



MT76x7 Flash Tool User's Guide

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Document Revision History

Revision	Date	Description
1.0	1 April 2016	Initial version
1.1	30 June 2016	Refine the images and complement the information of using the flash tool.
1.2	13 January 2017	Updated UI. Added support in Linux OS.
1.3	5 May 2017	Add new flash info configuration file.

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1. Introduction

MT76x7 Flash Tool is designed to support flexible device flashing on MT76x7 applications. It primarily supports flashing the normal binary required for the LinkIt 7687 HDK operation based on MT76x7 chipset. It also supports flashing the scrambled binary to hide the device data. Figure 1 shows the graphical user interface (GUI) of the Flash Tool.

This document guides you through the following.

- Flashing the system on your development board.
- Reading the data from the development board.
- Cloning a system image from one device to another.

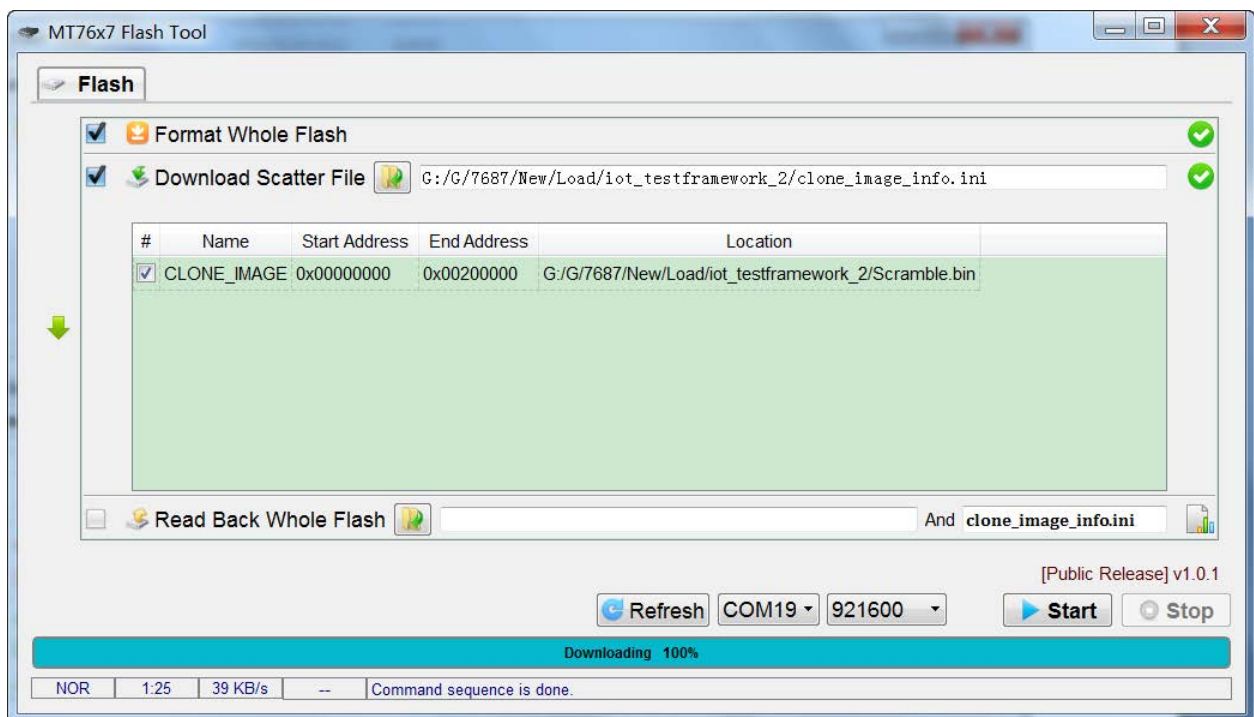


Figure 1. The Flash Tool GUI

2. MT76x7 Flash Tool Installation

This section provides an installation guide for the MT76x7 Flash Tool and covers the following items:

- The supported environment for installation.
- Installing the MT76x7 Flash Tool.

2.1. Environment

The Flash Tool can be used on Microsoft Windows XP, Vista, Win7, 8 and 10 with 32-bit and 64-bit operating system, also can be used on Linux with 32-bit and 64-bit operating system (Ubuntu 14.04 or higher).

To install the tool:

Download the LinkIt SDK v4 package from [here](#).

2.2. Linux version of MediaTek MT76x7 Flash Tool

On Linux OS environment:

- 1) Extract the content of the SDK and navigate to the MT76x7 Flash Tool's folder (`./linux32bit` or `./linux64bit`). The tool is a setup free package.
- 2) Run the following command to establish the library environment and launch the Flash Tool:

```
source env-setup.sh
./mt76x7-flash-tool.exe
```

2.3. Microsoft Windows version of MediaTek MT76x7 Flash Tool

On Microsoft Windows OS environment:

- 1) Extract the content of the SDK and navigate to the MT76x7 Flash Tool's folder (`./win`). The tool is a setup free package.
- 2) Execute the `mt76x7-flash-tool.exe` to launch the Flash Tool (see Figure 2).

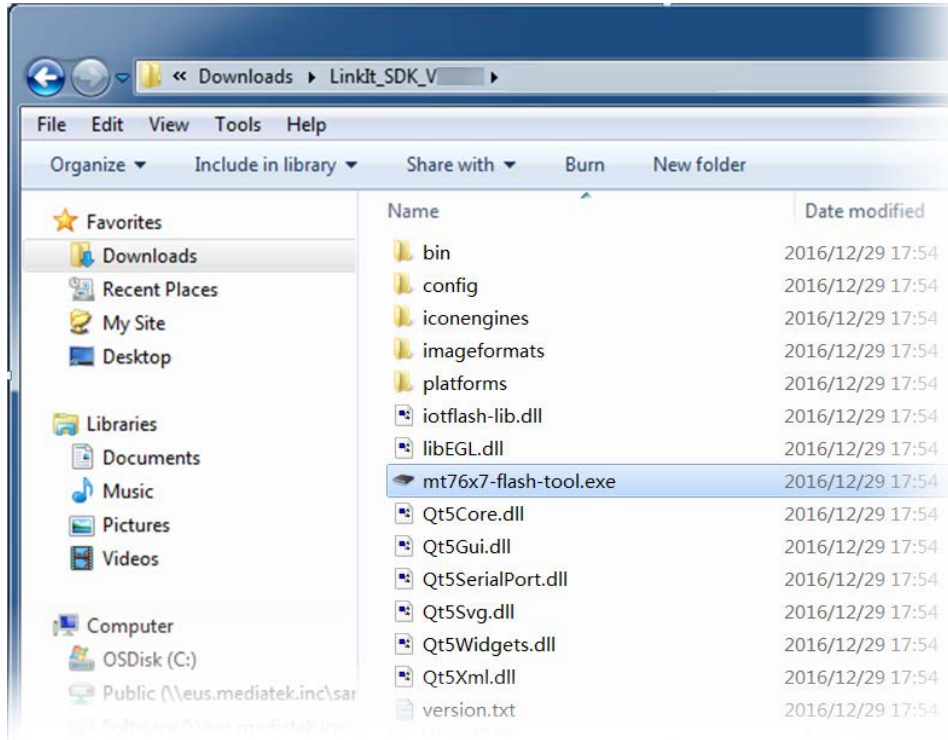


Figure 2. Executable file in the MT76x7 Flash Tool's destination folder

3. Supported Features

The Flash Tool supports the following five features:

- Formatting the storage, see section 3.3, "Formatting the storage".
- Downloading the images, see section 3.4, "Downloading an image".
- Reading back an image, see section 3.5, "Reading back an image".
- Cloning the image of a device, see section 3.6, "Cloning the image of a device".

3.1. Configuring the Flash Tool

Configure the Flash Tool before commencing the first image download or storage formatting operations. Follow the description in section 2.1, "Firmware update" of the LinkIt 76x7 HDK user's guide to set the board to **FLASH Recovery** mode before proceeding to the next section.

3.1.1. Configure the COM port and the baud rate

To configure the COM port and the baud rate:

- 1) Launch the MT76x7 Flash Tool and connect the device with a micro-USB cable.
- 2) Reset the development board or unplug and re-plug in the micro-USB cable.
- 3) Click **Refresh** and configure the correct COM port and the baud rate, as shown in Figure 3.

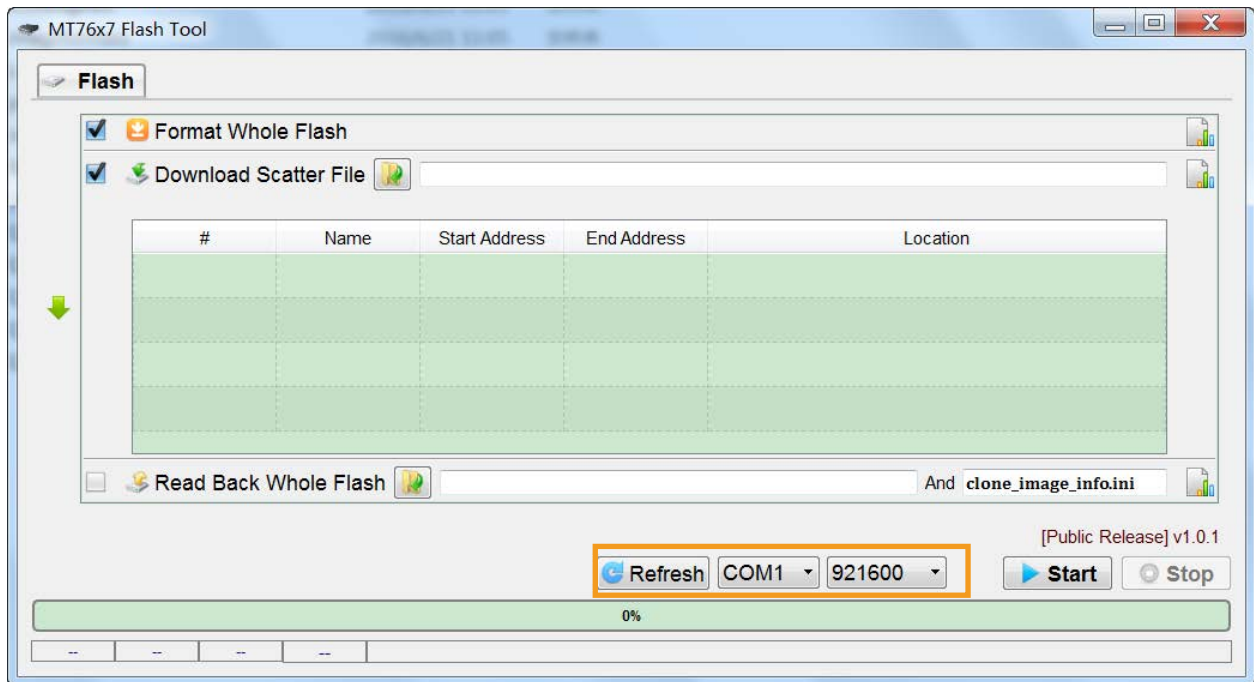


Figure 3. Setup the COM port and baud rate

3.2. Command execution sequence

This tool provides all-in-one service, where format, download, and read back can be applied in a single run. The command execution sequence is from the top to the bottom of the UI, as shown in Figure 4.

To execute the commands:

- 1) Select the checkbox to enable the operation.
- 2) Some functions need additional input for successful execution; such as **Download Scatter File** operation requires the path to the scatter file. Once all the required information is provided, click **Start** to execute the commands sequentially.

After the completion of the command execution, the corresponding icon changes to checkmark or crossmark to indicate status of the result.

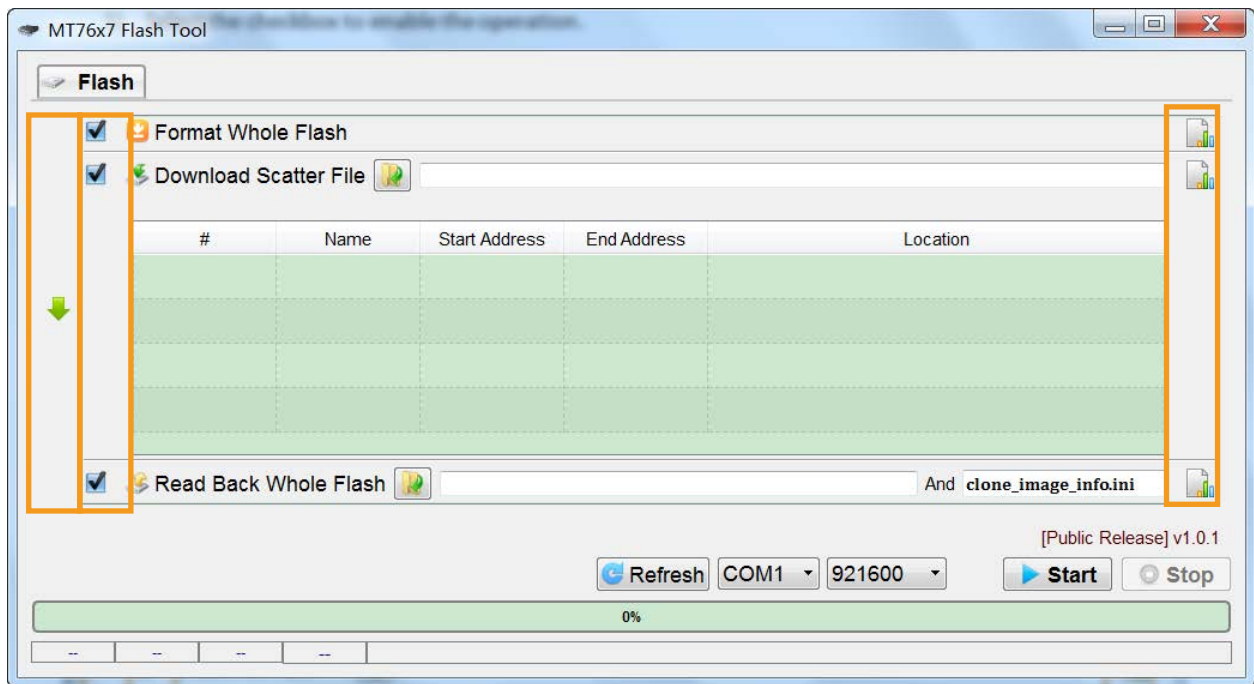


Figure 4. Command execution sequence and status

3.3. Formatting the storage

The **Format** function erases the available storage on the target device.

To apply formatting:

- 1) Enable **Format Whole Flash** checkbox.
- 2) Click **Start** to execute the command and check the final status.

3.4. Downloading an image

The **Download** feature flashes the image to the device. The image data can be scrambled if necessary. If scrambled, the data read back cannot be decoded.

Follow these steps to execute commands.

- 1) Enable **Download Scatter File** checkbox.

- 2) Click **open folder** to provide the scatter file. It's an **Image Description File** that contains the partition layout of the device along with the project load. The detailed content including **Name**, **Start Address**, **End Address** and the **Location** of the files are displayed in a table, as shown in Figure 5.
- 3) Click **Start** to execute the command. When downloading is complete, the result status is shown in Figure 6.

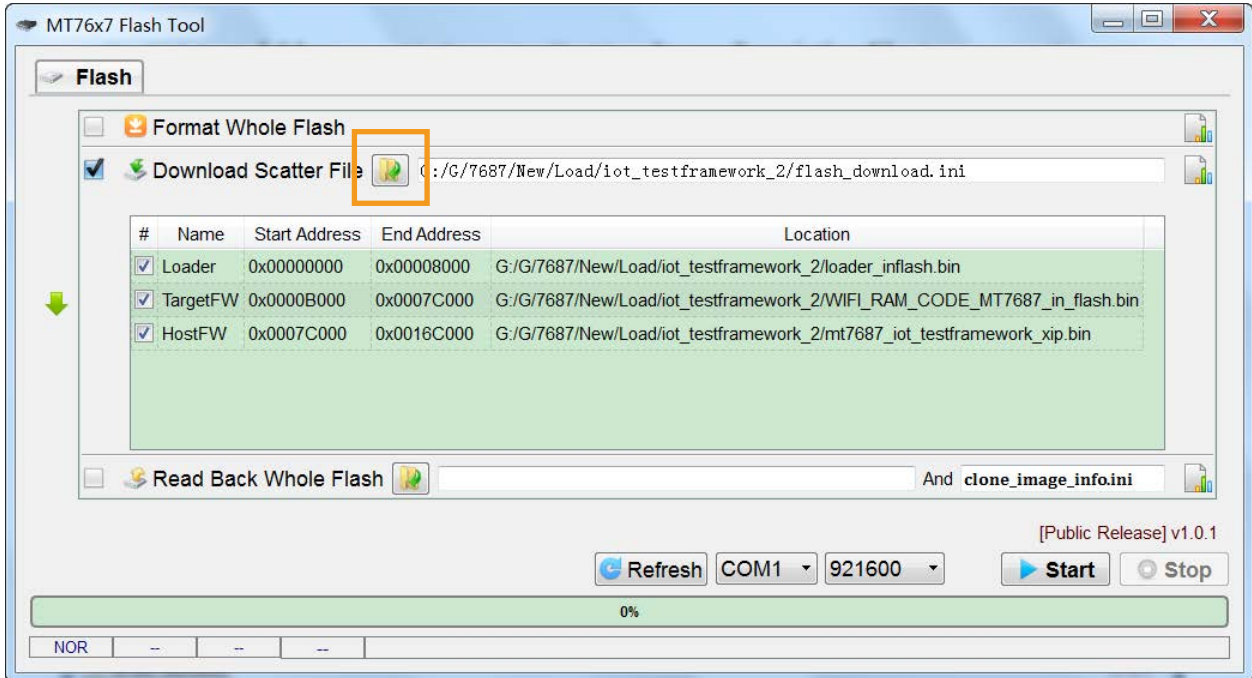


Figure 5. Download an image to the device storage

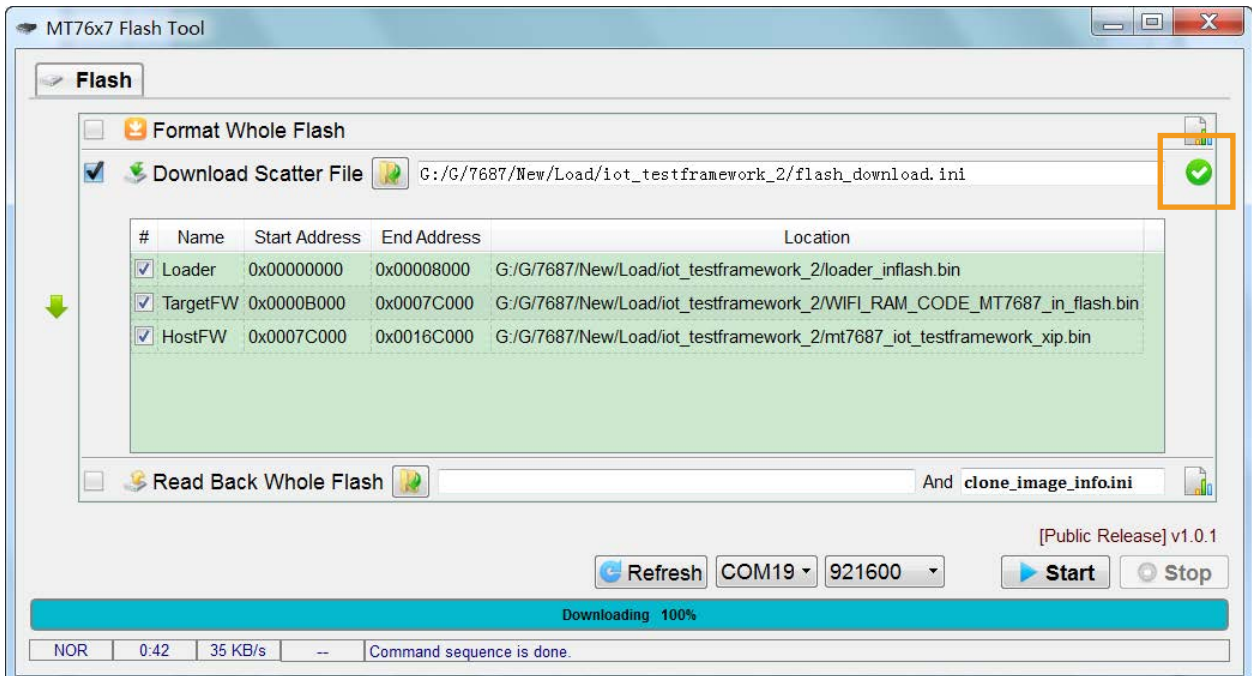


Figure 6. Downloading the image is successfully complete

The Scatter file, known as **Image Description File** (usually named as flash_download.ini), is located under the project binary folder, where all other binary files reside. The binary files could be either MediaTek released or

generated during build process. The **Image Description File** includes information about the file version, project name, partition layout details, etc. More information about this file can be found in section “Building the project” of the MediaTek LinkIt™ Development Platform for RTOS Get Started Guide.

3.5. Reading back an image

The **Read Back Whole Flash** feature reads back the entire image from the device storage. The image is usually used as an input file for cloning the device.

To execute the commands:

- 1) Enable **Read Back Whole Flash** checkbox.
- 2) Click the corresponding **open folder** to select the output file where the image needs to be stored.
- 3) Click **Start** to execute the command. After the command execution is complete, the corresponding image description file named “clone_image_info.ini” will be generated in the same folder, as shown in Figure 7.

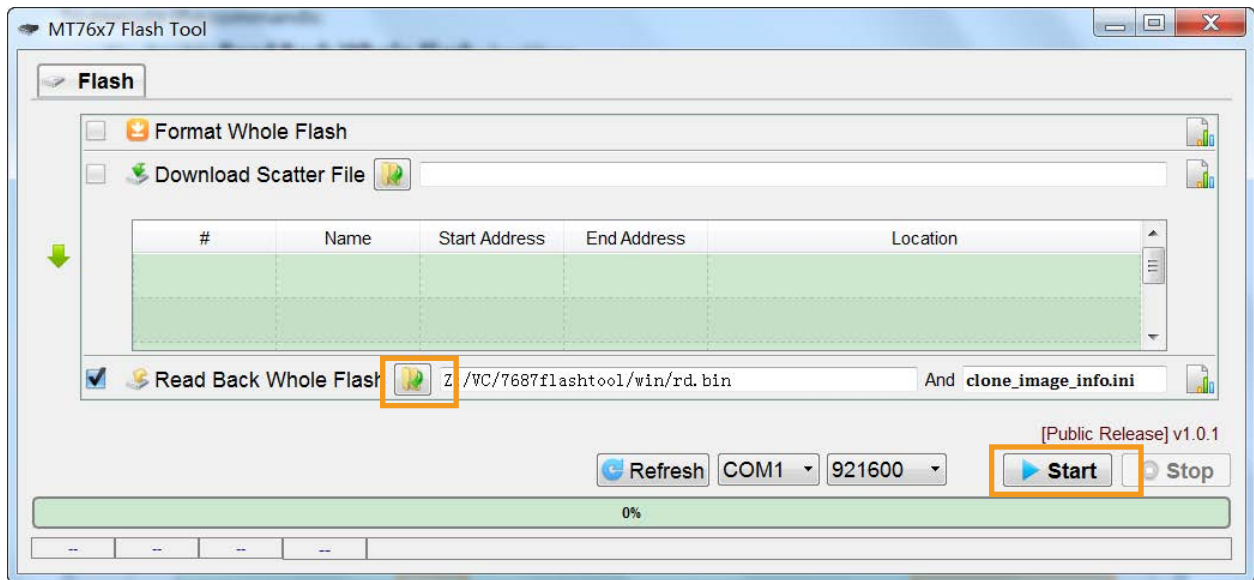


Figure 7. Reading back the whole flash

3.6. Cloning the image of a device

The **Clone** feature reads back the image of the device from one device and flashes it to another device.

To execute the commands:

- 1) Enable **Download Scatter File** checkbox.
- 2) Click **open folder** to select the image description file read out from a device. This file is usually generated through the **Read Back Whole Flash** operation and named as “clone_image_info.ini”. See section 3.5, “Reading back an image”.
- 3) Click **Start** to execute the command, as shown in Figure 8.

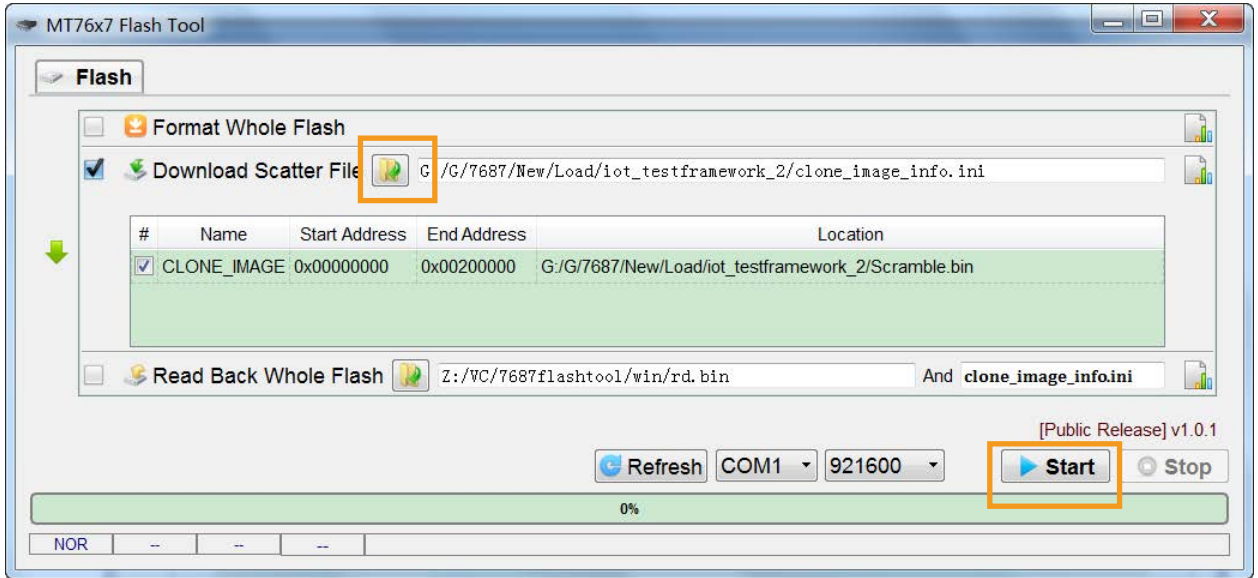


Figure 8. Clone the image using Download Scatter File function

4. Adding New Flash Hardware

This section provides the method of adding new type of flash hardware supported by Flash Tool.

- The configure file named “flash-id-white-list.xml” in folder “config” and it contains the flash info like “Jedec id”, “name” and “total flash size” similar to the script snippet and the content format, as shown below.
- If new flash is added, creating a new item in this configure file.

```
<?xml version="1.0" encoding="utf-8"?>
<white-list>
  <list>
    <!--item jedec_id="0x[Manufactory ID][Memory type][Memory
density][Reserved 00]" name="Flash Name" total_size="flash size"-->
    <item jedec_id="0xEF401600" name="W25Q32JV" total_size="0x400000"/>
    <item jedec_id="0xEF401400" name="W25Q80DV" total_size="0x400000"/>
    <item jedec_id="0xEF401500" name="W25Q16DV_SPI"
total_size="0x400000"/>
    <item jedec_id="0xEF601500" name="W25Q16DV_QPI"
total_size="0x400000"/>

  </list>
</white-list>
```