



Realtek Ameba1 Image Tool User Manual

This document define pin out of Ameba DEV.

Version 1.0

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1 Purpose

Image Tool can help to generate the image file for applications. Besides, users can download image file with JATG & image tool.

2 Environment Setup

2.1 Hardware Setup

■ Hardware Setup:

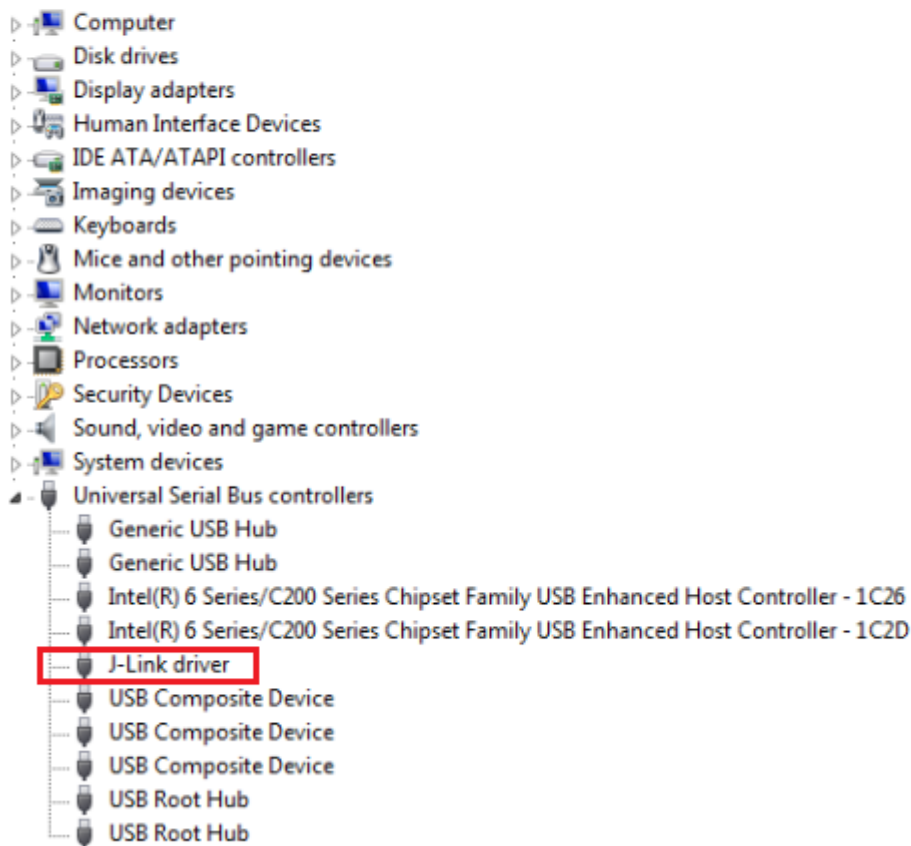


RTL-AMEBA_DEV_3V0



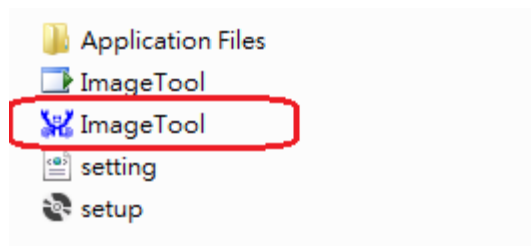
RTL-AMEBA_DEV01_1V0

- Above Microsoft .NET Framework 3.5
- Ex. Win 7 32/64 bit
- Hardware: **JTAG(J-Link) have to be installed and connected correct and J-Link installed.**



2.2 Software Setup:

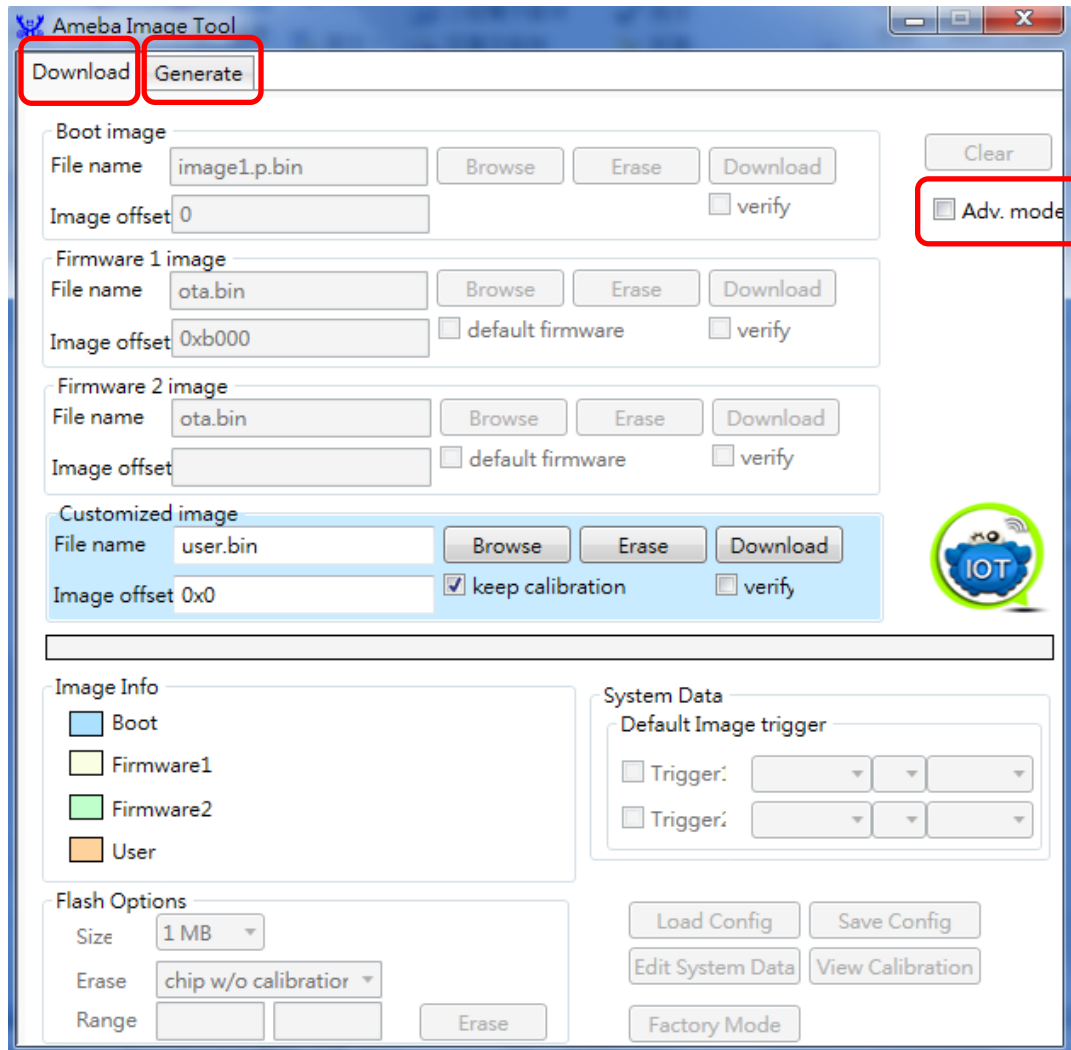
Execute Image Tool.exe.



2.3 Advanced Software Setup:

Select Download mode or Generate(generating image) mode.

Select Adv. mode or not.



Ameba Image Tool

Download **Generate**

Boot image
File name: image1.p.bin [Browse] [Erase] [Download] [Clear]
Image offset: 0 [verify] **☒ Adv. mode**

Firmware 1 image
File name: ota.bin [Browse] [Erase] [Download]
Image offset: 0xb000 [default firmware] [verify]

Firmware 2 image
File name: ota.bin [Browse] [Erase] [Download]
Image offset: [default firmware] [verify]

Customized image
File name: user.bin [Browse] [Erase] [Download]
Image offset: 0x0 [keep calibration] [verify]

Image Info
☒ Boot
☐ Firmware1
☐ Firmware2
☐ User

System Data
Default Image trigger
☐ Trigger: [] [] []
☐ Trigger: [] [] []

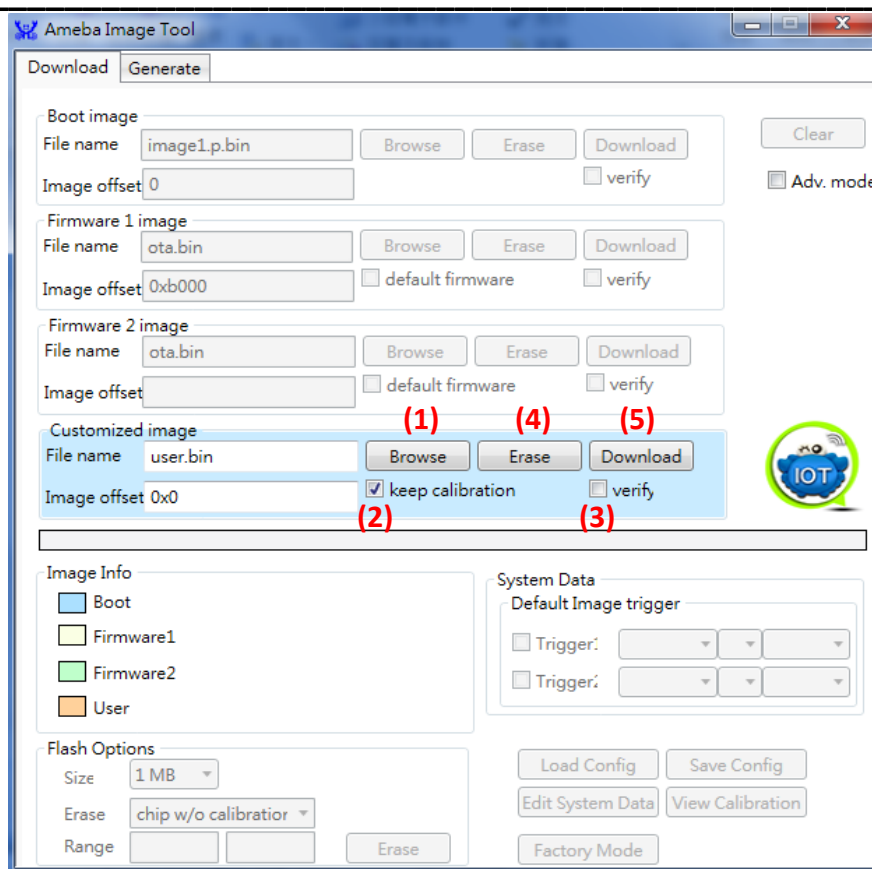
Flash Options
Size: 1 MB
Erase: chip w/o calibration
Range: [] [] [Erase]

[Load Config] [Save Config]
[Edit System Data] [View Calibration]
[Factory Mode]

3 Download image

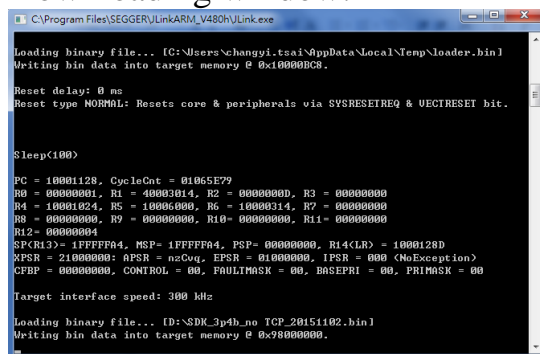
Make sure your J-Link can work.

- (1) Select the bin file(user.bin).
- (2) Select keep calibration date or not.
- (3) Select verify or not
- (4) Click Erase (must do Erase first and then Download)
- (5) Click Download



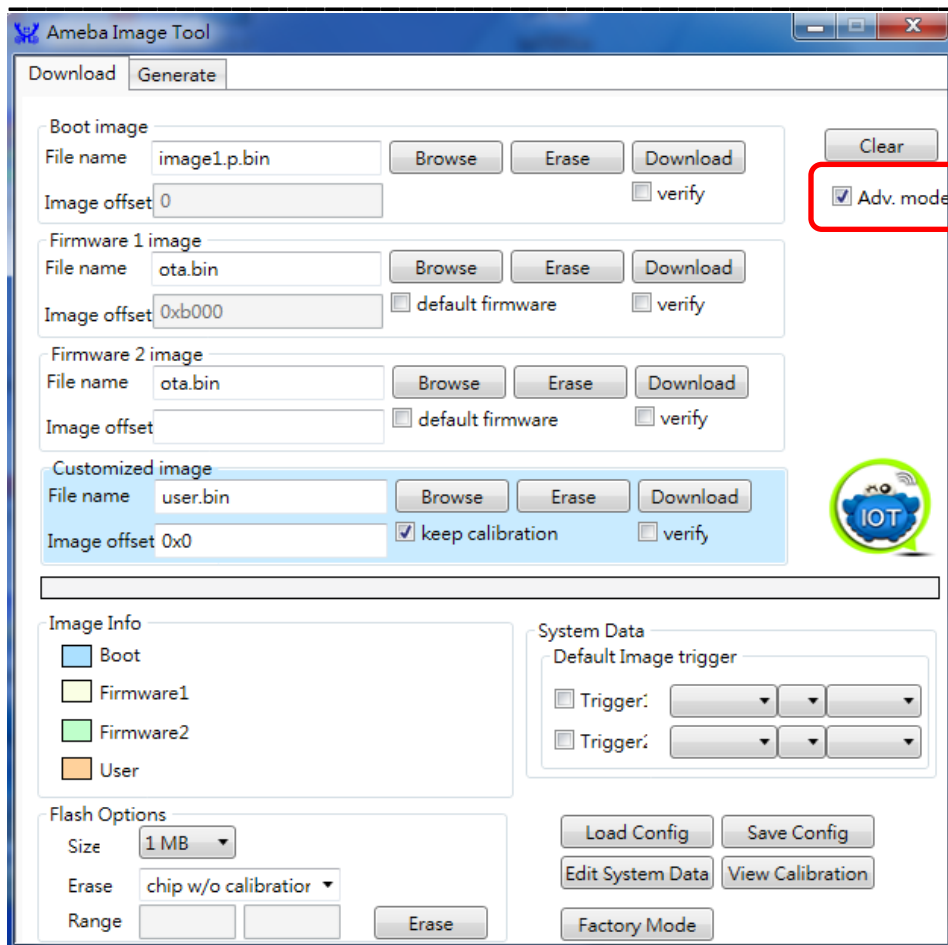
Do not remove power supply when downloading image.

Downloading window:

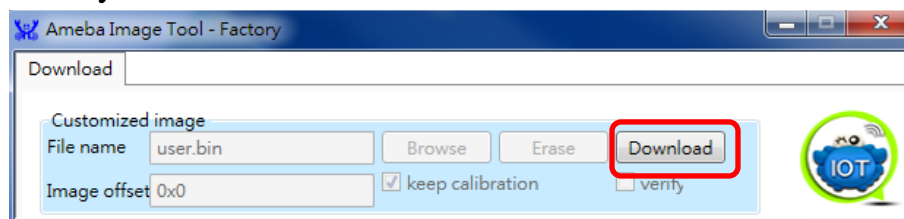


4 Set Factory Mode

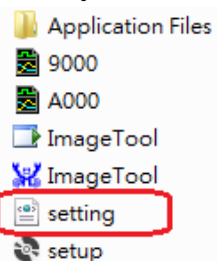
Select Adv. mode & Factory mode.



Factory mode:



Factory mode can be restored when the setting.xml file is deleted.

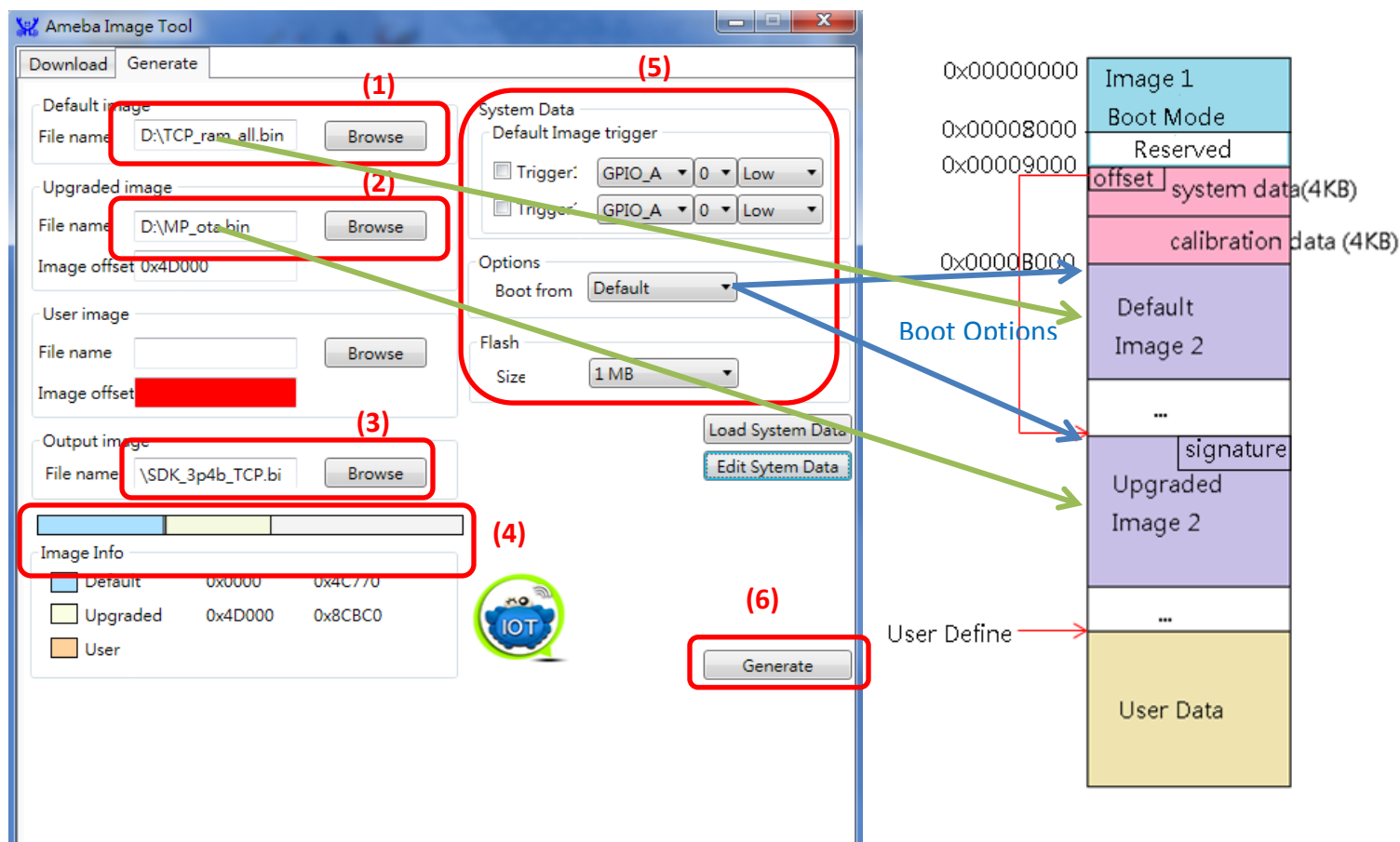


5 Generate Image

ram_all.bin and ota.bin path:

\\SDK\project\realtek_ameba1_va0_example\EWARM-RELEASE\Debug\Exe
[Doc] UM0034 Realtek Ameba-1 memory layout can be referred.

- (1) Select ram_all.bin.
- (2) Select ota.bin.
- (3) Select Output image .
- (4) Adjust offset and be sure that OTA is not overlapped.
- (5) Setup System Data, [boot options](#) and flash size.
- (6) Generate image.



The screenshot shows the Ameba Image Tool interface with the following components and annotations:

- (1)** Default image File name: D:\TCP_ram_all.bin
- (2)** Upgraded image File name: D:\MP_ota.bin
- (3)** Output image File name: \SDK_3p4b_TCP.bi
- (4)** Image Info table:

	Start Address	End Address
Default	0x0000	0x4C770
Upgraded	0x4D000	0x8CBC0
User		

- (5)** System Data section:
 - Default Image trigger: GPIO_A, 0, Low
 - Options: Boot from: Default
 - Flash Size: 1 MB
- (6)** Generate button

Arrows indicate the mapping of tool settings to the memory layout diagram on the right:

- Green arrow from (1) to Image 1
- Green arrow from (2) to Upgraded Image 2
- Blue arrow from (5) Boot from: Default to Default Image 2
- Red arrow from (5) Flash Size: 1 MB to User Data

Memory Layout Diagram:

Address	Content
0x00000000	Image 1
0x00008000	Boot Mode
0x00009000	Reserved
offset	system data(4KB)
	calibration data (4KB)
0x0000B000	Default Image 2
...	...
signature	signature
	Upgraded Image 2
...	...
User Define	User Data

6 Example

- 1) Generate ram_all.bin with normal driver (lib_wlan.a).
- 2) Generate ota.bin with MP driver(lib_wlan_mp.a).
- 3) Generate user.bin that Ameba can switch to normal mode and MP mode with AT commands #ATSC and #ATSR.

Customer can do RF calibration and write MAC address in MP mode but switch to normal mode when WiFi function test.

- 4) Customer can update user image when keep calibration is selected.