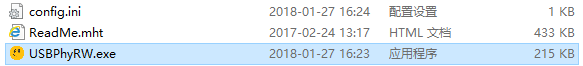
**USBPhy-RW Tool User Manual**

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This web is describing how to use USBPhy-RW tool read/write RTK Single PHY chip(RTL82x1) registers.

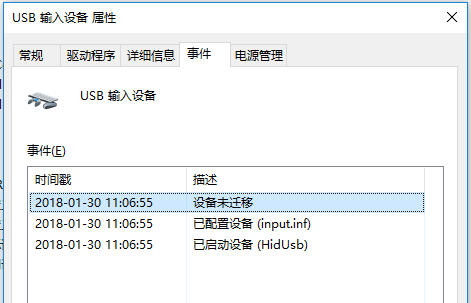
Tool folder contains three files including config/ReadMe/USBPhyRW.(As the following jpeg)   


Please attach USBPhy-RW dongle into your PC then run USBPhyRW.exe.

This tool is created by .NET4 Please be aware of necessary installation for .NET4 support package.

This tool create asynchronous hid method to get all HID interface handle and lock the dev by VID/PID. It get data buff via standard windows API method.

USBPhy-RW dongle FW is developed by C with STM32 MCU library. And the dongle will be enumrated as a HID dev so you don’t need install any other driver pkg.



The whole project doc including hardware pcb/.NET source/MCU FW source are open source.

Github <https://github.com/Wendy1106/USBPhy-RW>

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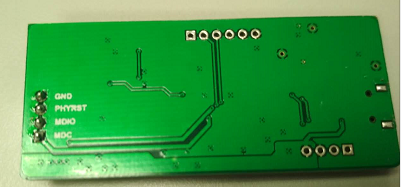
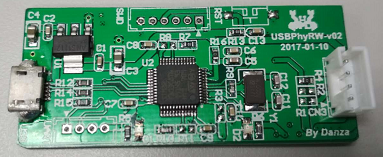
USBPhy-RW dongle owns some interfaces. MicroUSB/2.0mm-4Pin MDC&MDIO connector/SWDIO/UART

1,SWDIO is used for original FW upgrade. This is not used for general applying.

2,UART is for external event signal trig in. This is not used for general applying.

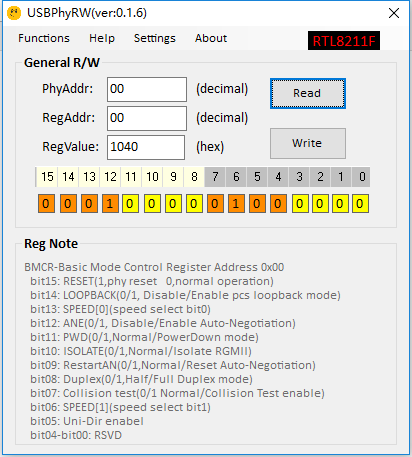
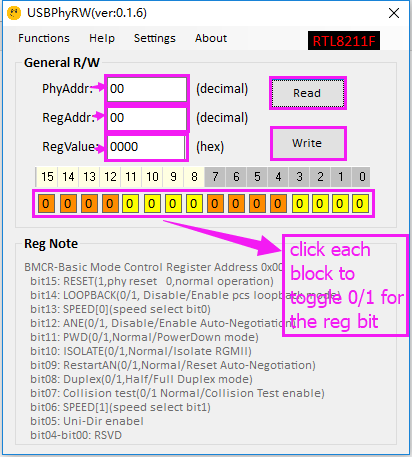
3, MicroUSB is used for connecting with your PC.

4, 2.0mm-4Pin MDC&MDIO connector is used for PHY chip signal connection which is marked in the bottom silk screen.



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Run USBPhyRW.exe and the program shows the following screen.



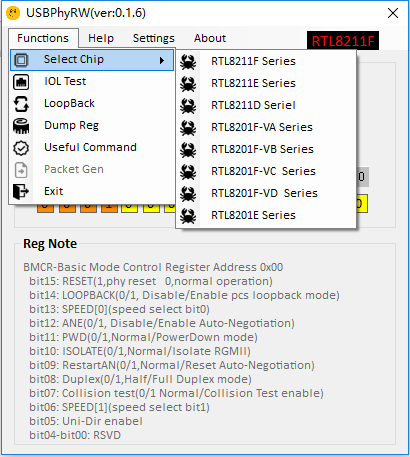
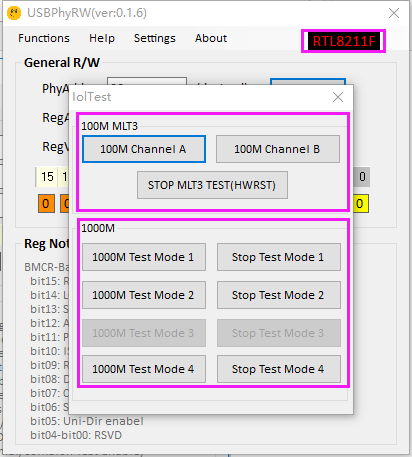
You can read phy reg by filling phyaddr/regaddr box and press Read button. The vaule will show in the RegValue box and following color blocks.

And write phy reg by filling phyaddr/regaddr box/RegVaule box/ and press Write button. The vaule will write into the phy reg.

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This tool can help you set IOL test regs by the Entry of ‘Functions->IOL Test’

Please select your chip type before use by the Entry of ‘Functions->Select Chip’



Note. This function is only tested by RTL8211F/RTL8211E demoboard. RTL8211D series has not been tested yet.

You can also set reg according to IOL APPNote by manual.

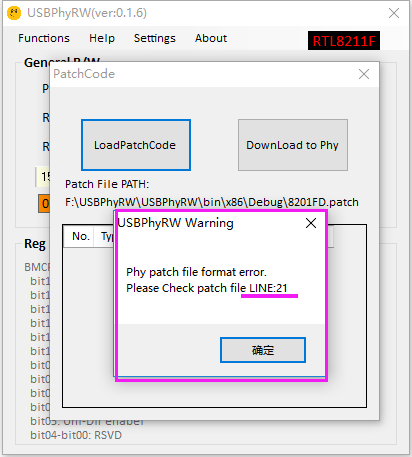
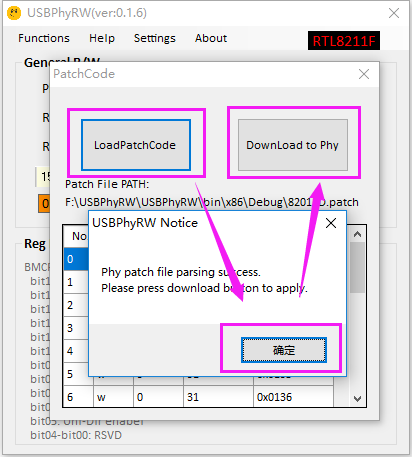
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2018-03-16 update

You can use patchcode function if you have many regs need to write into the phy chip by the entry ‘Functions->PatchCode’

Press ‘LoadPatchCode‘ to browse the \*.patch file. If the patch file format is correct the below grid form will show the patch content. Press ‘Download to Phy’ the patch code will load by MDC/MDIO

If the patch file format is incorrect the tool will throw out warning message you need to modify patch file to meet the requirement



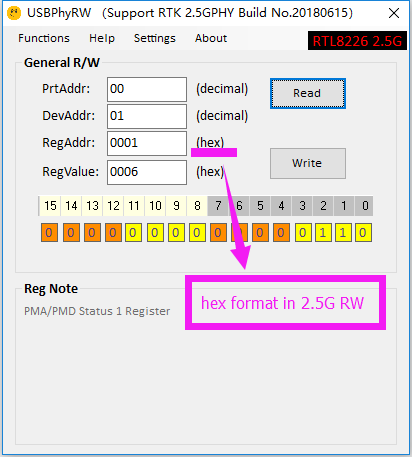
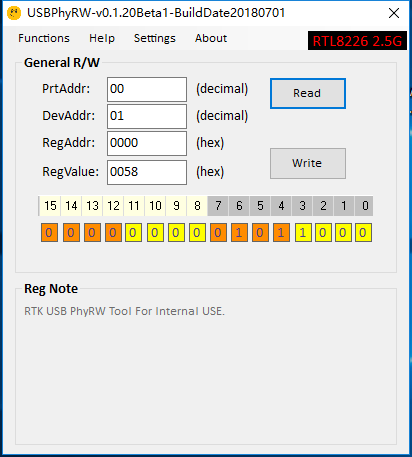
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2018-06-14 update

You can enter into the UI by the entry Function-> RTL8226 2.5G Series

Add RTL8226 Series 2.5GPHY Support. Both R&W have been tested. (MDC is 500KHz in 2.5G RW)

Only 3.3V MDC/MDIO is available due to current dongle hardware design.

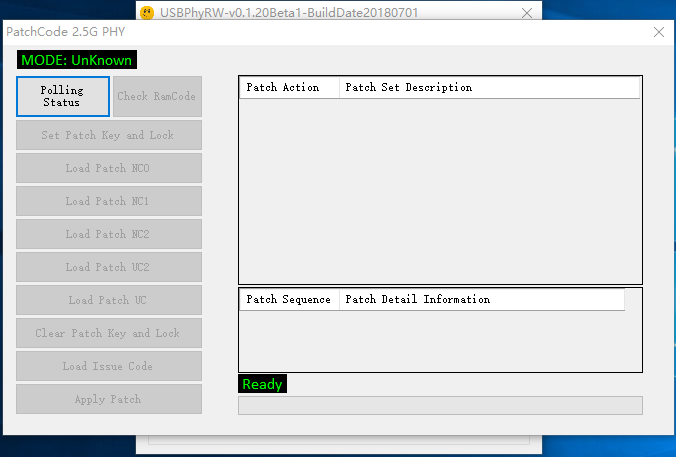
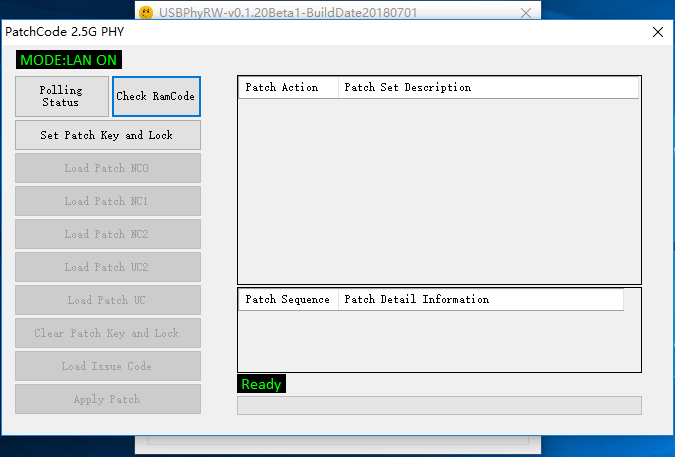
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20180701 Update

Add 2.5G Phy PatchCode Function.

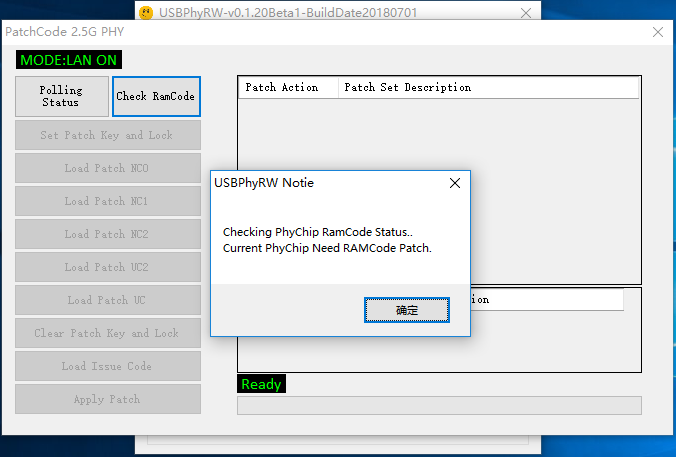
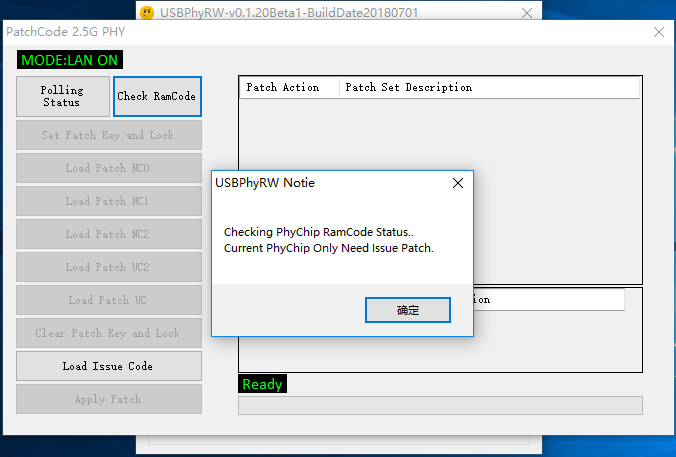
You can use this function by the entry “Functions->PatchCode” when your chip is RTL82226 2.5G Series.

Before starting you need Polling Phy Status . The patch procedure is only allowed when PHYChip is in LAN ON MODE.

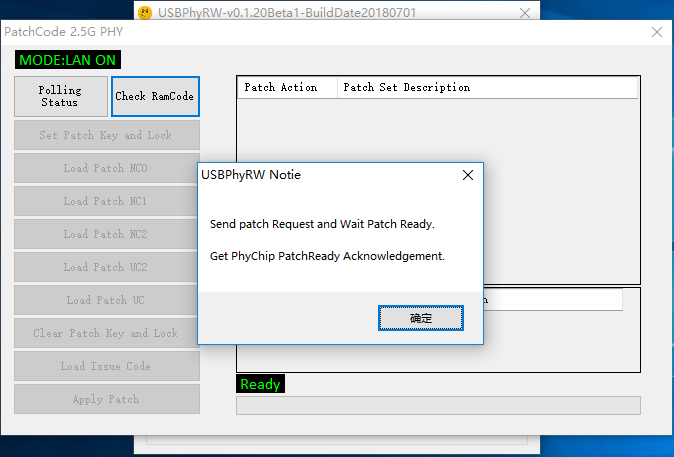
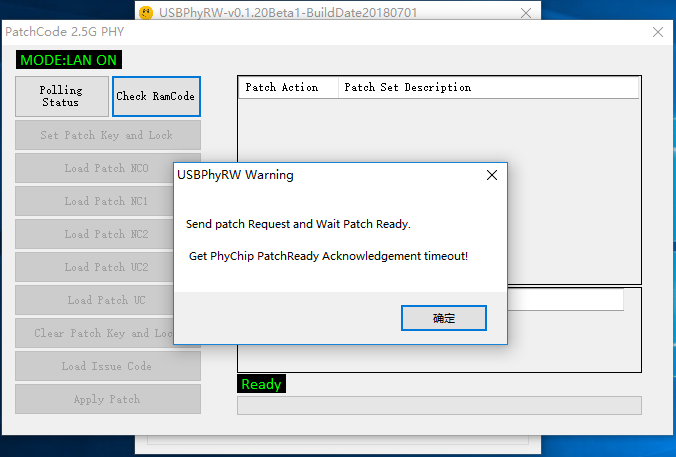
 

If status is right you can go on the next step by click CheckROMCode Button.

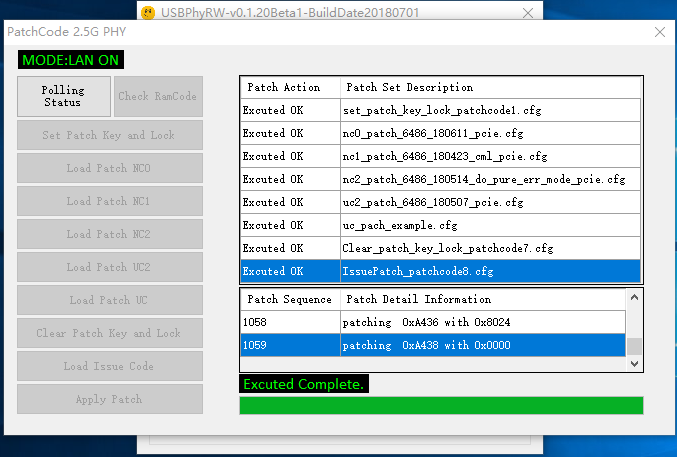
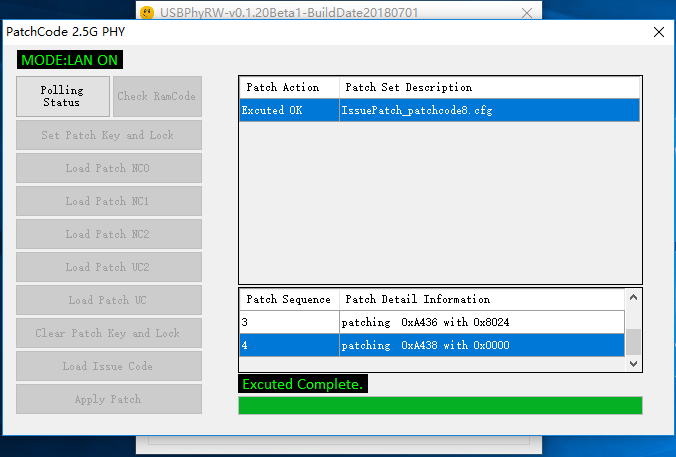
The tool will check the phy chip if it need ramcode&issue patch or only issue patch.

If the phychip need ramcode patch the tool will set patch key to phy and wait for the patch ready automatically. If patch ready is time out the procedure will be stopped.

If all is right you can select the \*.cfg file by the following load patch button one by one. After you finish the patch selection the ApplyPatch button is actived you can press the button the aplly all the patch.

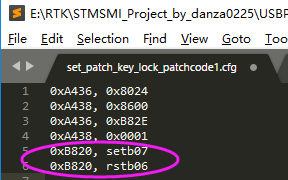
 

Another notification need to be pointed.

Current format of cfg patch file is just like the following jpeg which is reg address in the head and regvaule is in the end.

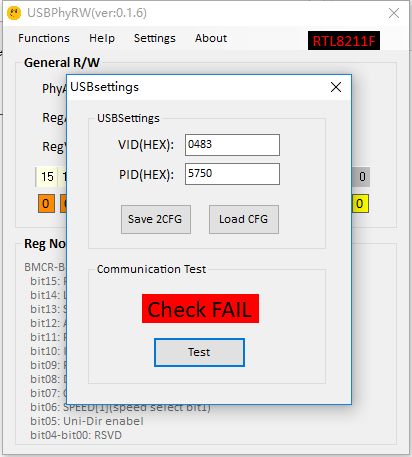
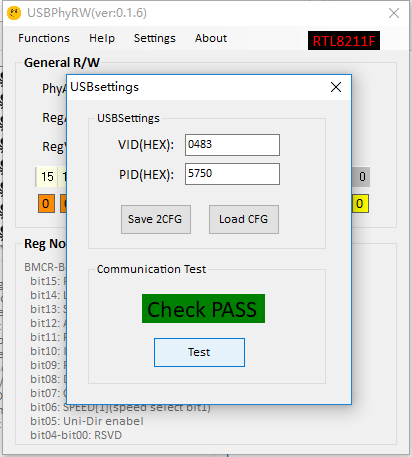
But if you want to change only one bit of some register you can use the red circle method which means Set 0xB820 bit7 to 1 and Set 0xB820 bit6 to 0;

Thus meaning setb07 equals set bit7 to 1 while rstb06 equals set bit6 to 0. For example if you want to set 0xB820 bit 15 to 1 you should write your patch with 0xB820, setb0f



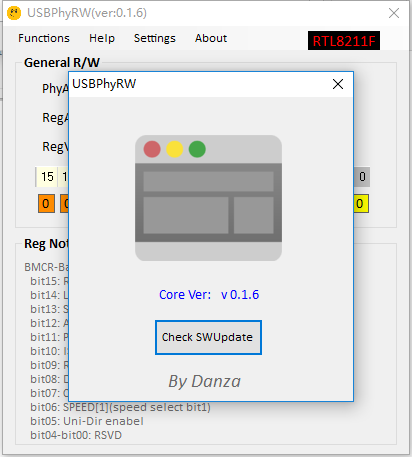
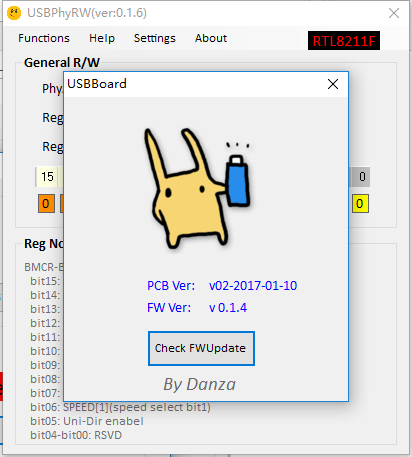
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You can check the communication between USBPhy-RW dongle and you PC by the entry ‘Settings->USBSettings ‘



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You can upgrade the dongle FW by IAP and this program online. But the server is in RS internal(My work PC) so the connection may be fail if the network is unreachable.



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You can contact with me or report issue in github if any bug. (EXT 57489)

Thank you.