Pack Tool User Guide

Version 2.0

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Revision History

Date	Version	Revision	Writer	Reviewer
2018/4/4	Draft v1.0	First draft	Pu Liangzhou	
2018/5/9	Draft v1.1		Pu Liangzhou	
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1 Overview

This document introduces how to use MPPacktool tool kits for RTL8762X/ RTL8752X.

The tool kits includes FlashMapGenerateTool and MPPacktool.

FlashMapGenerateTool is used to generate flashmap.h and flash map.ini files.

MPPackTool is used to generate OTA header bin, merge sub-images and generate a packet file.

2 Flash Map Generate Tool

2.1 Select IC

IC type should be selected at the first usage, as shown in Figure 2-1.

Figure 2-1 IC Type selection

Select right IC type and then click ‘Confirm’ button to enter main dialog. Click IC type button on main dialog also shows IC select dialog.

2.2 Flash map Settings

Flash Map Generate Tool provides several default flash maps for each kind of IC types, and at least one default flash map for layout which not supports bank switch and one for supports bank switch. All the default flash maps can be switched by item "Support OTA switch" in main dialog.

Select one default flash map and configure the flash size. Then double-click the address / size of the corresponding item in the table in the main interface to customize the configuration.

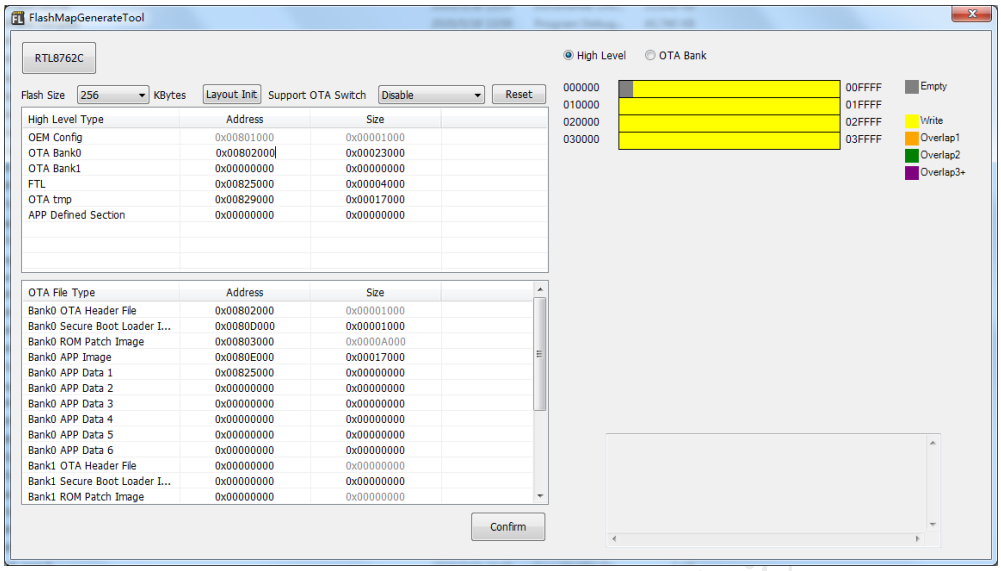

Figure 2-2 Flash Map Generate Tool UI

Flash map generate tool also provides user-defined flash map initialization. Click layout init button, double-click the corresponding item in the "Layout init" dialog and assign the appropriate size (KB) to the area, click confirm to complete flash map initialization.

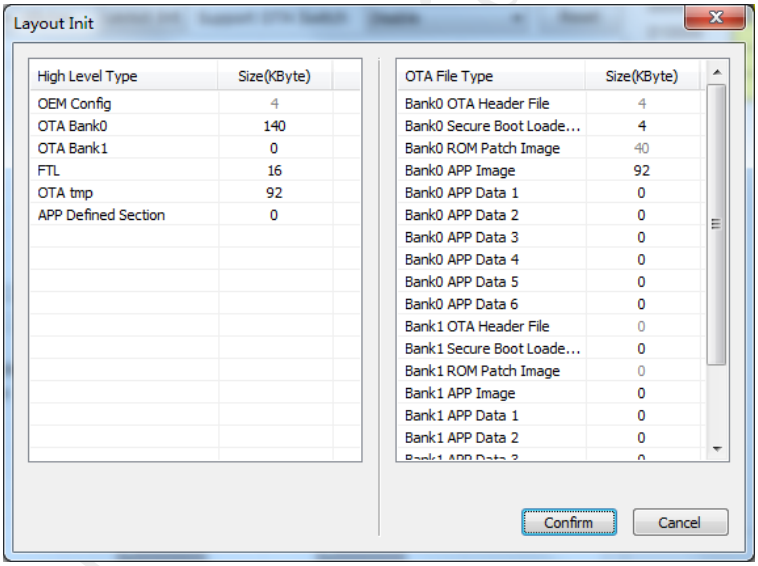

Figure 2-3 Layout Init Dialog

Click "confirm" on the main dialog to generate the flash_map.h and layout map.ini file, flash map.ini is used for Mppacktool and mptool Rd mode, flash_map.h file can be added to the app project in SDK.

3 Pack Tool

3.1 Select IC

IC type should be selected at the first usage, as shown in Figure 3-1.

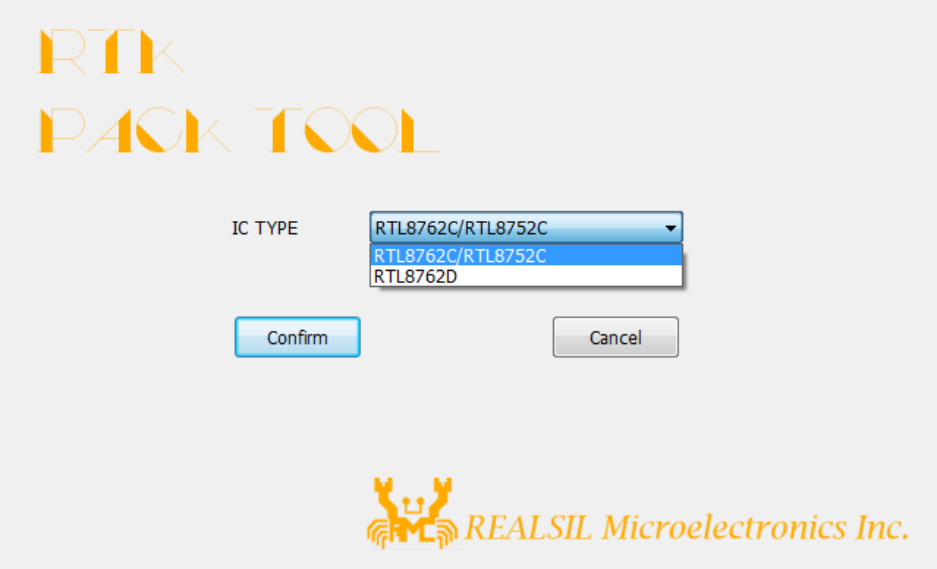

Figure 3-1 Add file path

Select IC type and then click ‘Confirm’ button to enter Pack dialog (as shown in Figure 3-2). The IC select dialog will be only shown at the first usage. Next time running Pack Tool will directly show Pack dialog.

A ‘Reset’ button is provided in Pack dialog. Click this button can reset the tool and restart the tool. IC Type select dialog will be shown.

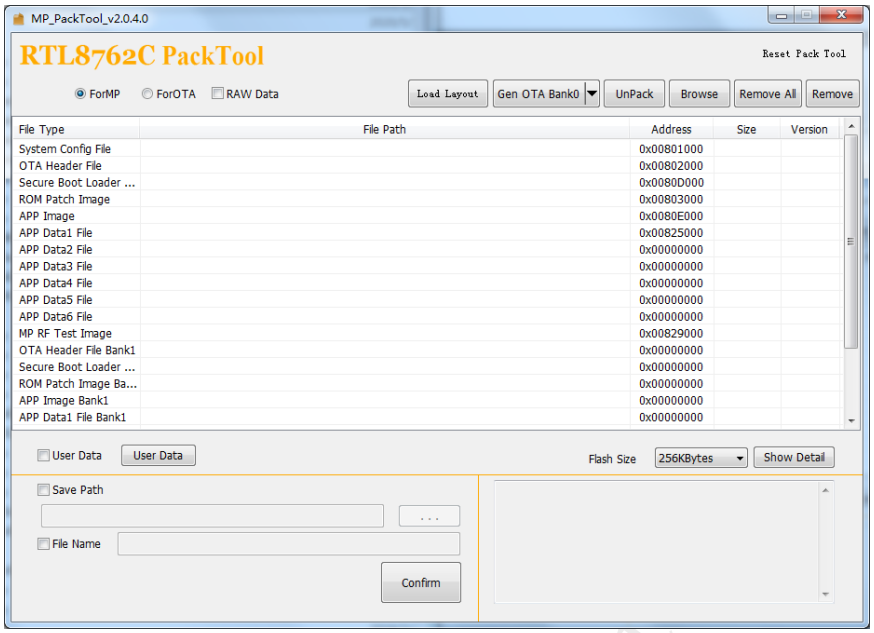

Figure 3-2 Pack Tool Dialog

3.2 Load Flash Map

Click “Load Layout” button in Pack tool, select a flash map.ini generated by Flash Map Generate Tool to load a flash map(Figure 3-3)。

After loading a flash map, all settings about flash layout in Pack tool will be set to the value same as in flash map, and cannot be changed any more.

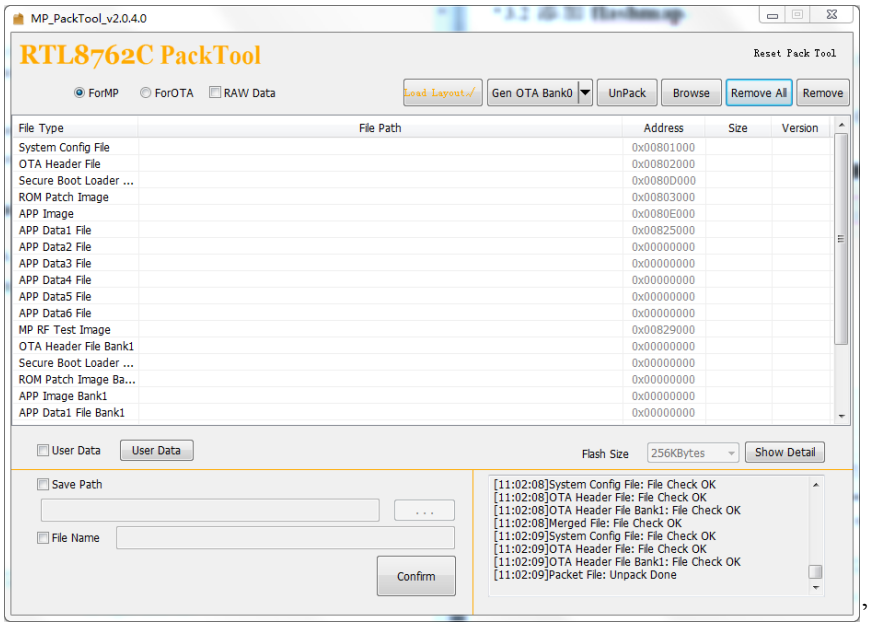

Figure 3-3 Lock Address for Pack Tool

3.3 Generate OTA Header Bin

Click the arrow in “Gen OTA Header” button to select OTA bank and open the OTA header dialog and configure to make a OTA header bin(Shown in Figure 3-4).

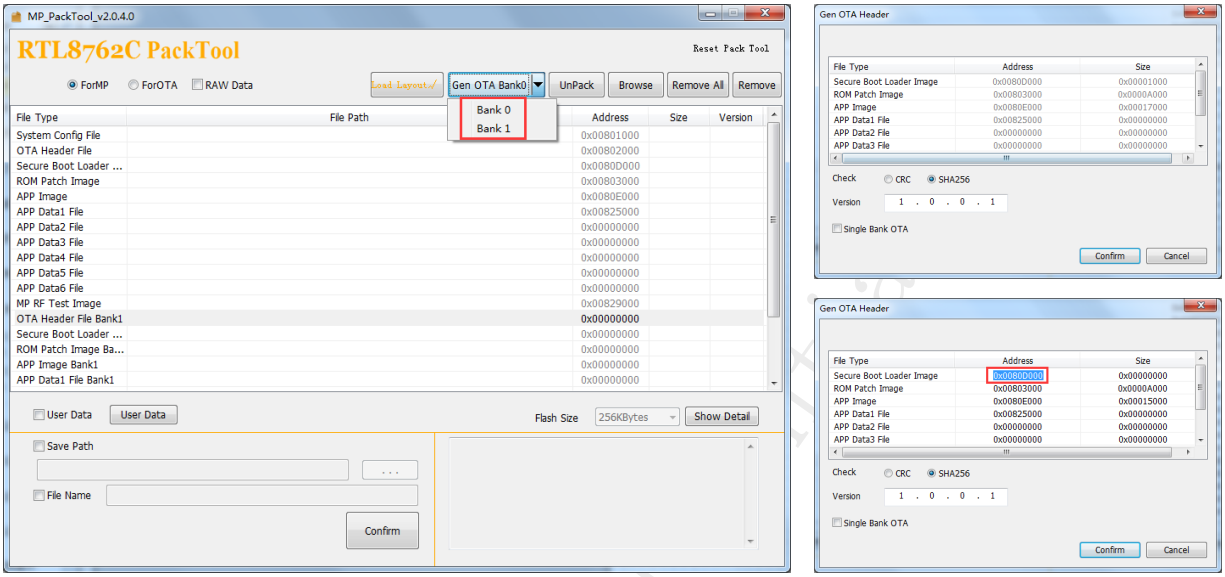

Figure 3-4 OTA Header Dialog

With the flash map loaded (top right of Figure 3-4), Pack tool will automatically read the bank information from the flash map and make it unchangeable.

When flash map is not loaded (bottom right of Figure 3-4), the address and size of all file types in the list should be configured and they will be checked after being changed.

CRC check, SHA256 check and version information is provided for OTA Header bin.

After configuring all the properties, click “Confirm” to generate OTA Header bin, the generated bin will be added automatically into the pack list. Then the address of the file types referred in OTA header bin will be locked to the value configured above even if the flash map is not loaded (Shown in Figure 3-5).

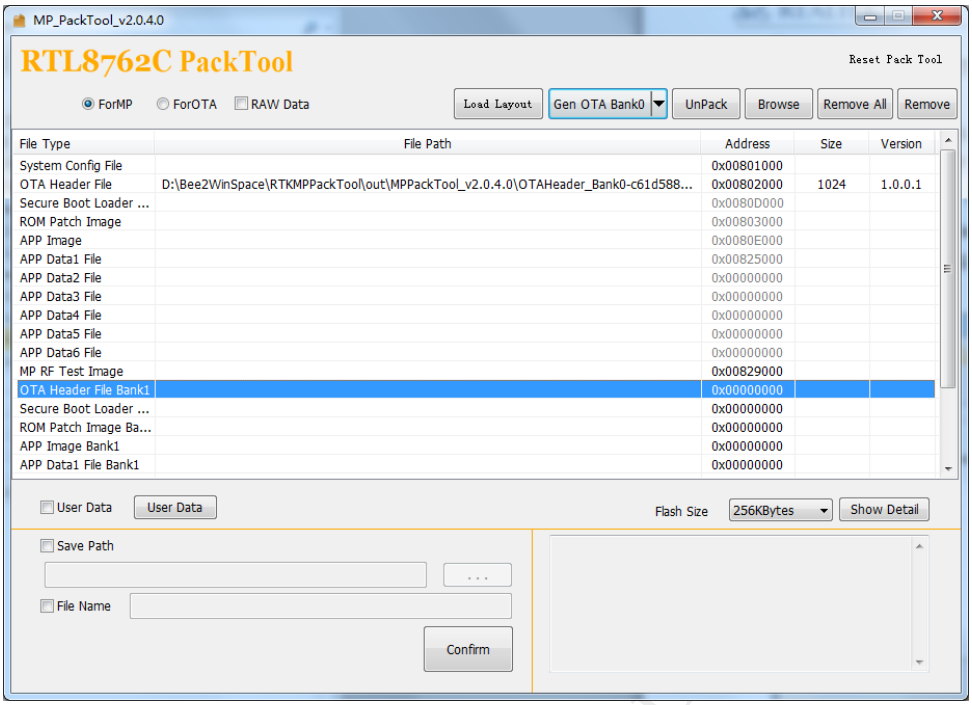

Figure 3-5 Lock for OTA Header Bin

3.4 Pack files

3.4.1 Pack Mode

After Pack tool loads a flash map, two packaging modes: forMP and forOTA are provided. The packet files of two modes are used for MP and OTA respectively. The image files to be packed have different requirements.

If the image files need to be packed freely, flash map file should be removed, and the tool will no longer restrict the type of image files.

When forMP mode is selected, the raw data check box is also available. An additional file (with "RAW" in the file name) will be generated after ticking the raw data check box. This file is the same size as the set flash size. All images to be packaged will be written to the expected location, and the file is supposed to be burned to the flash starting address (0x800000).

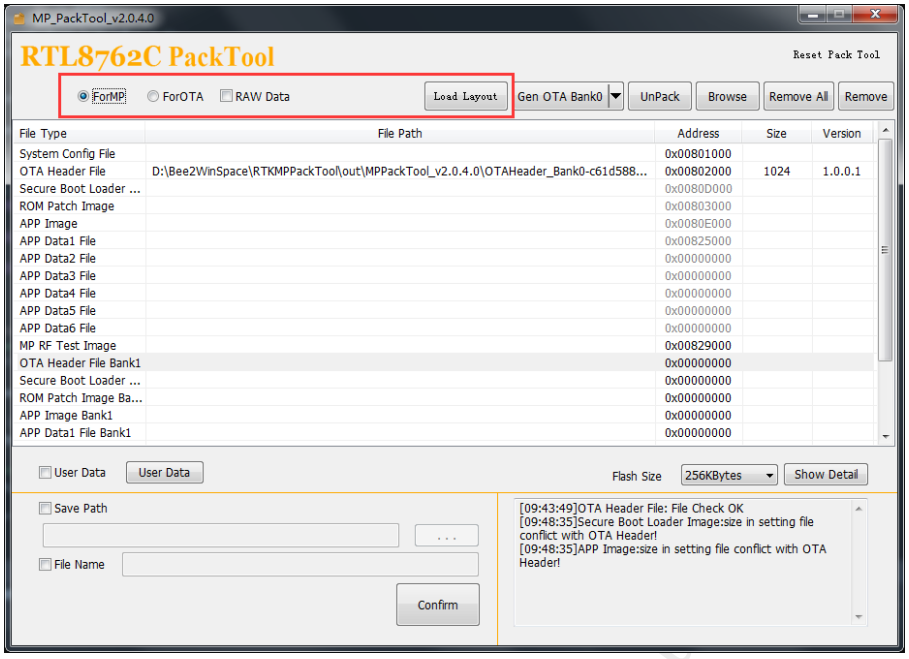

Figure 3-6 Select Pack Mode

3.4.2 Add Images

Find the file type of the sub image to be added and double click the place in “File Path” column, it will switch into edit mode. Click the folder button (Shown in Figure 3-7) to add sub image.

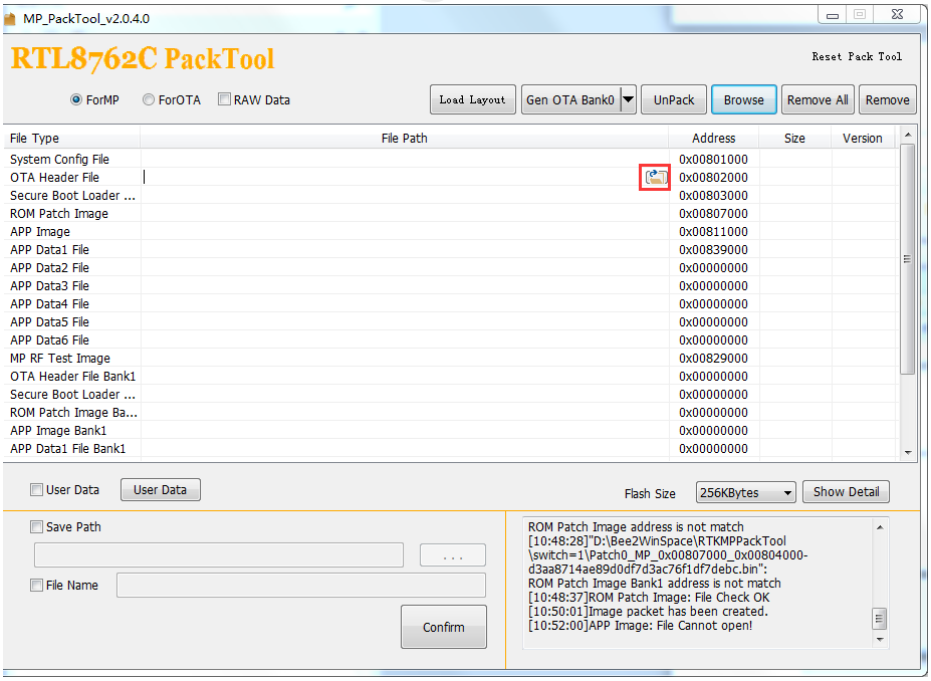

Figure 3-7 Add file path

The Pack Tool will check if the selected image is legal, e.g. MD5 check is necessary for all the files being selected, sub image files for RTL8763B will also need to check file type, file length, file version, etc. (Shown in Figure 3-8). The check result will be shown in message box. If check failed, the file path color will set red.

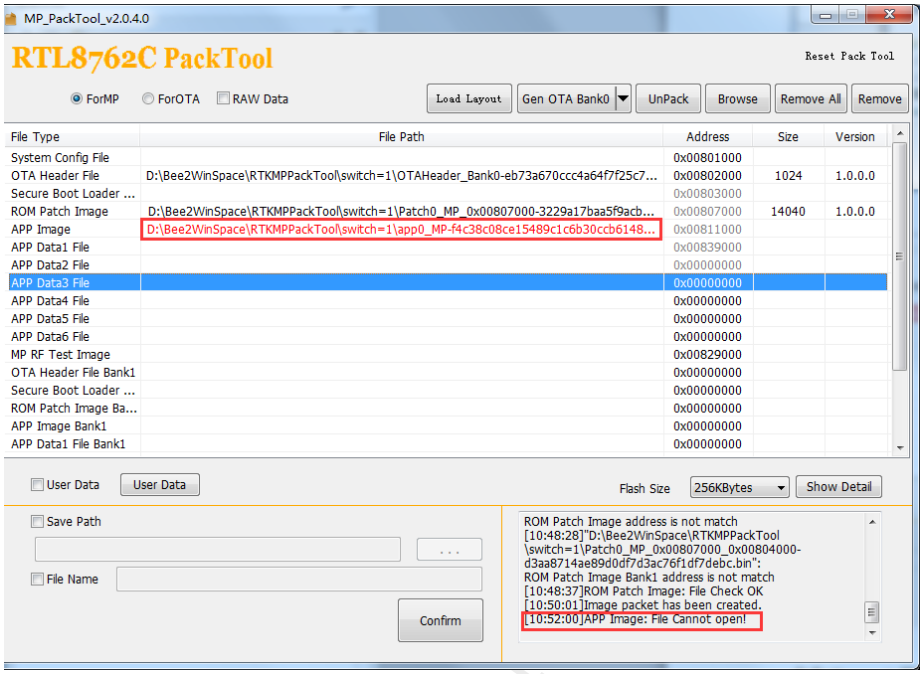

Figure 3-8 File check error & success

Click “Browse” button to and more than one files at a time, however, adding files in this way will clear all the old file path and address setting in the list. (Shown in Figure 3-9).

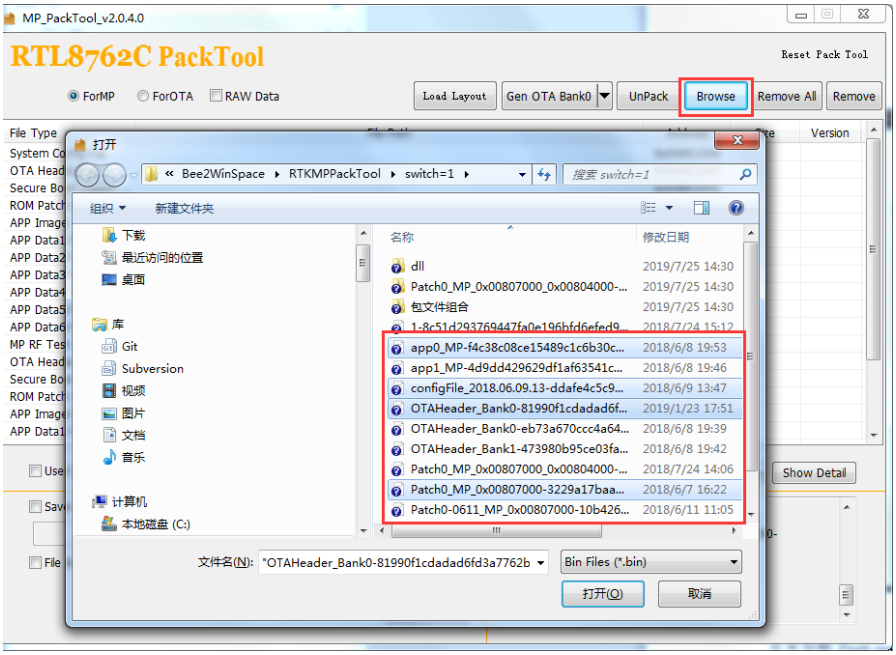

Figure 3-9 Add multi image files to list

If the flash map is not loaded, the unlocked address can be changed by double clicking (Shown in Figure 3-10).

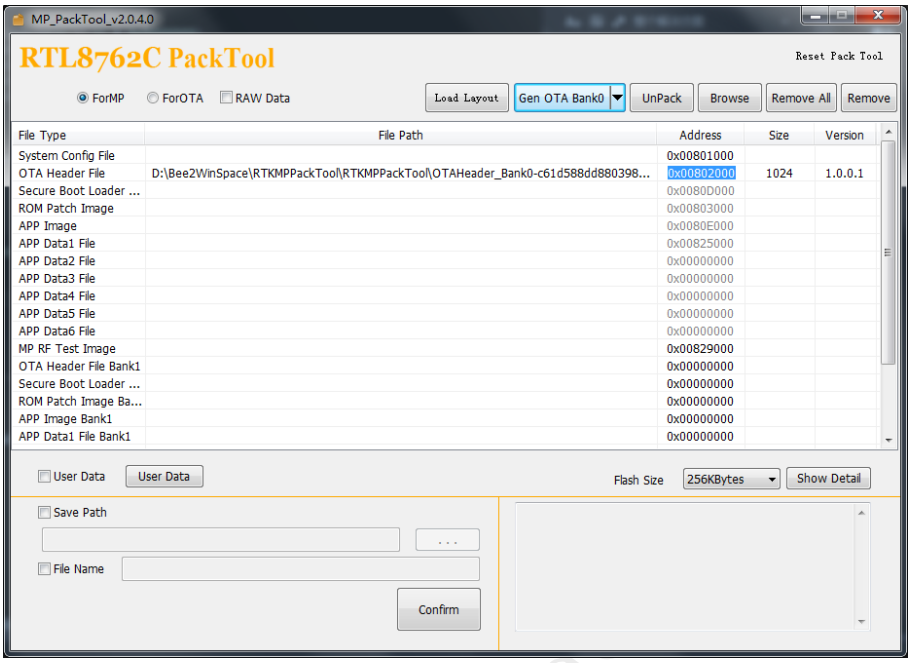

Figure 3-10 Change address

If one sub image is mistaken added into the image list, click to select it in the image list and click ‘Remove’ button to remove it (Shown in Figure 3-11).

The remove button will clear “File Path”, “Size”, and “Version” column, and the address in “Address” column will be reset to the default value.

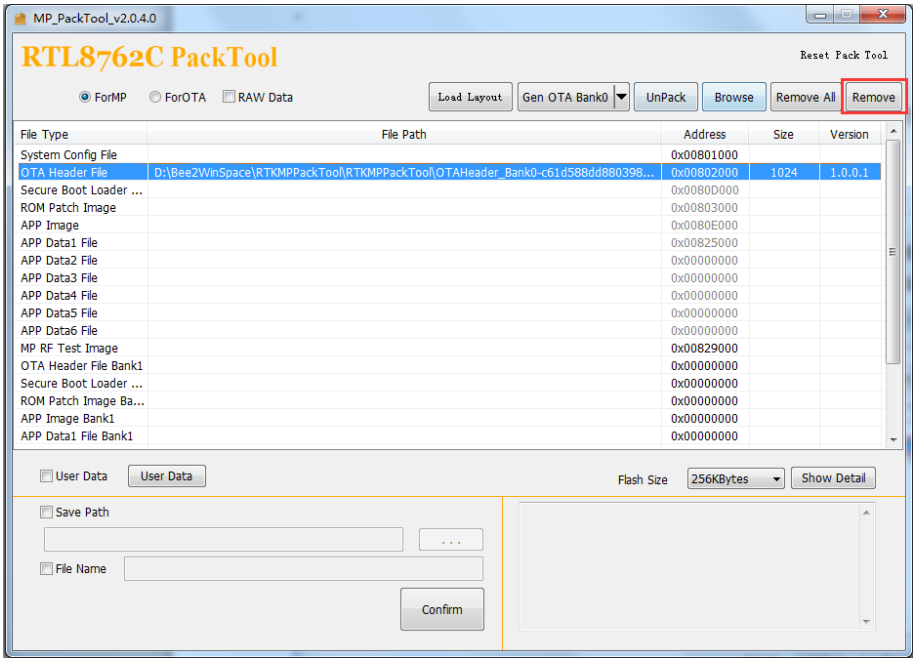

Figure 3-11 Remove Sub Image

3.4.3 Show Memory Layout

The Pack Tool provides a function to show memory layout. Using it to help check if there is any memory overlap in current build.

Choose a correct flash size before using it, make sure the selected size is match with the using flash. Then click ‘Show Detail/Hide’ button to show memory layout. (Shown in Figure 3-12)

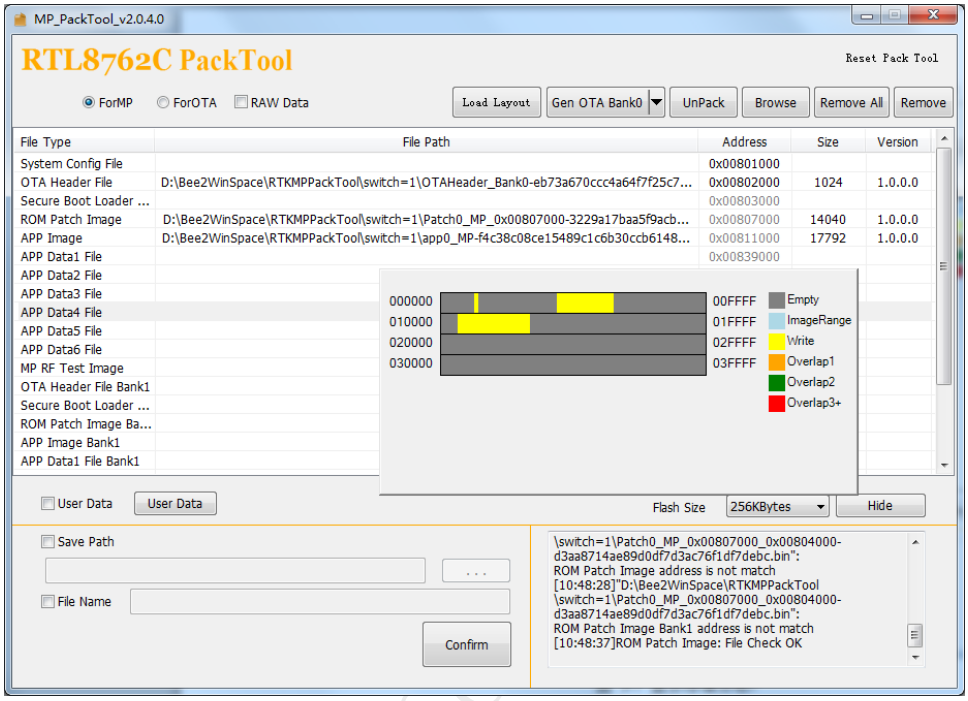

Figure 3-12 Show Memory Layout

3.4.4 Add User Data

Packtool provides the function of packing user data. User data is not within the scope of flash map and cannot participate in OTA.

Tick the User Data check box and click the User Data button to configure in the pop-up User Data dialog (Figure 3-13). The configuration mode is similar to that of the image files. The tool only guarantees that there is no conflict between the added user data files.

Pack tool will generate an additional packet file with the file name containing "WithUserData" if the raw data check box is ticked, the generated RAW Data file will also contain user data.

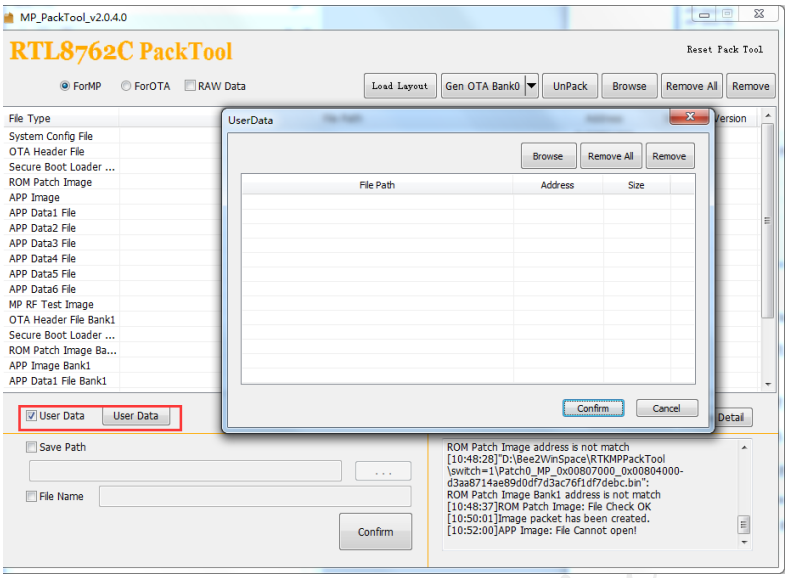

Figure 3-13 User Data Settings

3.4.5 Generate a Packet

After building a complete image list, click the 'Confirm' button to generate a packet. The packet will be stored in the same path as the Pack Tool, named as "ImgPacketFile-MD5.bin". MD5 is the MD5 value for the whole packet file.

In addition, select the save path check box to customize the save path of the package file. Check the file name check box to customize the package file name (Shown in Figure 3-14).

If the packet file cannot be generated correctly, there will be error message. Change sub bin files' selection according to the message and click 'Confirm' again to generate packet file correctly.

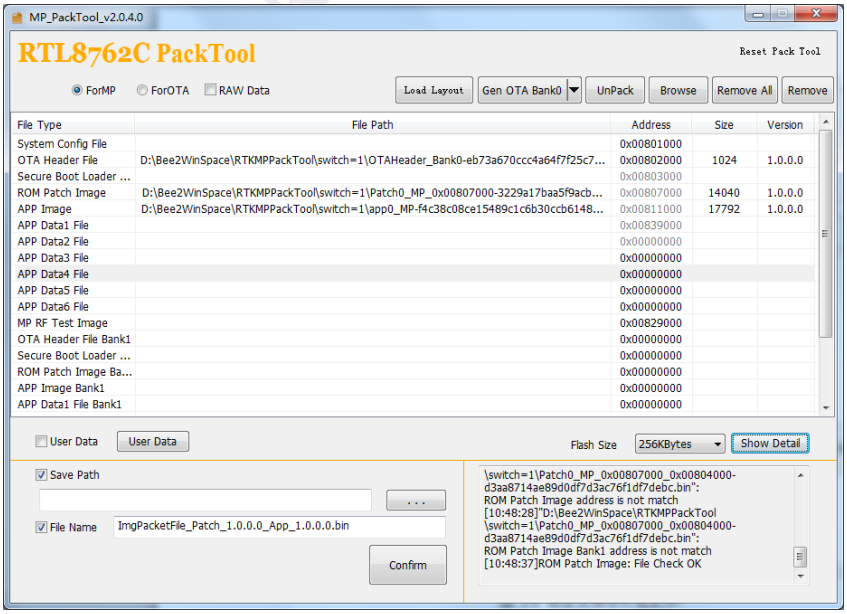

Figure 3-14 Save packet in custom path

3.4.6 Unpack a Packet File

The Pack Tool also allows adding sub image files from packet files. Click “UnPack” button to select a packet file (Shown in Figure 3-15).

The unpack function will clear the image list first and then add all the sub image files in the packet file into image list. The unpacked image files will be stored into a folder which name is same to the selected packet file and also has the same path with the selected packet file. (Shown in Figure 3-16)

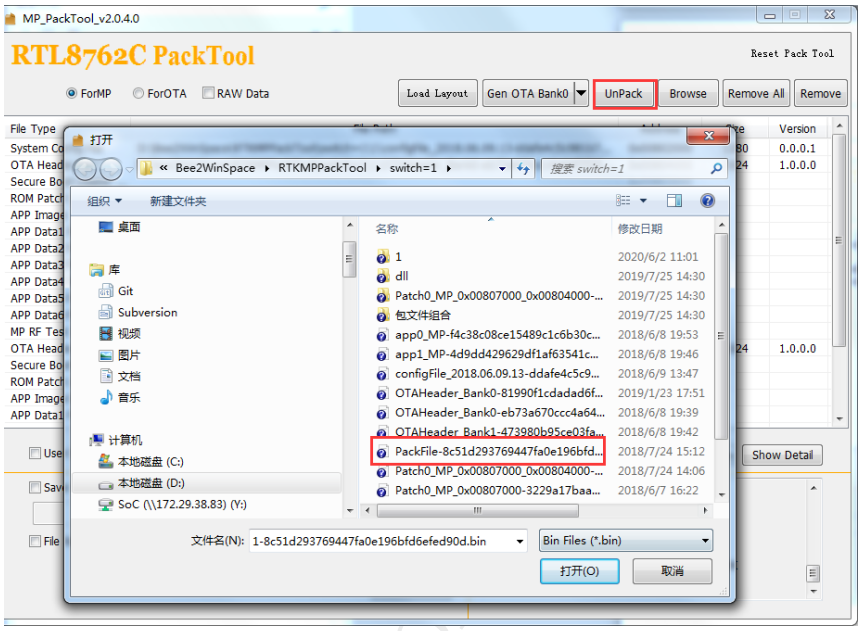

Figure 3-15 Packet File select

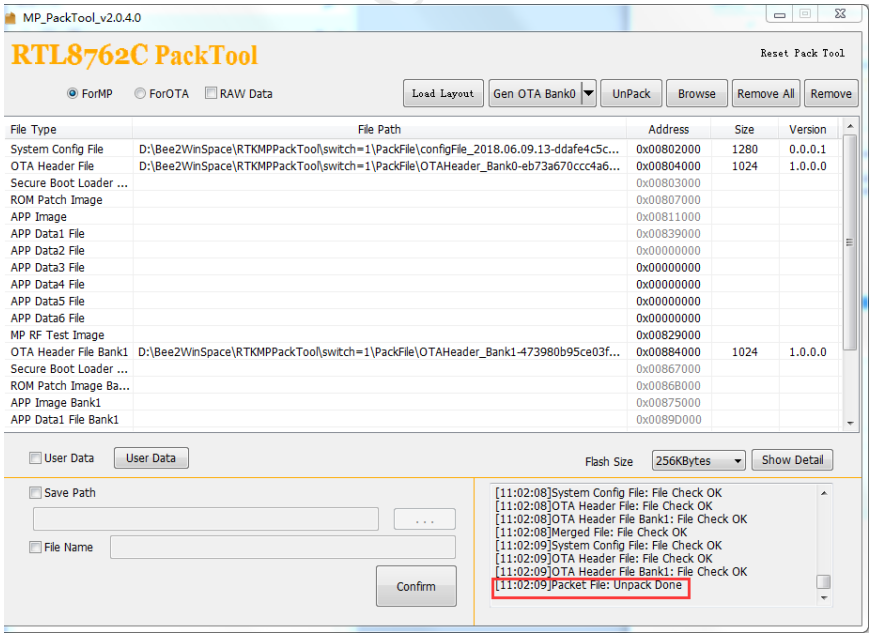

Figure 3-16 Add Packet File to list