



## **Troubleshooting NEO2-HF No Connection with HF-RFID Module**

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## 1 The Problem

It can happen accidentally that you click on [SET BAUDRATE] in this demo software. Changing the Baudrate will not change the communication speed on the USB-VCP interface. This Baudrate affects the internal communication between the HF-RFID module and the mainboard controller.

HF DEMO V4.2

FILE PC/SC CHANNEL ABOUT EXIT

SYSTEM AUTOLIST CARDS ISO14443A-3/4 MIFARE CLASSIC ULTRALIGHT/C DESFIRE ISO14443B ISO15693 ISO7816 ISO18000

**CONNECTIVITY**

CONNECTION ☐ PC/SC ☒ SERIAL

COMPORT COM4 BAUDRATE 115200 ADDRESS 0 DISCONNECT

**SYSTEM**

GET FIRMWARE VERSION 72 32 63 20 04 28

GET HW SERIAL NUMBER 08 9F 0F 01 58 55 9F 25

BAUDRATE 9600 BPS

LED LIGHTING TIME 3 x50MS NO. OF TIMES 4

BUZZER BEEPING TIME 3 x50MS NO. OF TIMES 4

NOTE: EACH CYCLE TIME IS FIXED TO 500MS!

ADDRESS 0x00000010 NOTE: ADDRESS AS 32BIT, MSB FIRST!

ADDRESS 0x00000008

ADDRESS 0 NOTE: THIS OPTION FOR SET RS485 DEVICES ADDRESS!

ANT PORT 1 NOTE: DEFAULT ANTENNA STATUS IS OPENED!

SET BAUDRATE

LIGHTING

BEEPING

READ FLASH

WRITE FLASH

SET ADDRESS

SET ANT

**PROTOCOL SCREEN**

Connect success

>> 50 00 00 04 54

<< 50 00 06 04 72 32 63 20 04 28 7D --success

>> 50 00 00 05 55

<< 50 00 08 05 08 9F 0F 01 58 55 9F 25 7D --success

>> 50 00 01 01 04 54

<< 50 00 01 01 04 54 --success

>> 50 00 00 04 54

<< --failure

CLEAR

## 2 The Solution · Preparation

**You cannot use this solution if you have a custom-specific firmware. In this case contact our support.**

### 2.1 Have the latest Firmware

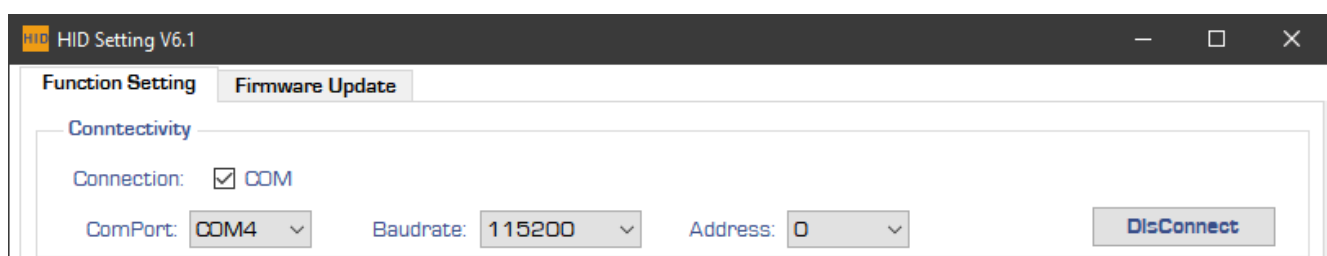
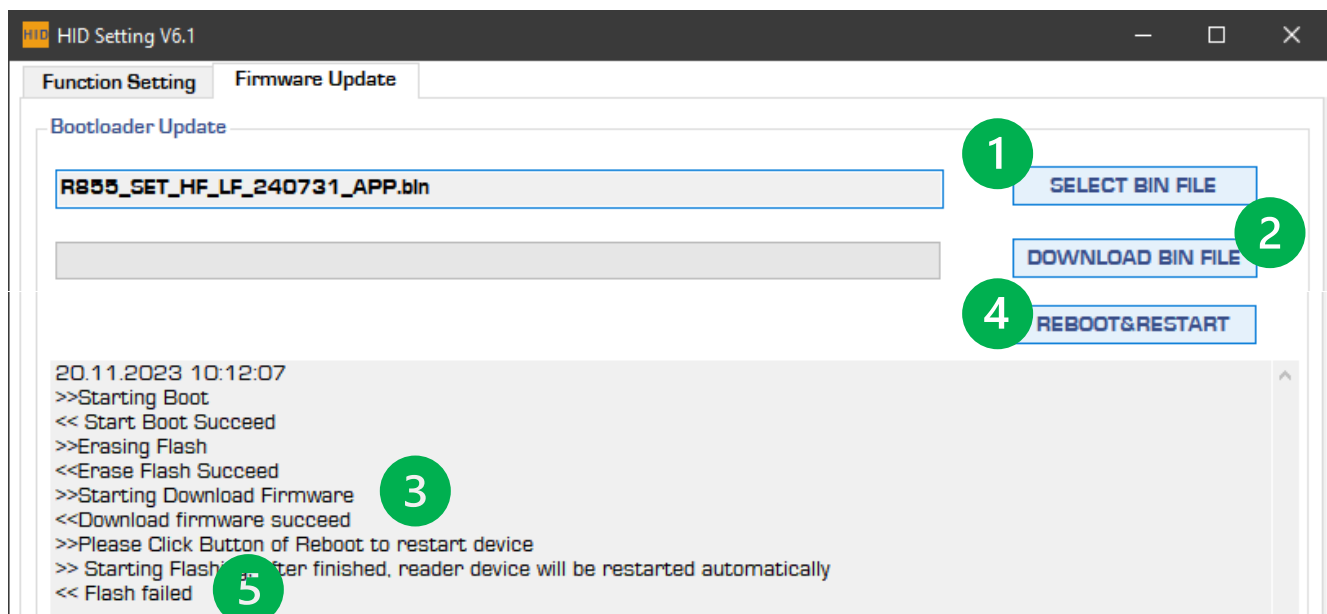
As of the firmware with date info 2022-09-13 it is possible to update the Firmware using this HID Setting software. If the firmware in your device has an older date, please contact our support for special assistance.

The firmware as of 2024-07-31 has the function to troubleshoot this situation already implemented. There is no need for an update.

### 2.2 Firmware Update

As of the firmware with date info 2022-09-13 it is possible to update the Firmware using this HID Setting software. Connect with the device you want to update and change to the second tab labelled "Firmware Update"

- 1: Click on [SELECT BIN FILE] will open the file selector. For your convenience, you can select the Firmware file in the explorer press and hold the [Shift] key, right-click and select "copy as path". After this you can simply paste the path into the file input line in the file selector.
- 2: Start the update with click on [DOWNLOAD BIN FILE]
- 3: Please wait until the process is finished.
- 4: Click on [REBOOT&RESTART]
- 5: Sometimes you get the error message "Flash failed".  
Please ignore this and test the device. If in doubt, do a power cycle.



Now you can change back to the tab “Function Setting” [DisConnect] = > [Connect] and see the new version information in the status bar. The date information should be 2024-07-31 or newer.

```
>> AA 00 01 83 82 BB
<< AA 00 0A 00 00 20 22 08 25 03 18 44 01 7B BB
>> AA 00 01 86 87 BB
<< AA 00 26 00 52 38 35 35 2D 53 45 54 2D 48 46 5F 4C 46 5F 4C 45 47 49 43 20 32 30 32 34 2D 30 37 2D 33
31 20 31 34 3A 32 33 71 BB
```

**CLEAR**

Version: R855-SET-HF\_LF\_LEGIC 2024-07-31 14:23 / SN: 2022082503184401

### 2.3 Shut OFF the Automatic Operation Mode

**HID Setting V6.2**

**Function Setting** | **Firmware Update**

**Connectivity**

Connection: ☒ COM

ComPort: COM4 Baudrate: 115200 Address: 0 **Disconnect**

**Settings Dual HID Mode**

Set Reader to HID Mode **1**

Working Mode: 00: HF 14443A LSB

Memory Position: 00 Data Position: 0 Data Length: 16

Memory Key(if applicable): ☒ Key A ☐ Key B Key: FF FF FF FF FF FF

Output Format: ☒ Number ☐ ASCII

HID Format: ☒ Lowercase ☐ Uppercase

**LF + HF Enable**

HF Data Format: 00 = 00: HF 14443A LSB

LF Data Format: 10: LF Read UID LSB of read-only tag type

LF Page Address: 00 **2** **SET READER**

**Prefix** Prefix1: No Prefix Prefix2: No Prefix Prefix3: No Prefix

**Postfix** Postfix1: No Postfix Postfix2: No Postfix Postfix3: No Postfix

**Protocol Screen** **SET**

```
>> AA 00 01 86 87 BB
<< AA 00 26 00 52 38 35 35 2D 53 45 54 2D 48 46 5F 4C 46 5F 4C 45 47 49 43 20 32 30 32 34 2D 30 37 2D 33
31 20 31 34 3A 32 33 71 BB
>> AA 00 10 FD 3F 00 00 FF FF FF FF FF 10 60 00 00 10 00 B2 BB
<< AA 00 02 00 80 82 BB
>> AA 00 02 F9 00 FB BB
<< AA 00 02 00 80 82 BB
>> AA 00 07 FE 00 00 00 00 00 00 00 F9 BB
<< AA 00 02 00 80 82 BB
```

**CLEAR**

Version: R855-SET-HF\_LF\_LEGIC 2024-07-31 14:23 / SN: 2022082503184401

1: Be sure that the switch of “Set Reader to HID Mode” is set to left and greyed out.

2: Store this setting with [SET READER]

Now you can go on to restore the HF-RFID module to 115200 bps Baudrate.

### 3 The Solution · Restore the Internal Communication

The newer firmware allows to configure the Baudrate of side of the mainboard controller for communication with the HF-RFID module. To reset this to the needs 115200 the procedure is this:

- 1: Configure the mainboard controller for a Baudrate different than 115200 bps. The set of commands are listed in the following. If you know the Baudrate you configured the HF-RFID module, please use this.
- 2: Send a configuration command to the HF-RFID module to set it to 115200 bps: 50 00 01 01 00 50  
If you receive the confirmation telegram, restoration is done: 50 00 01 01 00 50  
If you do not receive any confirmation, repeat step 1 with a different Baudrate.

#### 3.1 The Procedure in Detail

##### Nomenclature

>> means that that this data is sent to the RFID device (NEO2)

<< means that this data should be the confirmation telegram from the RFID device

Description	Telegram (hexadecimal)
Set mainboard controller to 9600 Baud	>> AA 00 02 F0 04 F6 BB
Do you get this confirmation telegram? If not, the communication with the NEO2 is lost.	<< AA 00 02 00 80 82 BB
Set HF-RFID module to 115200 Baud	>> 50 00 01 01 00 50
Do you get this confirmation telegram? If not, try the next Baudrate	<< 50 00 01 01 00 50
Set mainboard controller to 19200 Baud	>> AA 00 02 F0 03 F1 BB
Do you get this confirmation telegram? If not, the communication with the NEO2 is lost.	<< AA 00 02 00 80 82 BB
Set HF-RFID module to 115200 Baud	>> 50 00 01 01 00 50
Do you get this confirmation telegram? If not, try the next Baudrate	<< 50 00 01 01 00 50
Set mainboard controller to 38400 Baud	>> AA 00 02 F0 02 F0 BB
Do you get this confirmation telegram? If not, the communication with the NEO2 is lost.	<< AA 00 02 00 80 82 BB
Set HF-RFID module to 115200 Baud	>> 50 00 01 01 00 50
Do you get this confirmation telegram? If not, try the next Baudrate	<< 50 00 01 01 00 50
Set mainboard controller to 57600 Baud	>> AA 00 02 F0 01 F3 BB
Do you get this confirmation telegram? If not, the communication with the NEO2 is lost.	<< AA 00 02 00 80 82 BB
Set HF-RFID module to 115200 Baud	>> 50 00 01 01 00 50
Do you get this confirmation telegram? If not, there is another problem!	<< 50 00 01 01 00 50

If you received the confirmation from the HF-RFID module, please unplug/replug the NEO2 from the USB.

#### 3.2 Using the Terminal Software hterm

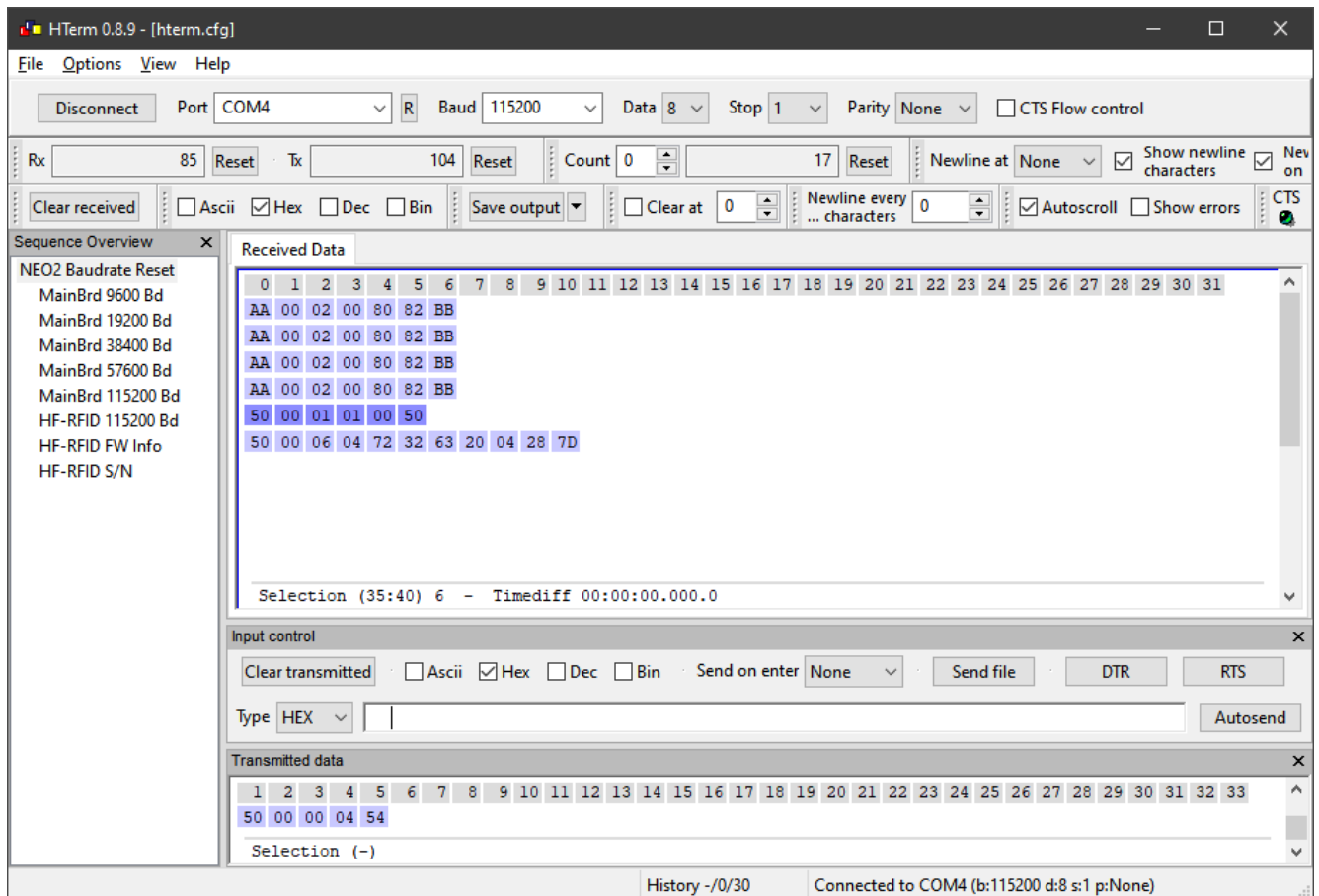
There are not many terminal software available that support editing and sending binary data. Feel free to use hterm, which is available online for free directly from the software developer: <https://www.der-hammer.info>

There is a short description of this software:

hterm\_x.y\_DE.pdf (German language)

hterm\_x.y\_EN.pdf (English language)

There is a sequence file that already contains the configuration commands for the mainboard controller and the HF-RFID module and, the firmware information request of the HF-RFID module to check the communication.



The first 4 lines are the confirmation telegrams from the mainboard controller that the new Baudrate was taken over.

The 5<sup>th</sup> line with 50 00 01 01 00 50 is the confirmation from the HF-RFID module, that the new Baudrate of 115200 was set.

Now the restoration is complete. After a power cycle the mainboard controller automatically returns to 115200 bps on the internal communication. So there is not need to do this.

Do Disconnect/Connect and send a final request for the Firmware information from the HF-RFID. This is the 6<sup>th</sup> line with the reply from the HF-RFID module.



4      **Revision History**

Date	Version	Description
2024-07-31	0.1	First English draft

## 5 Appendix: File "NEO2 Baudrate Reset.hts"

```
<?xml version="1.0" encoding="UTF-8"?>
<HtermSequenceFile name="Hterm Sequence File" version="0.8.9">
  <ItemList>
    <SequenceItem name="MainBrd 9600 Bd">
      <sequence value="h[AA] h[00] h[02] h[F0] h[04] h[F6] h[BB]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="MainBrd 19200 Bd">
      <sequence value="h[AA] h[00] h[02] h[F0] h[03] h[F1] h[BB]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="MainBrd 38400 Bd">
      <sequence value="h[AA] h[00] h[02] h[F0] h[02] h[F0] h[BB]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="MainBrd 57600 Bd">
      <sequence value="h[AA] h[00] h[02] h[F0] h[01] h[F3] h[BB]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="MainBrd 115200 Bd">
      <sequence value="h[AA] h[00] h[02] h[F0] h[00] h[F2] h[BB]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="HF-RFID 115200 Bd">
      <sequence value="h[50] h[00] h[01] h[01] h[00] h[50]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="HF-RFID FW Info">
      <sequence value="h[50] h[00] h[00] h[04] h[54]"/>
      <description></description>
    </SequenceItem>
    <SequenceItem name="HF-RFID S/N">
      <sequence value="h[50] h[00] h[00] h[05] h[55]"/>
      <description></description>
    </SequenceItem>
  </ItemList>
</HtermSequenceFile>
```