

SPRD Download & Upgrade Tool User Guide

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1. Introduction

1.1 Function

The download and upgrade tool used in production line are very similar. To provide users with great convenience, they are made into two separate applications. The functions and characteristics of these two tools are described below.

Download tool is used to write procedures, user data. It has the following characteristics:

- This tool supports DebugHost and USB mode, it can simultaneously download more than one mobile phone. It does not support USB and serial mixed.
- The main program Lod file is necessary, and it must have the relevant header information. Meanwhile, user can provide CFP file, written with the main program together.
- Supports erase function, can erase all the content on the FLASH (**Radio frequency calibration area data will be erased**).
- Support setting save function.

Upgrade tool is used to write procedures, user data. It has the following characteristics:

- This tool supports DebugHost and USB mode, it can simultaneously download more than one mobile phone. It does not support USB and serial mixed.
- User can provide the main program Lod file (must have the header information), if not provided, the tool will read the FLASH information from the phone.
- User can provide CFP file. But the main program Lod file and CFP file cannot absent at the same time.
- Support setting save function.

1.2 Operating Environment

This tool can run on XP, win7, win8, win10 system. The PC need to have at least one available serial port or USB port.

1.3 Instruction of production and test

1.3.1 Illustration of USB Download Mode

USB download mode, VBAT cannot have power. It needs to hold down the OK button and then insert the USB cable to ensure that the OK button can be checked in manual operation. In fixture operation, it required that the connection of USB 5V of the fixture and the short connection of OK key basically completed at the same time. The software will check the OK key after about 2 seconds on the connection of USB 5V.

When the flash is empty, whether short connected the OK button in fixture operation will not affect the tool detected chips.

OK button is the default key used to enter USB download mode during CHARGE boot and it can be configured in the software. See KEY_USB_BOOT_DOWNLOAD definition (target / <target_name> / include / tgt_board_cfg.h). Note that when KEY_USB_BOOT_DOWNLOAD is modified, make sure the download fixture is also synchronized.

Other methods to enter the USB download mode cannot guarantee reliability, and cannot be used in production.

In the production process, if it needs to connect multiple mobile phones to PC using USB HUB, VBAT cannot have power, neither the battery, there can be no external power supply.

1.3.2 Illustration of COM Download Mode

If the COM mode is used, it needs to connect the phone to PC using USB serial device, and VBAT powered is required. In manual operation, hold down the power button until the screen is lighted up. Make sure to start when the screen is lit. In fixture operation, it also needs to make sure to start when the screen is lit.

USB mode has higher stability and efficiency. We strongly recommend using USB mode in production.

Note: The COM range is 0 ~ 255. If the port is out of the prescribed scope, such as COM366, please select the port again.

2. Interface Description

2.1 Main User Interface

Run fpdownload/fpupgrade program, the main interface of the program is shown

in Figure 2-1 (In addition to the window title, the main interface of the two tool are the same). The information of about button is “SPRD download tool v9.00.03-g6482e190”, where “v9.00.03-g6482e190” is the version number of the tool which will be updated continuously.

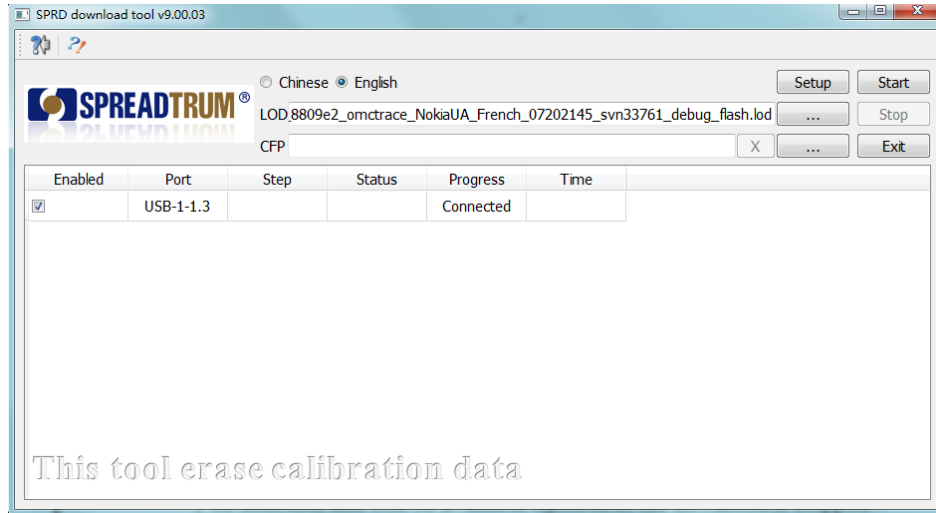




Figure 2-1 Main user interface of download tool

2.2 Elements of the interface

Description of the elements in the main interface is displayed in Table 2-1.

Table 2-1 Description of the elements in the main interface

Icons	Description
	Open setup dialog, select the download mode and phase check option. If you start the download, this button will be disabled, and will be available again after stop download.
	Select main program lod or CFP file. If you start the download, this button will be disabled, and will be available again after the download is stopped.
	Clear CFP file. When the CFP file is empty, this button will be disabled and will be available after selecting the CFP file.
	Start download. This button will be disabled when the main program file is empty or the download is started. It will be available after the download is stopped.
	Stop downloading process. This button will be available after the download is started.
	Exit program.
	Switch to Chinese.

<input checked="" type="radio"/> English	Switch to English.
 	Open user guide or about information.

2.3 Status Window

The area below is the status window, which is used to display the status of the port, downloading, result, etc., as shown in Figure 2-2 and Table 2-2

Enabled	Port	Step	Status	Progress	Time
<input checked="" type="checkbox"/>	USB-1-1.4	Program	7%	In Progress	0:11

Figure 2-2 Status Window

Table 2-2 Description of status window

Items	Description
Enabled	Port enabled. Can make the detected port/device in the enable/disable state.
Port	Available port number/device name.
Step	The whole download process is divided into several steps. This item indicates the name of the current step.
Status	Show the progress of the current download during the download process and display error messages when the download failed.
Progress	Display the connection status of the port/device (connect /not connect) before downloading starts and show the status of the download (In progress/pass/fail/cancel) after downloading starts
Time(s)	Download time, unit second.

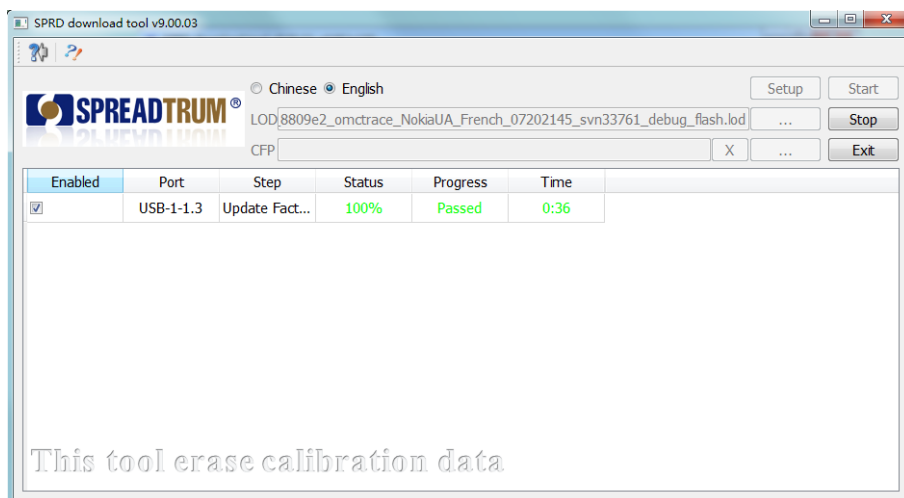


Figure 2-3 Passed window

Enabled	Port	Step	Status	Progress	Time
<input checked="" type="checkbox"/>	USB-1-1.4	Program	Program failed: IO error	Failed	0:17

Figure 2-4 Failed window

2.4 Setup Interface

2.4.1 Download Tool Setup Interface

The setup interface is used to set the download mode and phase check. As shown in Figure 2-5.

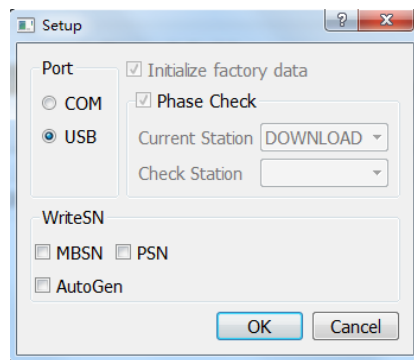

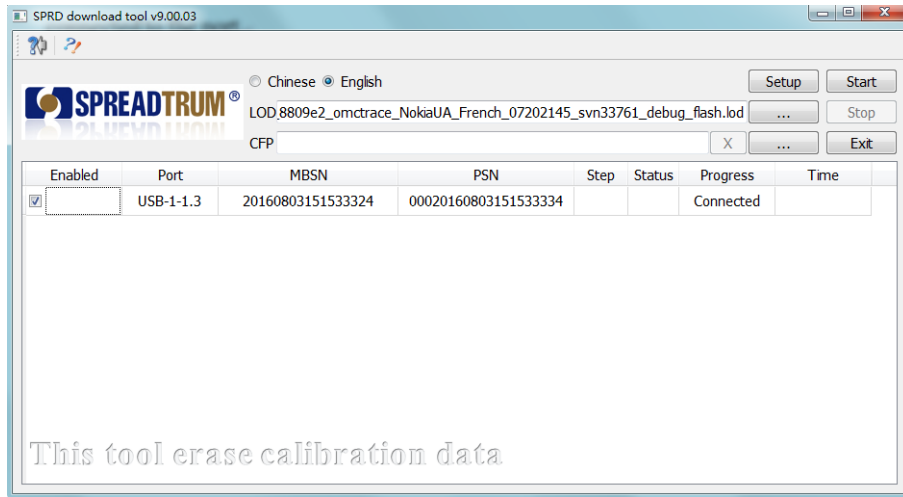


Figure 2-5 Setup interface of download tool

- Port Selection: Support DebugHost and USB mode and the default mode is the serial port.

 Note: Currently, both DebugHost and USB mode support automatic mode. It means that click on the “start” button, the program will begin to download, when the download is complete, unplug the phone, the program will automatically detect whether there is a new module is connected to the port.

- Initialize factory data:
The download tool initializes the factory data by default and cannot change through configuration file or setup dialog. See phase check instruction for detail.
- Phase Check: Set the current station and the station to be checked.
- SN setting
If MBSN box is checked, the program will write MBSN while downloading;
If PSN box is checked, the program will write PSN while downloading;
If AutoGen box is checked, the program will automatically generate SN.
The main interface is shown as follow if SN box is checked.



2.4.2 Upgrade Tool Setup Interface

The setup interface is used to set the download mode and phase check. As shown in Figure 2-6.

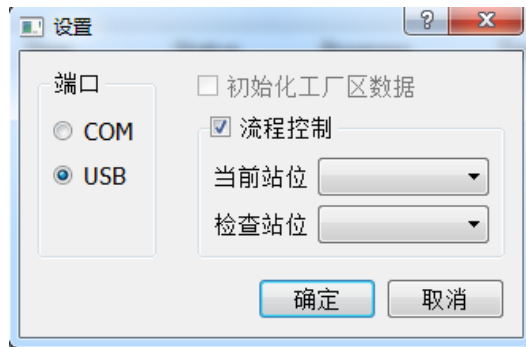


Figure 2-6 Setup interface of upgrade tool

The upgrade tool does not initialize the factory data by default. User can change the setting by modify the upgrade.ini file in cfg folder.

3. Operation Guide

3.1 Quick Start Guide

Next, take download tool for example, the operation steps of the tool is described as below.

1. Running

Run fpdownload.exe. The main interface is shown in Figure 2-1.

2. Select the main program file and CFP file (option)

Click  button on the main interface to select the relevant files.

3. Download parameter setting

Click setup button to open setup dialog. Set the download mode and phase 选择

check, as shown in Figure 2-5. The program will automatically detect the available port/device and display it on the interface, as shown in Figure 3-1.

Enabled	Port	Step	Status	Progress	Time
<input checked="" type="checkbox"/>	USB-1-1.3			Connected	
<input checked="" type="checkbox"/>	USB-1-1.4			Connected	

Figure 3-1 Port/device list

 Note:

The port/device list will automatically cleared after the download mode is changed. The program will automatically detect new available port/device.

4. Starting Downloading

Click the start button on the interface and the program will begin download.

5. Downloading Complete

Status window show the progress of the download. After the download is complete, progress bar of the corresponding port display download results with different colors. “Passed” with green color indicates downloading success while “Failed” with red color means failure, as shown in Figure 3-3. If it is not user error, the reason for failure will be given. The download results will be retained at the interface until the phone is pulled.

Enabled	Port	Step	Status	Progress	Time
<input checked="" type="checkbox"/>	USB-1-1.4	Write Flags	100%	Passed	0:36

Figure 3-2 Passed window

Enabled	Port	Step	Status	Progress	Time
<input checked="" type="checkbox"/>	USB-1-1.4	Program	Program failed: IO error	Failed	0:17

Figure 3-3 Failed window

6. Exit Program

Click exit button on the interface or close window button to exit the program.

7. Write SN

There are two ways to generate SN, automatically and manual input.

Manual input:

- The cursor will automatically jump to the next SN box after manually input a SN.
- The operation will start immediately after SNDelay milliseconds if the size of SN meets requirements.

- User can fix several bits of SN through download.ini configuration file. The program will determine whether the input is consistent with the setting and will report error if the two are not match. The matching character can be changed by modifying the values of MBSNMatch and PSNMatch in the configuration file.

Automatically generate:

- The SN will be calculated by the algorithm and cannot be modified by user.

3.2 Language Setting

Switch to Chinese / English through the button

