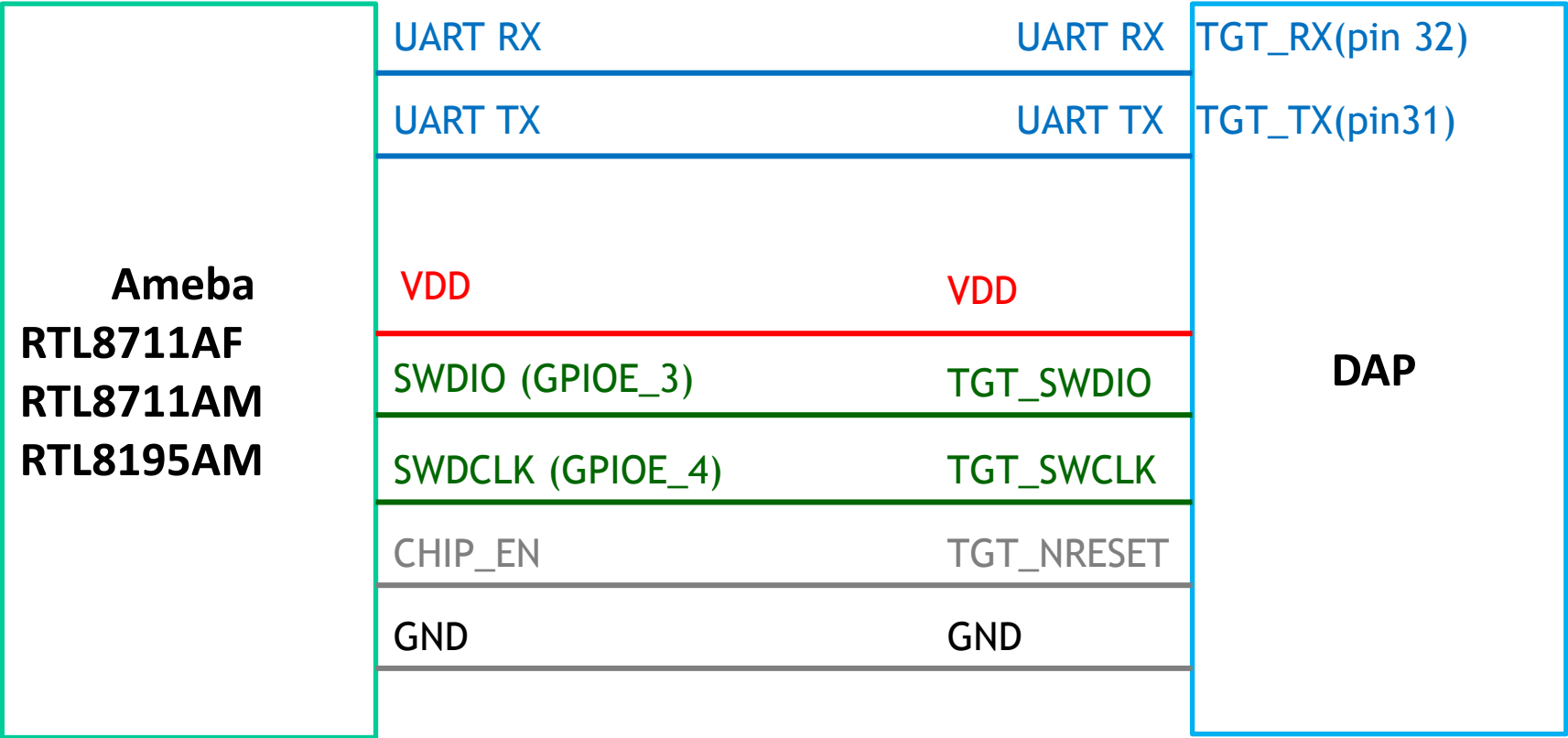




Ameba1 MP F/W Download Tool Guide



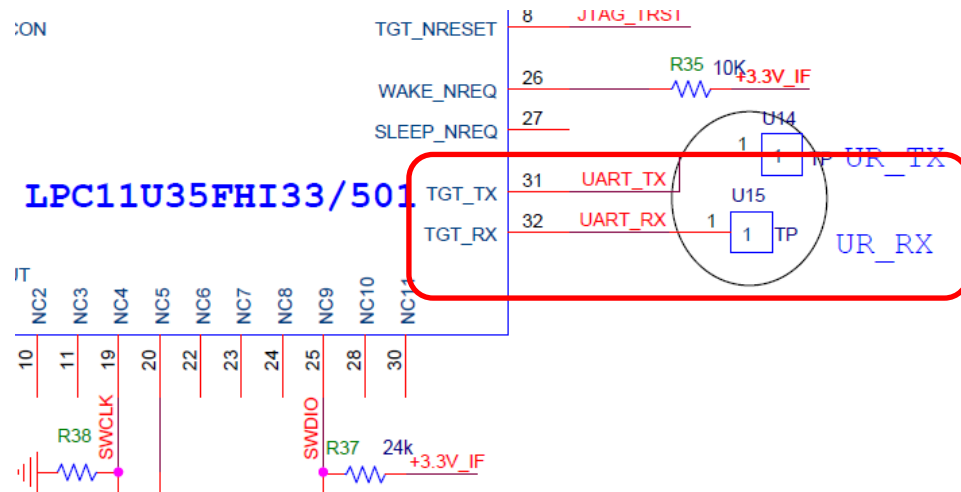
Block Diagram



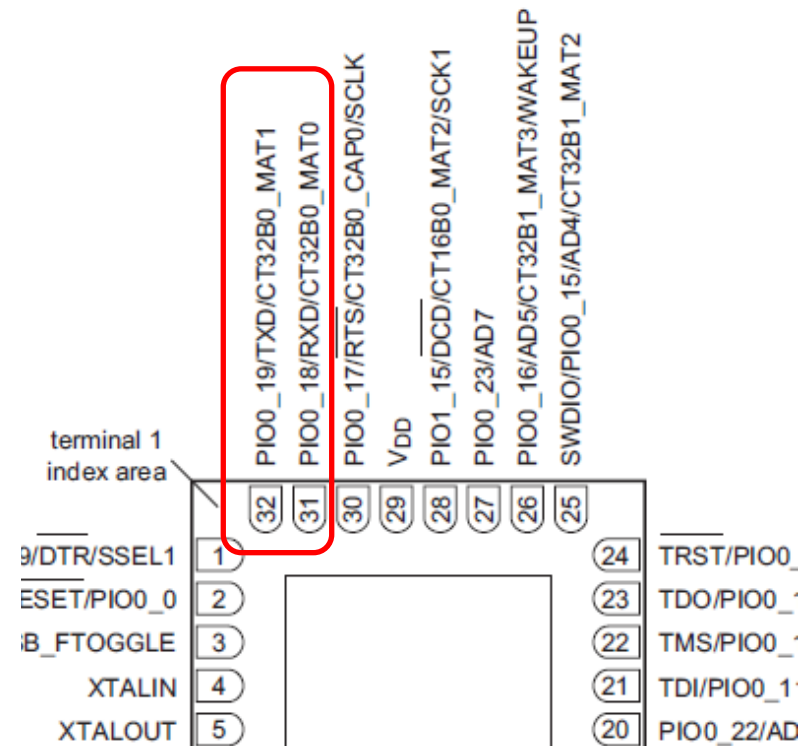


Definition Difference

■ Ameba DEV



■ DAP datasheet





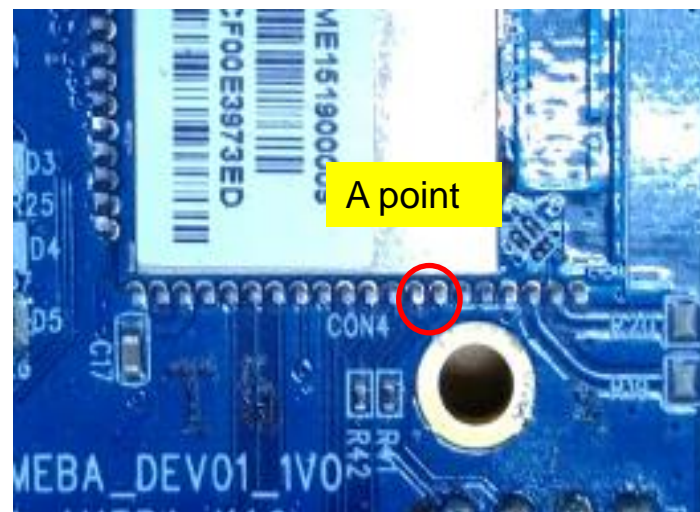
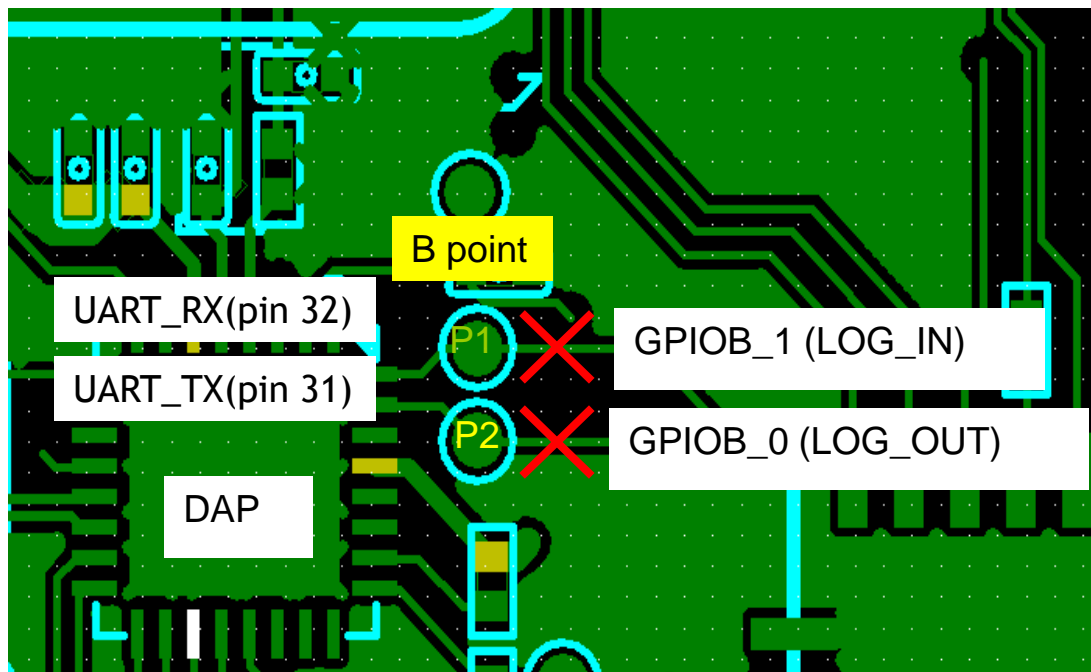
Pin Definition Comparison Table

High Speed F/W Download Tool		Ameba DEV			
No	Pin Name	Pin No	DEV Net Name	Ameba Pin Name	Note.
1	UART RX	32(DAP)	UART_RX	GPIOB_1	LOG_IN
2	UART TX	31(DAP)	UART_TX	GPIOB_0	LOG_OUT
3	VDD		3V3	3V3	3.3V
4	SWDIO	10(8711)	JTAG_TMS	GPIOE_3	
5	SWDCLK	9(8711)	JTAG_CLK	GPIOE_4	
6	CHIP_EN	18(8711)	CHIP_EN	CHIP_EN	
7	GND		GND	GND	GND



Hardware re-work

- Cut off trace point A to point B.
- Cut off the trace between GPIOB_1(LOG_IN) & UART RX(DAP pin 32)
- Cut off the trace between GPIOB_0(LOG_OUT) & UART TX(DAP pin 31)





Hardware re-work

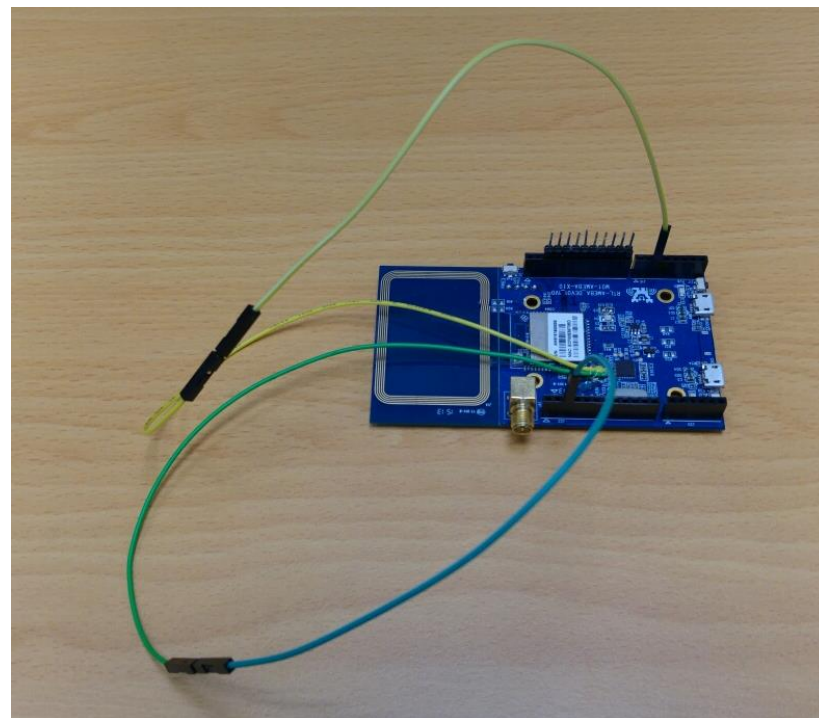
- DAP UART RX(pin 32): connect to UART_IN (GPIOA_6)
- DAP UART TX(pin 31): connect to UART_OUT (GPIOA_7)

or

- DAP UART RX(pin 32): connect to UART_IN (GPIOC_0)
- DAP UART TX(pin 31): connect to UART_OUT (GPIOC_3)

Please check the pin function table of [RTL8711AF](#), [RTL8711AM](#) and [RTL8195AM](#)

PIN name	JTAG	UART Group	I
GPIOA_3		UART0_RTS	
GPIOA_5		UART0_CTS	
GPIOA_6		UART0_IN	
GPIOA_7		UART0_OUT	
GPIOB_0		UART_LOG_OUT	
GPIOB_1		UART_LOG_IN	
GPIOB_2			I2
GPIOB_3			I2
GPIOC_0		UART0_IN	
GPIOC_1		UART0_CTS	
GPIOC_2		UART0_RTS	
GPIOC_3		UART0_OUT	
GPIOC_4			I2

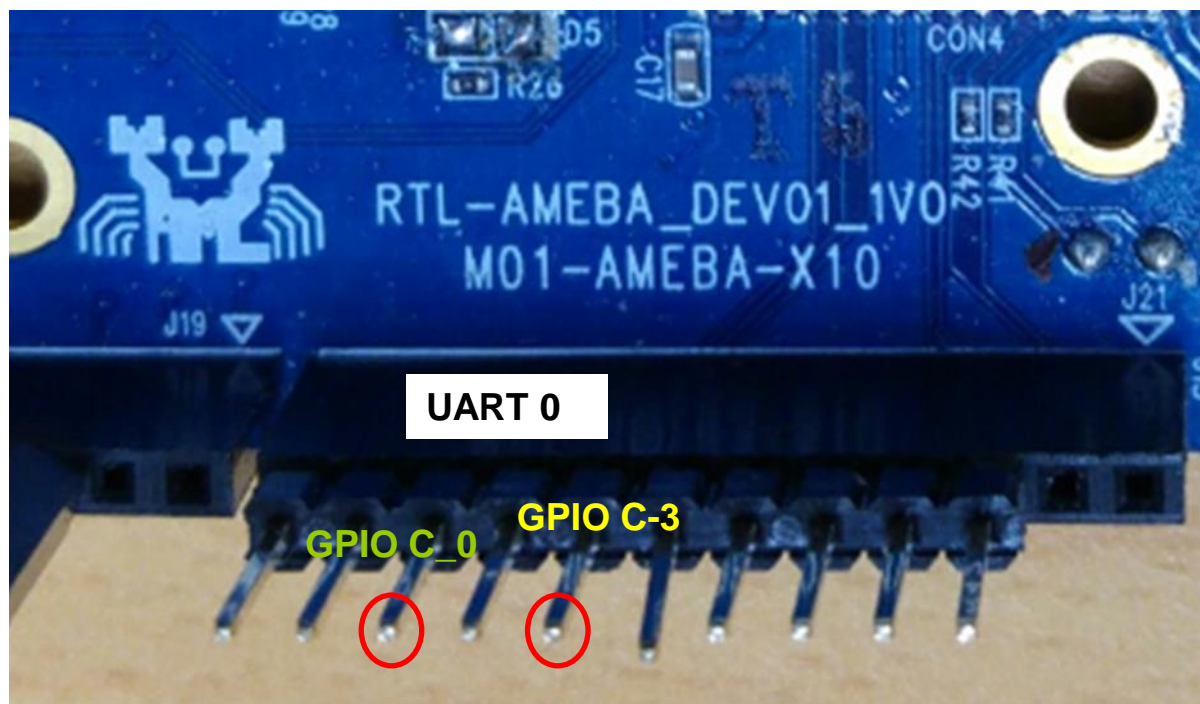
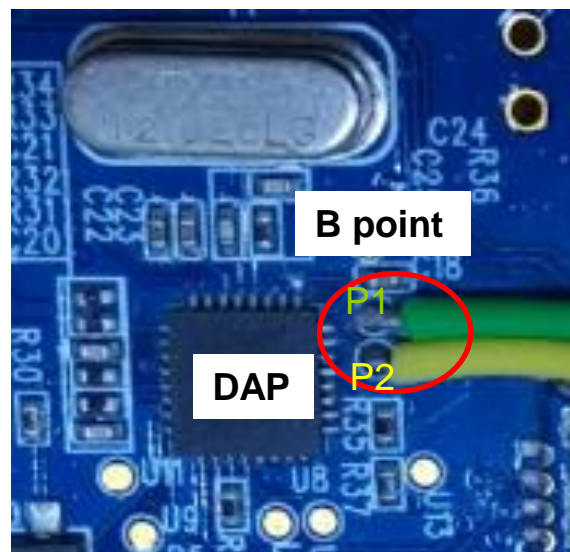




Hardware re-work

■ Example :

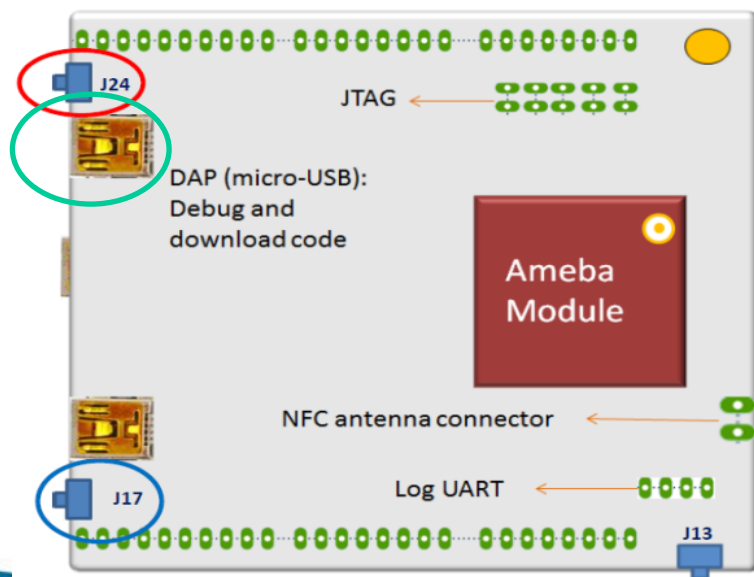
B point P1 to GPIO C_0 and P2 to GPIO C_3 , if UART0 is used for X-Modem transfer.





Upgrade DAP F/W

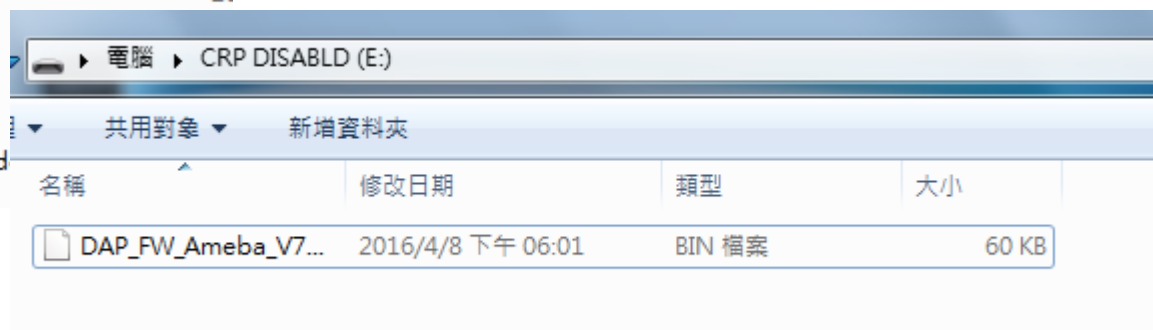
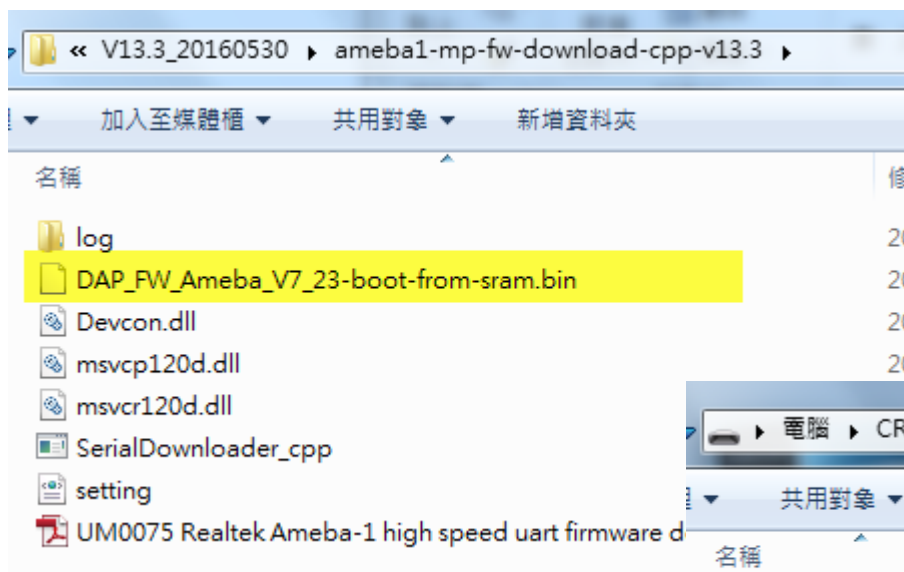
- Connect the Ameba EVB from PC.
(DAP Debug and download code port.(Micro-USB))
- Enter DAP mode :
Keep pushing the Bottom J24 and J17
- Check the Computer file : CRP DISABLD (E:)
- Delete the “firmware.bin” from the disk “CRP DISABLD ”





Upgrade DAP F/W

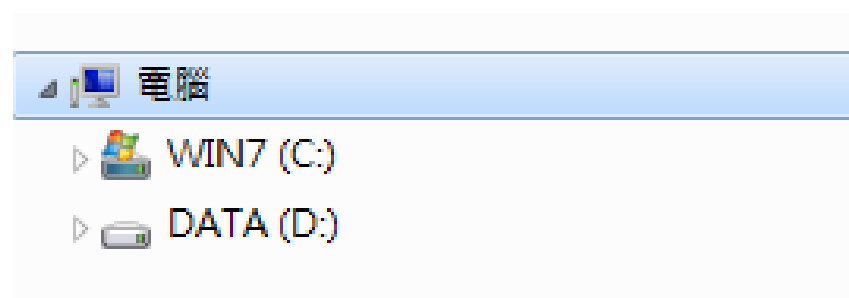
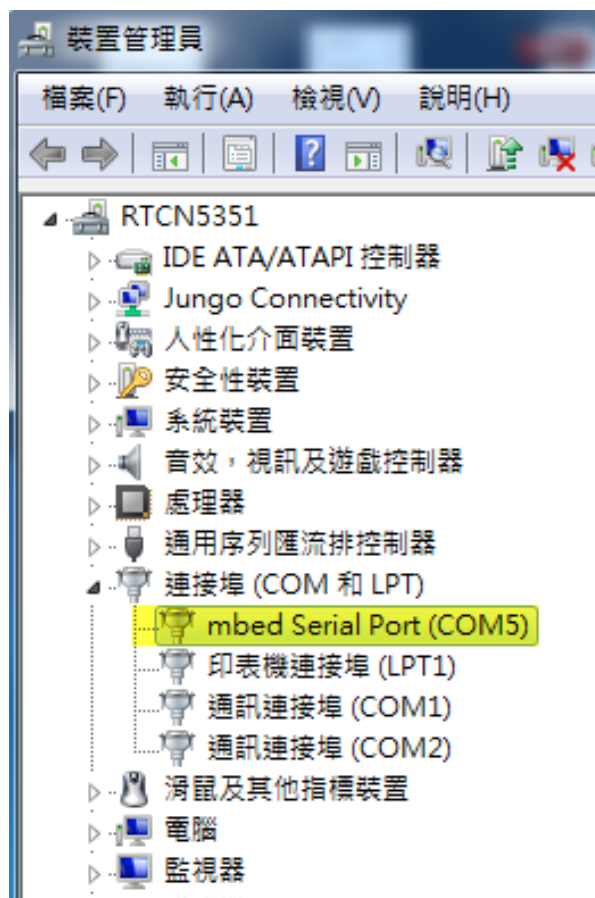
- Copy the “DAP_FW_Ameba_Vx_xx-boot-from-sram.bin ” to the disk ““CRP DISABLD ”
- Unplug & plug USB connector





Start firmware download

- Check the Devmgmt, PC real connect to mbed Serial Port.
(Now, mbed does not appear in the computer file.)





Start firmware download

Execution

- Double click on “SerialDownloader_cpp”
- Check whether there is “mbed Serial Port (COMn)vx.xx ID:”

Example : this sample is ready on COM5

- If not ready COMn “mbed Serial Port (COMn)vx.xx ID:”

1. Click mbed Serial Port (COMn)vx.xx ID

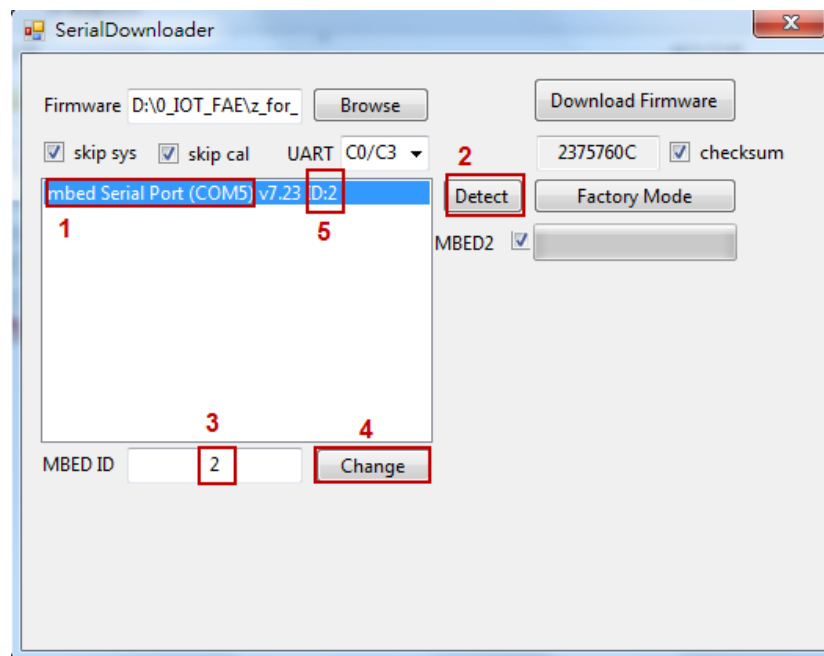
2. Click Detect button.

3. Click MEB ID to set ID number.

[ex. (2)]

4. Click Change button.

5. ID number will be set and store to
Ameba’s flash.





Start firmware download

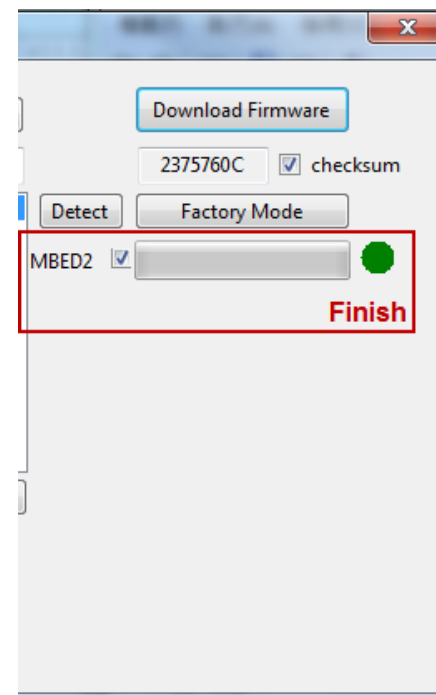
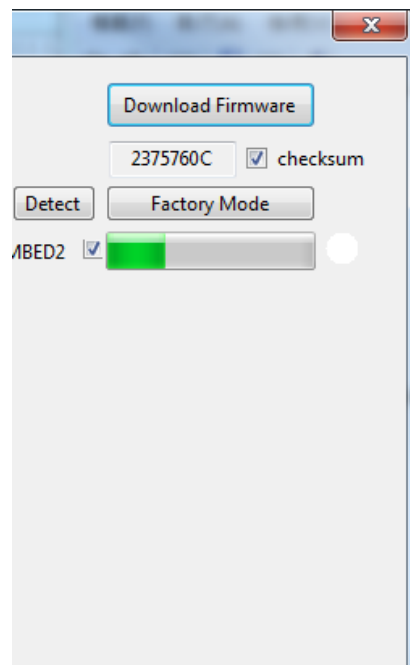
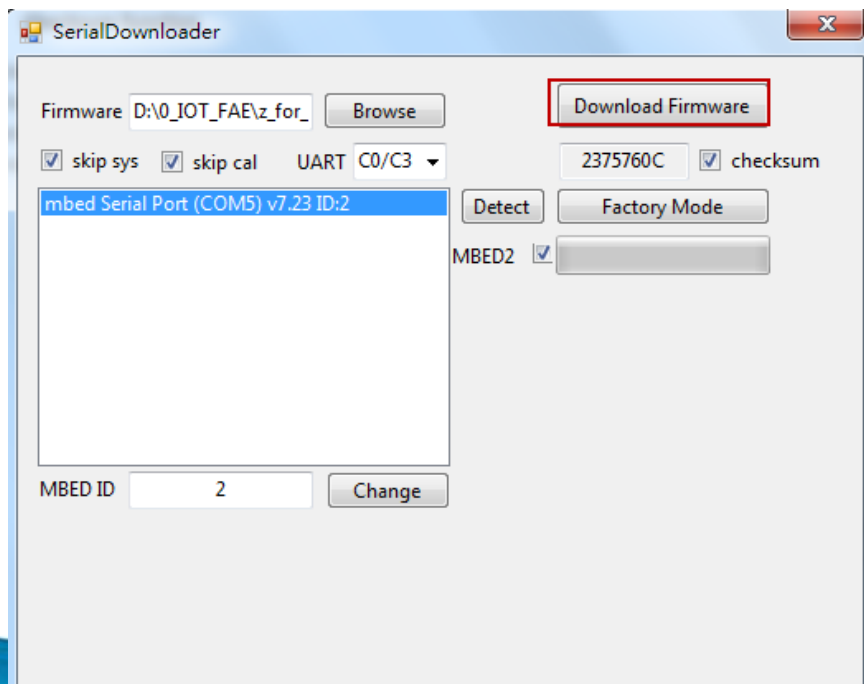
Configuration :

- Flow Document Number: UM0075 Page.7-8.

Checksum Function :

- Flow Document Number: UM0075 Page.9-11.

*Download firmware complete and checksum verification okay.

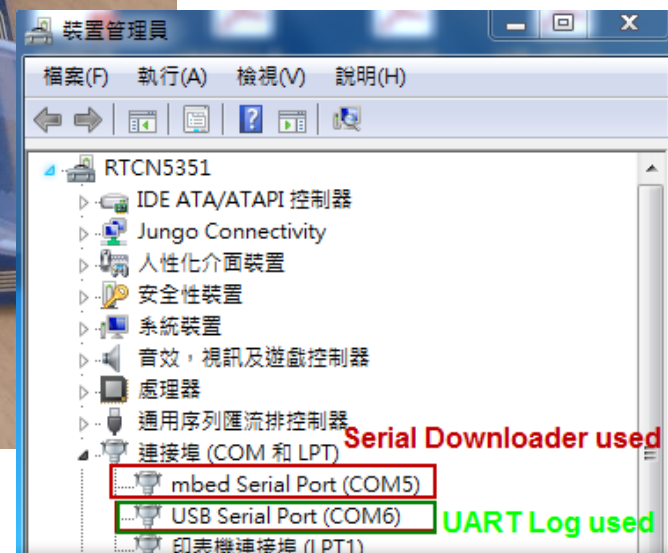
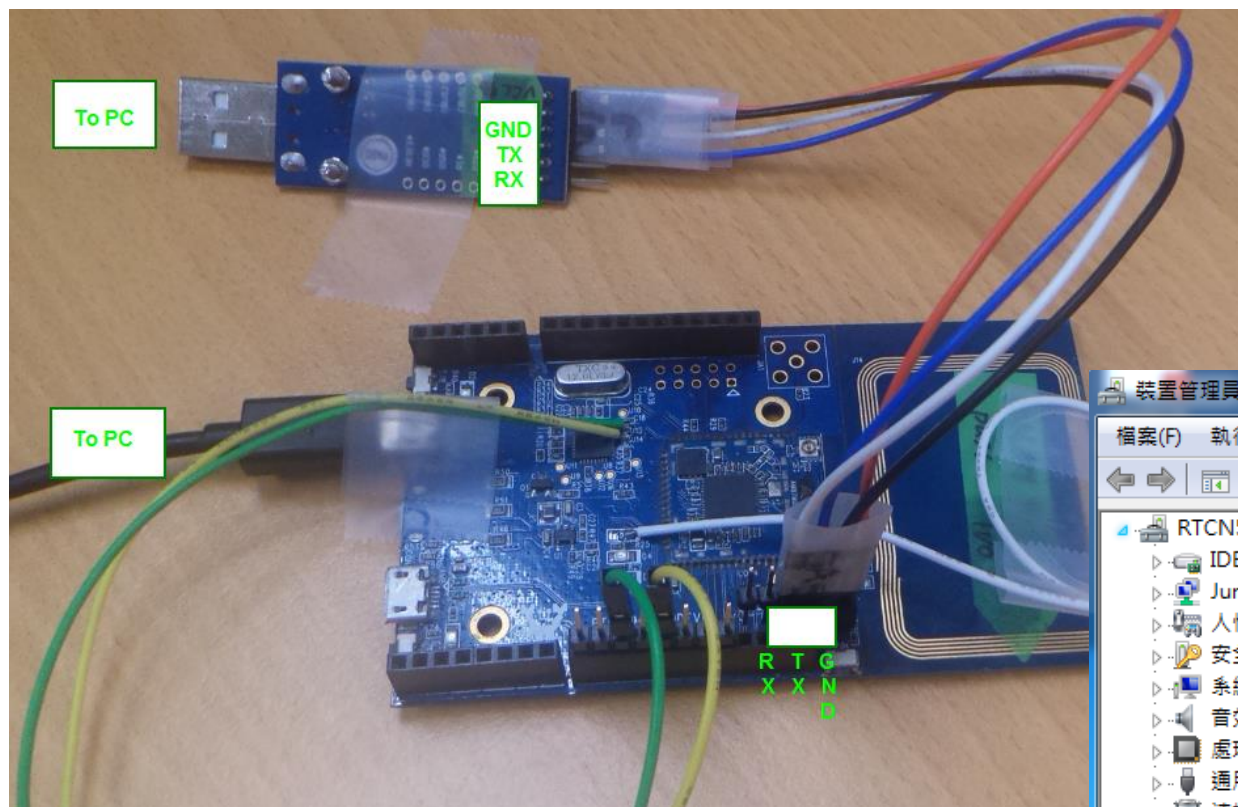




Debug Message

Check debug message :

If user wants to use UART Log of Ameba to watch the message from serial port. (UM0075 page.12)





Debug Message

Check debug message :

檢視(V) 說明(H)

TAPI 控制器

connectivity

裝置

!

及遊戲控制器

流排控制器

OM 和 LPT

Serial Port (COM5)

Serial Port (COM6)

連接埠 (LPT1)

Download Firmware

2375760C

☒ checksum

Detect

Factory Mode

MBED2 ☒

Serial Downloader used

UART Log used

COM6:38400baud - Tera Term VT

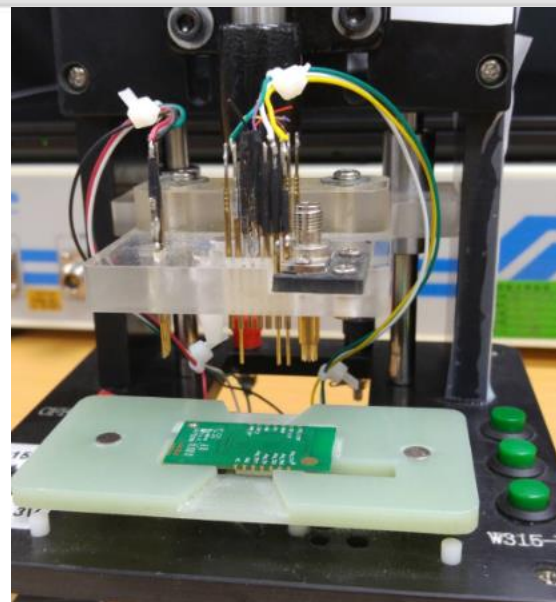
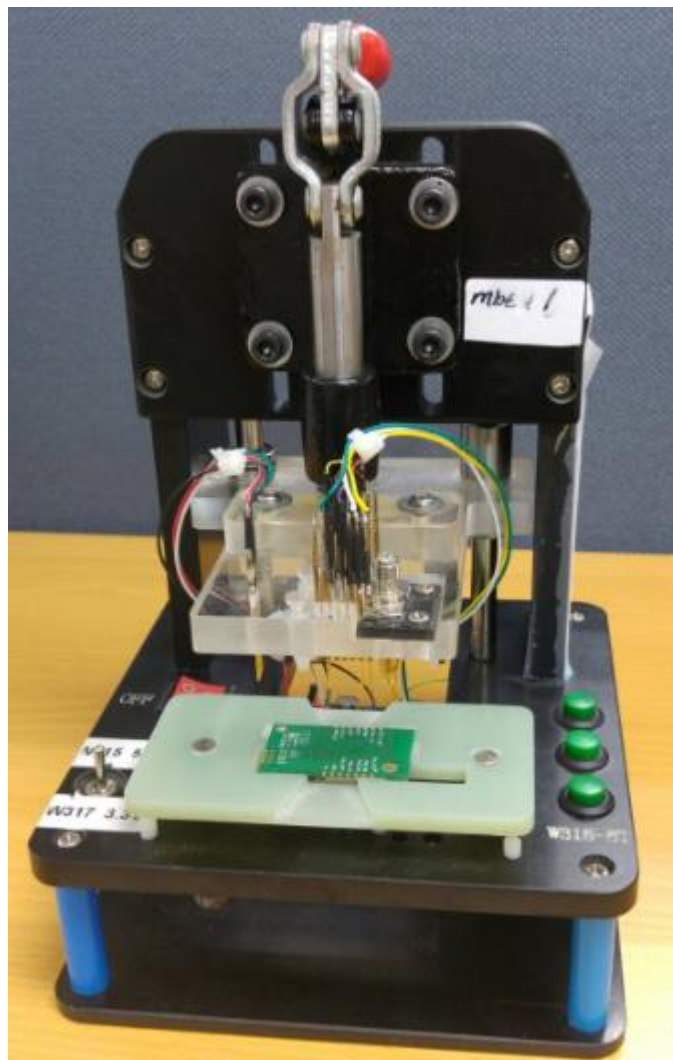
File Edit Setup Control Window KanjiCode Help

SPI calibration
Find the available window
Baud:1; auto_length:12; Delay start:0; Delay end:63
==== Enter Image 2 ====
UART idx 0, mux 0
Loop Start
Vendor Command
skip_sys 1
Vendor Command
skip_cal 1
Vendor Command
ref checksum 2375760c
Valid pattern reset
Skip 00009000
Skip 00009400
Skip 00009800
Skip 00009c00
Skip 0000a000
Skip 0000a400
Skip 0000a800
Skip 0000ac00

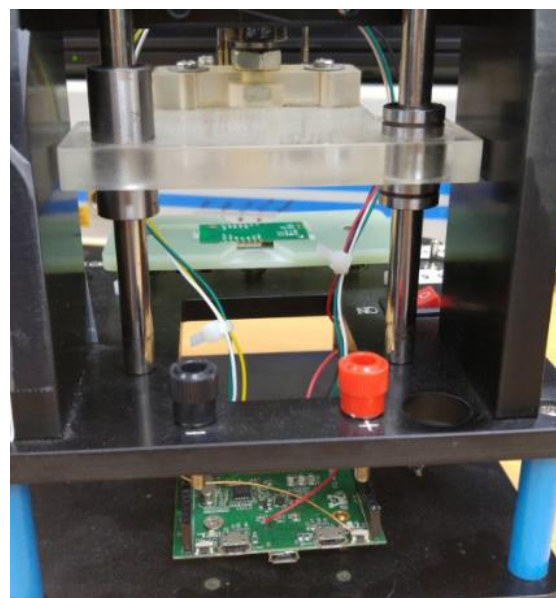
[MISC Wrn]xModem: End of Transmit
Vendor Command
Flash checksum 2375760c
ref checksum 2375760c, checksum 2375760c
flash checksum 2375760c
96969999
fc66cc3f
03cc33c0
6231dce5
Takes 276170
[]



Manufacturing Fixture (Reference)



DUT



Ameba DEV

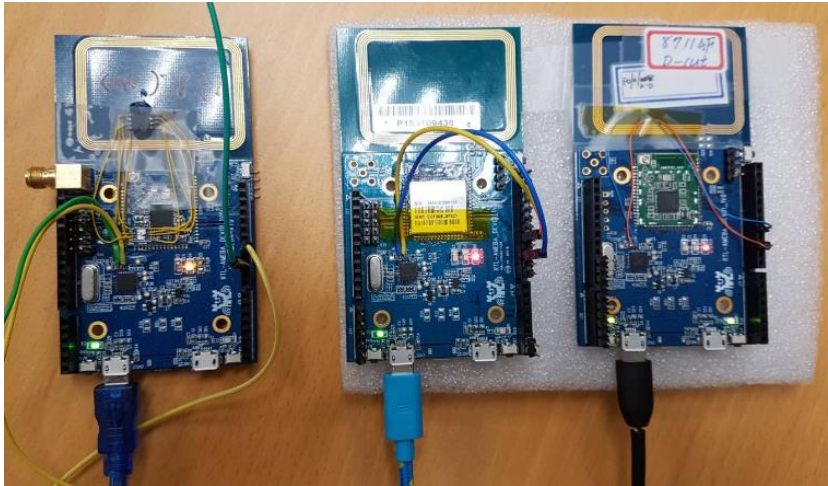
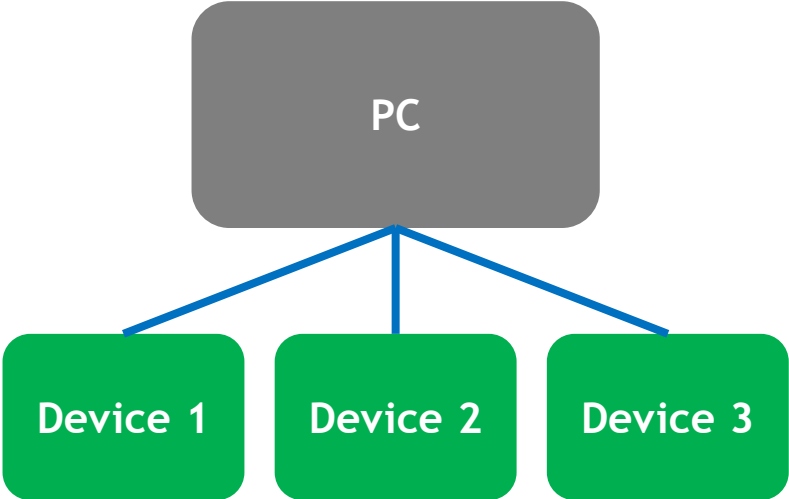


Multiple Devices F/W Download



Block Diagram

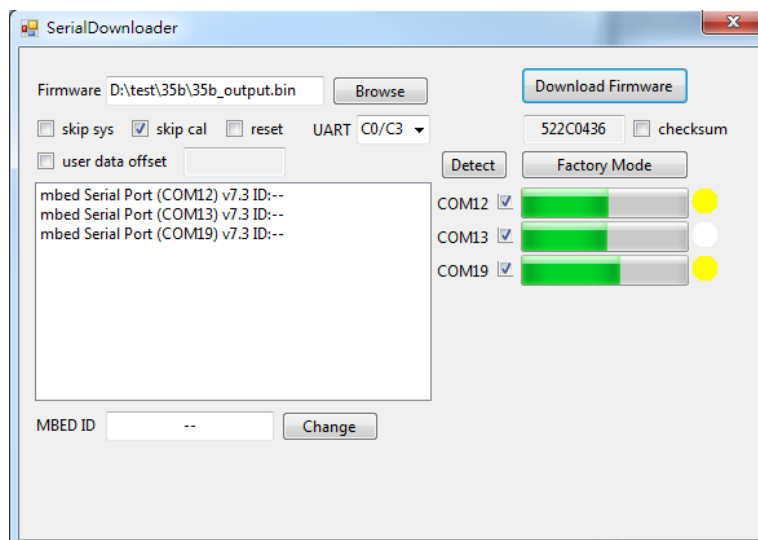
■ Example- 3 Devices



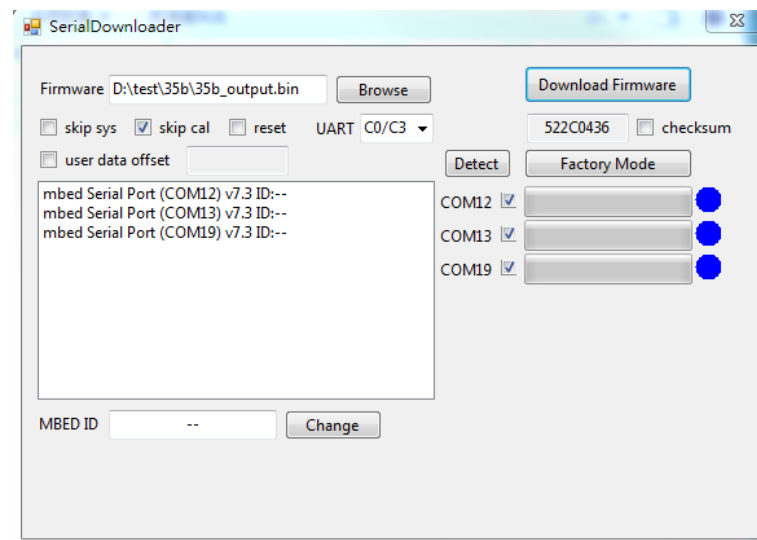


Example- Write Flash Time Comparison

- F/W download tool:
 - 756KB image size / 3 devices: 22s
- SWD/JTAG + Flash tool:
 - 756KB image size / 1 devices(erase+write+CRC): 120s



Writing flash



Finished



Trouble Shooting Guide



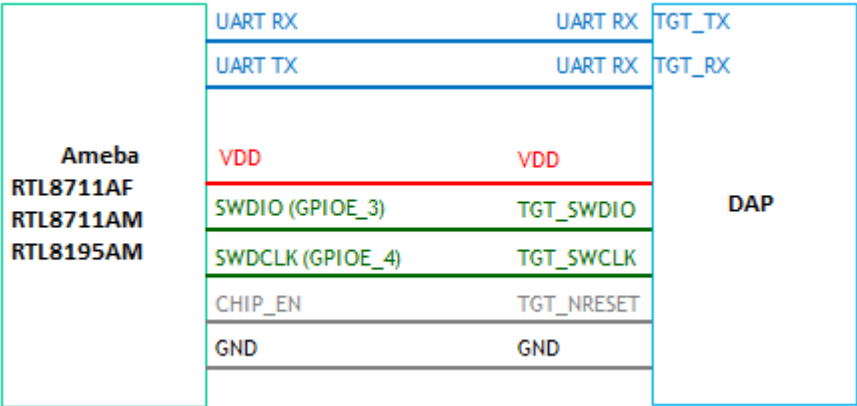
Check the USB connection





CPU can not be detected

- 1) Check the connection
- 2) VDD is supplied.
- 3) SWD can work.
- 4) HW reset.
- 5) Change another module if the is image failed.
- 6) Check the UART_log message





Thank you