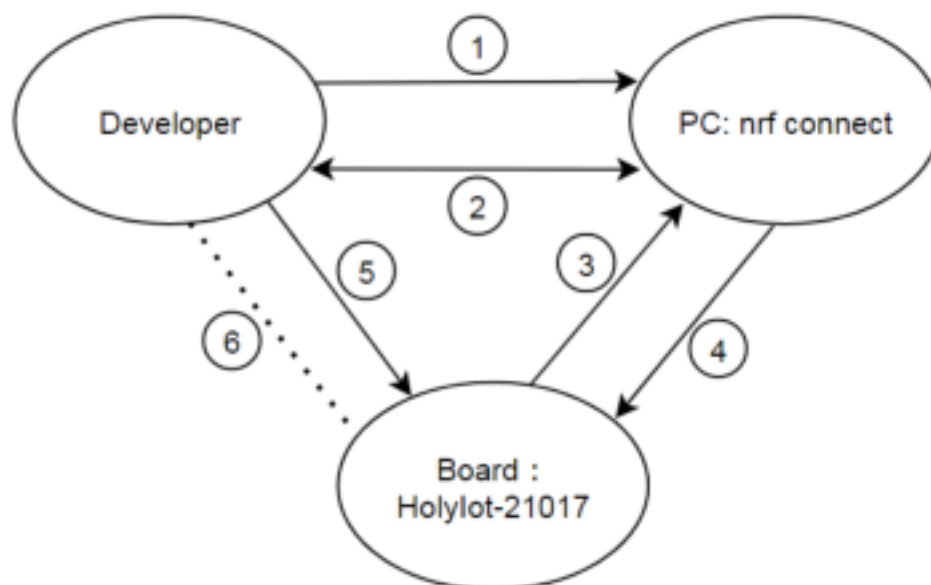


HOLYIOT-21017-nRF52840-USB Manual

/*****/

The following figure shows the block diagram of the development and use of Holyiot-21017.



Holyiot-21017 control diagram

among them:

- ①: Developers can import the files to be upgraded into "nRF-Connect".
- ②: Developers can use "Holyiot-21017" as a USB device with Bluetooth host function to interact with "nRF-Connect".
- ③: "Holyiot-21017" as a Bluetooth host can display the received data of other Bluetooth devices on "nRF-Connect" via USB.
- ④: "nRF-Connect" can upload and issue commands to "Holyiot-21017" via USB to realize the visual operation of Bluetooth data exchange with other Bluetooth slaves. "nRF-Connect" can also quickly upgrade the firmware of "Holyiot-21017" via USB without other emulators.
- ⑤: Developers can implement the "Holyiot-21017" hardware reset operation by approaching the magnet.
- ⑥: Reserved.

/*****/

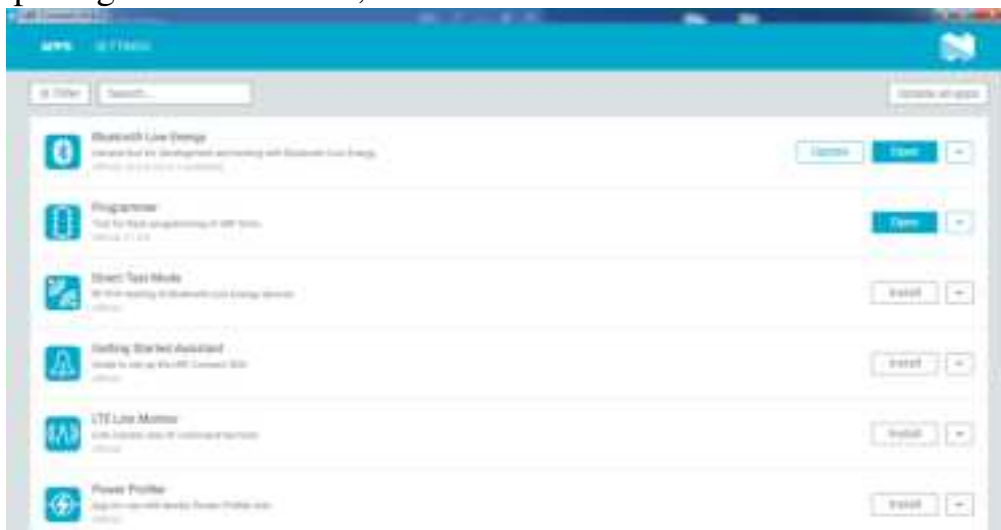
1. The normal use of Holyiot-21017:

we will explain in detail the normal use of "Holyiot-21017" as a USB device with Bluetooth host function.

Developers need to download and correctly install the newer Nordic official PC version software, "nRF-Connect", the link is as follows:

<https://www.nordicsemi.com/Software-and-tools/Development-Tools/nRF-Connect-for-desktop>.

After opening "nRF-Connect", the interface is as follows:



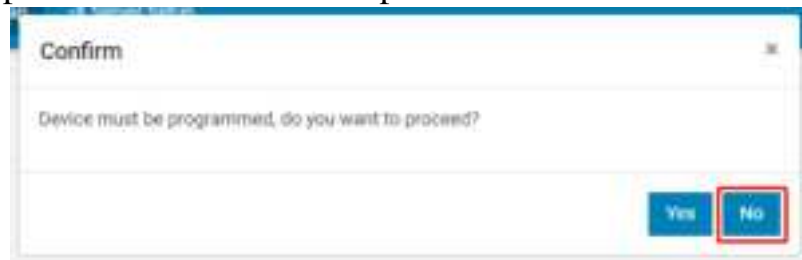
The interface after "nRF-Connect" is opened

Open "Bluetooth Low Energy", then insert "Holyiot-21017", after the driver installation is complete, select the USB device "USB: Nordic Semiconductor nRF52 Connectivity":



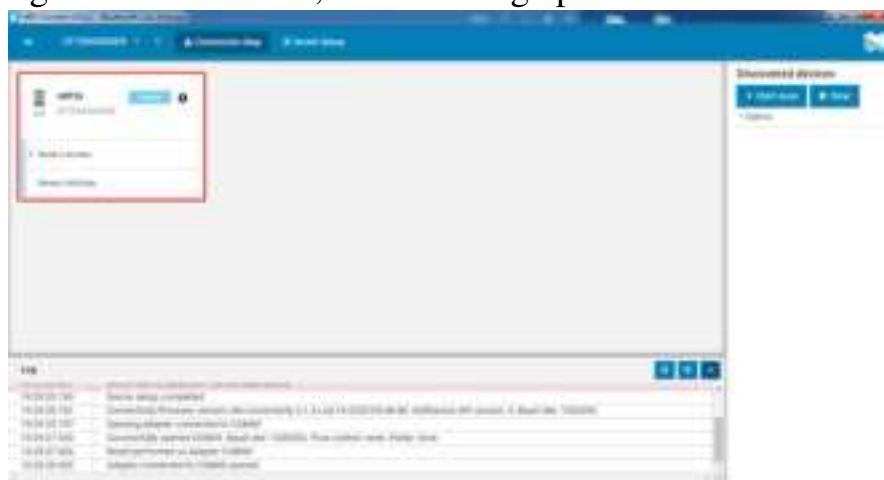
Click to select USB device

Then there will be a pop-up prompt to upgrade to the official default firmware of no signal enhancement function, we choose "NO", (of course, if you choose "YES", the operation will fail and the previous interface will be restored):



Whether to upgrade to the official default firmware

After waiting for a few seconds, the following operation interface will be entered:



Enter the visual operation interface of the Bluetooth host

Next, developers can operate "Holyiot-21017" according to their needs:



Operate according to needs

This point, the introduction of the conventional usage of "Holyiot-21017" has been completed.

2. The firmware upgrade of Holyiot-21017 (USB-DFU)

First, insert "Holyiot-21017" into the computer through the USB port. After the computer recognizes the USB device normally, reset the "Holyiot-21017" hardware by approaching the magnet. If the reset is successful, the red indicator light of "Holyiot-21017" will be the breathing effect. After the reset is successful, the magnet needs to be moved a little farther ($>0.3\text{m}$) to avoid continuous resetting.

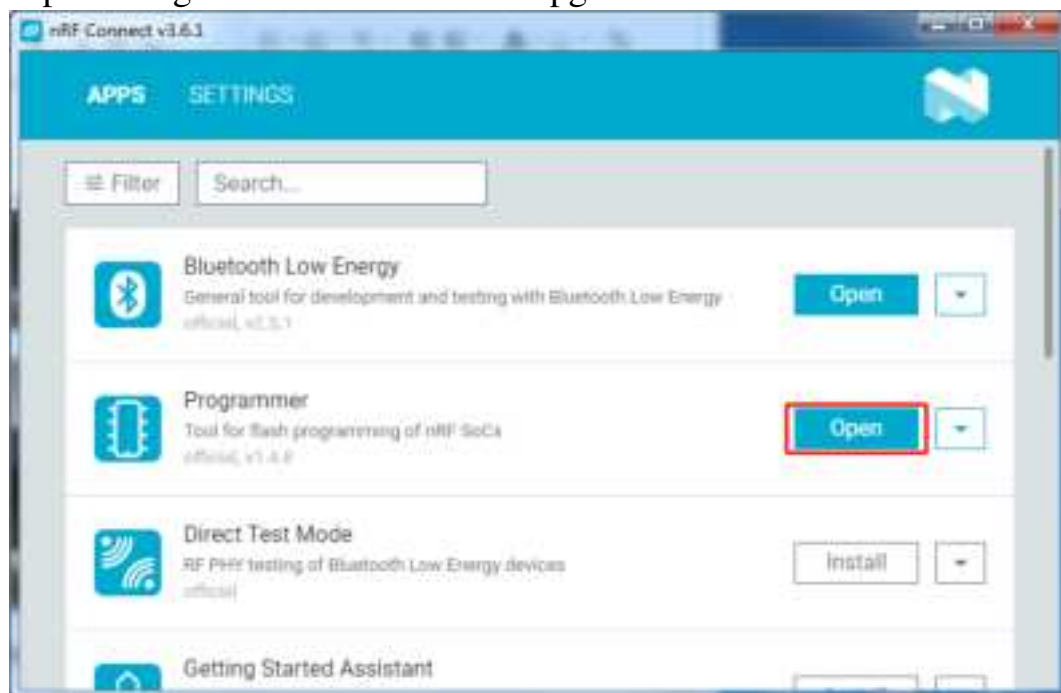


Place the magnet close to "Holyiot-21017" to reset it



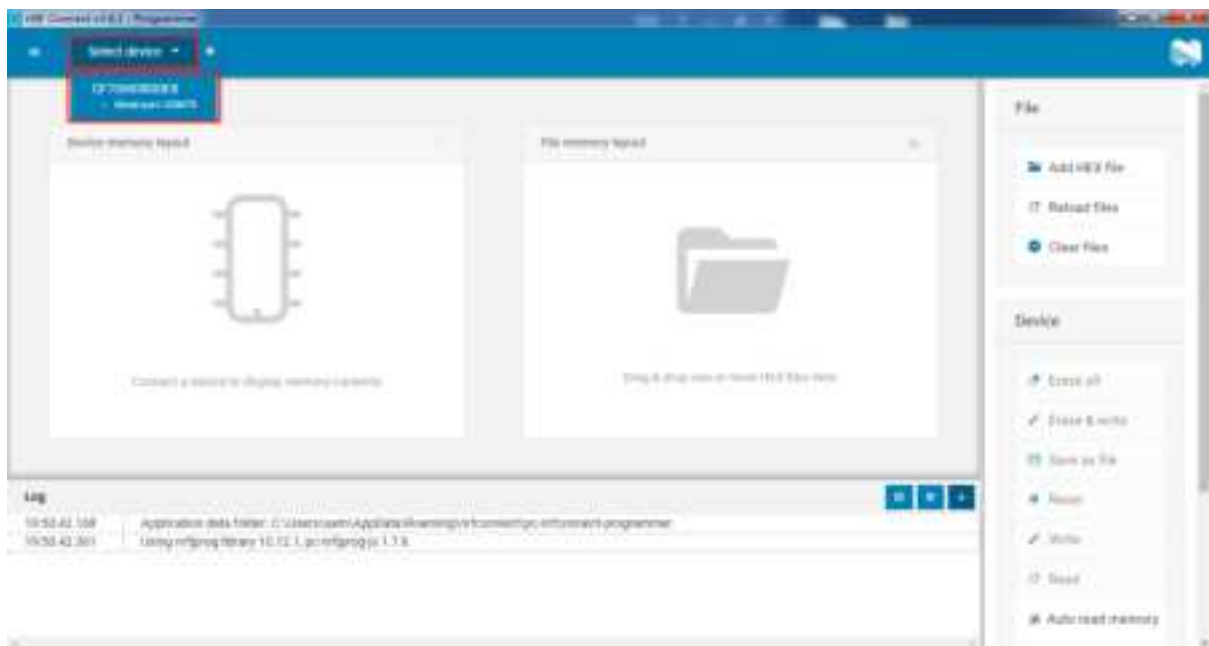
The reset is successful, remove the magnet and the red light is on

Then open "Programmer" for firmware upgrade interface:



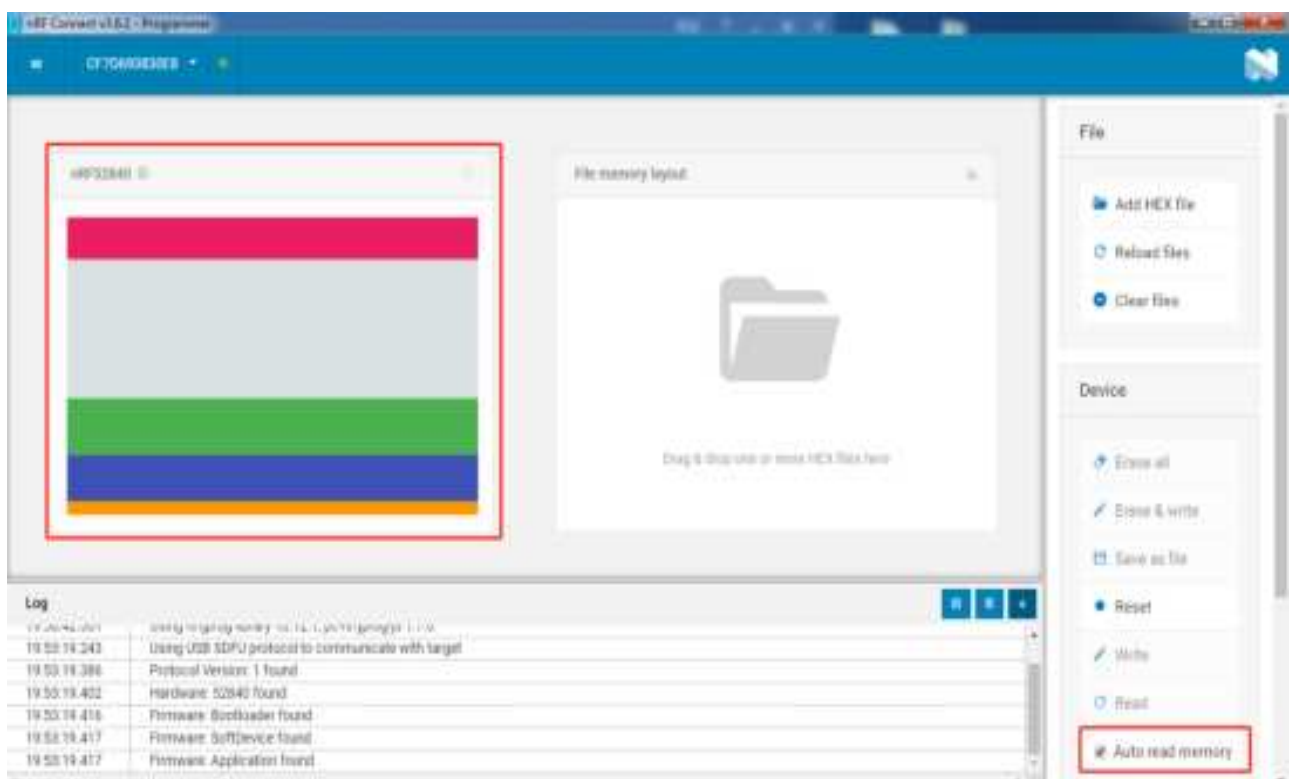
Open the "Programmer"

Then select the USB device that can be upgraded:



Choose a USB device that can be upgraded with firmware

Click "Auto read memory", you can see the firmware stack information of "Holyiot-21017":



You can read the current MCU firmware stack information

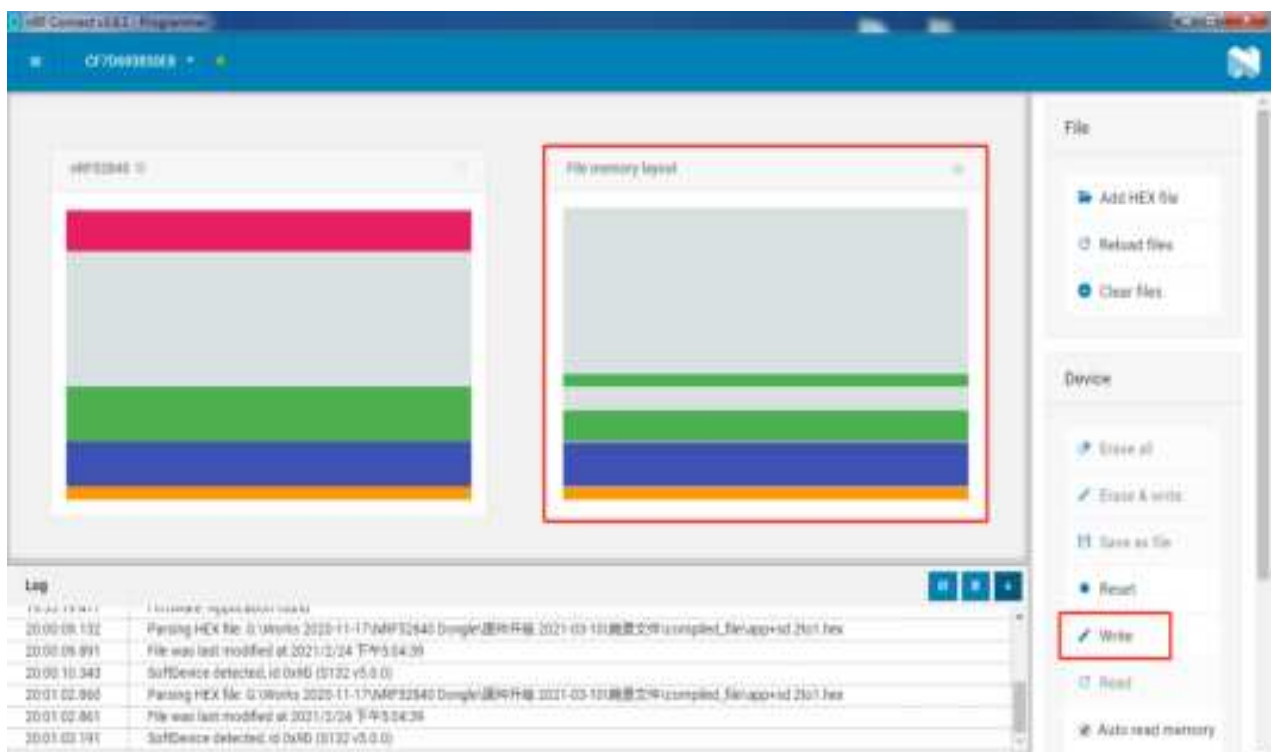
Then click "Add HEX file" to load the firmware to be upgraded:

(Note that this upgrade can only upgrade application and softdevice)



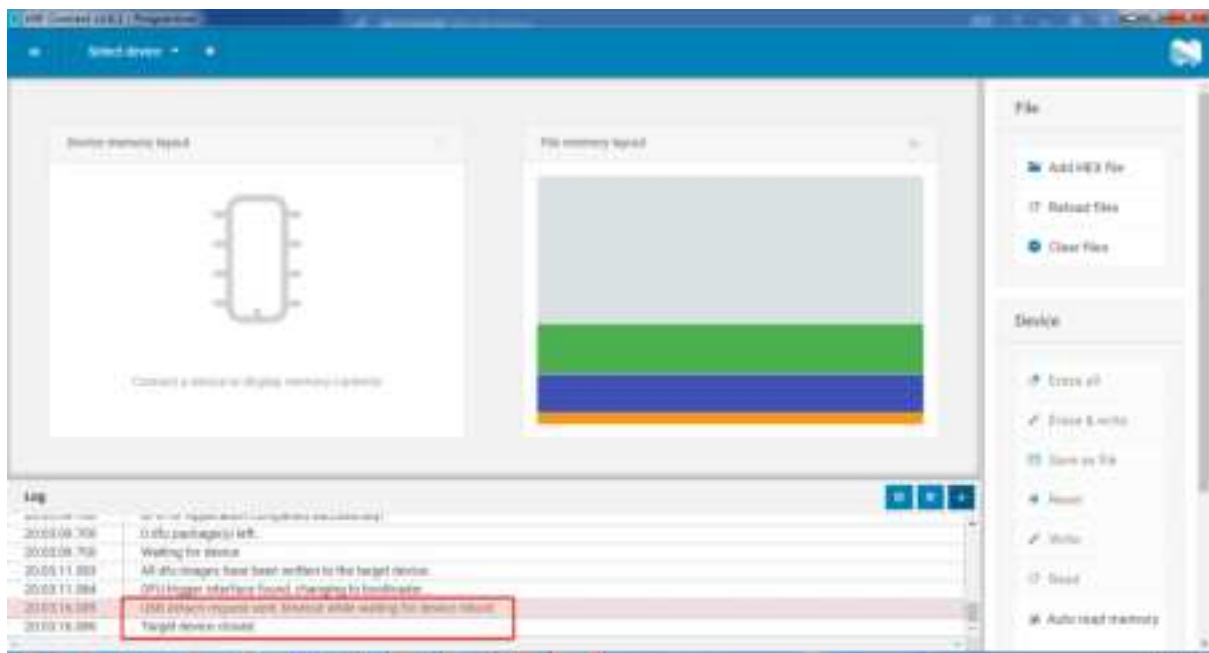
Load the firmware to be upgraded

If the developer wants to stop the firmware upgrade at this time, you can directly click "Reset" to reset to the normal working state. If you continue to upgrade, please click "Write" to write the firmware to "Holyiot-21017":



Click "Write" to start the upgrade

Attach the successful upgrade interface:



Firmware upgrade (USB-DFU) successful

After the firmware upgrade is successful, "Holyiot-21017" will directly run the upgraded firmware program.

The above steps can be used to repeatedly upgrade the firmware.
At this point, the firmware upgrade demonstration is over.

FCC Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Radiation Exposure Statement

This device complies with RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.