

# UNISOC NPI Download User Guide

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Unisoc Confidential

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#### statement

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## Foreword

### Document Description

This document primarily introduces the use of the Unisoc download tool and provides factory testing guidance. It is applicable to Unisoc products. SC6531/SC7701/SC7730/SC7731/SC9820/SC9830/SC9832/SC9850/SC9853/SC9860/SC9861/

/SC9863A/UMS312 Platforms such as [platform name missing].

### Reading Object

This document is intended for R&D testing and production line testing technicians.

### Content Introduction

This document consists of six chapters:

- Chapter 1: Overview;
- Chapter Two: Interface Description;
- Chapter 3: FactoryDownload;
- Chapter 4: Upgrade Download;
- Chapter 5: ResearchDownload;
- Chapter Six: FAQ

### Document Conventions

This document uses the following prominent symbols to indicate areas that require special attention during operation.



Notice:

Remind users of precautions to take during operation.



illustrate:

Explain the more important points.

## 1 Overview

### 1.1 Function Introduction

Downloading involves using a download tool to write the mobile software into the hardware module. Unisoc's download tool can download multiple modules simultaneously, offering high efficiency.

It's efficient and easy to use; simply connect the module correctly to the port and switch to the correct mode, and the program will automatically detect and start the download process.

The entire process is automated. Once a module has finished downloading, and you manually replace it, the program will automatically detect the new module and restart the download.

Unisoc provides three different download tools suitable for different scenarios:

**FACTORYDOWNLOAD** Tools are generally used for PCBA. During the phased production download, the tool will initialize...PhaseCheck, ProdNV

Partitioning, erasing NVParameters, pre-writing SN Number.

**UPGRADEDOWNLOAD** Tools are suitable for PCBA or it could be a software upgrade for the entire phone; before the upgrade, the calibration flag will be checked.

Placepass. Otherwise, the upgrade cannot be performed. The main feature of this tool is its...NVParameters are forcibly backed up; no initialization is performed. PhaseCheck,

ProdNV Partition.

**RESEARCHDOWNLOAD** The tool is mainly used for research, development, and debugging, and supports read and write operations. Flash Partitioning, supports NVparameter,

PhaseCheck, ProdNV. This tool supports partition backup and features such as packaging downloaded files. However, it does not initialize by default. ProdNV,

PhaseCheck Partition.



## 1.2 Operating environment

### 1.2.1 Hardware Requirements

hardware	Basic requirements
PC	CPU:i5and above Memory:4Gand above
Connecting wire	USB
USBExpansion Card	One-to-many download requires the following:
power supply	Ordinary DC power supply with Spreadtrum voltage regulator board Precision power supply output is stable

surface1-1

### 1.2.2 Software Requirements

software	Version Requirements
operating system	WIN7,WIN10
SPRD USBdrive	Version2.0.0.131

surface1-2

### 1.2.3 Test environment setup

The test environment setup is shown in the figure.1-1As shown:

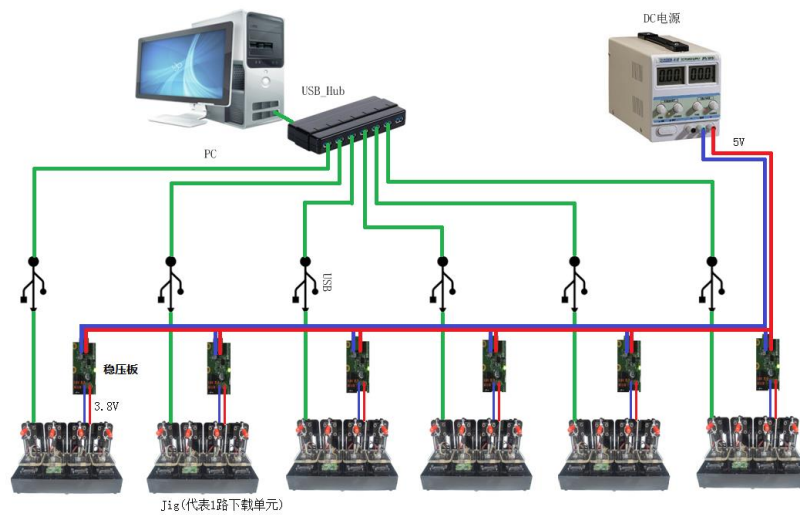







Figure 1-1

equipment	describe
	PCRequirements must be met1.2Requirements in the section PCpassUSBConnection testDUT
	ActiveHubOr useUSBExpansion Card
	Use a precision power supply or a regular DC power supply with a Zhanrui voltage regulator board.
	voltage stabilizer board
	Download Fixture

surface1-3

## 1.3 Download into mode

### 1.3.1 U1TXDPull low trigger

PCBAStage-based fixture downloading generally involvesU1TXD/NBOOTThe signal is pulled low to start downloading.

The Unisoc platform can be used to...U1TXD/NBOOTA low signal and power-on can trigger entry into download mode.Boot Mode).

### 1.3.2Key trigger

During the final stage of device assembly, downloading is generally performed using a button-triggered method.

The Unisoc smartphone platform can be accessed by pressing the "Volume Down" button (i.e., ...KEYIN0) Simultaneously, powering on the phone can trigger it to enter download mode.Boot Mode) •

Unisoc feature phone platform generally followsKEYIN0/KEYOUT0Key (The key definitions may vary depending on the project) Simultaneously, powering on can trigger the phone.

Enter download mode (Boot Mode).

## 2Interface Description

### 2.1Main interface

The three download tools are identical except for the notification displayed in the lower right corner.

The following is based on FactoryDownloadTaking the main interface of the tool as an example, we will introduce the basic operation of the tool.

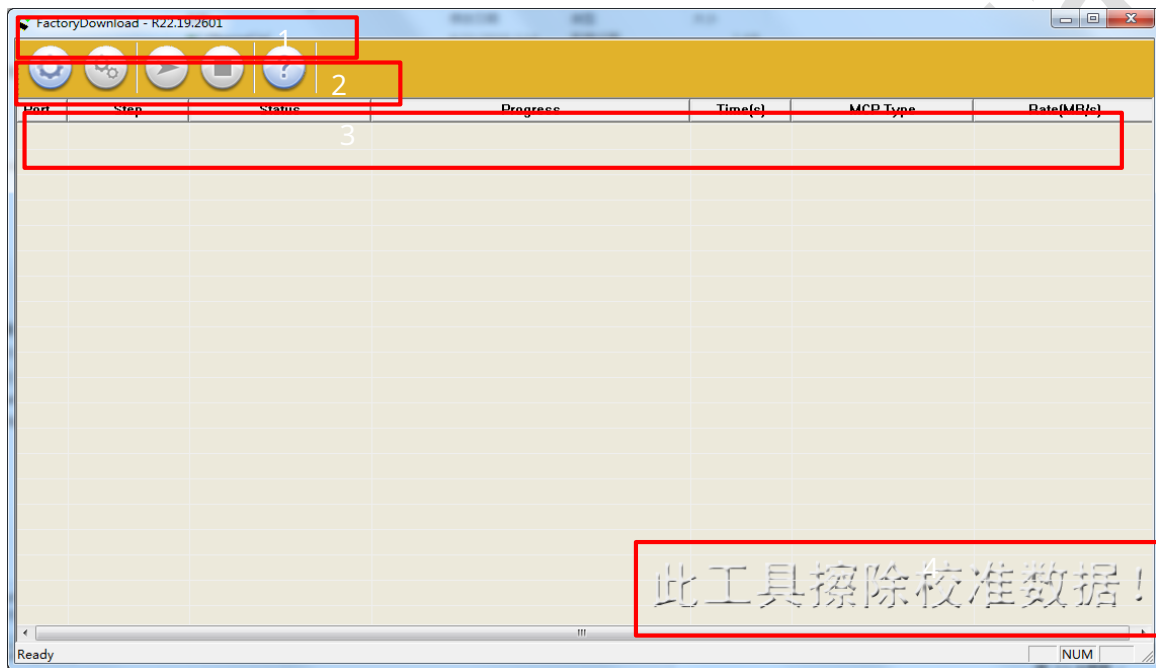







Figure 2-1

Item	illustrate
Item 1	Tool version information
Item 2	Toolbar: Includes five functions: Load, Settings, Start, Stop, and Version View.
Item 3	status bar
Item 4	Tool interface prompts

surface2-1

## 2.2 Toolbar Description

toolbar icons	illustrate
	Select the package and configuration file to download; the configuration file is optional. This button will be disabled if the download starts. It will be enabled again after the download stops.
	Configure download parameters. Clicking this button will open the settings dialog box. This button will be disabled when a download begins. It will be enabled again after the download stops.
	<p>The program detects and opens available ports to prepare for the download process. There are two modes: Automatic mode: In this mode, the program will automatically detect if any modules are connected to the port, and if a module is detected, the download process will begin automatically. After the download is complete, the program will automatically detect if any modules are connected to the port again.</p> <p>Manual mode: After the module download is complete, the program reports the download results and pauses. The download will only resume when the start button is clicked again.</p> <p>This button is disabled when the program is run for the first time. The download process can only begin after you have configured the settings.</p>
	<p>Stop the download process. This button only becomes available after the user clicks the start button and the program opens an available port.</p> <p>In order to protect the file download process, so when you enter...NVDuring file download, the stop button is disabled to prevent users from clicking it. Under no other circumstances can users click this button to stop the download process.</p> <p>You can only exit the program after stopping the download process.</p>
	<p>The version information button, when clicked, displays the program version and copyright information. Right-clicking in the pop-up version information box allows you to quickly navigate to the tool's directory.</p>

surface2-2

## 2.3 Status bar description

The area below the toolbar is the status window, used to display the port status, download status, results, etc.

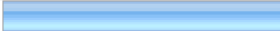
Port	Step	Status	Progress	Time[s]	MCP Type	Rate[MB/s]
3	System	Downloading...		177	—	Avg:14.96, Peak:20.00

Figure 2-2

Item	Description
Port	Available port number. If it displays as...XThis indicates that the port cannot be opened.
Step	Indicates the filename or description of the current operation.
Status	Current operating status
Progress	The download progress bar, if it displays "WaitingA green "Download successful" message indicates that an operation is in progress.Passed"Disconnected, it will display in blue"Ready An error occurred during the download process, displaying a red "Failed"
Times	Single download timer, unit: seconds
MCP Type	Displays the device currently downloading.MCP Typeinformation
Rate [MB/s]	Display download speed.AvgIndicates average speed.PeakIndicates the highest rate

surface2-3

downloadPassAfterwards, the phone did not disconnect, and the tool interface displayed...PassAs shown below:

Port	Step	Status	Progress	Time[s]	MCP Type	Rate[MB/s]
3	_POWEROFF_	Finish	Passed	274s	—	Avg:13.38, Peak:17.32

downloadPassThen, the phone disconnected, and the tool interface displayed...ReadyAs shown below:

Port	Step	Status	Progress	Time[s]	MCP Type	Rate[MB/s]
3	_POWEROFF_	Unplugged	Ready	287s	—	Avg:12.78, Peak:3000.00

downloadFailThe tool status bar is displayed in red.Failedand prompt the correspondingFailThe information is as follows:

Port	Step	Status	Progress	Time[s]	MCP Type	Rate[MB/s]
3	FDL2	Unplugged	Failed: User cancel	3s	—	Avg:0.00, Peak:0.00


## 3 FactoryDownload

FactoryDownloadTools are generally used forPCBADuring the phased production download, the tool will initialize...PhaseCheck,ProdNVPartitioning

eraseNVParameters, pre-writingSNNumber. This tool forces erase.Running NVand writeFix NVTherefore, before using this tool to download, according to

Backup requiredNV.

### 3.1 FactoryDownloadSettings interface

Click the toolbar  Enter the tool settings interface, which includesMainPage,Options,Multi-Language,LCD Configure,

CustomizationFive subpages.

#### 3.1.1 MainPagepage

Configure port and baud rate, display downloaded file information, and also display version and...ProductRelevant information is shown in the figure.3-1As shown:

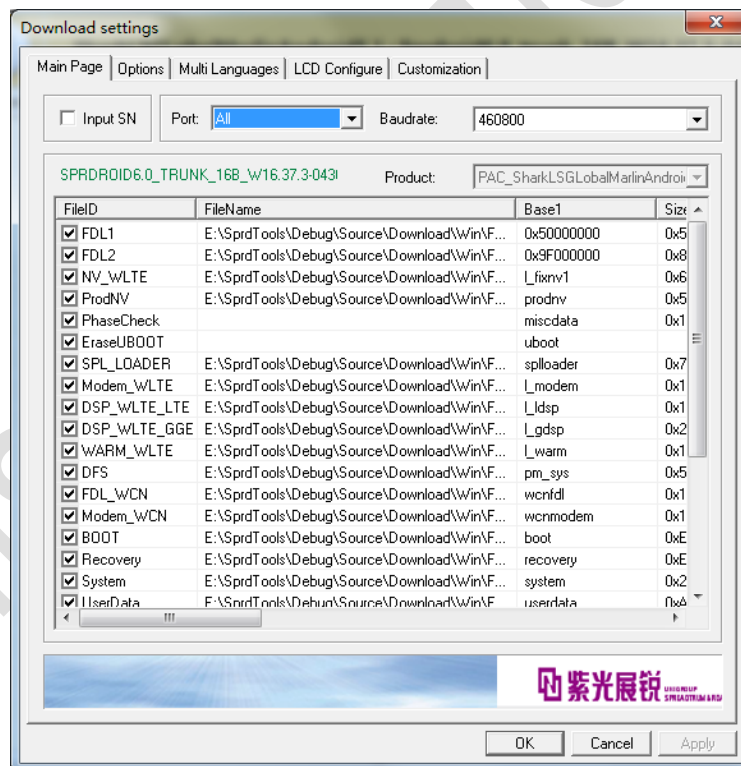


Figure 3-1

See the table for details.3-1

Item	Description
Input SN	Set whether to inputSNUncheck the tool for random writingSNIf checked, user input is required.SN
Port	Port settings: You can select a specific port for downloading, or you can select "AllDownload on all available ports
Baudrate	baud rate settings onlyUARTDownload settings are valid.USBDownloading does not require attention to this setting.
Information bar	Above the file list, the version and...ProductionRelated information
Download file list area	FileNameThe path to the downloaded file;Base1Indicates the download address;Size1Indicates large file Small,0x0This indicates that the file size is automatically calculated by the tool during download.

surface3-1

### 3.1.2 Optionspage

OptionsAll related functions in the settings page require...FDLorUbootModule compatibility is required for proper use. By default, only user-defined settings are allowed.

PlaceReset to NormalorPowerOffFor production line safety reasons, other options can only be modified.FactoryDownload.inimiddle

The configuration is as shown in the figure.3-2As shown:

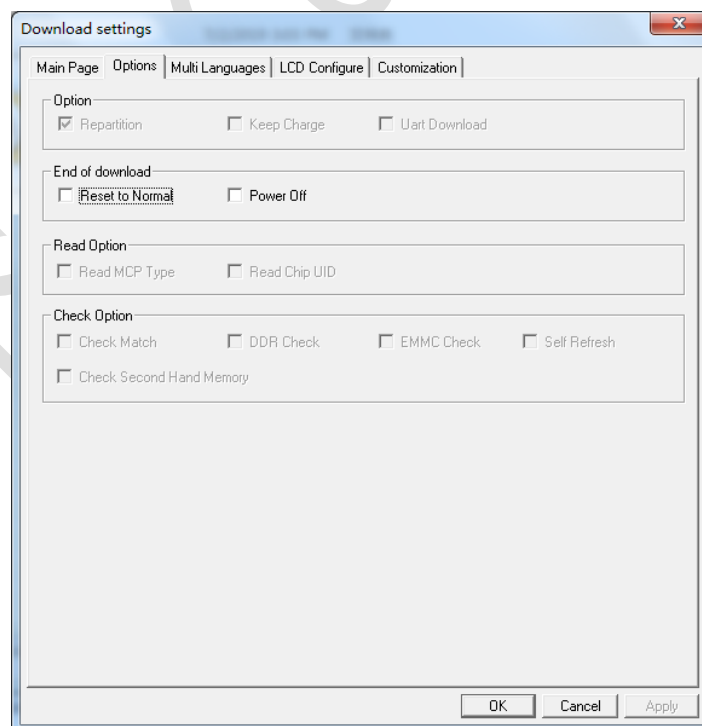


Figure 3-2



See the table for details.3-2:

Item	Description
Repartition	The option is checked by default; this indicates whether to repartition the drive during download, and only applies to...Nand/EMMC FlashType of product effective
KeepCharge	This option is not available by default; it indicates whether to enable charging during the download process, and this function requires software support.
Uart Download	The default setting is that this option is not available; it indicates whether to use serial port download.
Reset to Normal	This option is not selected by default; in the final step of downloading the tool, a command is sent to restart the phone.
Power off	The option is selected by default; in the final step of the download, the tool sends a command to power off the phone and unplug it. USB This feature will take effect later and requires software support; downloading the built-in battery requires selecting this option.
Read MCP Type	This feature is not available by default; it requires software support.
Read Chip UID	This feature is not available by default; it requires software support.
Check Match	This feature is not available by default; it requires software support.
DDR Check	This feature is not available by default; it requires software support.
EMMC Check	This feature is not available by default; it requires software support.
Self-Refresh	This feature is not available by default; it requires software support.
Check Second Hand Memory	This feature is not available by default; it requires software support.

surface3-2

### 3.1.3 Multi-Languagespage

Multi-Languagespage:NVThe settings for multiple languages in the program.

Check the language representation option to enableMMIEnable the language feature. If inMainSelected on the options pageNVThe document does not contain multiple languages.

This page will be empty.

### 3.1.4 LCD Configurepage

LCD Configurepage:PSorUserImagAbout in the documentLCDDriver settings.



illustrate:

This setting requires special attention.PSorUserImagFile, otherwise not available.LCDConfiguration information is displayed.

### 3.1.5 Customizationpage

Select "In the settings window"CustomizationTags, you can enterCustomizationSettings interface.

Check "Check for bad flash rate.After selecting the option, you can set the bad block rate. Enabling this function will check the phone's memory before downloading.NANDbad blocks

The download will be terminated if the bad block rate exceeds the set bad block rate.

Currently, this feature only supports...NAND FlashThe bad block rate check function requires software support; please confirm this before using it.

Does the software support this feature?

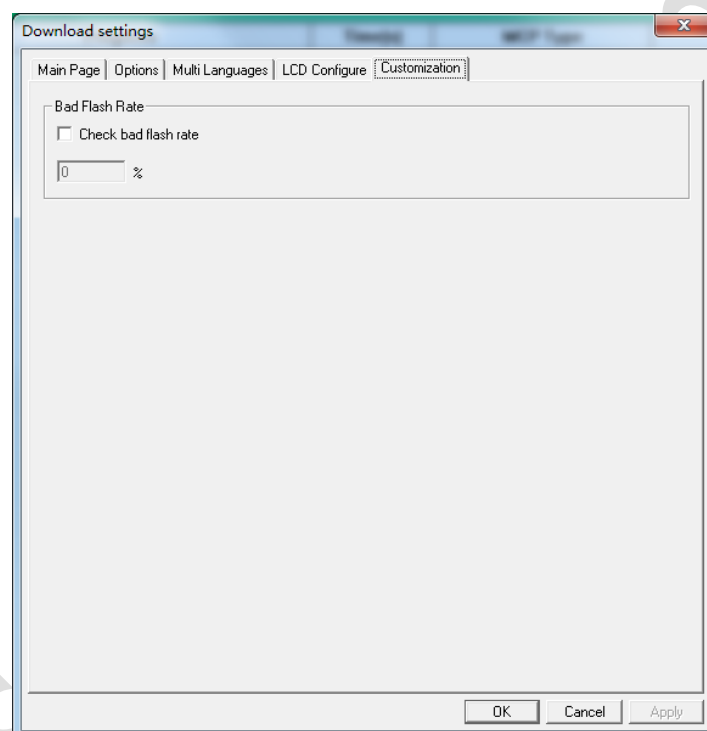


Figure 3-3

## 3.2 FactoryDownloadOperating Instructions


Before starting the download, follow these steps:1.3The section describes how to set up the download environment.

### 3.2.1Load file



Open the download tool and click the toolbar icon. Select the file package you want to download.

3.2.2Set download parameters

After the file loads successfully, click the settings button.  Enter the settings interface:

MainPagePage Setup: InMainpageThe interface sets the port and baud rate; you may need to manually enter these settings during download.SNPlease check the box.

InputSNOptions.

OptionsInterface settings: Select according to testing requirements.Reset to NormalorPower offOptions.

 illustrate:

It is recommended to check the box for downloading with built-in battery.Reset to NormalorPower offOptions (Power OffThis feature requires software support.

3.2.3Start downloading

Step 1After setting up the tools, click the toolbar icon.  The program automatically detects available ports and opens them to prepare for downloading.

Step 2Set up the test environment and follow the instructions.1.4The method described in this section triggers the phone to enter download mode, and the tool automatically detects available ports.

And start downloading, as shown in the image below.

Port	Step	Status	Progress	Time(s)
10	FDL	Downloading...	<div></div>	5

Figure 3-4

If you have checkedInputSNOptions,fdIA dialog box will pop up after the file download is complete (as shown in the image).3-5(As shown)enterSNThen, clickOK,

The tool will continue downloading.

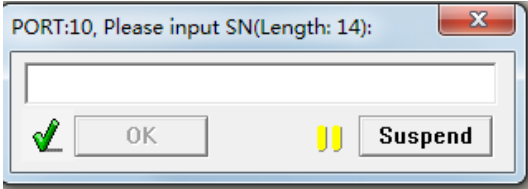



Figure 3-5

If you click "Suspend" The tool will pause the download (as shown in the image).3-6(As shown) Click  Icon, download can be resumed

Port	Step	Status	Progress	Time[s]
10	FDL2	 Downloading...	<div></div>	19

Figure 3-6

### 3.2.4Download complete

After a successful download, the tool status bar will display green.PassThe text, as shown in the picture3-7As shown

Port	Step	Status	Progress	Time[s]
10	UBOOTLoader	Finish	Passed	146s

Figure 3-7

Disconnect the module; the tool status bar will display in blue.ReadyThe text, as shown in the picture3-8As shown; to continue downloading, simply change the file to be downloaded.

Module, according to1.4The method described in this section allows you to enter download mode, and the tool will automatically start the next download without needing to click again.



Button.

Port	Step	Status	Progress	Time[s]
10	UBOOTLoader	Unplugged	Ready	121s

Figure 3-8

### 3.2.5Exit Program

If the tool is in automatic download mode, other buttons on the toolbar will be unavailable. Click the icon.



Exit automatic download mode, at which point the toolbar will...

His button became available and could be clicked.



The button can be used to reload other files, or you can close the tool directly.

## 4 Upgrade Download

UpgradeDownloadTools are suitable for PCBAFor phased or system-wide software upgrades, the main feature of this tool is its ability to...NVParameters

Forced backup (read back and then write to the phone). I don't know how to operate it.PhaseCheck,ProdNVBefore partitioning and upgrading, the tool will check the calibration flag.

If not calibratedPassThen an upgrade cannot be performed.

### 4.1 Upgrade DownloadSettings interface



Click the toolbar icon Enter the tool settings interface, which includesMainPage,Options,Multi-Language,LCD Configure,

CustomizationFive subpages

#### 4.1.1 MainPagepage

Configure port and baud rate, display downloaded file information, and also display version and...ProductRelevant information is shown in the figure.4-1As shown

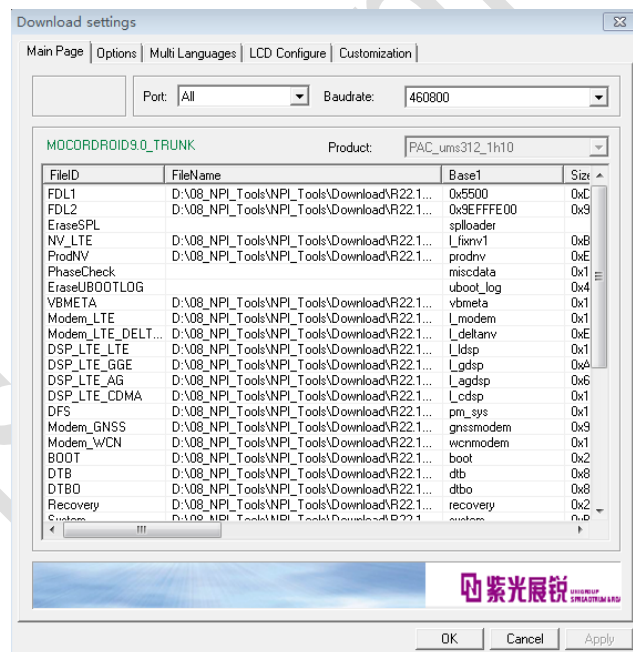


Figure 4-1

See the table for details.4-1

Item	Description
Port	Port settings: You can select a specific port for downloading, or you can select "AllDownload on all available ports
Baudrate	baud rate settings
Information bar	Above the file list, the version and...ProductionRelated information
Download file list area	FileNameThe path to the downloaded file;Base1Indicates the download address;Size1Indicates file size.0x0This indicates that the file size is automatically calculated by the tool during download.

surface4-1

## 4.1.2 Optionspage

OptionsAll related functions in the settings page require...FDLorUbootModule compatibility is required for proper use. By default, only user-defined settings are allowed.

PlaceReset to NormalorPowerOffFor production line safety reasons, other options can only be modified.UpgradeDownload.inimiddle

The configuration is as shown in the figure.4-2As shown

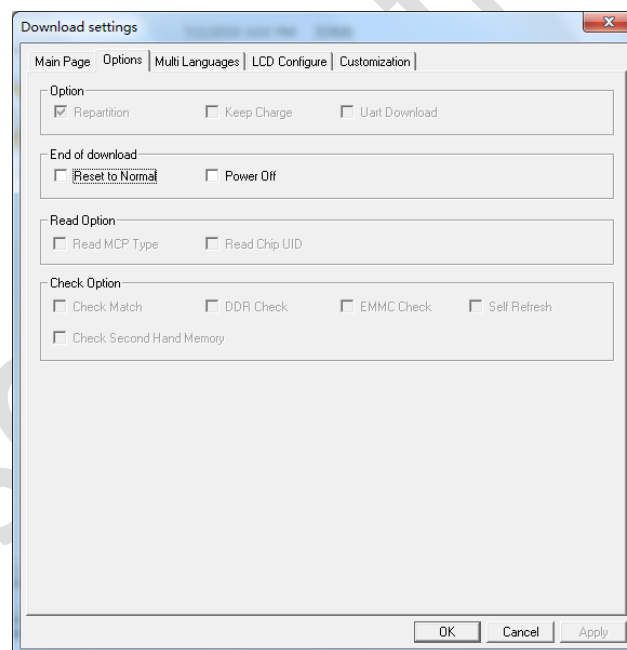


Figure 4-2

See the table for details.4-2

Item	Description
Repartition	The option is checked by default; this indicates whether to repartition the drive during download, and only applies to...Nand/EMMC Flash Type of product effective
KeepCharge	This option is not available by default; it indicates whether charging should be enabled during the download process. This function requires software support. hold
Uart Download	The default setting is that this option is not available; it indicates whether to use serial port download.
Reset to Normal	This option is not selected by default; in the final step of downloading the tool, a command is sent to restart the phone.
Power off	The option is selected by default; in the final step of the download, the tool sends a command to power off the phone and unplug it. USBThis feature will take effect later and requires software support; downloading the built-in battery requires selecting this option.
Read MCP Type	This feature is not available by default; it requires software support.
Read Chip UID	This feature is not available by default; it requires software support.
Check Match	This feature is not available by default; it requires software support.
DDR Check	This feature is not available by default; it requires software support.
EMMC Check	This feature is not available by default; it requires software support.
Self-Refresh	This feature is not available by default; it requires software support.
Check Second Hand Memory	This feature is not available by default; it requires software support.

surface4-2

### 4.1.3 Multi-Languagespage

Multi-Languagespage:NVThe settings for multiple languages in the program.

Check the language representation option to enableMMIEnable the language feature. If inMainSelected on the options pageNVThe document does not contain multiple languages.

This page will be empty.

### 4.1.4 LCD Configurepage

LCD Configurepage:PSorUserImagAbout in the documentLCDDriver settings.



illustrate:

This setting requires special attention.PSorUserImagFile, otherwise not available.LCDConfiguration information is displayed.

#### 4.1.5 Customizationpage

Select "In the settings window"CustomizationTags, you can enterCustomizationSettings interface.

Check "Check for bad flash rate.After selecting the option, you can set the bad block rate. Enabling this function will check the phone's memory before downloading.NANDbad blocks

The download will be terminated if the bad block rate exceeds the set bad block rate.

Currently, this feature only supports...NAND FlashThe bad block rate check function requires software support; please confirm this before using it.

Does the software support this feature?

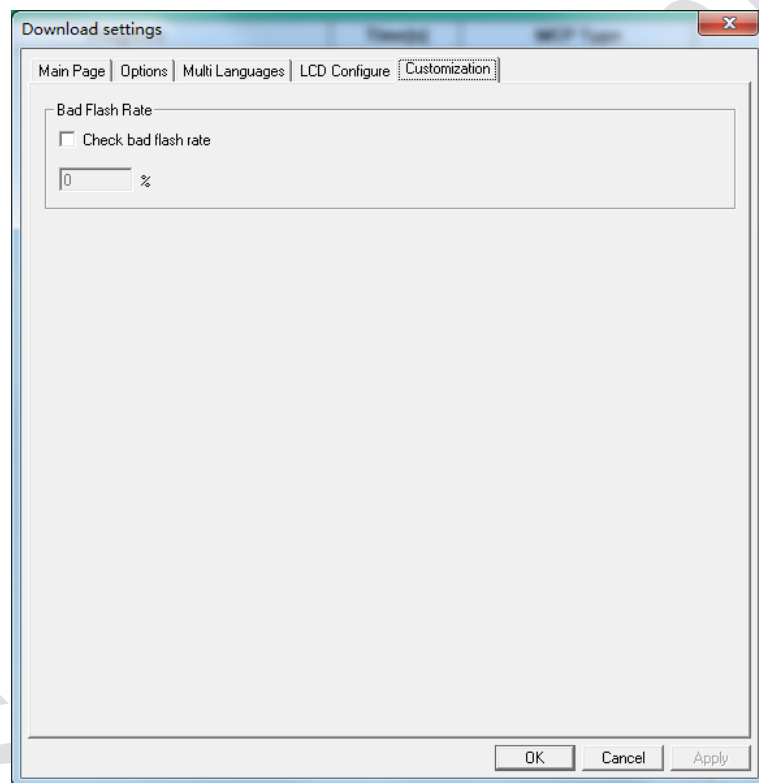


Figure 4-3



## 4.2 Upgrade DownloadOperating Instructions

Before starting the download, follow these steps:1.3The section describes how to set up the download environment.

### 4.2.1Load file

Open the download tool and click the toolbar icon.



Select the file package you want to download.

### 4.2.2Set download parameters

After the file loads successfully, click the settings button.



Enter the settings interface:

MainPagePage Setup: InMainpageInterface settings for port and baud rate

OptionsInterface settings: Select according to testing requirements.Reset to NormalorPower offOptions.



illustrate:

It is recommended to check the box for downloading with built-in battery.Reset to NormalorPower offOptions (Power OffThis feature requires software support.

### 4.2.3Start downloading

Step 1After setting up the tools, click the toolbar icon.



The program automatically detects available ports and opens them to prepare for downloading.

Step 2Set up the test environment and follow the instructions.1.4The method described in this section triggers the phone to enter download mode, and the tool automatically detects available ports.

And start downloading.

Port	Step	Status	Progress	Time[s]
10	FDL	Downloading...	<div></div>	5

Figure 4-4

#### 4.2.4Download complete

After a successful download, the tool status bar will display green.PassWords

Port	Step	Status	Progress	Time[s]
10	UBOOTLoader	Finish	Passed	146s

Figure 4-5

Disconnect the module; the tool status bar will display in blue.ReadyIf the message indicates that you want to continue downloading, simply change the module to be downloaded and follow the instructions.1.4

The method described in this section allows you to enter download mode, and the tool will automatically start the next download without needing to click again.



Button.

Port	Step	Status	Progress	Time[s]
10	UBOOTLoader	Unplugged	Ready	121s

Figure 4-6

#### 4.2.5Exit Program

If the tool is in automatic download mode, other buttons on the toolbar will be unavailable. Click the icon.



Exit automatic download mode, at which point the toolbar will...

His button became available and could be clicked.



The button can be used to reload other files, or you can close the tool directly.

## 5 ResearchDownload

ResearchDownloadThe tool is mainly used for research, development, and debugging, and supports read and write operations. Flash Partitioning, supports NV parameter, PhaseCheck, ProdNV

This tool supports partition backup (reading back and then writing to the phone) and features such as packaging downloaded files. However, it does not initialize by default. ProdNV,

PhaseCheckThis tool is not recommended for production testing.

### 5.1 ResearchDownloadSettings interface

The settings window is used to configure the download process, including the port speed and the files to be downloaded. Click the toolbar icon.



Enter the tool settings interface

noodle

#### 5.1.1 MainPagepage

MainPagePage: Configure port and baud rate; supports selecting download files. ProductInformation, the download file path can be customized, such as

As shown in the figure below

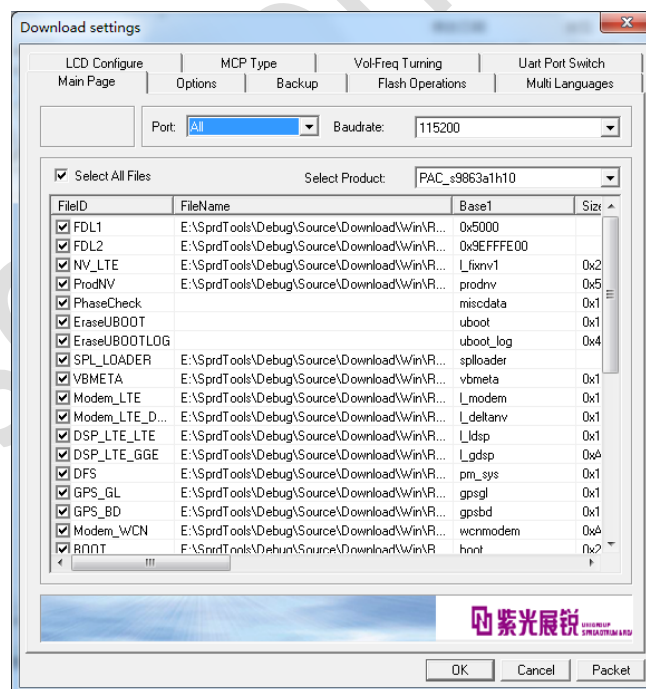


Figure 5-1

See the table for details.5-1:

Item	Description
Port	Port settings: You can select a specific port for downloading, or you can select "AllDownload on all available ports
Baudrate	baud rate settings
Information bar	Above the file list, it displaysProductionRelated information
Download file list area	<div> <div> <div>FileName</div> <div>The column is editable; double-clicking it allows you to enter a file path or open a file selection.</div> <div>Select a file in the dialog box.</div> <div>"Base1"</div> <div>Indicates the logical address or partition name of the download partition; Size 1</div> <div>This indicates the size of the download partition. If it is displayed as0xFFFFFFFFThis partition is</div> <div>Fit Size</div> </div> </div>

surface5-1

5.1.2 Optionspage

OptionsAll related functions in the settings page require...FDLorUbootThe module must be compatible and support it for it to function properly.

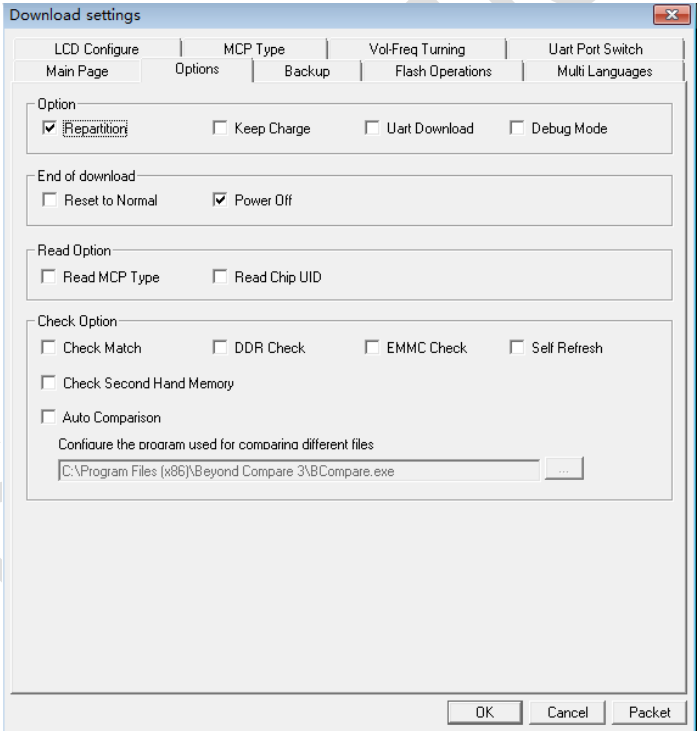


Figure 5-2

See the table for details.5-2

Item	Description
Repartition	The option is checked by default; this indicates whether to repartition the drive during download, and only applies to...Nand/EMMC Flash. This type of product is valid;  readFlashTo ensure the integrity of the phone's content, this option can be left unchecked.
KeepCharge	This option is not selected by default; it indicates whether charging is enabled during the download process, and this function requires software support.
Uart Download	The option is not checked by default; this indicates whether to use serial port download. Unchecking the option means using serial port download. USB download
Debug Mode	This option is not checked by default; it can be enabled or disabled during research and development. kernel log, need FDL2 Support. Enable Kernel Log. Selecting this option will download the software. kernel log level Set as 7; closure kernel log: Do not check this option, and at the same time Main Page Check the box Phase Check Download the item
Reset to Normal	This option is not selected by default; in the final step of downloading the tool, a command is sent to restart the phone.
Power off	The option is selected by default; in the final step of the download, the tool sends a command to power off the phone and unplug it. USB This feature will take effect later and requires software support; downloading the built-in battery requires selecting this option.
Read MCP Type	This option is not selected by default; ReadMCP Type Information, this function requires software support.
Read Chip UID	This option is not selected by default; download and read UID. This function requires software support.
Check Match	This option is not selected by default; it is used for version error prevention and requires customization. FDL2 Only then can this function be supported.
DDR Check	This option is not selected by default; DDR This check requires software support.
EMMC Check	This option is not selected by default; EMMC Download integrity checks for this type of project require software support.
Self-Refresh	This option is not selected by default; DDR The self-refresh function requires software support.
Check Second Hand Memory	The secondhand material inspection function is not selected by default; this function requires software support.
Auto Comparison	Automatically combine the read partition data with pacTo compare the original data of the corresponding partitions, it is necessary to cooperate with...Flash Operations. In read flash Function usage: If third-party comparison software information is configured, the third-party comparison software will be called to implement the comparison function.

surface5-2

### 5.1.3 Backuppage

BackupPage: Set the items to be backed up during download. You can choose to back up or not back up based on your actual needs during download. NV, ProdNV,

PhaseCheckAs shown in the figure 5-3As shown:

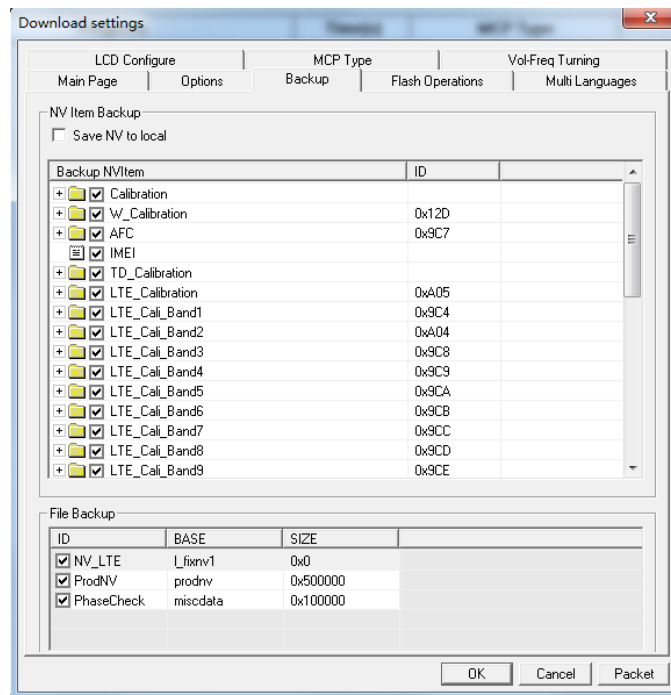


Figure 5-3

#### NVItem Backup:

NVItem BackupThe list contains items that need to be backed up. NV IDItem, such asFile BackupBackup is set up in the middlennvDuring download,

Inside the phonenvRead backPCend, according toNVItem BackupSelectedNV IDItem by itemIDBack up the data before downloading it to your phone.

These backup items are only for [the following],nvThe partition is valid. File BackupSelect nonNVIf the item is not selected, the interface will not display the configuration information for the backup item.

#### Save file to local:

likeFile BackupThe system has a backup function set up; if you check this option, the backed-up partition files will be saved as backups after downloading. SNInformation life

The name is stored in the tool directory. BackupIn the directory.

## File Backup:

File BackupThe list box shows the partitions that need to be backed up by default. Checking this option will back up that partition during download. Unchecking it will not...

Without backing up the corresponding partition data, directly...pacThe original download file is downloaded to the corresponding partition. IfMainPageIt's not in the settings page.

If the corresponding download items are selected, these partitions will not be operated on during the download.



illustrate:

Each time you reopen the download program, these options will be restored to their default values.

### 5.1.4 Flash Operationspage

Flash OperationsPage: This setting is used forFLASHThe read/erase/write function, whenMain PageDownload items in the middle have been processed.

Only after completing this will you be taken to the configuration page to configure the processing items. (If there is a configuration...)Erase All FlashThe solution is to first read back the backup partition, and then erase the entire partition.flash,

Next, complete the task.MainPageThe download option in the settings will then execute the read/erase/write configuration option in that setting. (See figure)5-4As shown

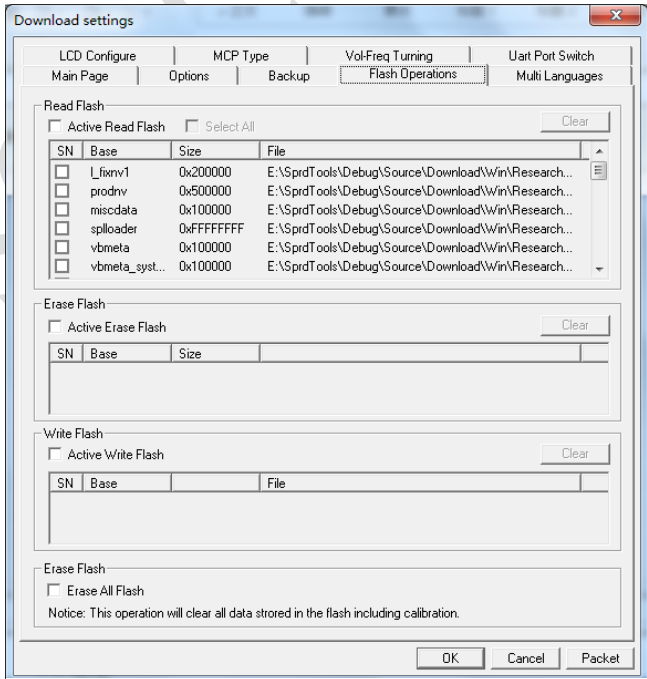


Figure 5-4

## Read Flash:

Read FlashUsed to read the contents of the phoneFlashSave partition data toPCThe file on the client side. (Default loading complete)pacThe file will automatically be generated after the file is downloaded.

according to pacConfigure the download item sequence to generate readback information. Check "Active Read Flash" Then select the partitions you want to read. Alternatively...

With custom settingsFlashThe address, size, and saved file path. If it's just reading back the contents of a partition on the phone, to ensure the readback...

You don't need to check the box for "Integrity of Mobile Data".Options" in the tab"RepartitionOptions.

Interface elements	describe
SN	Used to select or deselect this readback configuration.
Base	Read back the logical address of the partition or the partitionIDInformation sameMain PagePage Base1 column
Size	Size of the reread content (Byte) It cannot exceed the partition size. hexadecimal0xThe beginning indicates.
File	Files saved locally
Active Read Flash	This is the master switch for enabling the readback function. You can only operate on the items in the list after checking the box.
Select All	Select or deselect all configuration items.
Clear	Clear all configuration items

surface5-3

## Erase Flash:

This function is used to erase a specific download partition. Check the "... " option.Active Erase FlashYou can configure which partitions need to be erased. Specifically...

Configuration methodRead FlashThe configuration table shows how to completely erase a partition.sizeDirect configuration0That's fine.

## Write Flash:

This function is used to write a specified download file to a download partition, similar to...Main PageThe download option is available. Check the box.

"Active Write Flash" You can configure which partitions should be written to. Specific configuration methods are as follows.Read FlashConfiguration table.

## Erase All Flash:

If you need to erase the wholeFlashYou can check the box.Erase All Flash"It should be noted that not all products support this feature.

Function.



### 5.1.5 Multi-Languagespage

Multi-Languagespage:NVThe settings for multiple languages in the program.

Check the language representation option to enableMMIEnable the language feature. If inMainSelected on the options pageNVThe document does not contain multiple languages.

This page will be empty.

### 5.1.6 LCD Configurepage

LCD Configurepage:PSorUserImagAbout in the documentLCDDriver settings.



illustrate:

This setting requires special attention.PSorUserImagFile, otherwise not available.LCDConfiguration information is displayed.

---

### 5.1.7 MCP Typeset up

Check "Check MCP Type" The tool will be downloaded FDL1(FDL2) Afterwards, check MCP Type Does it match the checked items? If not, it does not match.

An error will occur if the match is not found. MCP Type In the configuration file MCPTYPE.ini In the settings, if you need to add MCPTYPE Please add the following to this file: Settings window

Select "MCP Type Tags, you can enter MCP Type Settings interface.

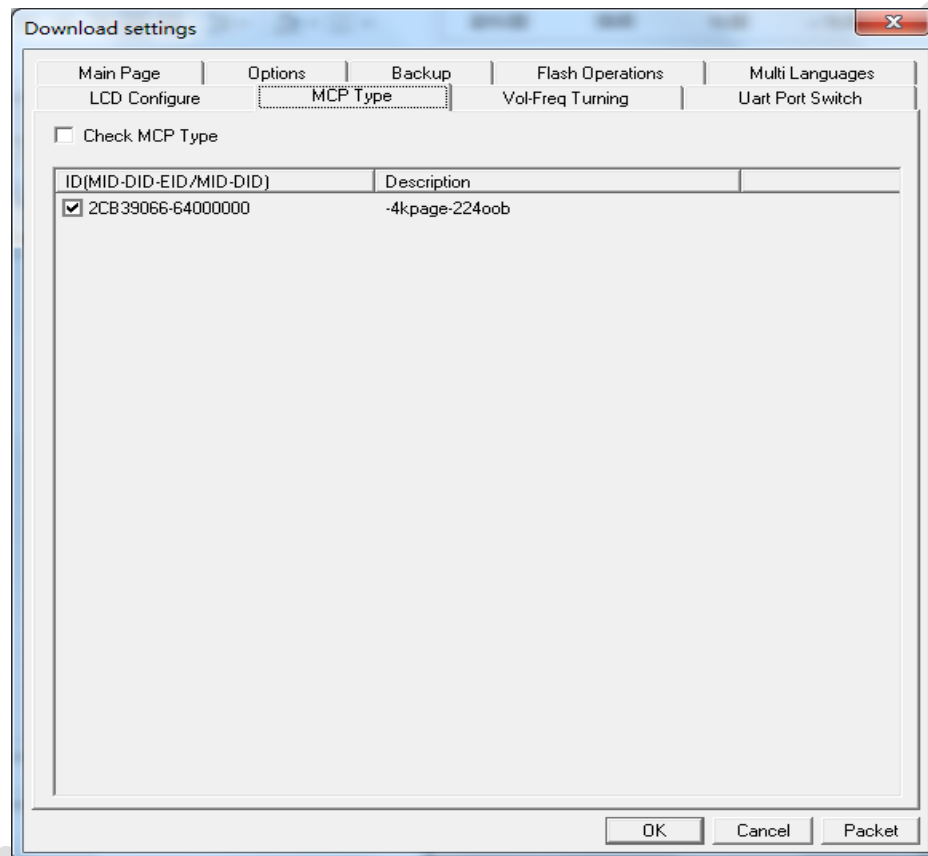


Figure 5-5

### 5.1.8 Vol-Freq Tunningset up

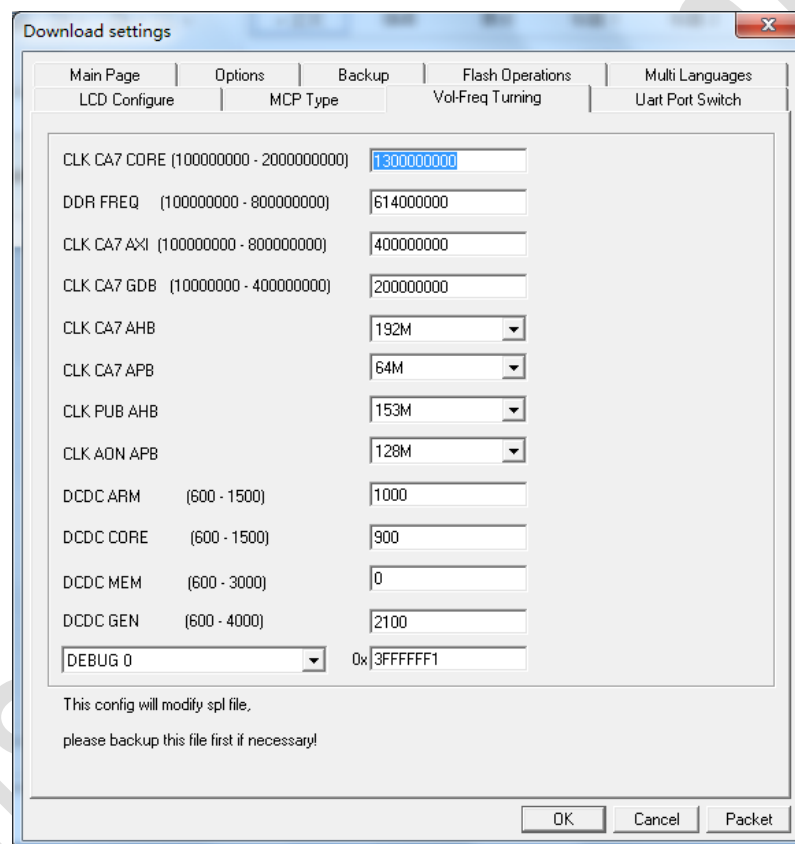
This page provides settings for voltage and frequency; the settings will be saved directly.SPLLoaderIn the file. Therefore, if necessary...

Please back up this file before making any changes. Also, this modification depends on...SPLLoaderSpecial markers in the file, if not

This mark may not be present.SPLLoaderThe download option cannot be modified. The specific interface displayed depends on the data format of the marked blocks. Edit

box or clickValueThe column allows modification of corresponding parameters, and the modified parameters will be directly saved to the specified location.SPLLoaderFile. Select in the settings window.

select"Vol-Freq Tunning"Tags, you can enterVol-Freq TunningSettings interface.



picture5-6

### 5.1.9 UART Port Switchset up

This page's functionality is used for...UartConfigure the port settings, and the results will be saved directly.UBOOTLoaderIn the file. Therefore, as...

If necessary, please back up this file before making any changes. Additionally, this modification depends on...UBOOTLoaderSpecial markers in the file, if

This mark is not present or not available.UBOOTLoaderDownloads - This setting cannot be modified. ClickvalueThe column's parameters can be modified.

The parameters will be directly modified and saved toUBOOTLoaderFile. In the settings window, select "UART Port SwitchTags, you can enterUart

Port SwitchSettings interface.

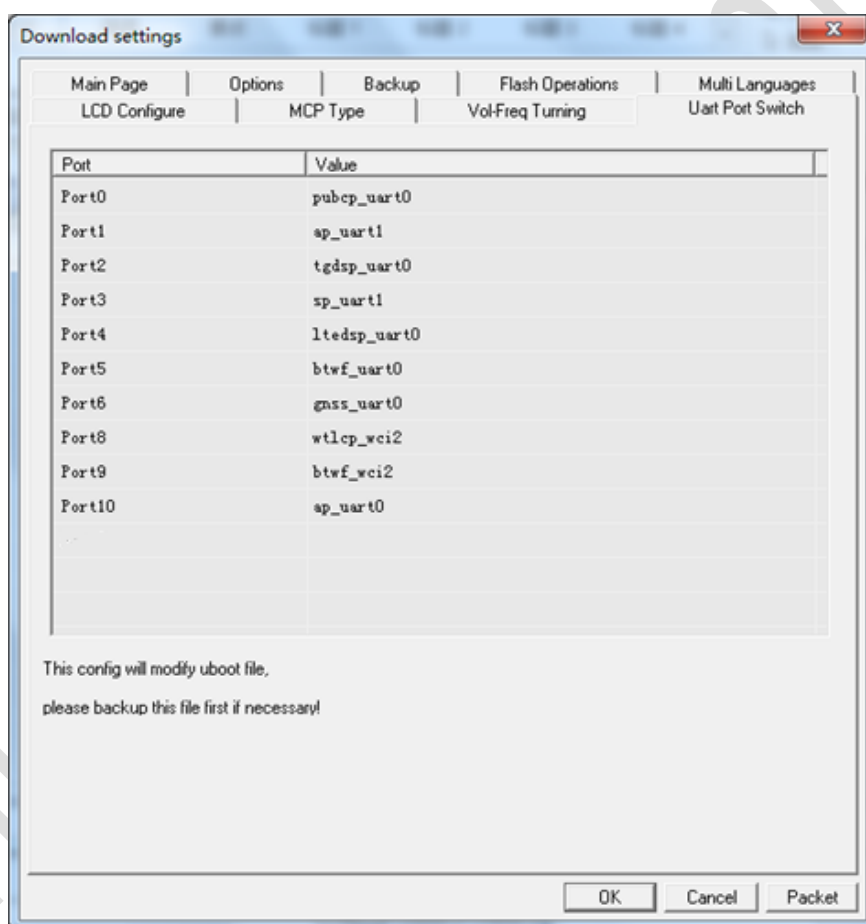


Figure 5-7

## 5.2 ResearchDownloadOperating Instructions

Before starting the download, follow these steps:1.3The section describes how to set up the download environment.

### 5.2.1Load file

Open the download tool and click the toolbar icon.



Select the file package you want to download.

### 5.2.2Set download parameters

After the file loads successfully, click the settings button.



Enter the settings interface and configure the download parameters:

MainPagePage Setup: InMainpageInterface settings include port and baud rate; select the file to download.

OptionsInterface settings: Select according to testing requirements.KeepCharge,Reset to NormalorPower offOptions such as...

BackupPage: Configure whether backup is required.NV,PhaseCheck,ProdNVitem



illustrate:

Fdl1/Fdl2This file is mandatory; other files can be selected as needed.

It is recommended to check the box for downloading with built-in battery.Reset to NormalorPower offOptions (Power Off(This function requires software support)

### 5.2.3Start downloading

Step 1After setting up the tools, click the toolbar icon.



The program automatically detects available ports and opens them to prepare for downloading.

Step 2Set up the test environment and follow the instructions.1.4The method described in this section triggers the phone to enter download mode, and the tool automatically detects available ports.

And start downloading.

Port	Step	Status	Progress	Time(s)
10	FDL	Downloading...	<div></div>	5

Figure 5-8

#### 5.2.4Download complete

After a successful download, the tool status bar will display green.PassThe text, as shown in the picture5-11As shown

Port	Step	Status	Progress	Time(s)
10	UBOOTLoader	Finish	Passed	146s

Figure 5-9

Disconnect the module; the tool status bar will display in blue.ReadyThe text, as shown in the picture5-12As shown, to continue downloading, simply change the file to be downloaded.

Module, according to1.4The method described in this section allows you to enter download mode, and the tool will automatically start the next download without needing to click again.



Button.

Port	Step	Status	Progress	Time(s)
10	UBOOTLoader	Unplugged	Ready	121s

Figure 5-10

#### 5.2.5Exit Program

If the tool is in automatic download mode, other buttons on the toolbar will be unavailable. Click the icon.



Exit automatic download mode, at which point the toolbar will...

His button became available and could be clicked.



The button can be used to reload other files, or you can close the tool directly.

## 6 FAQ

### 6.1 CmdDloaderintroduce

CmdDloaderIt's a command-line application that requires download tools to function. The entire download process is actually...

The loading tool is processed in the background.CmdDloaderThe application is primarily responsible for launching the download process and monitoring the download progress and results. It should function independently of the download application.

Invalid.

#### 6.1.1Parameter format

To launch the application from the command line, use the following parameter format:

```
> CmdDloader.exe <-pac PacFile> [-port ComPort] [-c]  
eg CmdDloader.exe -pac D:\SC7702_sc7701.pac -port 195
```



illustrate:

- -pac PacFile :enterpacdocument.

- - port ComPortEnter the port number of the download device.

- - c :This command is optional; when you enter this parameter...CmdDloaderThe application will clear the download process before it starts downloading.

Not specifiedportWhen information is received, the application will automatically find a suitable download port for download.CmdDloader.iniInWaitDUTTimeout

The configuration option allows you to set the timeout for finding a valid device.0This indicates an indefinite wait until a suitable download port is found.

## 6.1.2 Program running

Download Passed This indicates that the download was completed successfully. An example of a successful download is shown in the image.6-1As shown:

```
E:\SprdToolSpace\Debug\Source\Download\Min\ResearchDownload\Bin>CndDloader.exe
pac D:\SC7702_sc7701_128X160BAR_32MB_384K_B3.pac -port 195
||*****||
Pac : D:\SC7702_sc7701_128X160BAR_32MB_384K_B3.pac
Port : 195
||*****||
Successfully connected to Dloader.

Loading pac file ...
Load PAC file successfully!
Detecting download device [COM195] ...
Waiting
FDL Checking baudrate
FDL Connecting
FDL Downloading... <100%>
FDL Checking baudrate
FDL Connecting
FDL Change Baud
FDL2 Downloading... <100%>
_BKF_NU Reading Flash <100%>
NU Downloading... <100%>
BootLoader Downloading... <100%>
UserImg Downloading... <100%>
MMIRes Downloading... <100%>
DSPCode Downloading... <100%>
DSPCode2 Downloading... <100%>
FLASH Erasing flash
KernelImg Downloading... <100%>
Erase FS Erasing flash
Download Passed, Elapsed Times = 34s
```

Figure 6-1

A download failure will display an error message, as shown in the image.6-2As shown:

```
||*****||
Pac : D:\SC7702_sc7701_128X160BAR_32MB_384K_B3.pac
Port : 195
||*****||
Successfully connected to Dloader.

Loading pac file ...
Load PAC file successfully!
Detecting download device [COM195] ...
Waiting
FDL Checking baudrate
FDL Connecting
FDL Downloading... <100%>
FDL Checking baudrate
FDL Connecting
FDL Change Baud
FDL2 Downloading... <100%>
_BKF_NU Reading Flash <100%>
NU Downloading... <100%>
BootLoader Downloading... <100%>
UserImg Downloading... <100%>
MMIRes Downloading... <100%>
[ERROR] Download Failed: User cancel, Elapsed Times = 18s
```

Figure 6-2



## 6.2 How to set a password

FactoryDownloadandUpgradeDownloadThe tool can be password protected.

ReviseFactoryDownload.ini/UpgradeDownload.iniEnable password mechanism.

[GUI]

NeedPassword=1

After successfully setting up, restart the tool, then click...



OR



The user needs to enter a password as shown in the image.6-3As shown

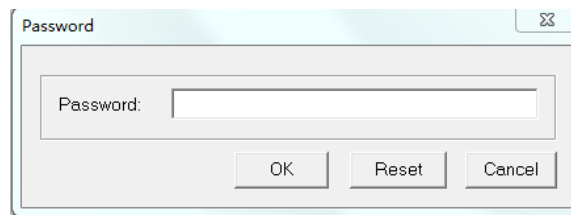


Figure 6-3

The initial password is "adminYou can clickResetThe button resets the password, as shown in the image.6-4As shown:

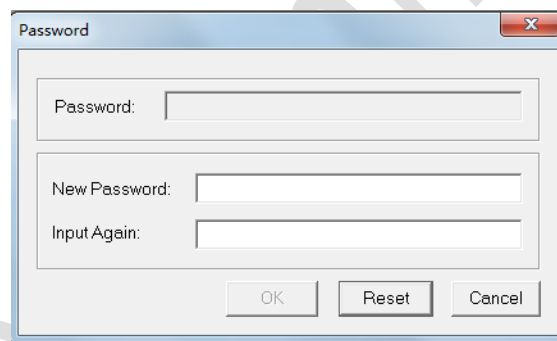


Figure 6-4

Password must be letters (az,AZ) or numbers (0-9)Length not exceeding20One character.

## 6.3 Port not recognized problem

If the module is connected and the port is displayed in Device Manager, but the program fails to download normally, the following reasons may be present:

1.Module power supply error: No external power supply

2.The port is being used by another application.

3.The module is not inBootIn this mode, according to1.4The section explains how to ensure the module is in download mode.

## 6.4 How to record downloaded data

The download tool supports saving test results in the following format: csv or txt. Formatting, off by default, can be enabled. xxDownload.ini In the configuration file

Line settings (the tool needs to be restarted for changes to take effect):

```
[Report]
;report file name is download_result.txt under the tool folder.

enable= 0                //Function switch 0: closure, 1: Enable

;0, Normal; 1, Press

Type = 0                 //Save file format, 0: txtFormat, 1: csvFormat

;DUTID: 1, SN; 2, ChipUID

DUTID=1                  //Types of recorded data
```

## 6.5 How to set up the toolLoggrade

Open the tools directory Channel.ini The file can be modified. Log The levels are as follows:

```
[Log]
; Text log level ;
0, No text log
; 1, Log errors, default value;
2, Log warnings
; 3, Log runtime information;
4, Log data only
5, Log everything
Level = 0
```

General download tool log The files are very large; download the tool to open them. log This will affect the download speed; if there are problems with the download,

It can be used ResearchDownload The tool allows you to select specific files for download, allowing you to download only the files you need.

## 6.6 set up FactoryDownloadWrittenSNlength

FactoryDownload The tool will write a file during download. 14 position SN On the phone, you can FactoryDownload.in configuration file

Modification SNLength:

```
[SN]
SN_LENGTH = 14
```

## 6.7 set upFactoryDownloadTool writingSNprefix

CustomizableFactoryDownloadWritten during tool downloadSNPrefix, inFactoryDownload.iniAdd one to the configuration file

The following configuration items:


[SN]

SN\_LENGTH = 14

FixedSN = xxx //xxxrepresentSNPrefix, length should not exceedSNlength

## 6.8 ResearchDownloadTool Packaging

ResearchDownloadThe tool supports packaging.Pac.

Step 1Click the toolbar icon ,loadPacBag

Step 2Then click the settings button.  Enter settingsMainPageOn this page, select the files you want to package. If no files are selected,

This indicates that the file will not be packaged; to replace a file, double-click the corresponding file.File IDofFileNameThe column allows you to select other files to open.

Bag.

Step 3ClickPackageClick the button, enter the product's alias, version number, and save path, then click.OkayPack it as shown in the picture.6-5Place

Show.

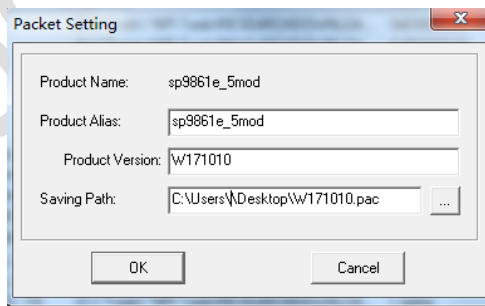


Figure 6-5

After successful packaging, the following message will appear as shown in the image.6-6As shown:

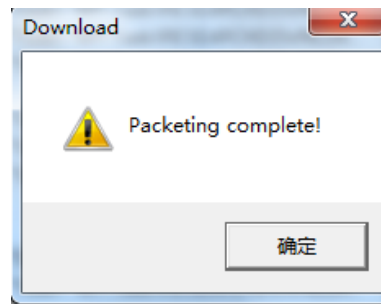



Figure 6-6

## 6.9 ResearchDownloadTool erasureMemory

If wipeMemoryIt can be usedResearchDownloadThe method is as follows:

Step 1Click the toolbar icon ,loadPacBag

Step 2Then click the settings button. ,existMainPageOnly select on the pagefdl1,fdl2(Do not select any other options, otherwise they will appear after erasing.)

(It downloaded the other selected files again.) ,existFlash OptionPage selectionErash All FlashOptions

Step 3Then return to the main interface and click...  Pressing the button will bring up the following dialog box, as shown in the image below. Confirm to proceed with the erasure process.Memory

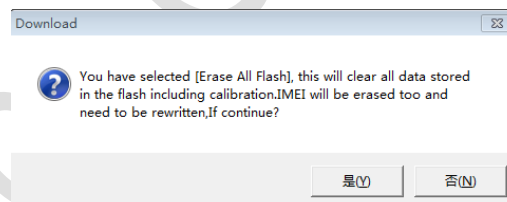


Figure 6-7

## 6.10 Upgrade DownloadUpgrade software

If a software upgrade is required Requires useUpgradeDownloadTools, becauseUpgradeDownloadWill toNV, PhaseCheck,

ProdNVBack up the information.

## appendixRevision History

Version	date	Remark
1.0	2017/9/28	Created
2.0	2018/04/01	Logo Update
2.1	2019/07/25	1.IncreaseFAQRelated content 2.Some content updated