XPOS(G) Software Development Environment Manual

MoreFun

Document management

Version history

date	version	modify the record	author
2019.02			yangjy

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Content

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1 Introduction

XPOS SDK is Fujian MoreFun Electronic Technology Co., Ltd. for the simple series of terminal custom secondary development package. Development environment using C / C + + development language, gcc compiler. Simple series of terminal software system kernel using Linux operating system, GUI use Cube independent research and development of XGUI architecture to support file system programming and FLASH absolute address space to read and write, the middle layer of the interface with the hardware interface and common components , Provides a friendly

secondary development interface and related examples, simplifying the application based on the cube simple series of terminals on the threshold to improve application development efficiency.

XPOS(G) SDK for Fujian Cube simple series terminal: H9G。

2 Software Development Process Description

The basic process for writing a terminal program is as follows:

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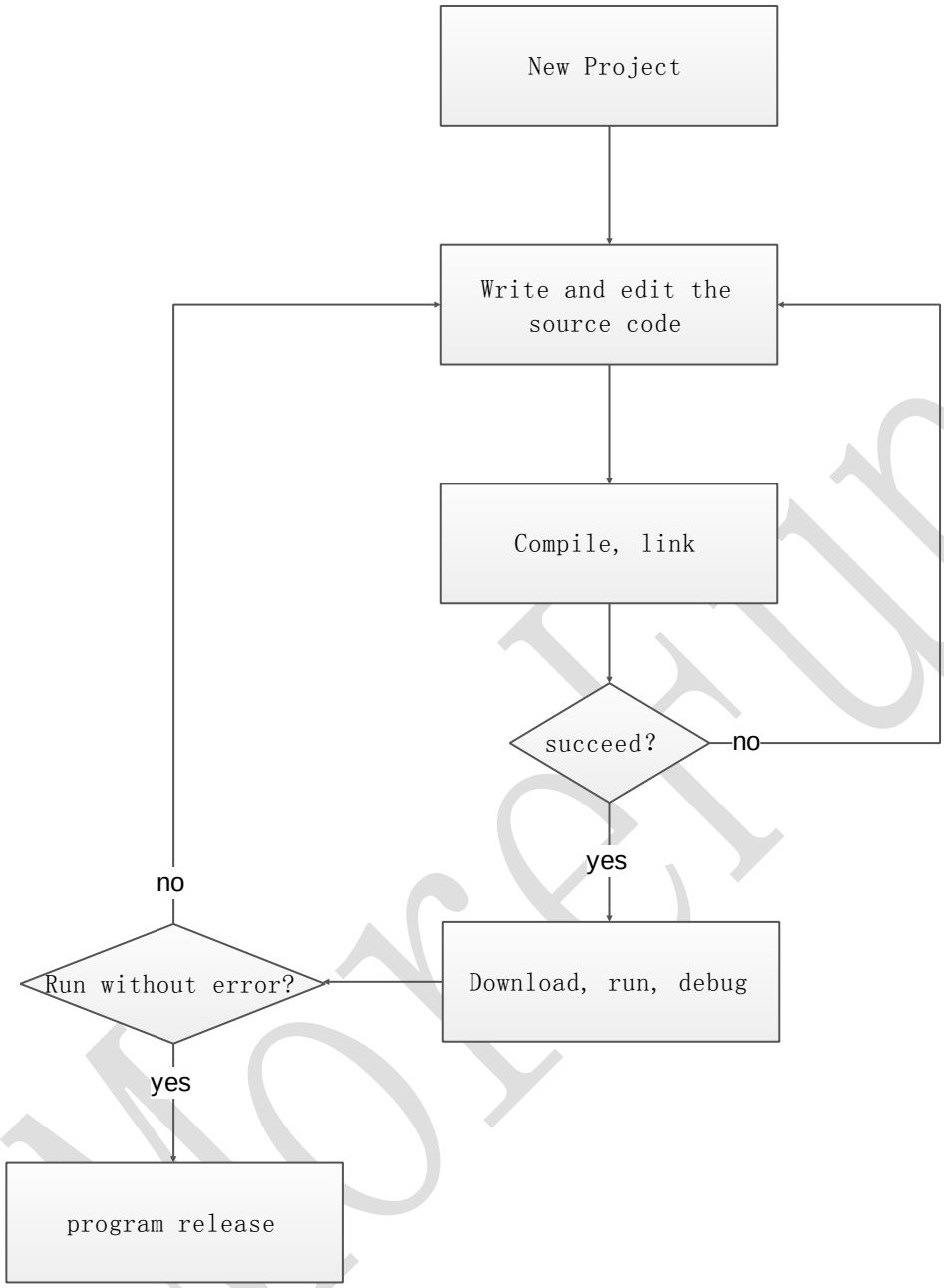

3 Typical application flow

Writing programs on a terminal is very similar or even simpler on a PC; it typically contains only an application that does not have a return value, and then the system is controlled by the program after

initializing the system. The application is mainly written in C language.

The program starts with the main function that you are familiar with. Please note that main does not return a function. main function is running after the first step is to initialize the hardware interface such as display devices, keyboard, card interface and ucosii operating system.

After the initialization is complete, the first will create a UI thread, which is also known as the main thread. This thread is used to draw the UI interface and some operations that are not time consuming. And some time-consuming operations need to create other threads to perform, it and the UI thread through the message and semaphore to synchronize the operation.

UI threads are composed of multiple pages, each page has a while loop, the internal loop by constantly calling xgui_GetMessageWithTime to check the various events. When an event occurs after the application will try to run it, continue to call after the end of xgui_GetMessageWithTime wait for the next event.

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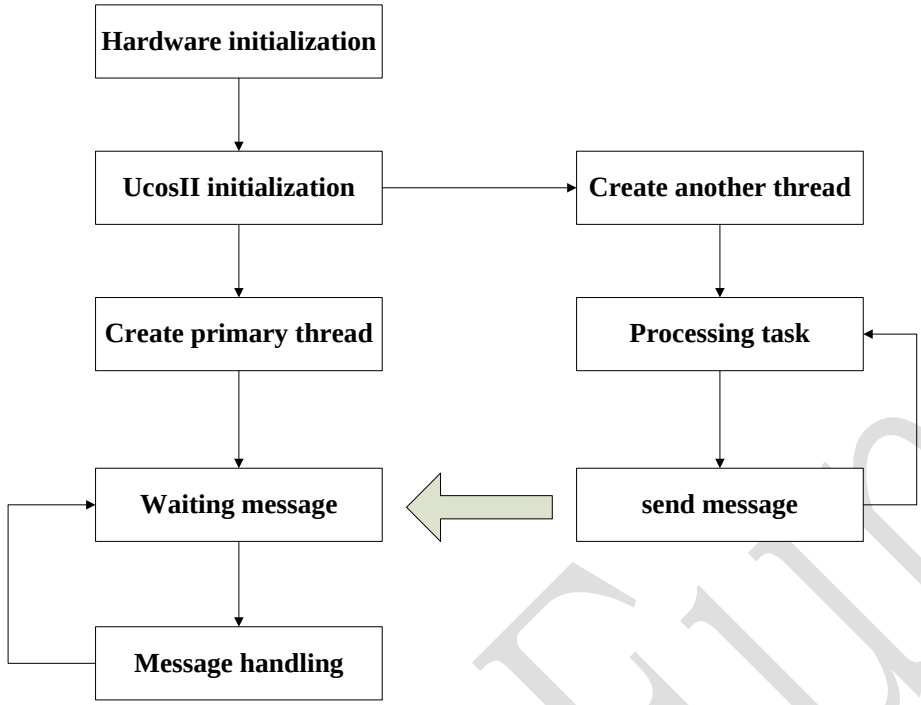


4 IDE Instructions for use

4.1 Tool installation

VirtualBox-5.2.22-126460-Win.exe

Download link

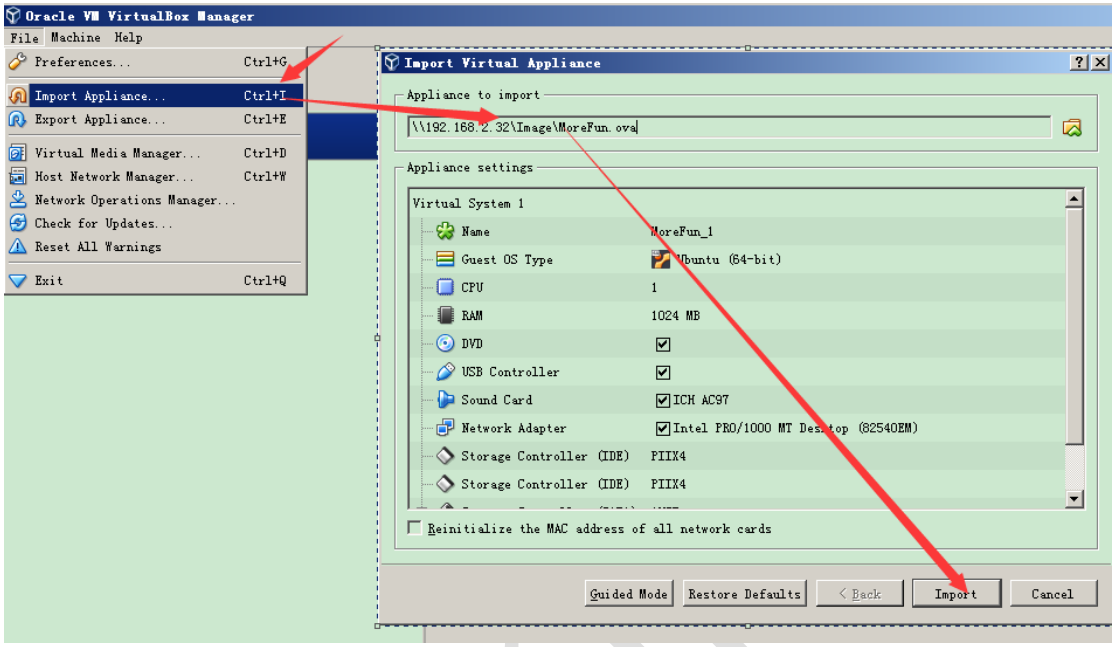
https://download.virtualbox.org/virtualbox/5.2.22/VirtualBox-5.2.22-126460-Win.exe

http://www.morefun-et.com/Uploads/sdk/VirtualBox.zip

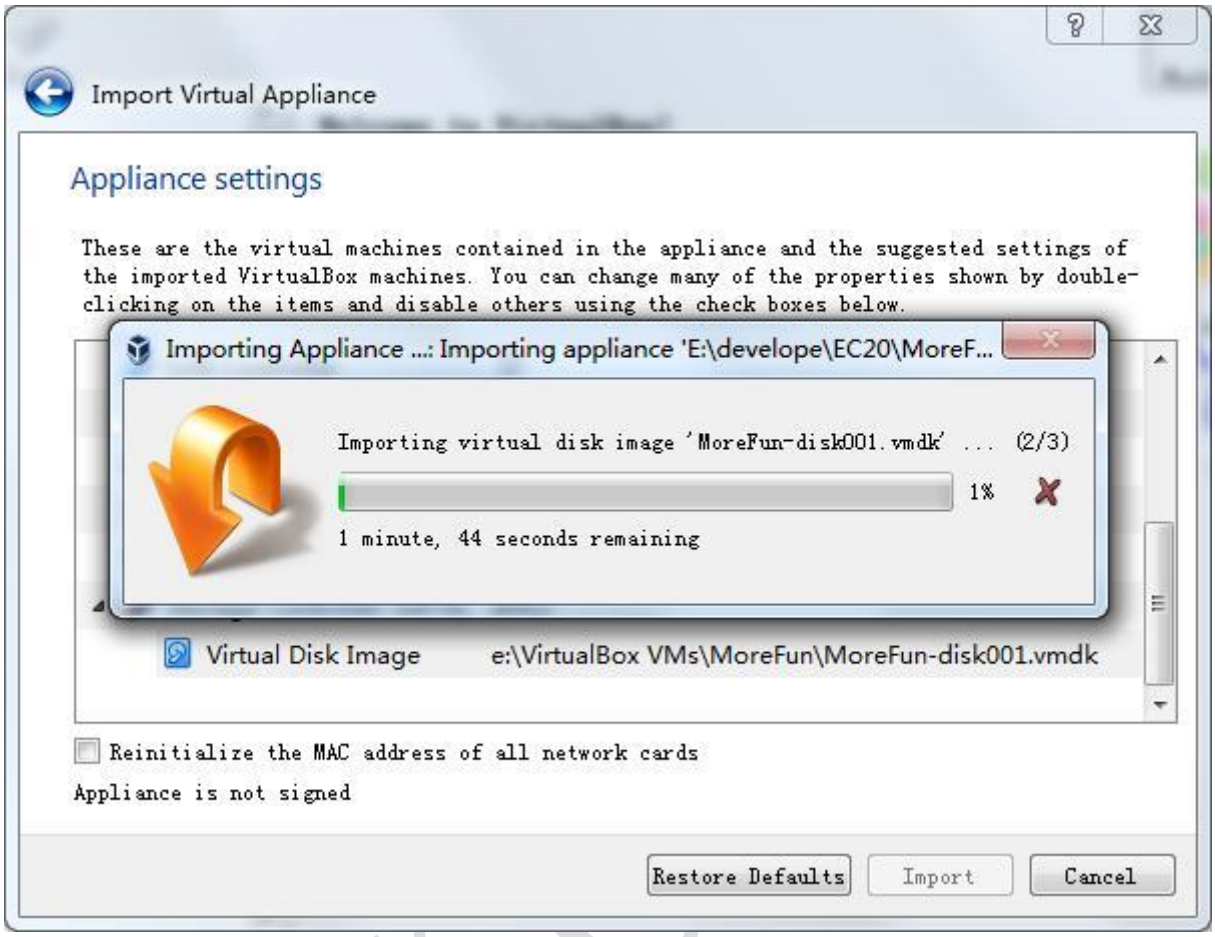
4.2 Import Development Environment Mirror

Download link

http://www.morefun-et.com/Uploads/sdk/MoreFun_ova.zip



Import takes a while



User: **morefun**

Password: **morefun123**

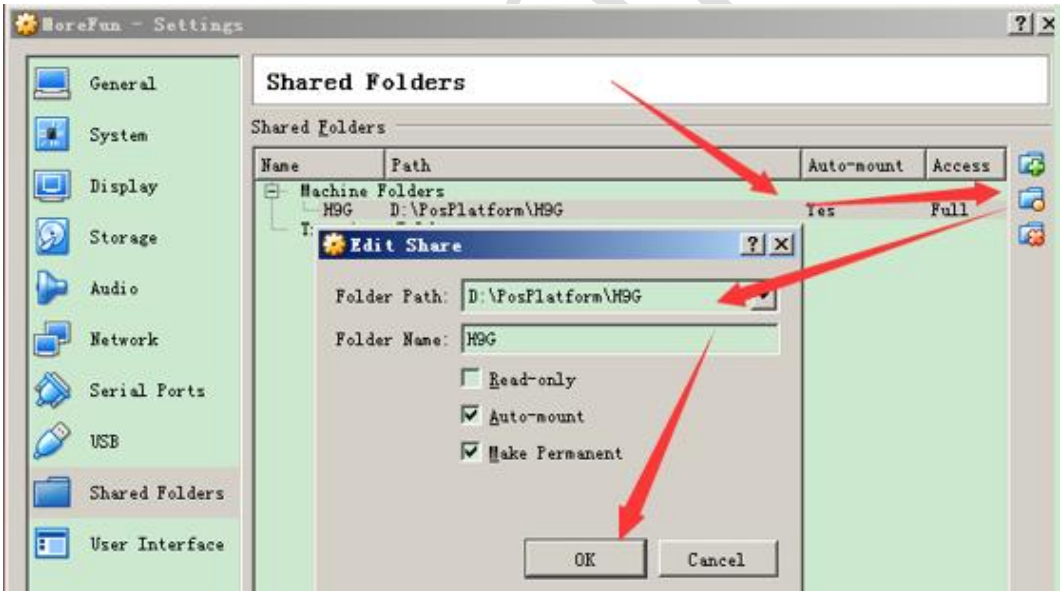
4.3 Shared Folders Settings

Configure your code path

Modify the code path (SDK path)

Don't change anything except the code path

除了代码路径不要修改别的内容



5 Write and compile source code

5.1 Use your favorite IDE

After the establishment and configuration of the project, you can

start the development work. You can use text editing tools, such as ultraedit, notepad ++, source insight, Visual Studio, visual studio Code and so on.

5.2 Compile Project

Create a new terminal (Ctrl+Alt+F1 or Ctrl+Alt+T)

User: morefun

Password: morefun123

cd ~/h9g/m90app/ xpos-sdk-demo
./build.sh

Windows Host Output directory

${Source path}\out\LINUX_320_240\demo.bin

6 Code debugging

Terminal only supports log output debugging. Log is through the terminal DEBUG port output, PC can use PuTTy and other serial tools to view the log.

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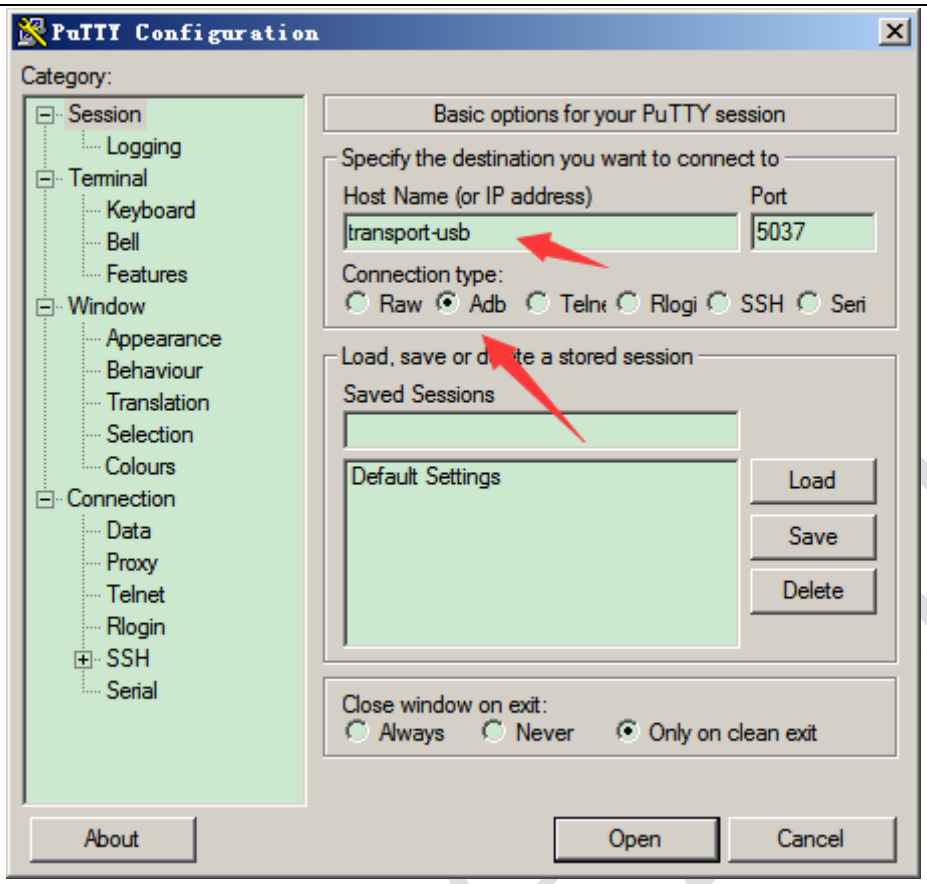
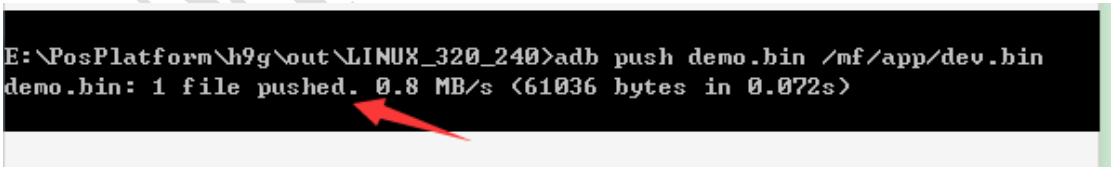


6.1 Download

Windows command line:

cd {your path}\out\LINUX_320_240

adb push demo.bin **/mf/app/dev.bin**



6.2 Startup application

Launch program putty.exe

```
cd /mf/app
./a
```

6.3 output log printf

The application can call the printf interface output log

```
printf("H9G out log\r\n")
```

The window putty will output:

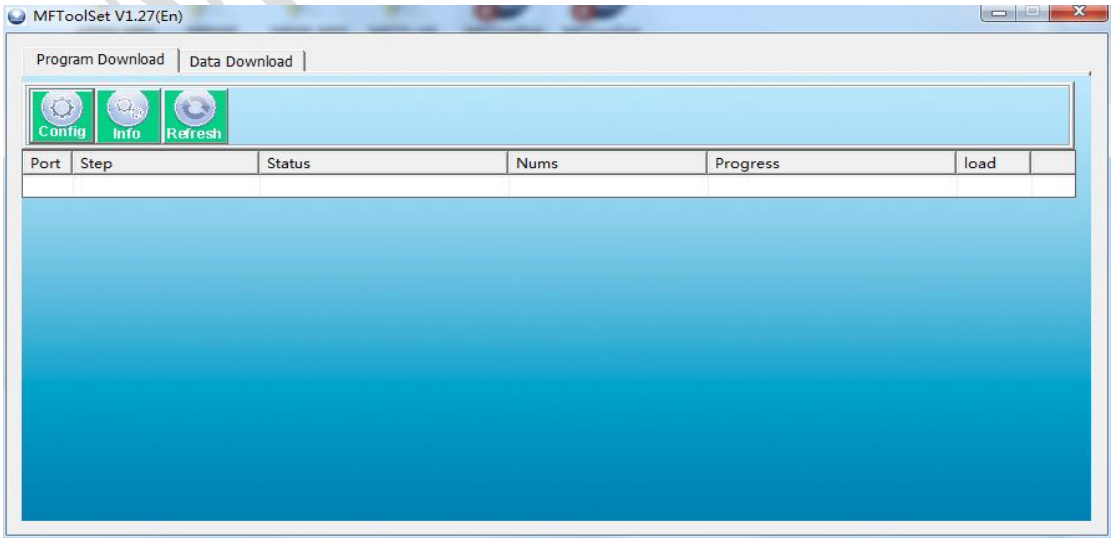
```
H9G out log
```

7 App download

In addition to downloading programs with the adb push command, you can also use tools to download applications or resource files.

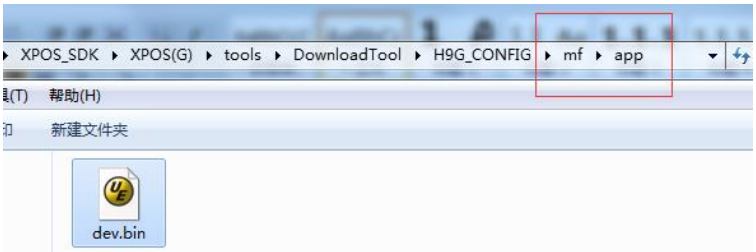
7.1 Download Tool

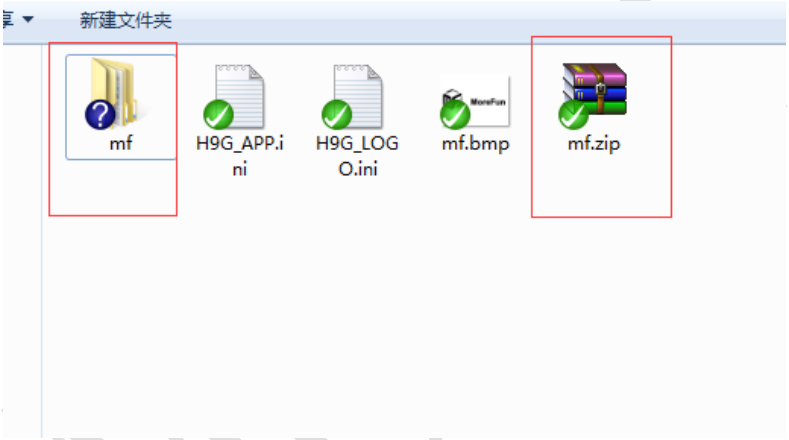
Download the program need to use the Rubik's caster download tool MFToolSet.



7.1.1 Program file packaging

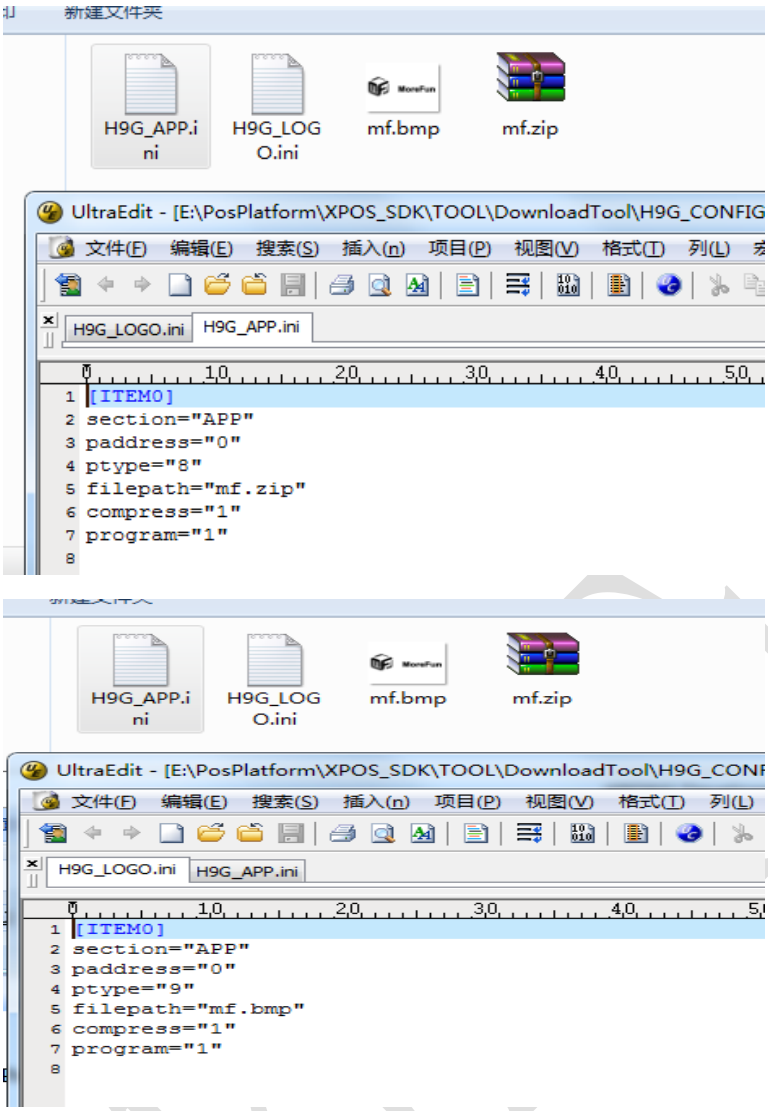
Put the application under the directory "mf/app" and rename it to "dev.bin". Then package the folder "mf" into "mf.zip".





7.1.2 Configuration File Editing

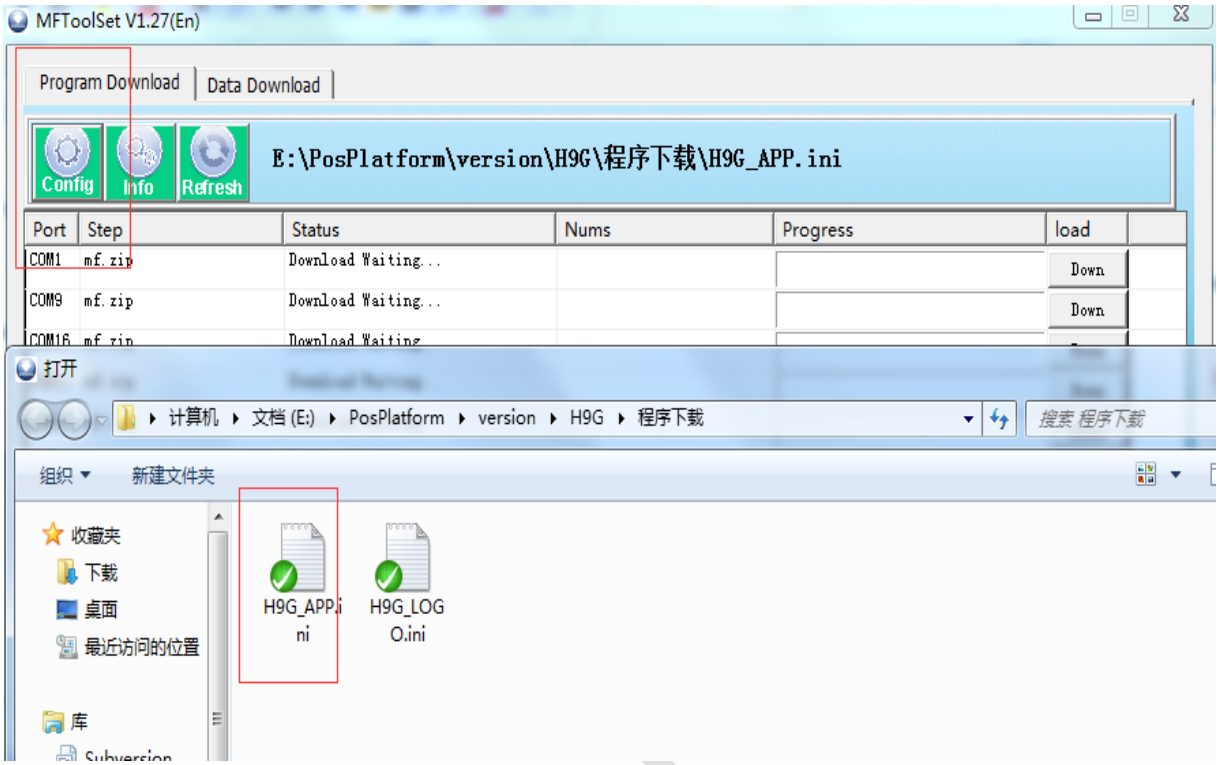
Use the INI configuration file to configure the download tool. The configuration file specifies the address of the program download and the path to the download program. SDK will provide a template for the configuration file, the user do not need to modify it. For example, APP configuration file for the H9G_APP.ini,logo configuration file for the H9G_LOGO.ini.

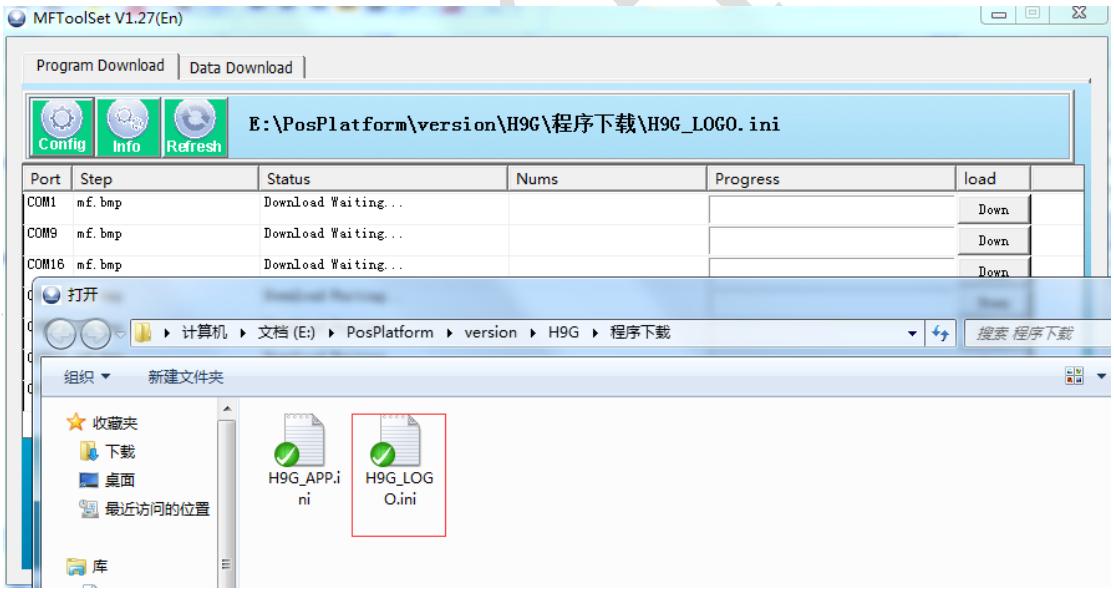


As shown above, the user do not need to modify it. Users only need to copy the application package and images to the same directory in the configuration file.

7.1.3 Select the configuration file

After modifying the configuration file, you can select the corresponding configuration file in the tool's setup menu.





7.2 Connect PC and Terminal

Before downloading, you need to connect the terminal to the PC. The current device has one way and PC connection: USB CDC virtual serial port.

7.2.1 H9G Connection

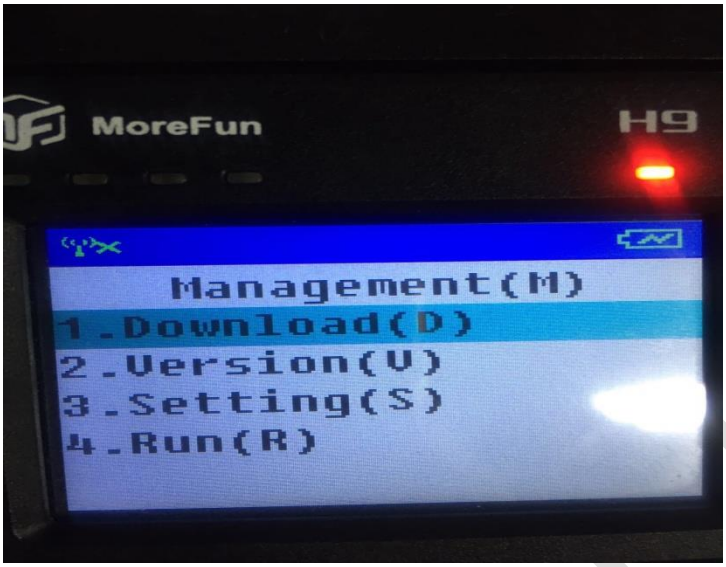
H9G is connected to USB using PC. This way you need to install the corresponding CDC driver. Refer to "Quectel_LTE_Windows_USB_Driver_Installation_Guide_V1.0.pdf" for details on how to install the drive. If you install the PC successfully inside the device manager will see a virtual COM port.
Connect the USB cable used, as shown below:

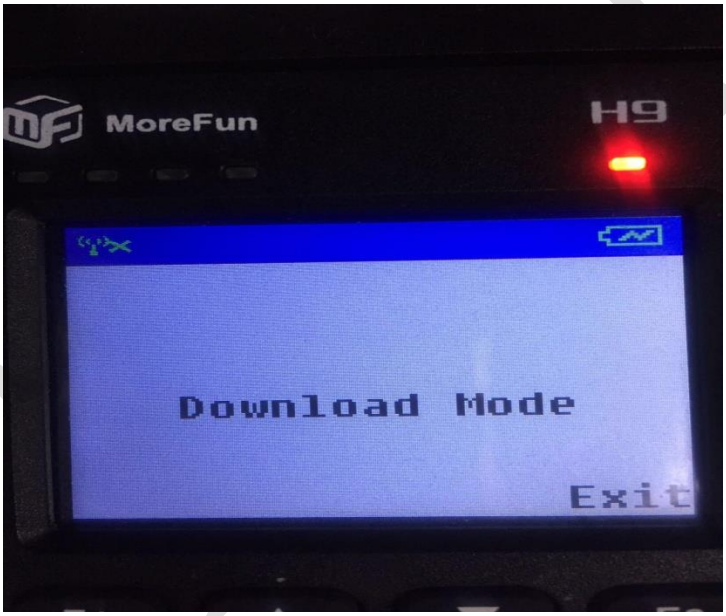
The small end of the need for Micro USB port. And most of the android phone data cable is the same. The micro usb termination device, the other end of the PC.

7.3 Into the Download Mode

The terminal must enter the download mode to upgrade the

program. Standby interface Press *#3333# to enter the management menu, then select 1 download, the LCD will have the appropriate tips, as shown below:



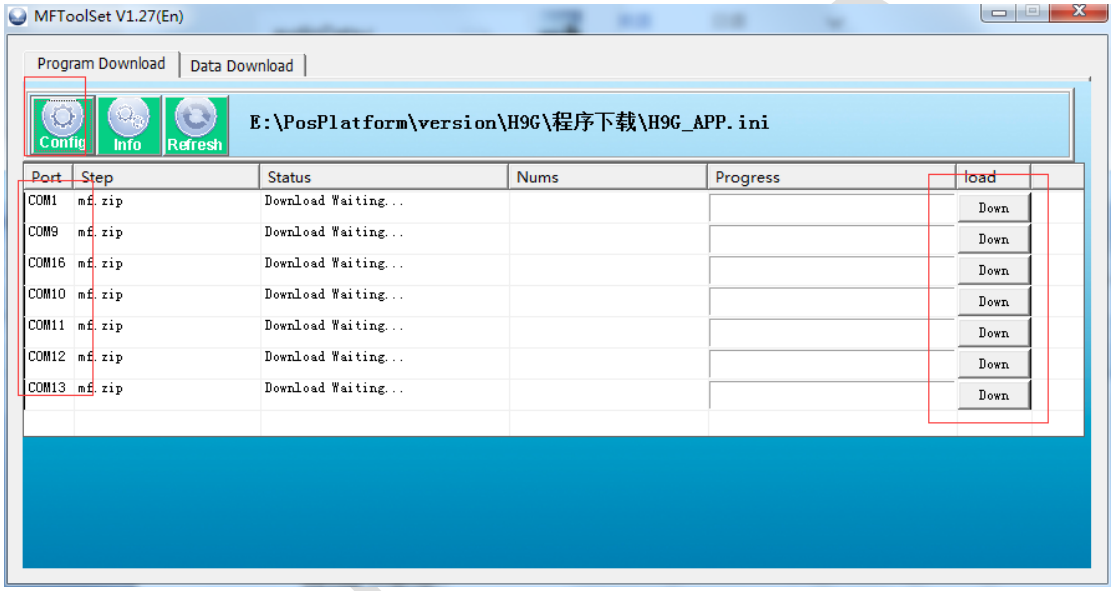


If the operation is in the download mode, follow the steps below to exit the upgrade mode:

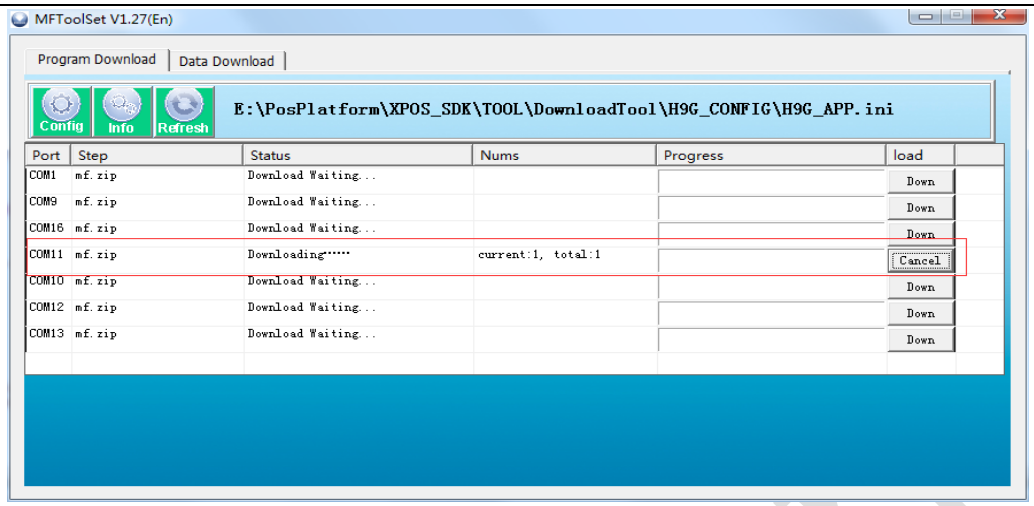
Remove the USB cable, long press the power button to perform a hard shutdown action.

7.4 Download

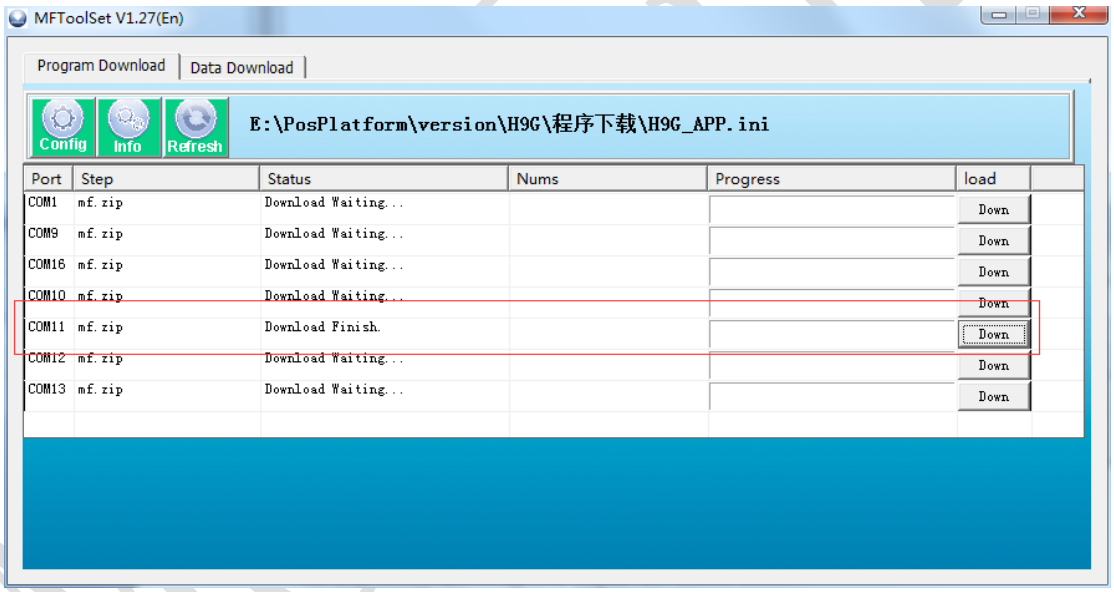
After the device enters the download mode and is connected to the PC, you can use the download tool to download the program. Before downloading, select the appropriate download profile in the setup menu.



In the device manager can see, the device connected to the PC which COM port above, such as here corresponds to COM11. So in the download tool to find COM11 corresponding to the download, and then select the download, it will start the download process.



When the download is complete, download the tools and equipment will have a corresponding LCD tips, as shown below:



Once the download is complete, the device will reboot and run the new program.

8 Driver installation

Reference:

Quectel_LTE_Windows_USB_Driver_Installation_Guide_V1.0.pdf

Appendix:

Create project and build

1. cd ~/h9g/m90app/
2. cp xpos-sdk-demo newapp -r
3. cd newapp
4. build.sh

Compile successfully Output file:

${Source path}\out\LINUX_320_240\demo.bin

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