

K-Solution Consulting Company Ltd.

PRBMD0x testing

Fix frequency testing

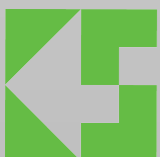
base on EVK

Steps

Step 1. update testing firmware

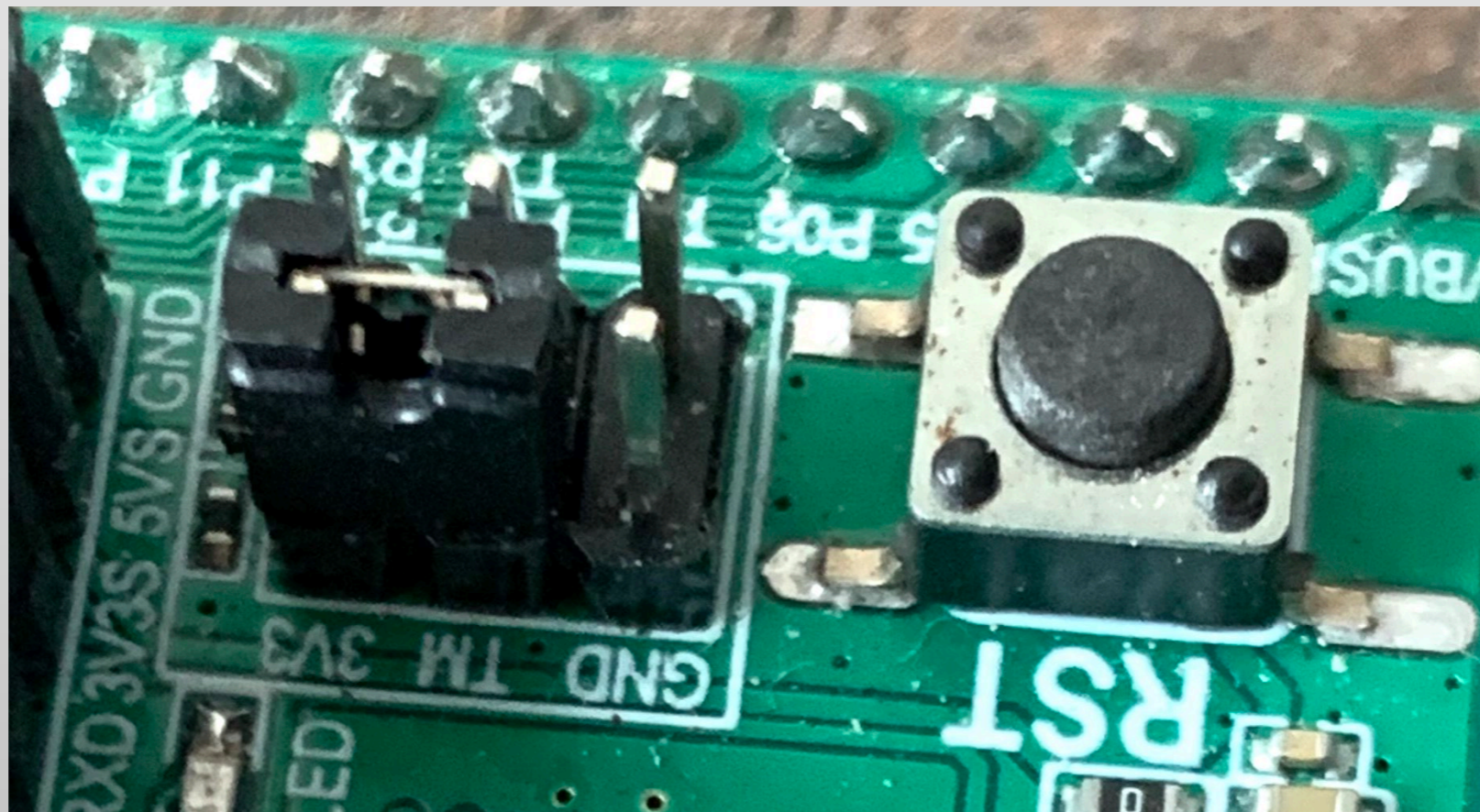
Step 2. Reset the module to operation mode

Step 3. Start RF testing



Step 1 - firmware programming

1. connect PRBMD0x EVK to PC
2. TM pin on the EVK pull High



Step 1 - firmware programming

3. Run PhyPlus Kit

Press Connect to connect the EVK through UART port

4. Press EVK reset

if “UART RX:cmd>>” appears, the module is in programming mode



Step 1 - firmware programming

5. press Erase to erase flash content

if Erase success, it will display on the LOG window

6. Double click the APP box and select suitable hex file

The screenshot shows a firmware programming interface. At the top, there are tabs for 'fct_Mode' and 'efuse_check'. Below these, there are fields for 'Erase Size' (set to 512k) and 'Address'. A red box highlights the 'Erase' button. Below this, there are tabs for 'IMG', 'HEX', and 'HEX Merge'. The 'HEX' tab is selected. In the 'HEX' section, there are fields for 'BOOT', 'APP', and several empty rows. The 'APP' field contains the text '(新)20210310/6222-6252 -DTM 20210310.hex' and is highlighted with a red box. To the right of the 'APP' field, there are checkboxes for 'SEC' and 'Auth', and a dropdown menu. Below the 'HEX' section, there are fields for 'ChipID/IV' (PID[16], LID[10], TID[14], MID[16], SID[08], IV[13], MAC[6], KEY1[32], KEY2[32]) and buttons for 'CheckID', 'WriteID', and 'WriteMAC'. At the bottom, there are tabs for 'Single' and 'Batch', and a table with columns 'TYPE', 'PATH', 'SIZE', 'ADDRESS', and 'VALUE'. The table has 5 rows, with the first row containing 'MAC' and 'AA:AA:AA:AA:AA:AA'.

	TYPE	PATH	SIZE	ADDRESS	VALUE
1	MAC				AA:AA:AA:AA:AA:AA
2					
3					
4					
5					



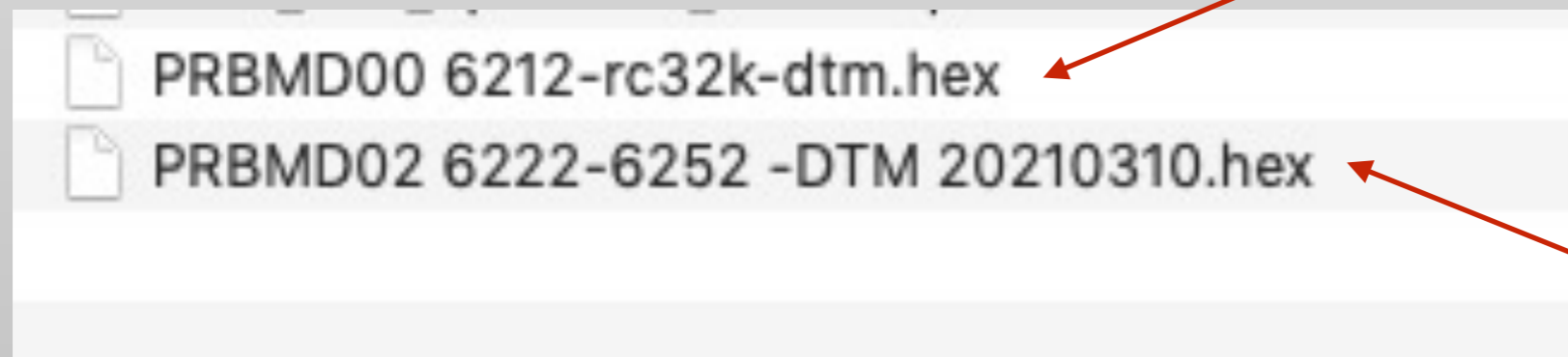
Step 1 - firmware programming

7. If the DTU module is PRBMD00, then select

PRBMD00 6212-rc32k-dtm.hex; if it is PRBMD02, then

select PRBMD02 6222-6252 -DTM 20210310.hex

8. Then click Write to start programming



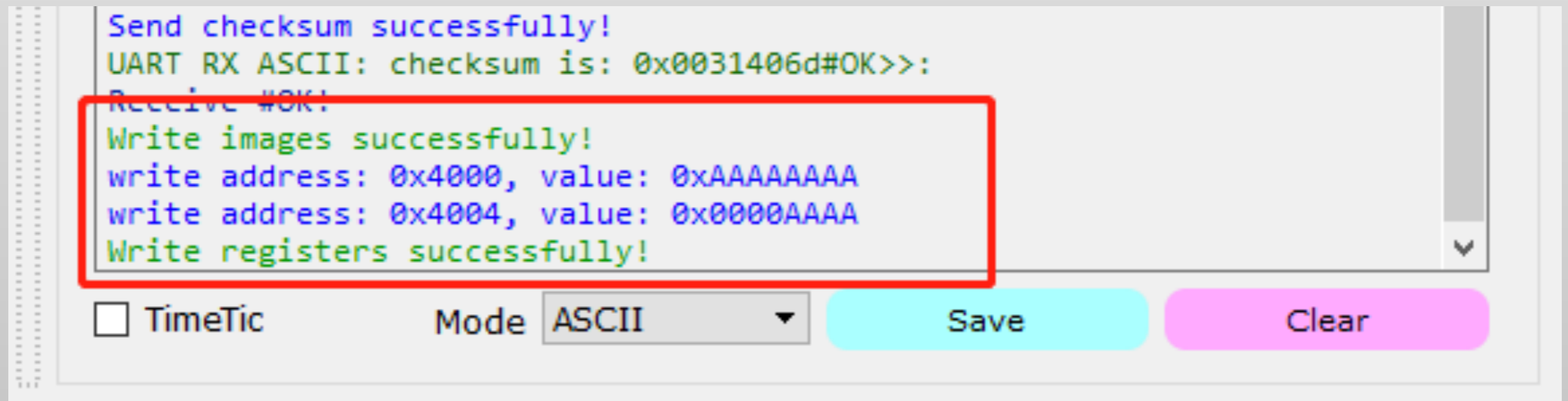
for PRBMD00

for PRBMD02



Step 1 - firmware programming

9. If program success, two sentences: “ Write image successfully!” and, “Write registers successfully” will appear



The screenshot shows a terminal window with the following text:

```
Send checksum successfully!  
UART RX ASCII: checksum is: 0x0031406d#OK>>:  
Receive #OK!  
Write images successfully!  
write address: 0x4000, value: 0xAAAAAAAA  
write address: 0x4004, value: 0x0000AAAA  
Write registers successfully!
```

Below the terminal window, there are controls: a checkbox for "TimeTic", a "Mode" dropdown menu set to "ASCII", a cyan "Save" button, and a pink "Clear" button. A red rectangular box highlights the four lines of output text in the terminal window.



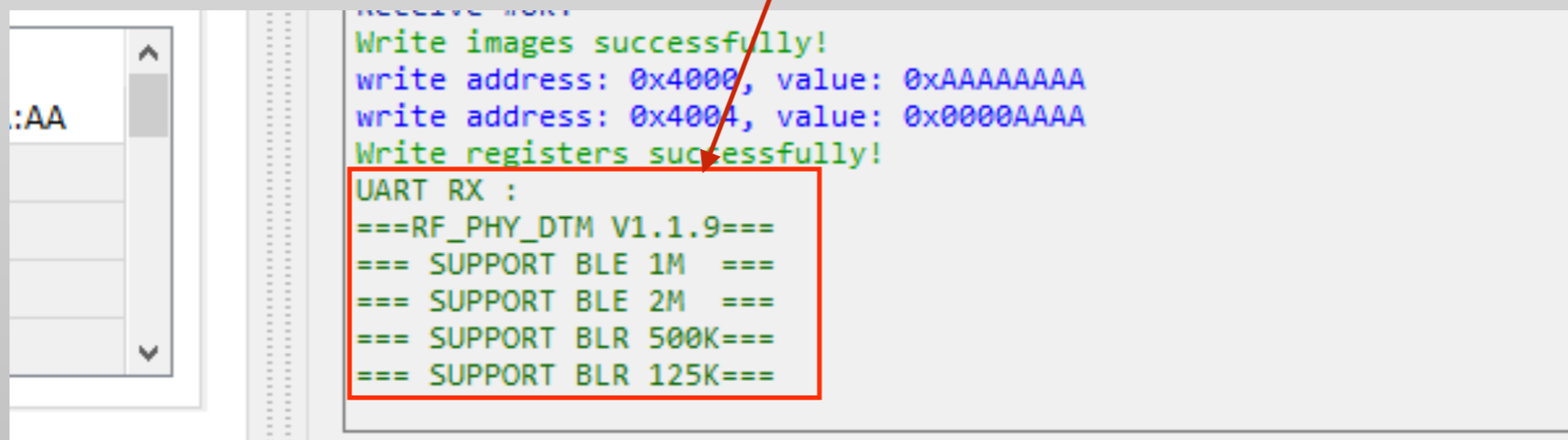
Step 2 - reset module to operation mode

1. turn the TM pin to low

2. Press reset

Module will send output the following message and display on the LOG window

3. Now the module is ready for test



```
Write images successfully!  
write address: 0x4000, value: 0xAAAAAAAA  
write address: 0x4004, value: 0x0000AAAA  
Write registers successfully!  
UART RX :  
===RF_PHY_DTM V1.1.9===  
=== SUPPORT BLE 1M ===  
=== SUPPORT BLE 2M ===  
=== SUPPORT BLR 500K===  
=== SUPPORT BLR 125K===
```



Step 3 - RF test

1. on the PHYPlus Kit, select RF_QuickSet tag
2. Select suitable test mode
3. Select suitable RF channel, package format, length...etc
4. Press Start



Step 3 - RF test

It is suggest to select Tx_Single_tone mode for testing.

After Start button, a frequency can be seen on spectrum analyser



related video

<https://youtu.be/vSec8Sk8o9E>

