

ResearchDownload User Guide

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About This Document

Purpose

The ResearchDownload User Guide describes how to use ResearchDownload.

Intended Audience

Organization

This document consists of five chapters and is organized as follows.

Chapter	Describes
1 Introduction	File composition and running requirements of ResearchDownload.
2 Interface Description	The main interface, toolbar, and status area of ResearchDownload.
3 Quick Start	How to start the program, set the parameters, download the software, and quit the program.
4 Basic Operations	Basic operations such as parameter setting, packing, and configuration file setting.

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1 Introduction

1.1 System Overview

ResearchDownload is for developer to develop and debug and used to write the mobile software into the mobile device through the serial port or USB. It supports downloading to multiple mobile devices at the same time.

Connect the mobile device correctly to the serial port and switch it to boot mode, ResearchDownload will automatically start downloading.

After downloading into one mobile device is completed, manually replace the mobile device with another, and ResearchDownload will automatically detect the mobile device and start downloading again.

1.2 File Composition

ResearchDownload consists of the files described in Table 1-1.

Table 1-1 File composition

Type	File
*.exe	ResearchDownload.exe
*.dll	BMAFrame.dll
	BMPlatform.dll
	Channel.dll
	DiagChan.dll
Configuration file	ResearchDownload.ini
	BMFileType.ini
	BMError.ini
	BMTimeout.ini
	BMAConfig.xml
	Channel.ini
	DiagChan.ini
	MCPTType.ini

1.3 Running Requirements

ResearchDownload runs on Windows 2000/XP/Vista/Windows7. At least one usable serial port or USB is required.

2 Interface Description

2.1 Main User Interface

Figure 2-1 shows the main user interface.


Figure 2-1 Main user interface







2.2 Toolbar

Table 2-1 describes the toolbar icons.

Table 2-1 Toolbar icons

Icon	Description
	Select the downloading packet file

	Set the downloading parameters
	Start downloading
	Stop downloading
	Version information

2.3 Status Area

Figure 2-2 shows the status area.

Figure 2-2 Status area

Port	Step	Status	Progress	Time{s}
1	FDL	Checking baudrate	Waiting...	0

Table 2-2 Columns in the status area

Column	Description
Port	Port number If “X” is displayed, it means that ResearchDownload opens the port failed.
Step	Current file name or operation
Status	Current operation status
Progress	Download progress: <ul style="list-style-type: none"> • Waiting indicates no mobile device is detected. • Inprogress indicates downloading is ongoing. • This column turns green when downloading is complete and red when an error occurs.
Time(s)	Cost time (second), each download

Figure 2-3 Passed

Port	Step	Status	Progress
8	NV	Finish	Passed

Figure 2-4 Failed

Port	Step	Status	Progress
8	NV	Finish	Failed

Figure 2-5 Waiting

Port	Step	Status	Progress
1	FDL	Checking baudrate	Waiting...

Note:



Waiting... indicates that an operation is being performed and it will take some time.

3 Quick Start

3.1 Running the Program

Run **ResearchDownload.exe**. The main interface is displayed, as shown in Figure 2-1.

3.2 Setting Parameters

If you have a downloading packet file (*.pac), you can click  to select downloading packet, and then click  to set detail parameters. The **Download settings** dialog box is displayed, as shown in Figure 3-1.


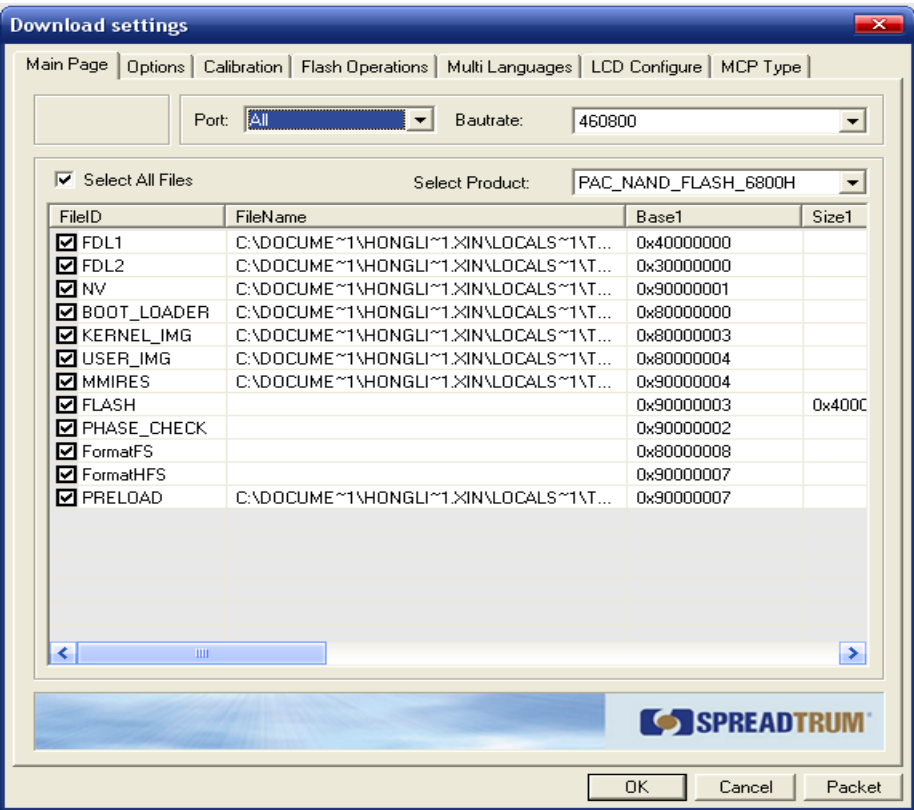

If you have not the downloading packet file (*.pac), you can click  to select the downloading files and set the parameters.

Figure 3-1 Download settings dialog box



- Note:
- The FDL(FDL1,FDL2) file shall be selected.
 - Set the parameters when you run the program for the first time. Later you can set them depending on your own requirements.

3.3 Starting Downloading

Click . ResearchDownload automatically detects the available serial port and opens it. After the mobile device is correctly connected to the serial port, ResearchDownload starts downloading.

See Figure 3-2.

Figure 3-2 Downloading progress

Port	Step	Status	Progress
8	UserImg	Downloading...	<div><div></div></div>

- Note:
- If the mobile device is connected to the serial port but download process is still not started, infer that:

- The mobile device is not powered.
- The serial port is being used by another program and therefore ResearchDownload cannot open it. To solve the problem, quit the program that is using the serial port.
- The mobile device is not in the boot mode state. Only when the mobile device is in the boot mode state, download can be started.

3.4 Completing Download Process


The downloading result is displayed in the status window, as shown in Figure 3-3 and Figure 3-4.

Figure 3-3 Downloading succeeded

Port	Step	Status	Progress
8	NV	Finish	Passed

Figure 3-4 Downloading failed


Port	Step	Status	Progress
8	NV	Finish	Failed

In manual mode, the downloading result is displayed until you click  to start downloading again.

3.5 Stopping the Program

Disconnect the mobile device from the serial port.

In continuous downloading mode, if there are more mobile devices to be downloaded, connect it to the serial port and ResearchDownload automatically starts downloading again.

Click  to stop downling.

4 Basic Operations

4.1 Parameter Settings

4.1.1 Download Settings Dialog Box


Click . The **Download Settings** dialog box is displayed, as shown in Figure 4-1.

Figure 4-1 Download Settings dialog box

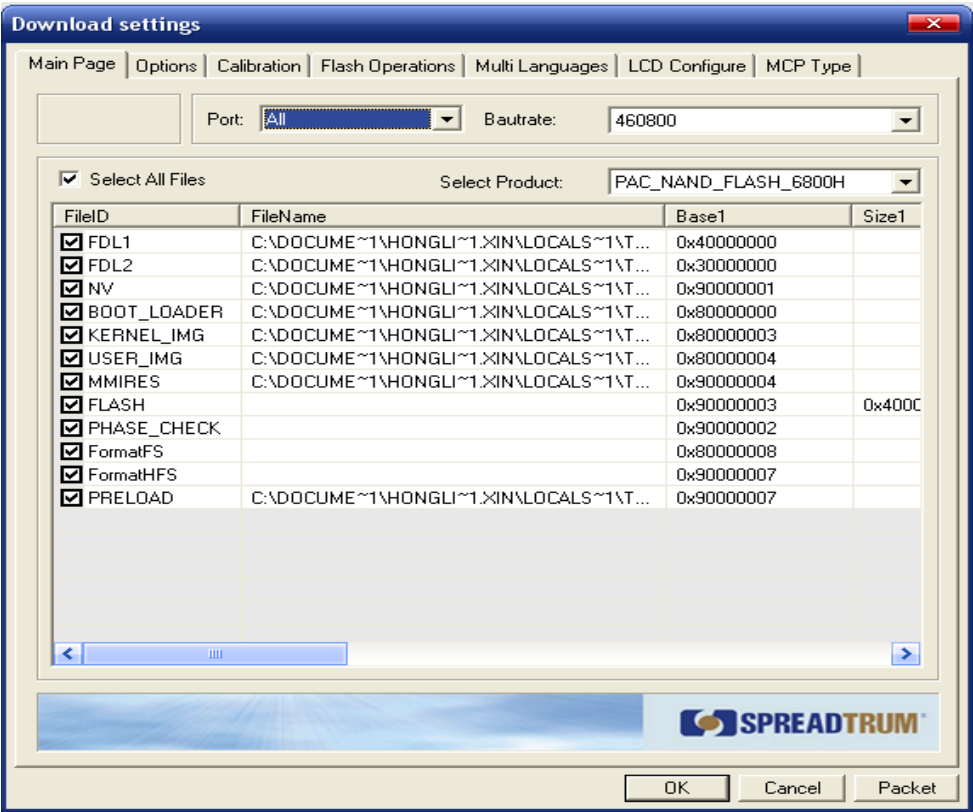


Table 4-1 describes the elements in the **Download settings** dialog box.

Table 4-1 Download settings dialog box elements

Element	Description
Port drop-down list box	Serial port setting

Baudrate drop-down list box	Baud rate setting
Select Product drop-down list box	Product to be downloaded
File list diagram	<ul style="list-style-type: none"> • FileName: Double-click this column to type the file path or click ... to select the file. • Base1: downloading address • Size1: file size. Empty indicates that the file size is automatically calculated by ResearchDownload during downloading.
Select All File check box	Select all the files.
Packet button	Pack the downloaded files

4.1.2 Main Page Tab Page

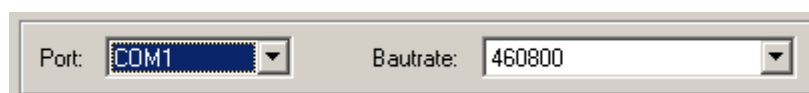
Setting the Serial Port

The **Port** drop-down list box lists all the usable serial ports. You can select one serial port or **All**.

The baud rate can be **57600**, **115200**, **230400**, **460800**, or **921600**. The default option is **115200**. If you select the baud rate that not matches the mobile device, the serial port may not be opened or downloading cannot be performed.

See Figure 4-2.

Figure 4-2 Serial port settings



Selecting the Product

The configuration file presets the available products and you can select the matched product to determine the downloading addresses of files. See Figure 4-3.

Figure 4-3 Selecting the product



Selecting the File

Check the files to be downloaded in the **FileID** column.

Double-click the **FileName** column to type the file path in or click ... to select the file. See Figure 4-4.

Figure 4-4 Selecting the file

FileID	FileName	Base1	Size1
<input checked="" type="checkbox"/> FDL1	CDR_w09.48_P2\8801h_s2a_build\fdl1.bin ...	0x40000000	

Note:

The file name is *****.bin** and is released with the program. Generally, the first file is **FDL(1)** and shall be downloaded. The **FileName** column cannot be null.

FLASH Settings

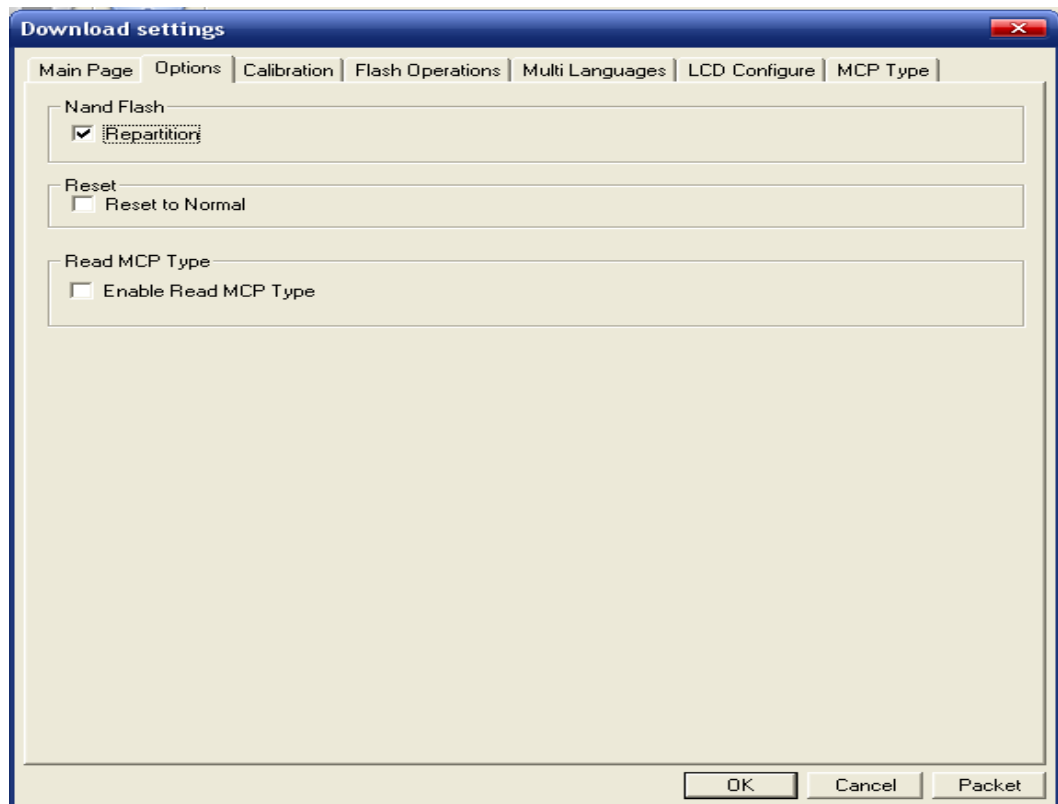
If you select the **FLASH**, ResearchDownload will erase the section of mobile device flash. The address and size of the flash section is shown in Figure 4-5.

Figure 4-5 FLASH settings

<input checked="" type="checkbox"/> FLASH	EraseFlash	0x90000003	0x4000
---	------------	------------	--------

4.1.3 Options Tab Page

Figure 4-6 Options tab page



- **Repartition**
ResearchDownload will repartition the NAND flash during downloading FDL2, only if the NAND flash is initialized failed, no matter what errors occur the fail. In this case, it is not sure that all the data in the flash is erased, and it will depend on FDL2 itself.
- **Reset To Normal**
ResearchDownload will send reset command to the phone at the end of download process if you check this item.
- **Enable Read MCP Type**
ResearchDownload will read MCP Type and display it.

4.1.4 Calibration Tab Page

Figure 4-7 Calibration tab page

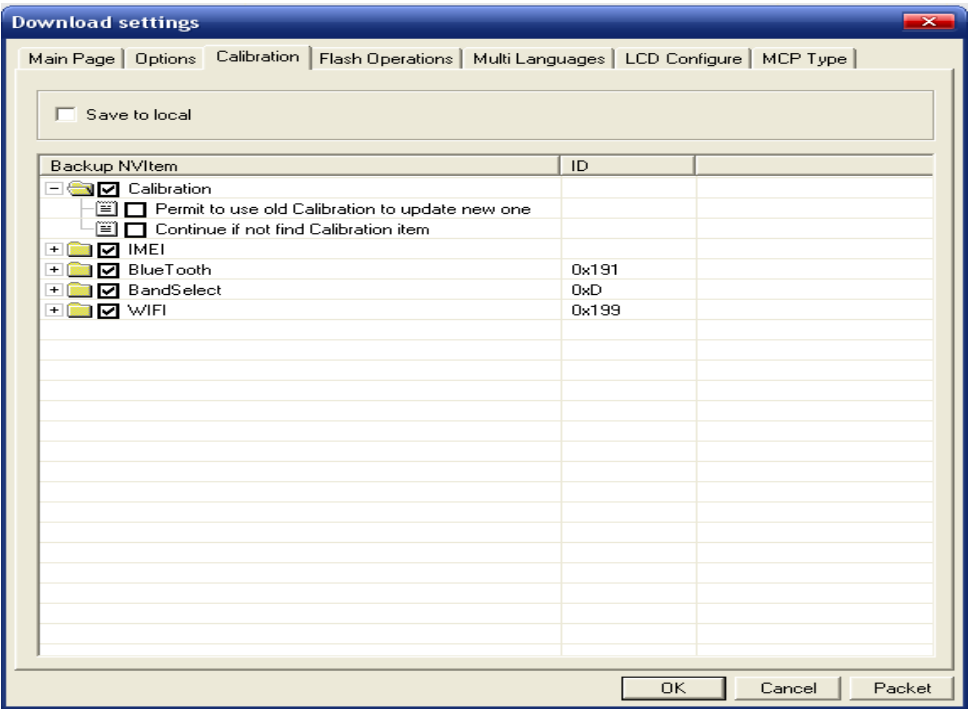


Table 4-2 Calibration tab page

Element	Description
Calibration	<p>Check Calibration and then the following sub check boxes become available:</p> <ul style="list-style-type: none">• Permit to use old calibration to update new one: If the version is earlier than that in the mobile device, check this box and calibration backup will go on, but if you do not check it, an error message will be given. Pay attention that the versions will be consistent after calibration backup. The default option is clearing the box.• Continue if not find calibration item: If any item is not found, check this box and calibration will go on, but if you do not check it, an error message will be given. The default option is clearing the box.
IMEI	Checked by default
Blue Tooth	Checked by default
TD_Calivration	It is the same as “Calibration”
Save To local	Checked by default

The functions of “Continue if not find calibration item” in Bluetooth is the same as that in Calibration.

Note:

If the NV parameter file is null, the settings here are ineffective during downloading.

Every time you run the program, these options will be reset to the default settings.

4.1.5 Flash Operation Tab Page

Figure 4-8 Flash Operation tab page

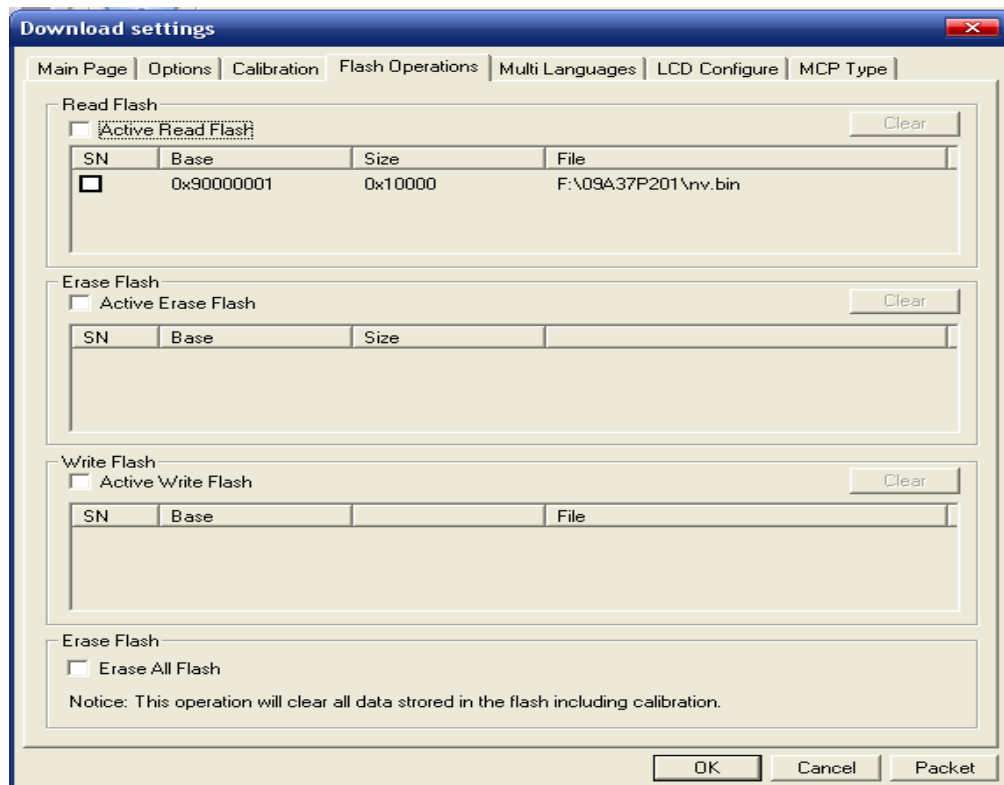
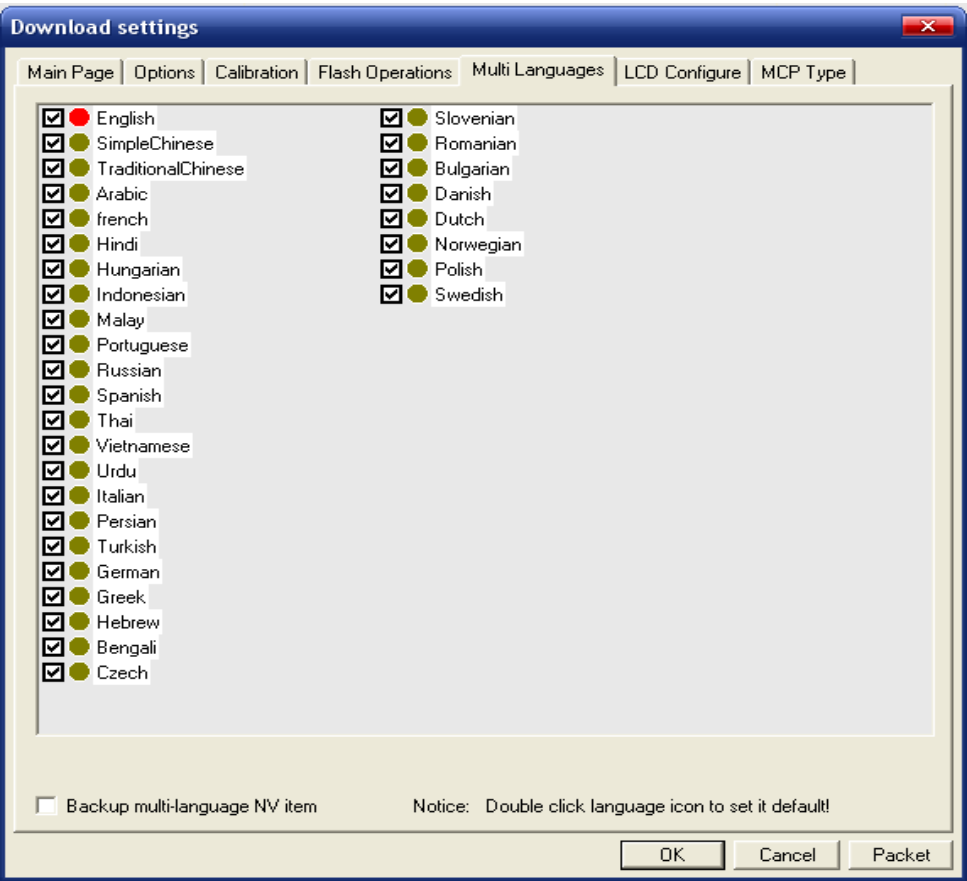


Table 4-3 Flash Operation tab page

Element	Description
Active Read Flash	Active the read flash function
Active Erase Flash	Active the erase flash function
Active Write Flash	Active the write flash function
SN	Serial Number, it have check or un-check state
Base	The flash address
Size	Read size
File	Save to local file path
Clear	Clear the SN-Base-Size-File list
Erase All Flash	To erase all flash; some products maybe not support.



4.1.6 Multi-Language Tab Page

Figure 4-9 Multi-language tab page



It is used to set the supported languages in NV file specially. You can double click the icon ball to set default language.

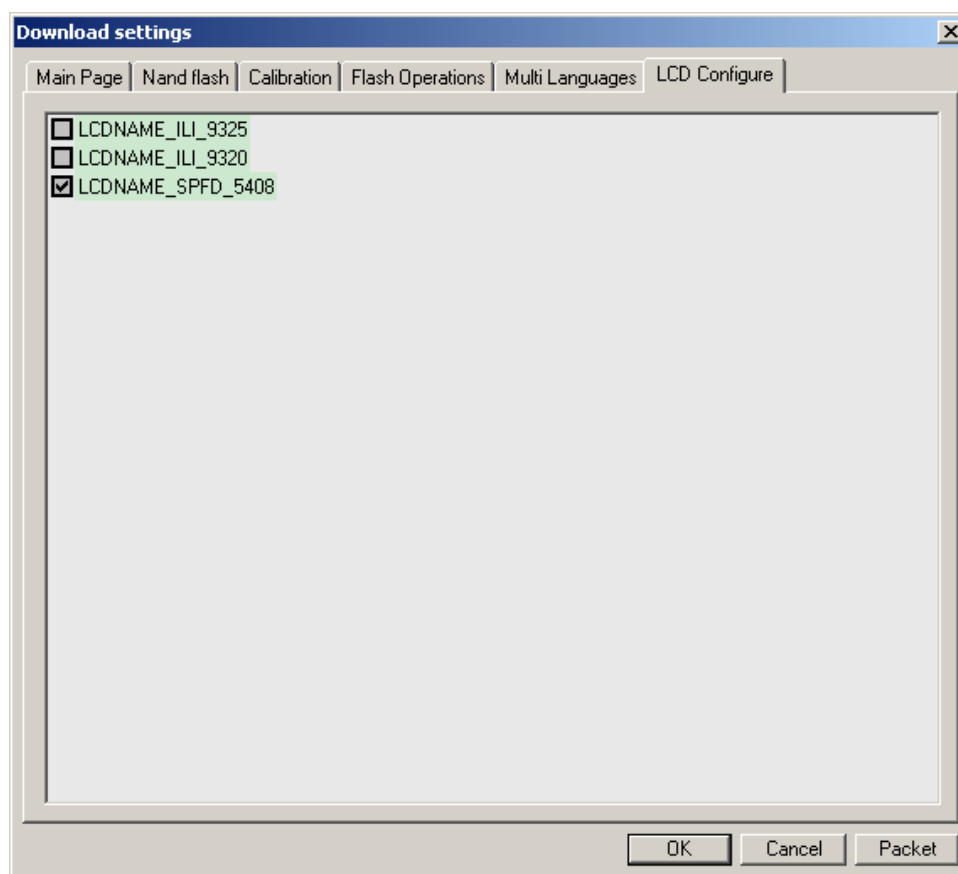
Table 4-4 Multi-language tab page

Element	Description
<input checked="" type="checkbox"/>  ENGLISH	Red-ball is default language
<input checked="" type="checkbox"/>  SIMP_CHINESE	Normal supported language
Backup multi-language NV item	Select to backup the multi-language NV item or not

Note:
If the NV file is not set or included supported language information, this page will be empty.

4.1.7 LCD-Configure Tab Page

Figure 4-10 Multi-language tab page



It is used to set the supported LCD in PS or UserImg file specially.

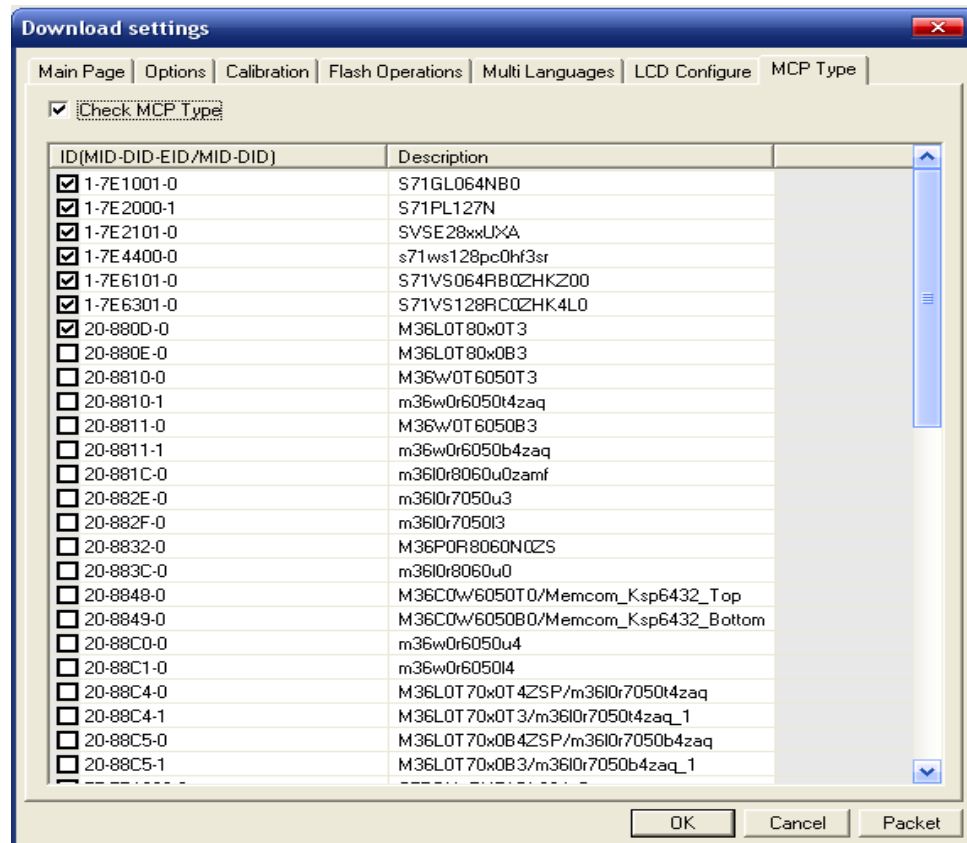
Note:

If the PS or UserImg file is not set or included LCD information, this page will be empty.

4.1.8 MCP Type Tab Page

This page is used to set if check the MCP type in downloading process. Check “Check MCP Type” to check the MCP type if matched the checked MCP type if the list. The MCP types are configured in the file MCPTYPE.ini. You can add MCP types in this file.

Figure 4-11 MCP Type tab page



4.2 Packing

Step 1 In the **Download settings** dialog box shown in Figure 3-1, select the product to be packed.

Step 2 Select the files to be packed.

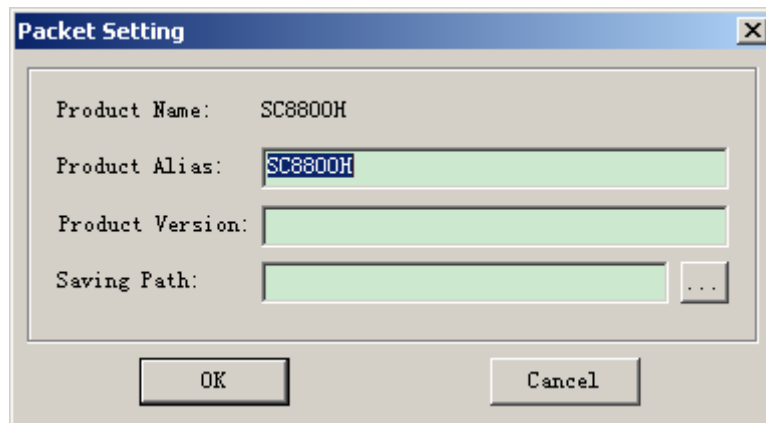
- The **PhaseCheck** file is used only for downloading production tools. It shall be selected.
- If packing aims at SPUpgrade,
 - The **PhaseCheck** file can be ignored. Even if it is selected, it is ignored during downloading.
 - The **Flash** file shall be selected.

Step 3 Set the parameters on the **Nand Flash** and **Calibration** tab pages.

- The sub boxes of **Calibration** shall be selected.
- The parameters on the **Nand Flash** tab page shall be correctly set. Otherwise, error messages will be given during unpacking.
- If you select repartitioning, back up the NV and select all the files. Otherwise, error messages will be given during unpacking.

Step 4 Click **Packet**.

The **Packet Setting** dialog box is displayed, as shown in Figure 4-12.

Figure 4-12 Packet Setting dialog box

Step 5 Type the production version and the saving path.

You can also click ... to select the saving path.

Step 6 Click **OK**.

4.3 Modifying the Product Configuration File

4.3.1 Adding Products

Adding a Scheme

If the file information of Product is the same as that of Scheme, skip this segment. Otherwise, do as follows:

Under <SchemeList>, add a node at the end:

```
<Scheme name = "XXX">
  <File>
    <ID>FDL</ID>
    <Type>FDL</Type>
    <Block>
      <Base>0x30000000</Base>
      <Size>0x0</Size>
    </Block>
    <Flag>0</Flag>
  </File>
  ...
</Scheme>
```

Pay attention to the following points:

- **XXX** is the Scheme name. It cannot be the same as those Scheme names under `<SchemeList>`.
- The first file shall be a FDL file.
- For the file type, consult relevant engineers. If necessary, you can add file types in **BMFileType.h**, for example, `<ID>FDL2</ID>`. For NAND Flash, the file type should be `<Type>NAND_FDL</Type>`.
- Base and Size are both hexadecimal and start with **0x**. The initial value of size is generally **0x0** except when the file ID is Flash.
- Flag is generally 1, which indicates importing the file. If the file ID is Flash, Flag is 0.

Adding a Product

Under `<ProductList>`, add a new node at the end.

```
<Product name="YYY" [enable="1"]>
  <SchemeName>XXX</SchemeName>
  <FlashTypeID>0</FlashTypeID>
  <Mode>0</Mode>
  <NvBaseAddrChangeFlag>0</NvBaseAddrChangeFlag>
  <NvNewBasePosition>1</NvNewBasePosition>
  <NVBackup backup="1">
    <NVItem name="Calibration" backup="1">
      <ID>0xFFFFFFFF</ID>
      <BackupFlag use="1">
        < NVFlag name ="Replace" check ="0"></ NVFlag >
        < NVFlag name ="Continue" check ="0"></ NVFlag >
      </BackupFlag>
    </NVItem>
    <NVItem name="IMEI" backup="1">
      <ID>0xFFFFFFFF</ID>
      <BackupFlag use="0"></BackupFlag>
    </NVItem>
  </NVBackup>
  <ProductComment></ProductComment>
</Product>
```

Pay attention to the following points:

- Product name **YYY** cannot be the same as the names under `<ProductList>`.

- [enable="1"] is optional.
- SchemeName is the scheme name created in the previous segment or the existing names under SchemeList.
- If Product is NAND Flash, FlashTypeID is 1. If Product is NOR Flash, FlashTypeID is 0.
- For single mode products, Mode is 0. For dual mode products, Mode is 1.
- NV backup items is either Calibration or IMEI, the backup of which is 1 and the ID of which is 0xFFFFFFFF. Other items have their own IDs.
- NVFlag name is either Replace or Continue. The former indicates that the old NV items are replaced with the new items. The latter indicates that if no NV items are found, the operation will go on.

4.3.2 Adding Backup Items

```
<Product name="YYY" [enable="1"]>
  <SchemeName>XXX</SchemeName>
  <FlashTypeID>0</FlashTypeID>
  <Mode>0</Mode>
  <NvBaseAddrChangeFlag>0</NvBaseAddrChangeFlag>
  <NvNewBasePosition>1</NvNewBasePosition>
  <NVBackup backup="1">
    <NVItem name="Calibration" backup="1">
      <ID>0xFFFFFFFF</ID>
      <BackupFlag use="1">
        < NVFlag name="Replace" check="0"></ NVFlag >
        < NVFlag name="Continue" check="0"></ NVFlag >
      </BackupFlag>
    </NVItem>
    <NVItem name="IMEI" backup="1">
      <ID>0xFFFFFFFF</ID>
      <BackupFlag use="0"></BackupFlag>
    </NVItem>
    <NVItem name="BlueTooth" backup="1">
      <ID>0x191</ID>
      <BackupFlag use="1">
        < NVFlag name="Continue" check="0"></ NVFlag >
      </BackupFlag>
    </NVItem>
  </NVBackup>
```

```
<ProductComment></ProductComment>
```

```
</Product>
```

- The new backup item name cannot be Calibration or IMEI.
- Use BackupFlag as follows:
 - `<BackupFlag use="1">`
 `< NVFlag name ="Replace" check ="0"></ NVFlag >`
 `< NVFlag name ="Continue" check ="0"></ NVFlag >`
 `</BackupFlag>`
 - `<BackupFlag use="0"></BackupFlag>`
 - `<BackupFlag use="1">`
 `< NVFlag name ="Continue" check ="0"></ NVFlag >`
 `</BackupFlag>`
- The new backup item ID cannot be the same as that of the ID of Calibration or IMEI.

4.3.3 Adding the Special Configuraiton File

To add the special configuration file, refer to the
Instruction_for_modifying_the_XML_configure_file.

Pay attention to the following points:

- If a product in the **BMAConfig.xml** has the same name as a file in the private configuration file, replace the former with the latter. If there are multiple private configuration files, the standard configuration of the same products is the latest one.
- The extended name of the private configuration file shall be xml.
- The directory of the private configuration file shall be on the same level as that of the **BMAConfig.xml**.

4.3.4 Hiding Some Products

You can hide some products in the **BMAConfig.xml** or other special configuration files in one special configuration file.

```
<ProductList>
```

```
...
```

```
<Product name="XXXX" enable="0" > //method 1
```

```
...
```

```
</Product>
```

```
<Product name="YYYY" enable="0"/> //method 2
```

```
</ProductList>
```

Pay attention to the following points:

- Method1: set enable to 0 or 1 to hide or display a product.
- Method2: set enable to 0 to hide a product. It cannot be set to 1 because it has no detailed product description.