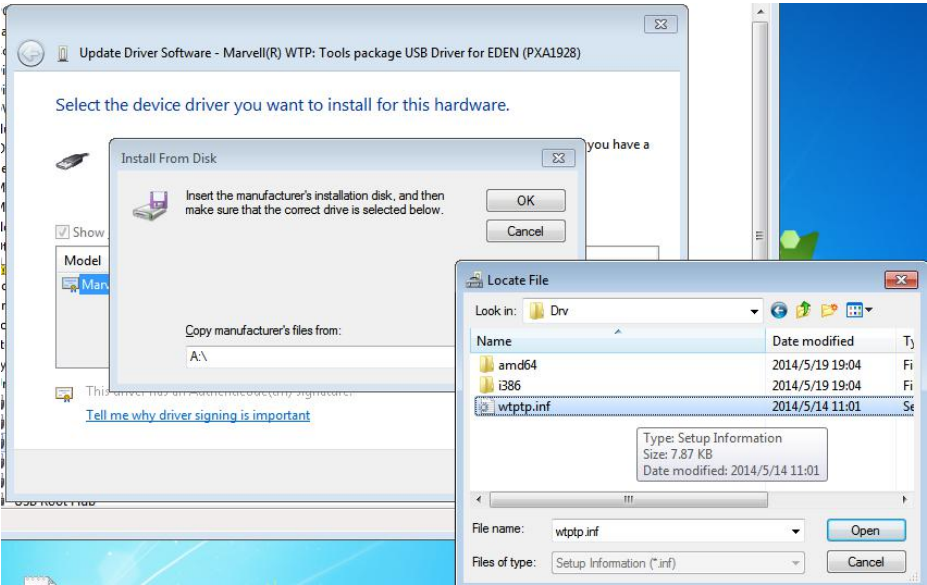


Step 4. there will be so many drivers installed before, ignore them, and select “Have Disk...”

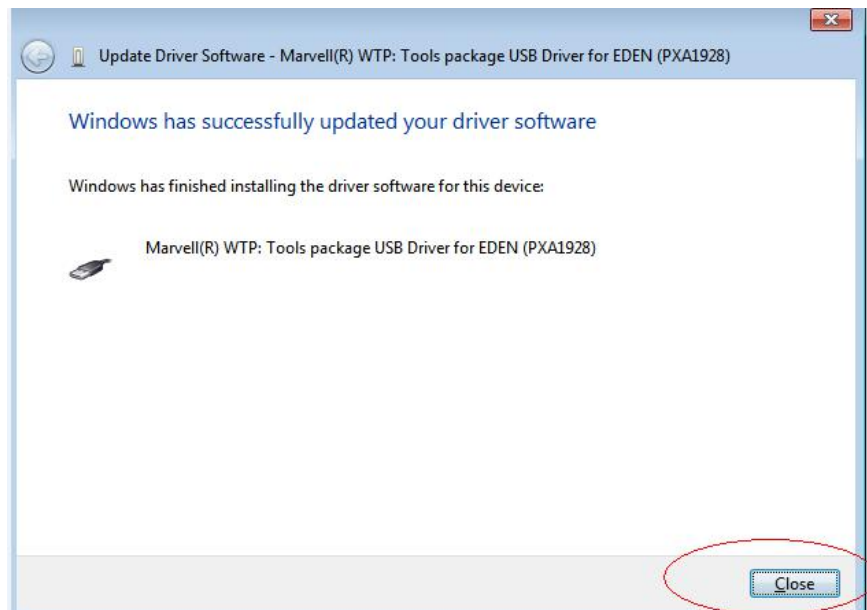
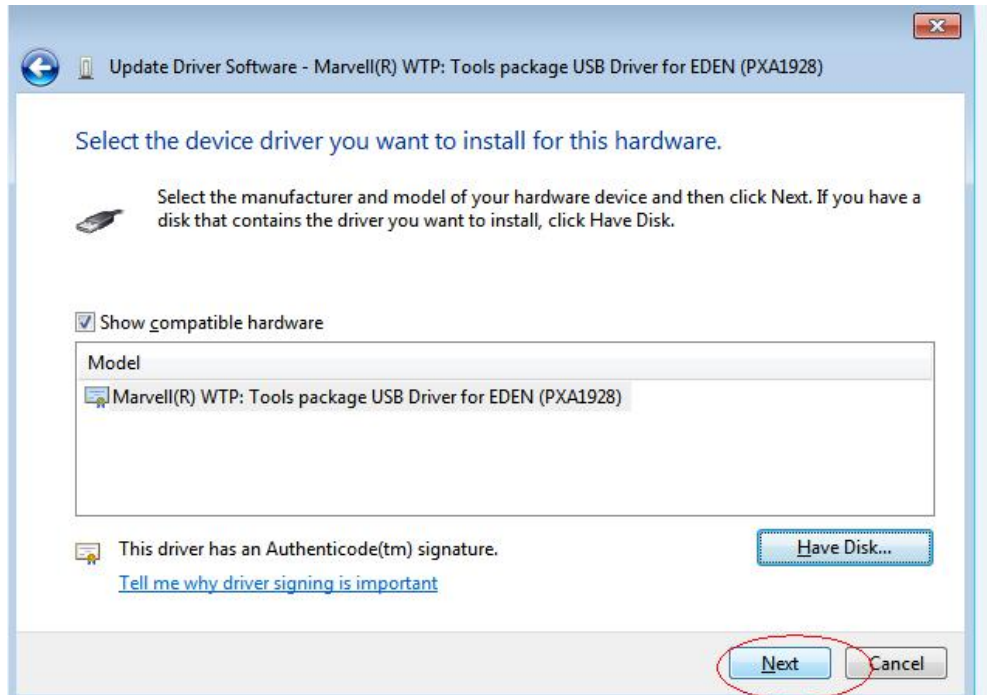


Step 5. Click “Browse...” button to select the corresponding .inf under SWDownloader driver directory, and OK.



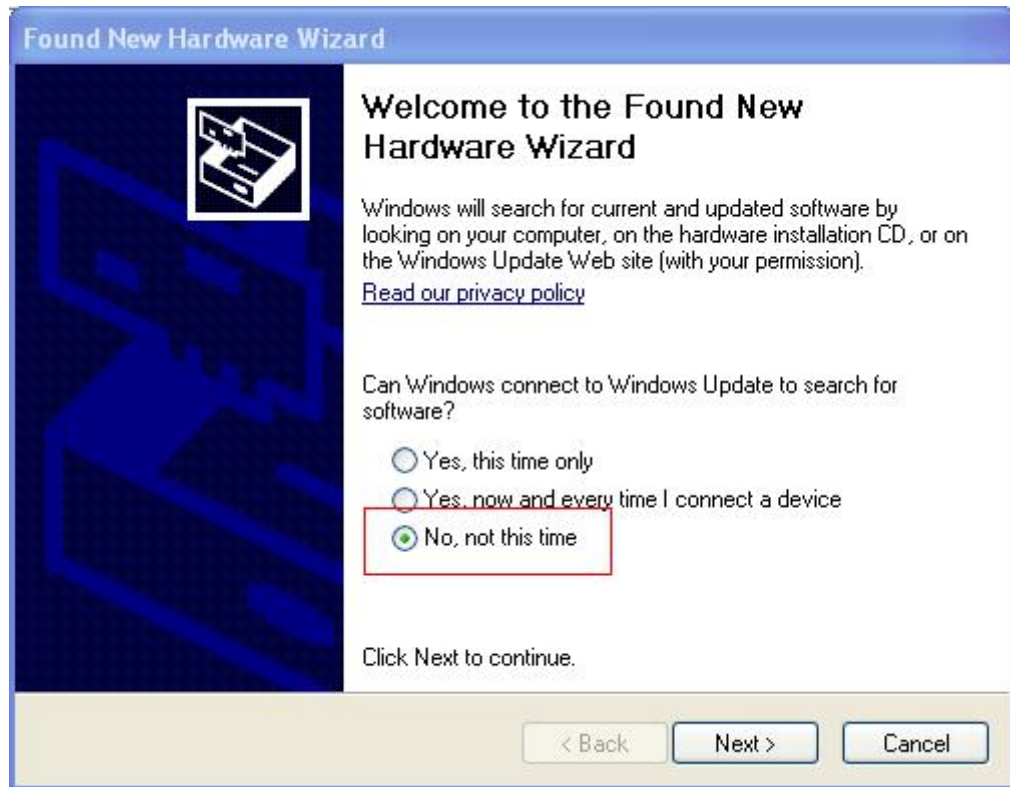


Step 6. and then follow it's instructions unstill end.

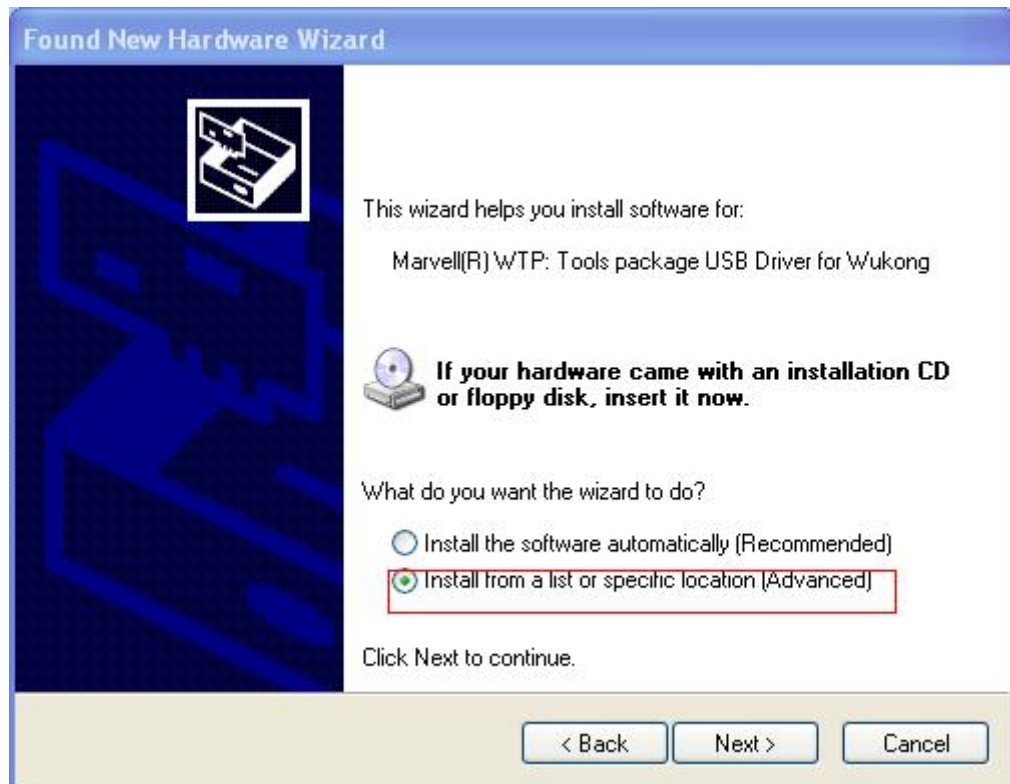


2.1.3 Update wtptp driver on WinXP OS

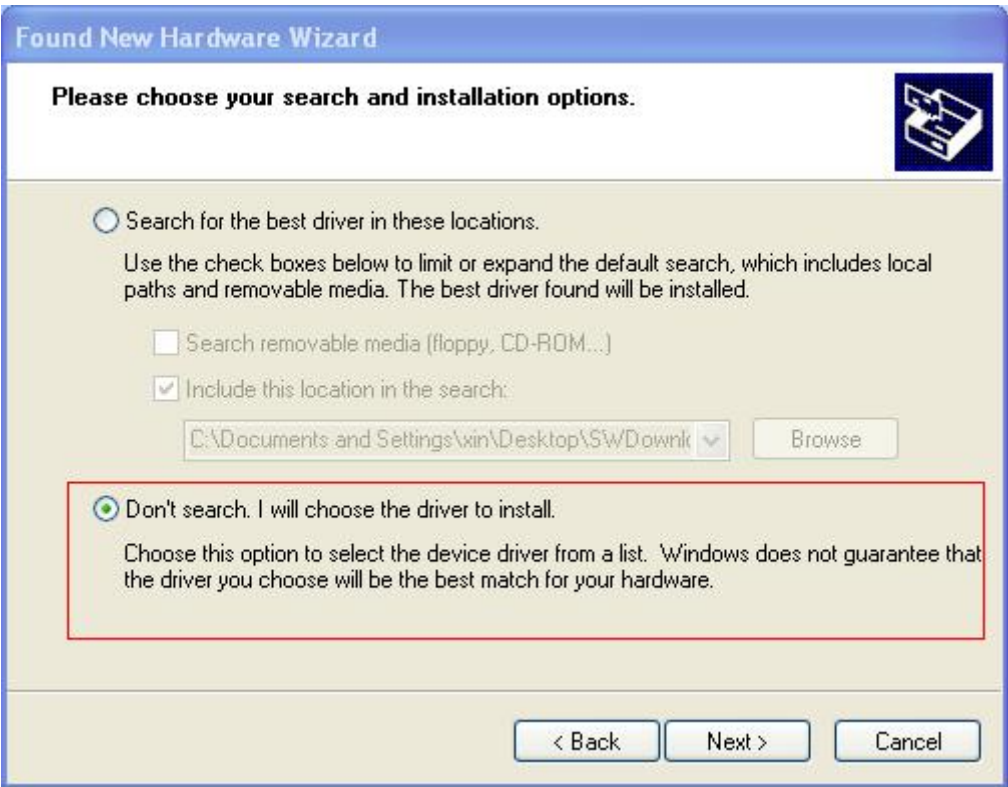
Step 1. select "No, no this time", and next



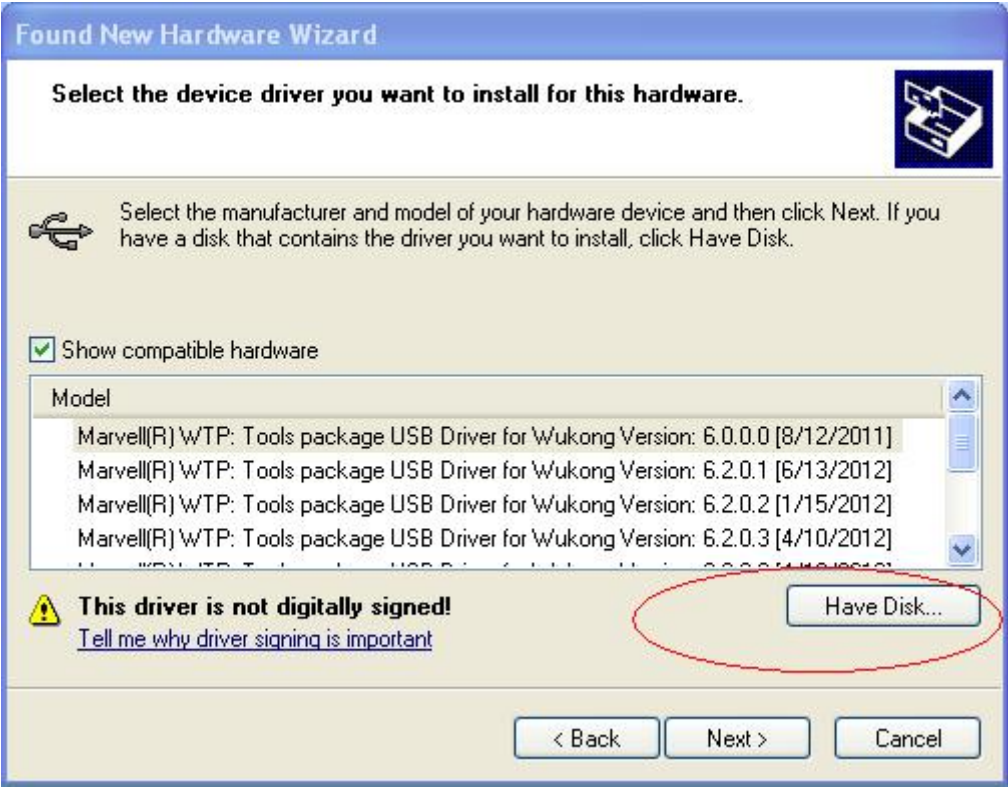
Step 2. select the second choice, and next



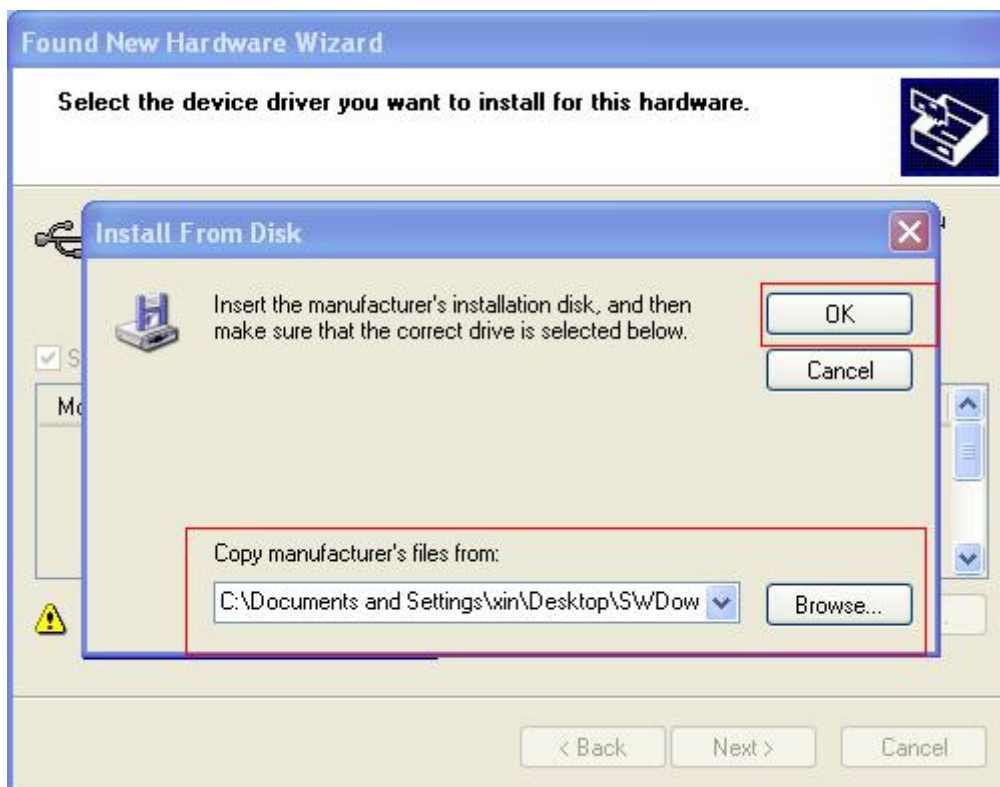
Step 3. select “Don’t search.....”, and next.



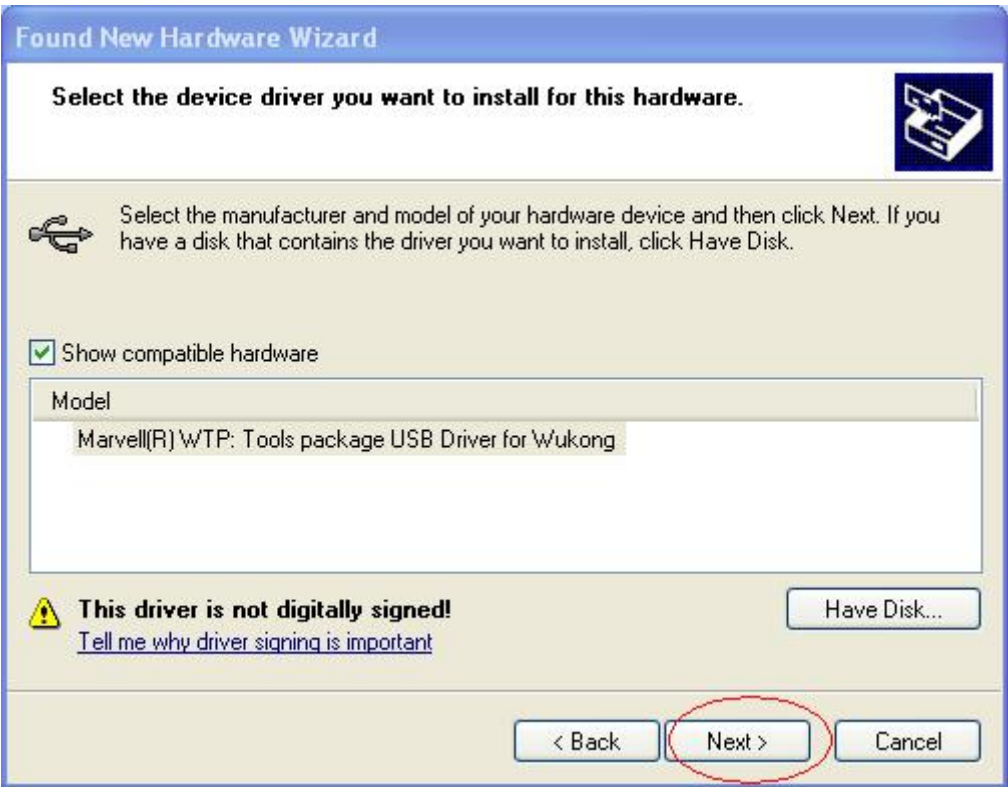
Step 4. there will be so many drivers installed before, ignore them, and select “Have Disk...”



Step 5. select the corresponding .inf under SWDownloader 4.8.5.0 driver directory, and OK.



Step 6. and then follow it's instructions unstill end.



2.2 How to install Wtptp driver on Linux PC

Please exact InstWTPTP.tar.bz2 in Driver\Linux folder and run InstallDrv.sh

3 Run application

Run application, execute SWDownloader.exe.

3.1 Preparations

It is better to erase the whole flash with XDB first if your board is non empty when you first use SWDownloader on this board



Note: SWDownloader also support non-empty flash programming, if you can make sure this board is flashed by SWDownloader last time , then you don't need to erase with XDB

3.2 How to Run

3.2.1 Download Data to UE

3.2.1.1 Normal use – Single Target Download (Default Mode)

Full images download

1. Open release package of SWDownloader, see figure 3.1;

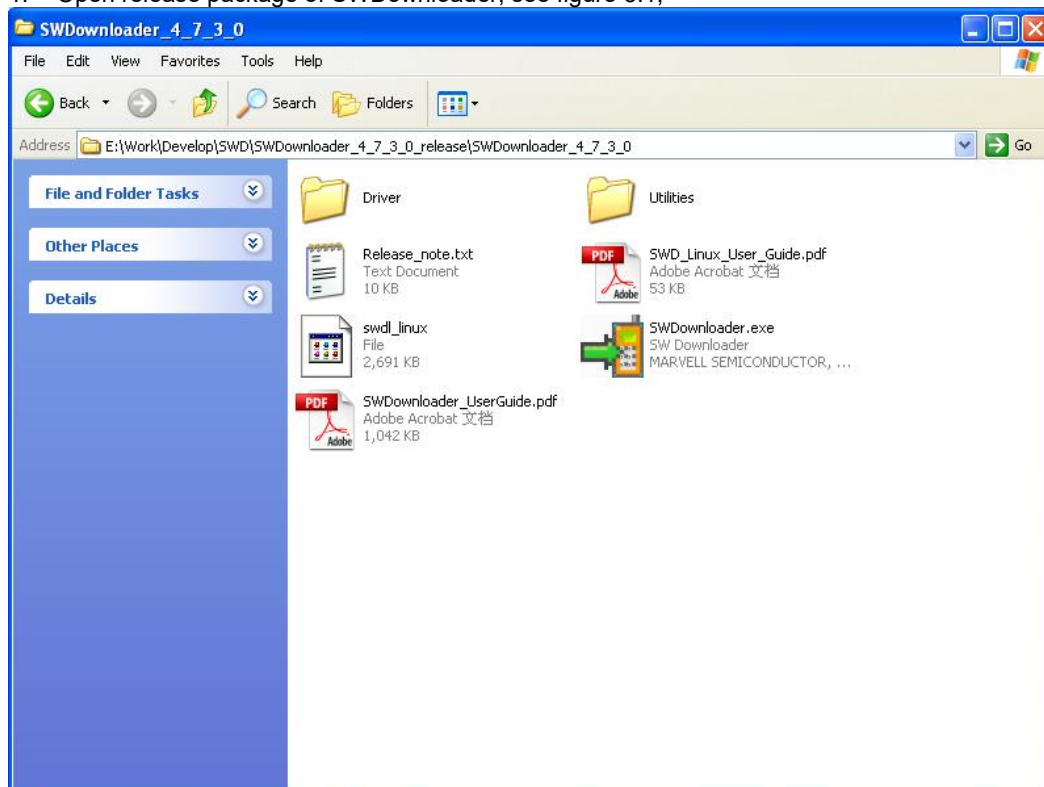


Figure 3.1

错误！未定义样式。

2. Double Click “SWDownloader.exe” see below figure 3.2;

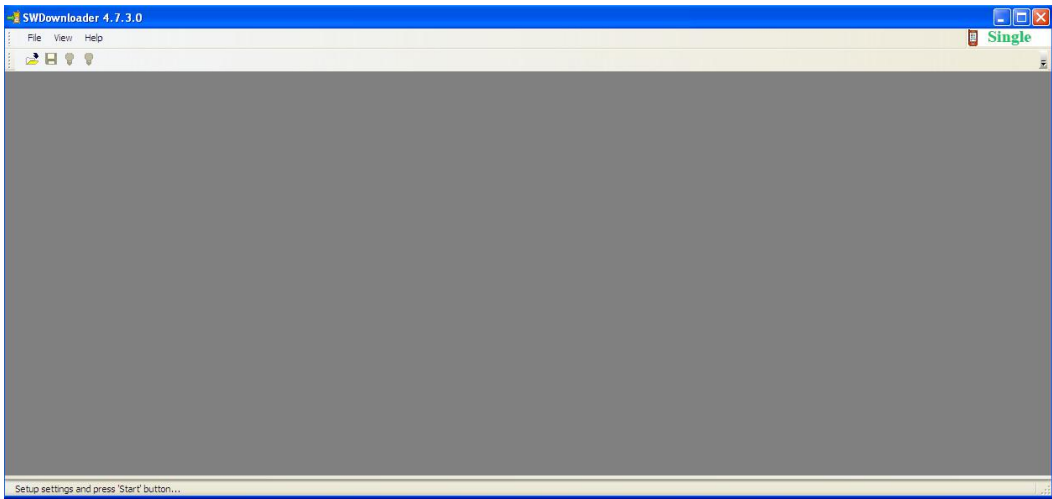



Figure 3.2

3. Click button  in toolbar or choose **File->Open** in menu to open a blf file such as EMEI_Trusted_eMMC_1024.blf, see figure 3.3;

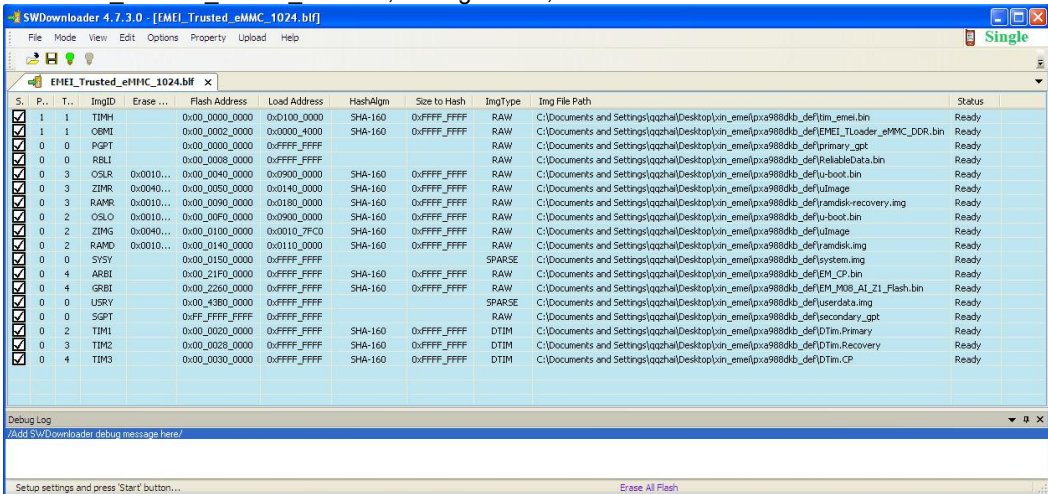




Figure 3.3

(Please check every image file enable to show , it will pop up message box if file not exist when you open blf file)

4. Click  to start preparing for downloading until see figure 3.4;

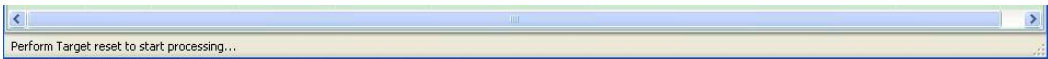


Figure 3.4

5. Do the following operations:
A. Empty board flash programming:

- 1) Plug in the USB cable;
- 2) Reset Board.
- B. Non-empty board flash programming(make sure your board is programmed by SWD before):
 - 1) Plug in the USB cable;
 - 2) RESET the board, **Press “Back” and hold until see WTPTP device is appeared**



1. **Note:** If you first use SWD to download in your PC, PC may prompt to install drivers for WTPTP, the drivers are located in: \Driver, see figure 3.5

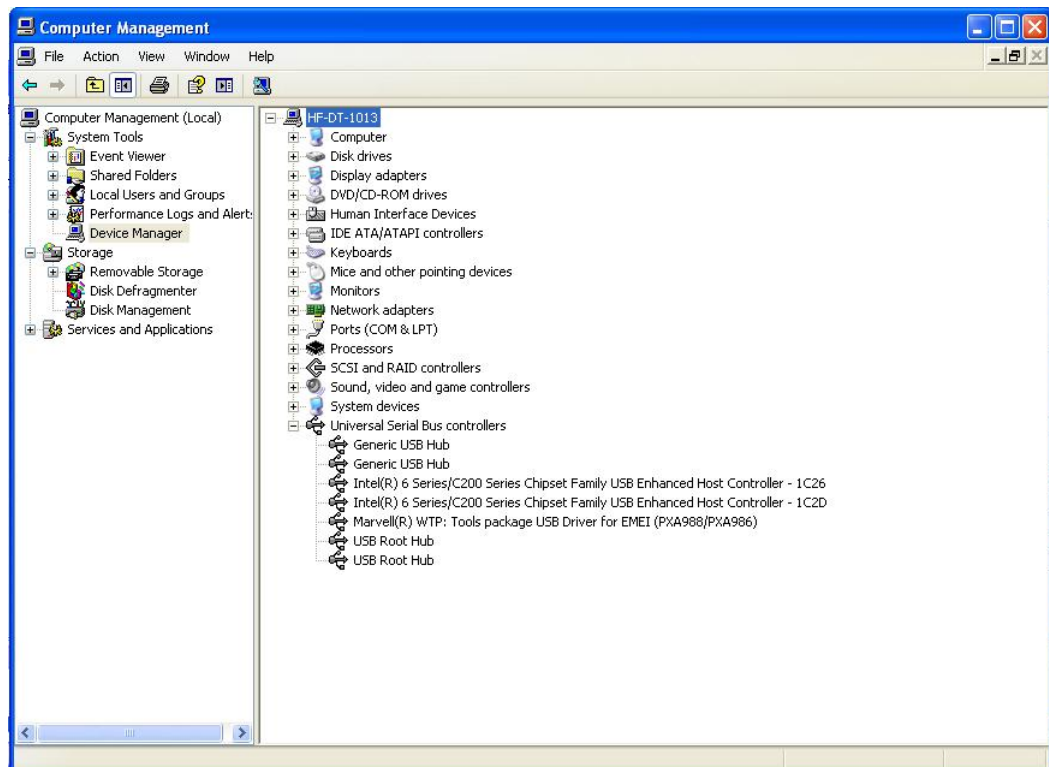


Figure 3.5

6. The download will start and wait for download completed , downloading progress will be displayed in progress bar ,see figure 3.6;

错误！未定义样式。

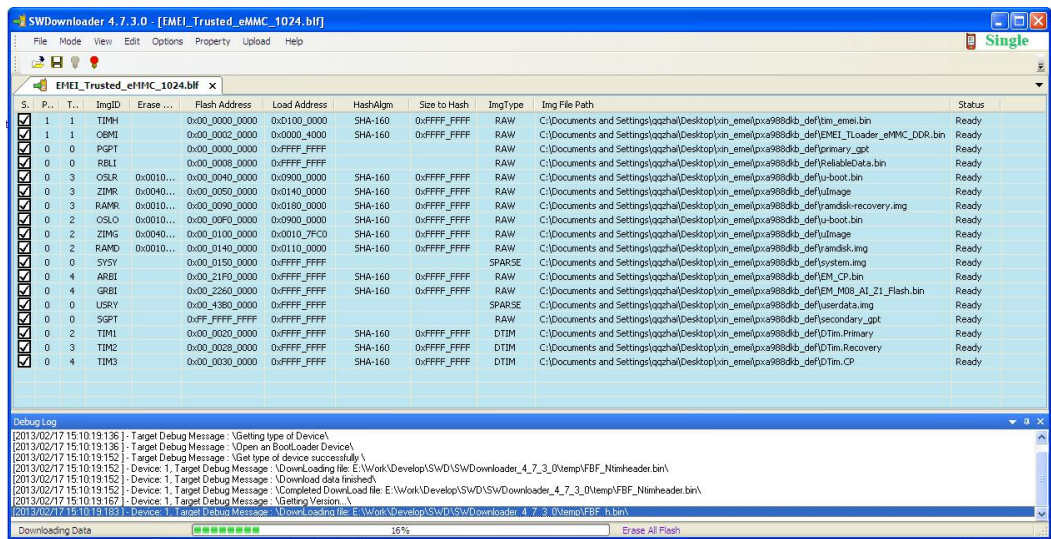


Figure 3.6

7. Please wait until download complete, it will pop up a message box telling the download time, see figure 3.7;

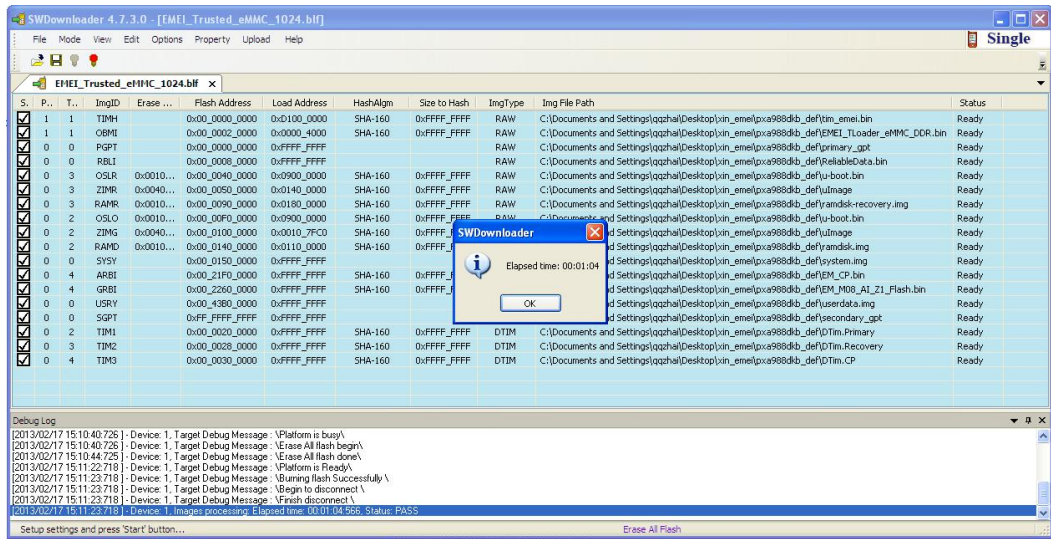


Figure 3.7

Partial Images Download

1. Copy all image files which are included in Tim in blf and all files are enable in blf file, but they are must be existed in this directory for generating Tim file and prepare for FBF file See figure 3.8;
2. Enable to be update images and Tim included images in view list and disable others, but please note that:TIMH and other Tim included images are must to partial download and user can't disable it ,see figure 3.8;

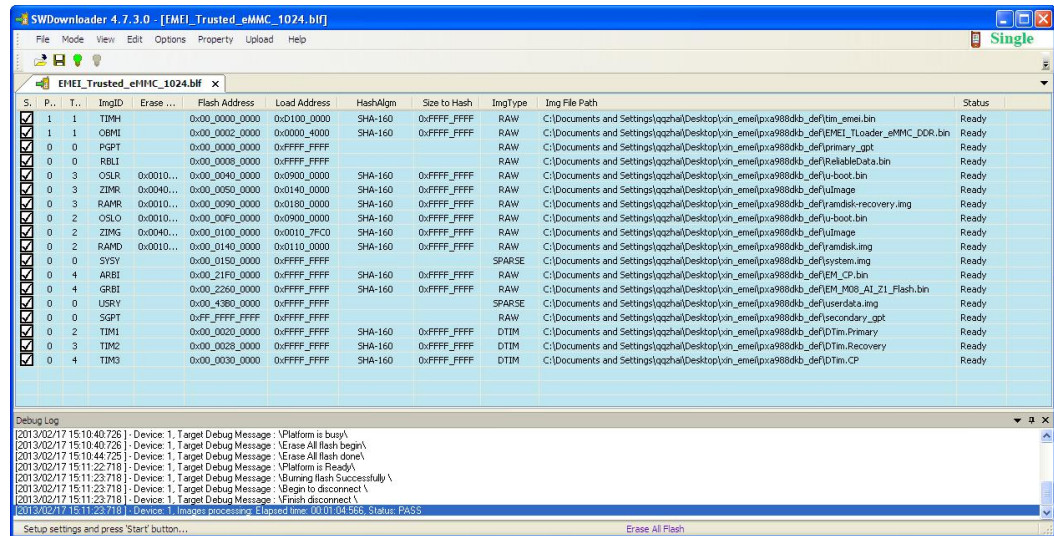



Figure 3.8

3. Click  to start preparing and wait its icon become gray;
4. Plug into USB, RESET the board, **Press “Back” key and hold until see device appeared;**
5. Wait download until partial download completed.

3.2.1.2 Multiple UEs Download

1. Choose Multi mode in Menu like figure 3.9;

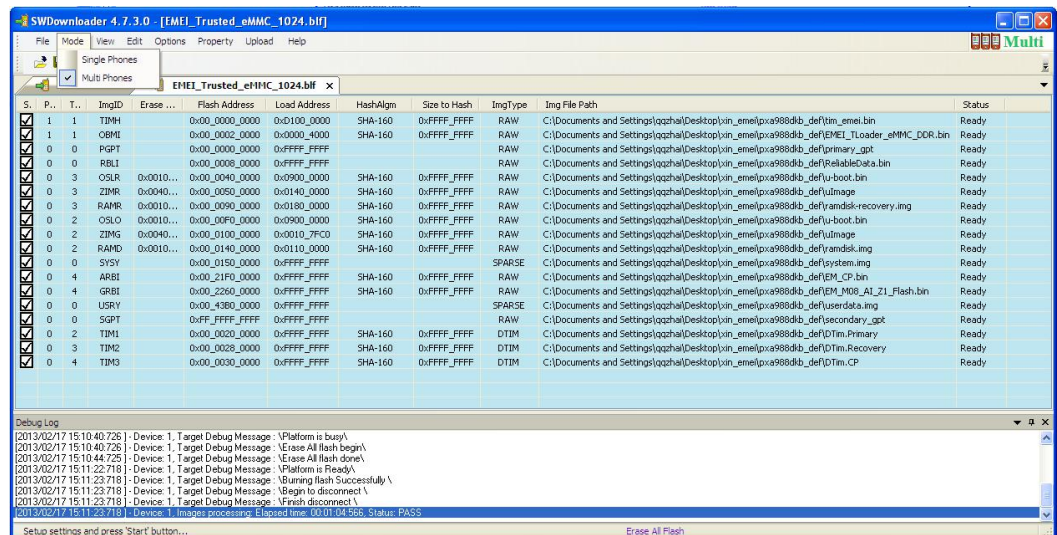



Figure 3.9

2. Click  to start preparing for downloading;
3. Open tab of File Transfer page of blf ,you can see download progress of every target ,see figure 3.10;

错误！未定义样式。

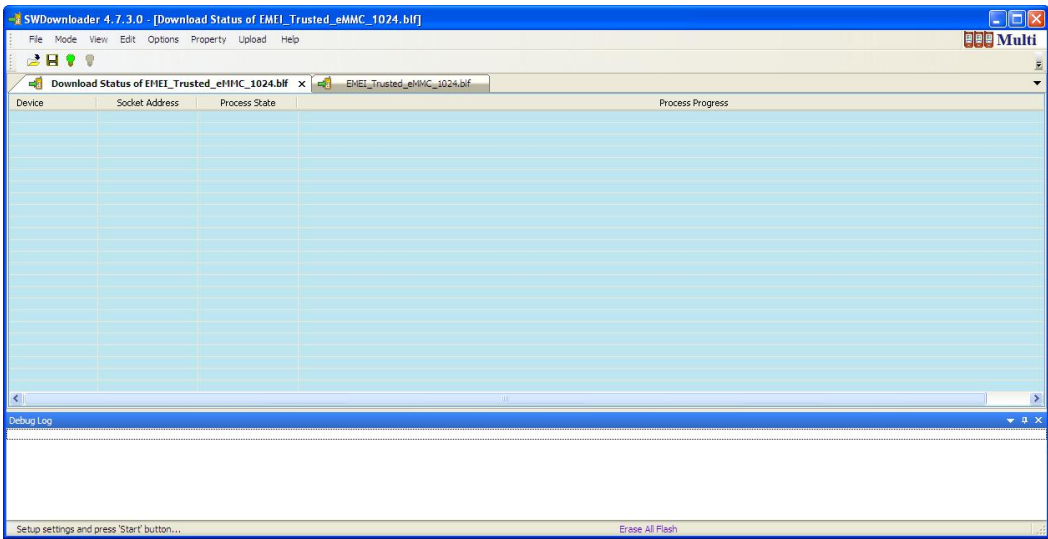


Figure 3.10

4. Reset all Targets and download will start and wait for them completed, see figure 3.11 , 3.12;

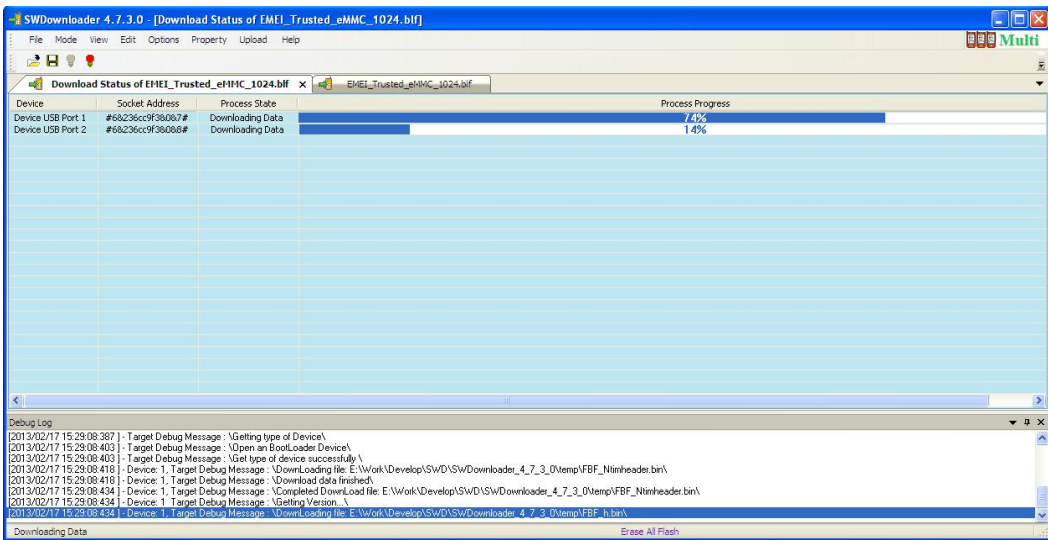
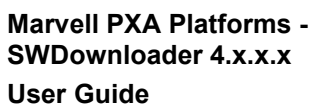


Figure 3.11



错误！未定义样式。

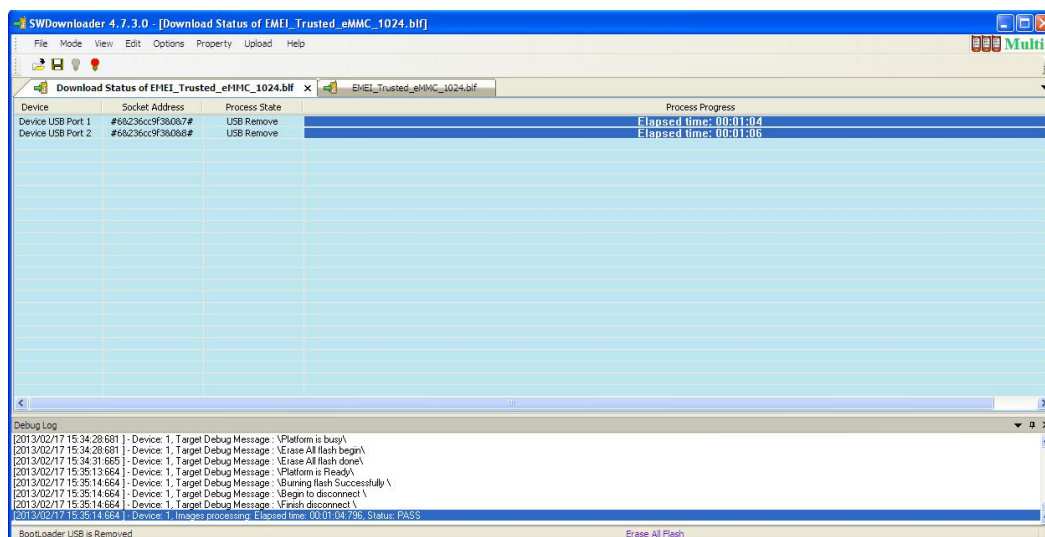


Figure 3.12

3.2.2 Upload Data from UE

3.2.2.1 Configure upload areas

1. Choose Upload option, see figure 3.13;

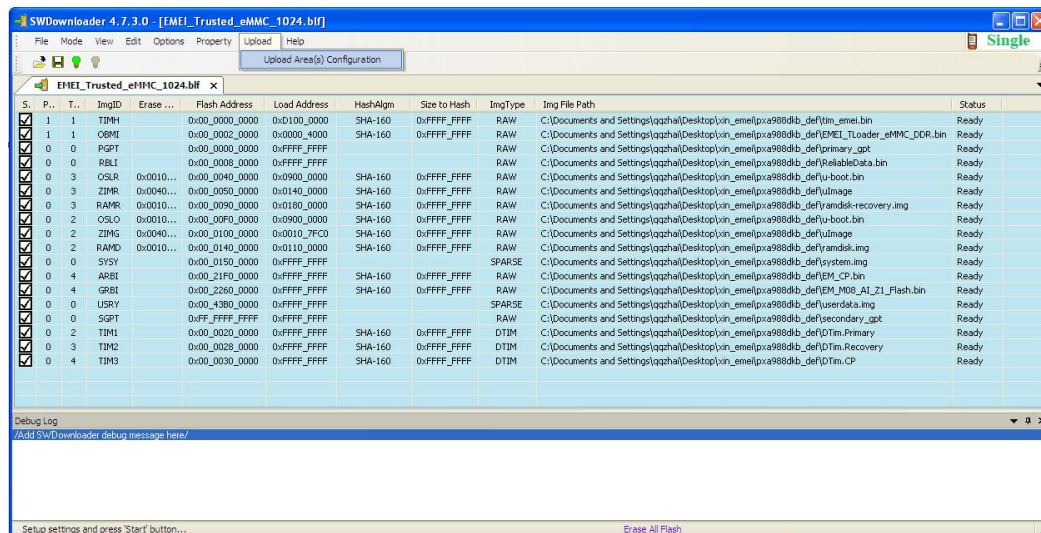


Figure 3.13

2. Configure upload data area of flash as you want in “Edit upload area dialog”, see figure 3.14;

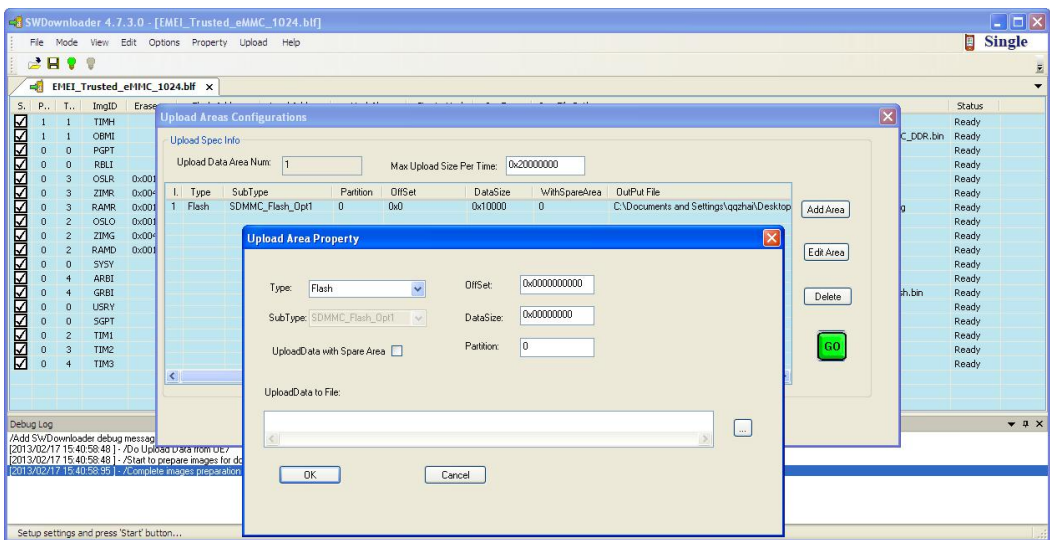


Figure 3.14

3.2.2.2 Save and import upload areas configuration file

You can save your upload configuration file for next usage by import it in UI, save file like figure 3.15, import it like figure 3.16;

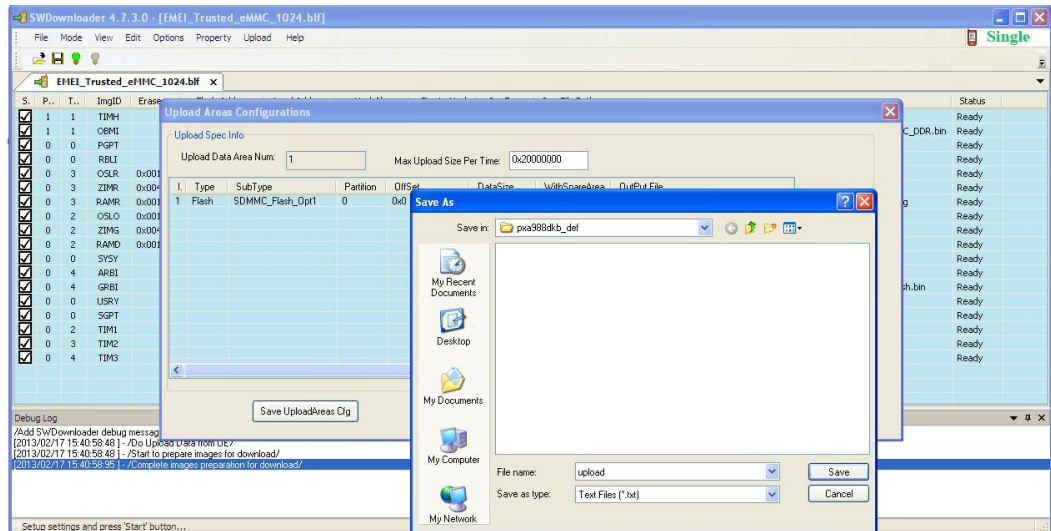


Figure 3.15

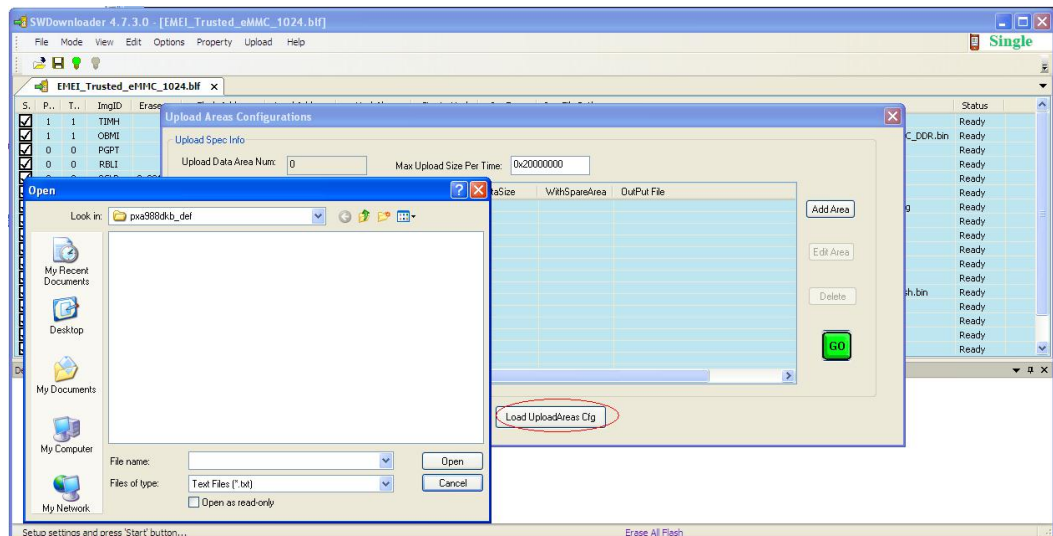


Figure 3.16

错误！未定义样式。

3.2.2.3 Check whether obm available

If obm was unavailable, we need check the ObmNotBoot CheckBox in figure 3.17

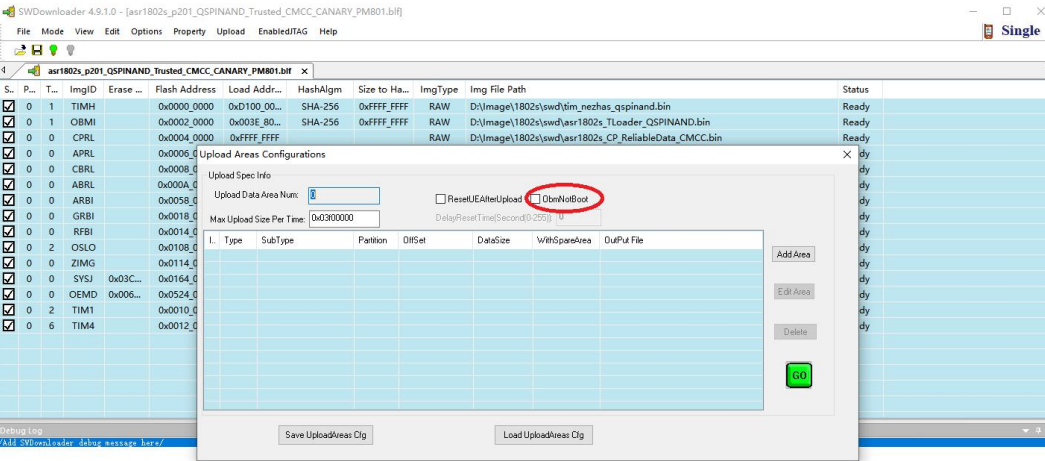


Figure 3.17

3.2.2.4 Upload data

1. After you finish all configuration of upload areas , please press **GO** to begin to prepare upload, RESET the board, and let WTPPTP device appeared, see figure 3.18;

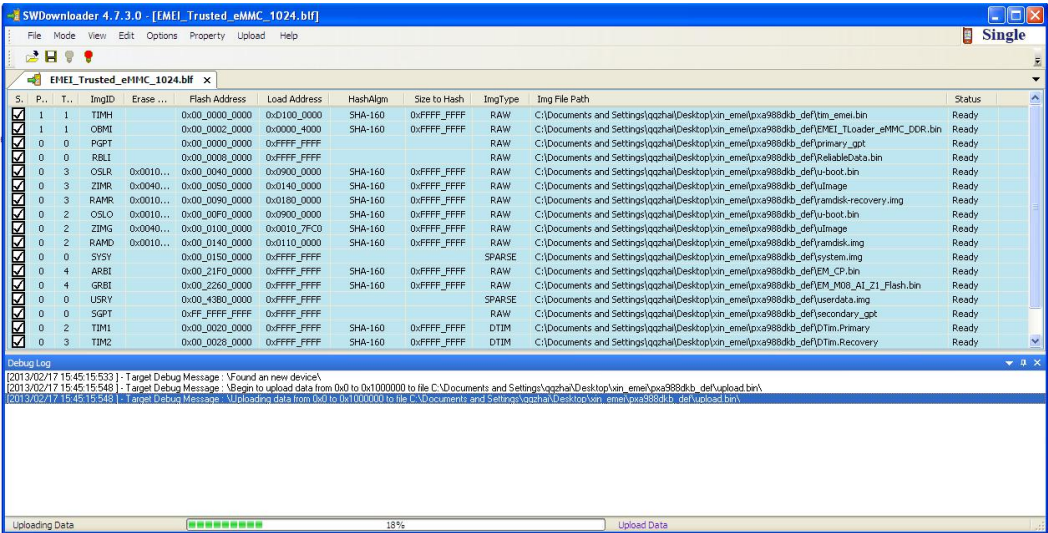


Figure 3.18

2. Waiting for upload finished , you will see a pop up dialog to give a notification that upload successfully , see figure 3.19;

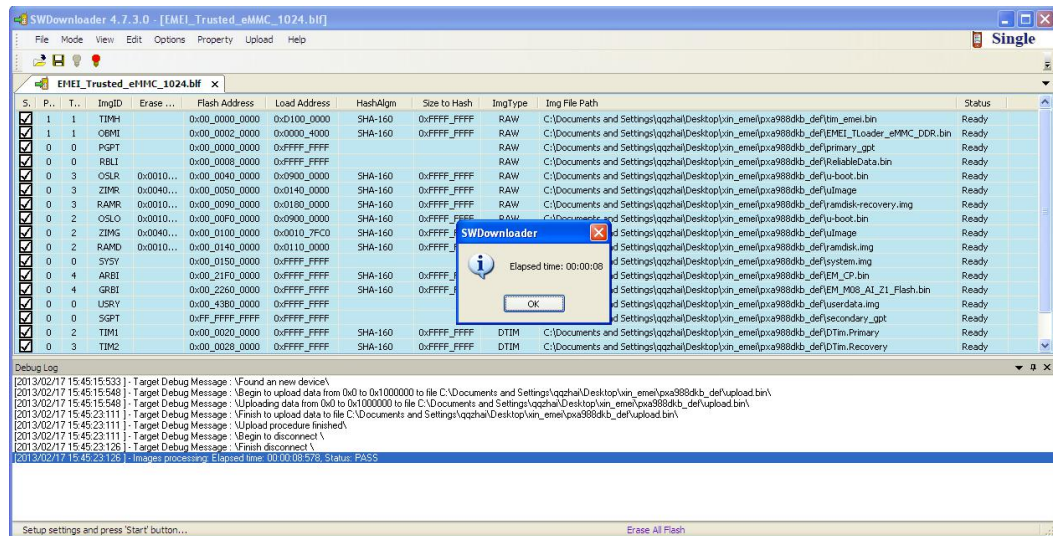


Figure 3.19



Note: SWDownloader don't support multiple UEs' upload

3.2.3 Enable Jtag

This function is used to enable Jtag if use can provide a key file with a burned phone

The Key File should follow marvell's key format

4 Appendix

4.1 Report issues

Please send email to qqzhai@marvell.com with "SWDownloader Issue Report: ..." title.

Or visit webs: <http://support.marvell.com>.

Or submit an issue at CQ web: <http://sh2-cq01.marvell.com/cqweb/login>.

4.2 Update this document

Please send updated document to qqzhai@marvell.com with "SWDownloader document update: ..." title for merging, and you will receive merged latest version.



4.3 Revision History

Table 4.1: Revision History

Document No and Revision	Author	Description	Date
0.1	qqzhai	The initial version	06/24/2011
0.2	qqzhai	Review version	06/27/2011
1.0	qqzhai	Release version	06/28/2011
2.0	qqzhai	Update version	09/26/2012
3.0	qqzhai	Update version	17/02/2013
4.0	qqzhai	Update version	27/11/2013
4.1	qqzhai	Update version	28/09/2014



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