

Configuration Software for the Keyboard Emulation (HID Operation Mode) EVO2, OEM-M1000

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1 Installation

1.1 Function Description

This RFID device can be either operated in full read/write mode or in automatic read mode with keyboard emulation. The keyboard emulation works as compatible HID* device, so that it will operate with most common operating systems.

When in keyboard emulation mode, it is not possible to do normal read/write operations.

* Human Interface Device

1.2 USB Driver Installation

If the device is connected to a PC for the first time, it can take some time for automatic installation of the drivers. If this is the case, please wait until this is fully done.

Normally the USB drivers are automatically installed with Windows operating systems. In rare cases it is possible, that automatic installation fails. Then perform a manual installation of the drivers. You can download the most current files directly from the IC manufacturer:

<http://www.wch-ic.com/search?q=CH340&t=downloads>
<http://www.wch-ic.com/products/CH340.html> => [More Download]

1.3 Installing the Configuration Software

Please download this file package:

<https://download.idtronic.de/Card%20Reader/Card%20Reader%20NEO2%20SDK.zip>

Unpack the archive and navigate to folder “07_Software for HID-Mode Configuration” and install the software with setup.exe. Finally you will have a new icon on your computer desktop:



Double-click on this icon to start the software.

2 Configuration Software "HID Setting"

2.1 Software Overview

HID Setting V6.1

Function Setting | **Firmware Update**

Connectivity

Connection: ☒ COM

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

Settings Dual HID Mode

Set Reader to HID Mode ☒

Working Mode: 10: LF Read UID LSB of read - only tag type

Memory Position: 09: HF 10: MSB-DEC

0A: HF 11: RL

0B: HF 12: d for future use

0C: HF 13: ure use

0D: HF 14: ure use

0E: HF 15: ure use

0F: HF Ultralight UID + Data

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

11: LF Read UID MSB of read - only tag type

12: LF Read UID LSB of Hitag1 / S tag type

13: LF Read UID MSB of Hitag1 / S tag type

14: LF Read UID LSB - DEC of Hitag1 / S tag type

15: LF Read UID MSB - DEC of Hitag1 / S tag type

16: LF Read UID LSB and Memory Page from Hitag1 / S tag type

17: LF Read UID MSB and Memory Page from Hitag1 / S tag type

18: LF Read UID LSB - DEC and Memory Page from Hitag1 / S tag type

19: LF Read UID MSB - DEC and Memory Page from Hitag1 / S tag type

1A: LF Read UID MSB - DEC of read - only tag type

1B: LF Read UID LSB - DEC of read - only tag type

1C: LF Reserved for future use

1D: LF Reserved for future use

1E: LF Reserved for future use

1F: LF Read FDX - B information

20: Legic Read UID

21: Legic Read ISO 15693 UID

22: ISO 14443 A

23: ISO 14443 B

24: INSIDE Secure

25: SONY FeliCa subset

30: LF+HF Enable

LF + HF Enable

HF Data Format

LF Data Format

LF Page Address

Prefix Prefix1

Postfix Postfix1

Protocol Screen

>> AA 00 01 83 83

<< AA 00 0A 00 00

>> AA 00 01 86 87

<< AA 00 26 00 52

33 20 31 36 3A 37

SET READER

Prefix

Postfix

SET

32 32 2D 30 39 2D 31

CLEAR

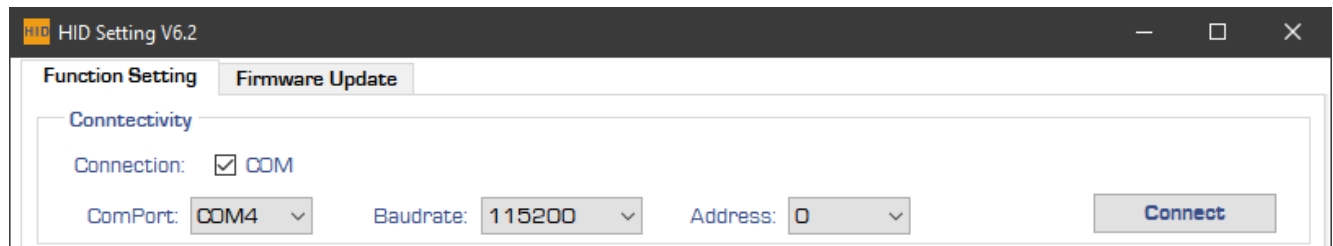
Annotations:

- FIRST: Select the communication parameters, then click on [Connect]
- SECOND: Select the data tag type you are using and configure the desired data.
- THIRD: Start the HID Operation Mode
- FINALLY: Store the desired settings in the reader.

You can monitor the communication between this configuration software and the RFID device.

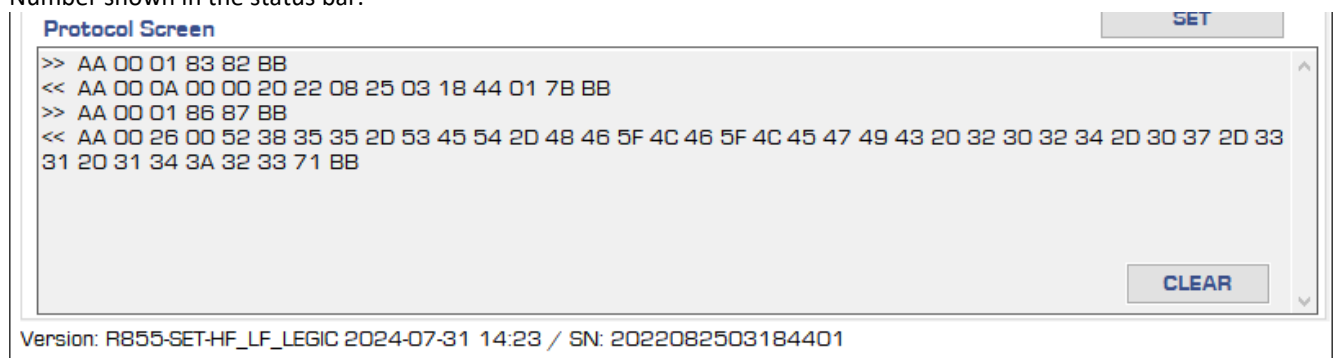
2.2 Connect your Device for Configuration

Please plug in the device first before starting the configuration software "HID Setting". Then start the configuration software "HID Setting".



If you have an early version of the NEO2 or have set it to other Baudrates on purpose, please select the appropriate Baudrate.

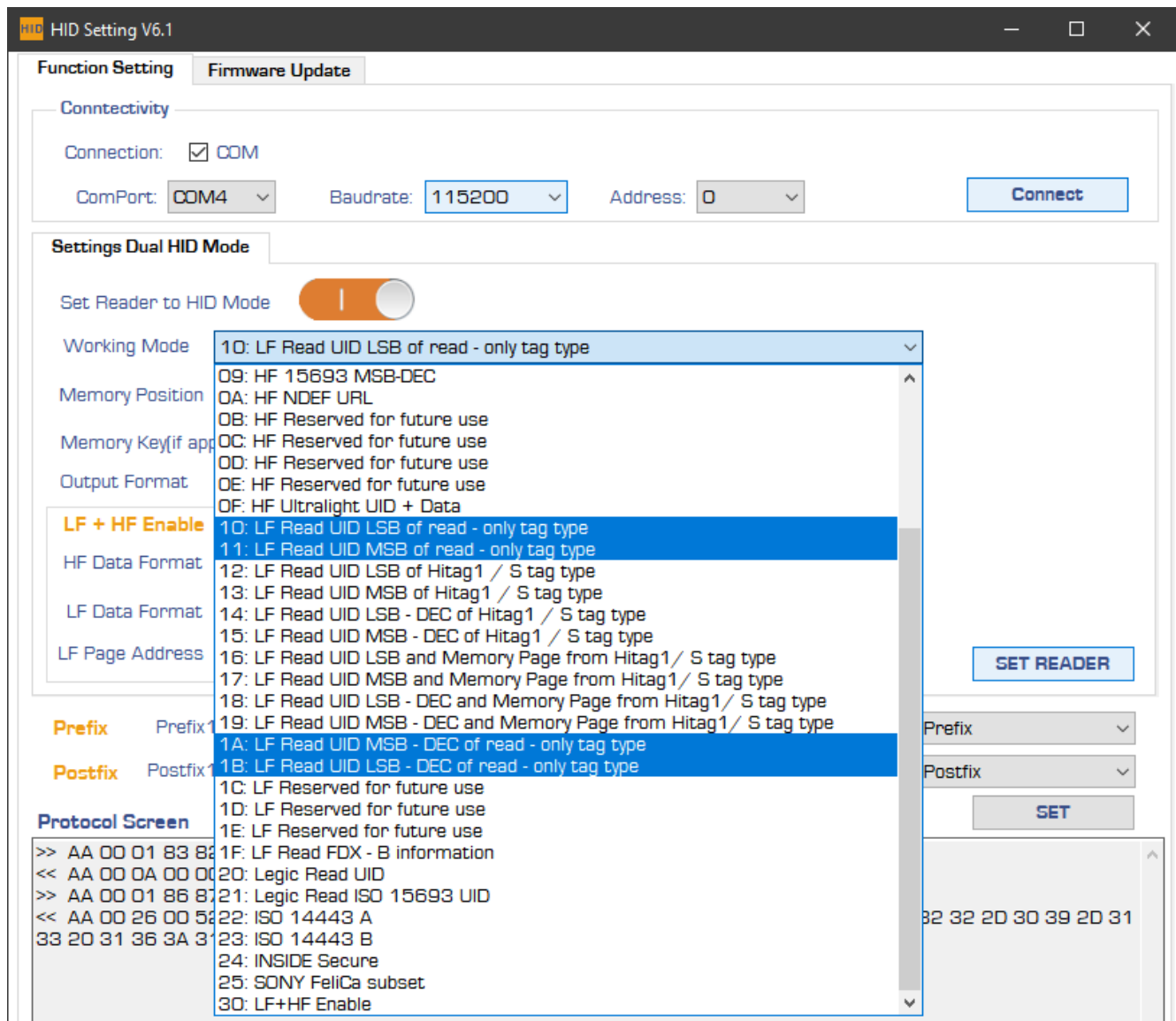
Then click on [Connect]. You should see 4 lines of communication in the Protocol Screen and the FW Information and Serial Number shown in the status bar.



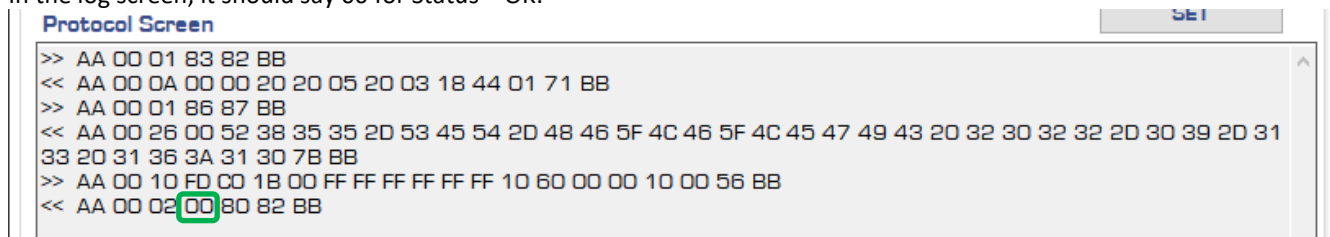
3 Configuration Examples

3.1 Capturing the UID of LF read-only RFID tags

- 1: As of 2022-09-13, the firmware uses 115200 Baud
- 2: Click on [Connect]
- 3: Switch the HID function on.
- 4: The functions 10/11 and 1A/1B will read and output the UID in various Byte order and number representations.
- 5: Store the configuration in the RFID device with [Set Reader]



In the log screen, it should say 00 for Status = OK.



3.2 Capturing the UID or Data from Hitag 1/S Type RFID Tags

- 1: As of 2022-09-13, the firmware uses 115200 Baud
- 2: Click on [Connect]
- 3: Switch the HID function on.
- 4: The functions 12...15 will read and output the UID in various Byte order and number representations. The functions 16...19 will add the memory contents of one page to the UID.
- 5: Store the configuration in the RFID device with [Set Reader]

HID Setting V6.1

Function Setting | Firmware Update

Connectivity

Connection: ☒ COM

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

Settings Dual HID Mode

Set Reader to HID Mode ☒

Working Mode: 00: HF 14443A LSB

Memory Position: 09: HF 15693 MSB-DEC

Memory Key(if applicable): 0A: HF NDEF URL

Output Format: 0B: HF Reserved for future use

0C: HF Reserved for future use

0D: HF Reserved for future use

0E: HF Reserved for future use

0F: HF Ultralight UID + Data

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

11: LF Read UID MSB of read - only tag type

12: LF Read UID LSB of Hitag1 / S tag type

13: LF Read UID MSB of Hitag1 / S tag type

14: LF Read UID LSB - DEC of Hitag1 / S tag type

15: LF Read UID MSB - DEC of Hitag1 / S tag type

16: LF Read UID LSB and Memory Page from Hitag1 / S tag type

17: LF Read UID MSB and Memory Page from Hitag1 / S tag type

18: LF Read UID LSB - DEC and Memory Page from Hitag1 / S tag type

19: LF Read UID MSB - DEC and Memory Page from Hitag1 / S tag type

1A: LF Read UID MSB - DEC of read - only tag type

1B: LF Read UID LSB - DEC of read - only tag type

1C: LF Reserved for future use

1D: LF Reserved for future use

1E: LF Reserved for future use

1F: LF Read FDX - B information

20: Legic Read UID

21: Legic Read ISO 15693 UID

22: ISO 14443 A

23: ISO 14443 B

24: INSIDE Secure

25: SONY FeliCa subset

30: LF+HF Enable

Prefix Prefix

Postfix Postfix

Protocol Screen

>> AA 00 01 86 82

<< AA 00 26 00 5

33 20 31 35 3A 37

>> AA 00 10 FD C

<< AA 00 02 00 8

>> AA 00 10 FD C

<< AA 00 02 00 8

SET READER

Prefix

Postfix

SET

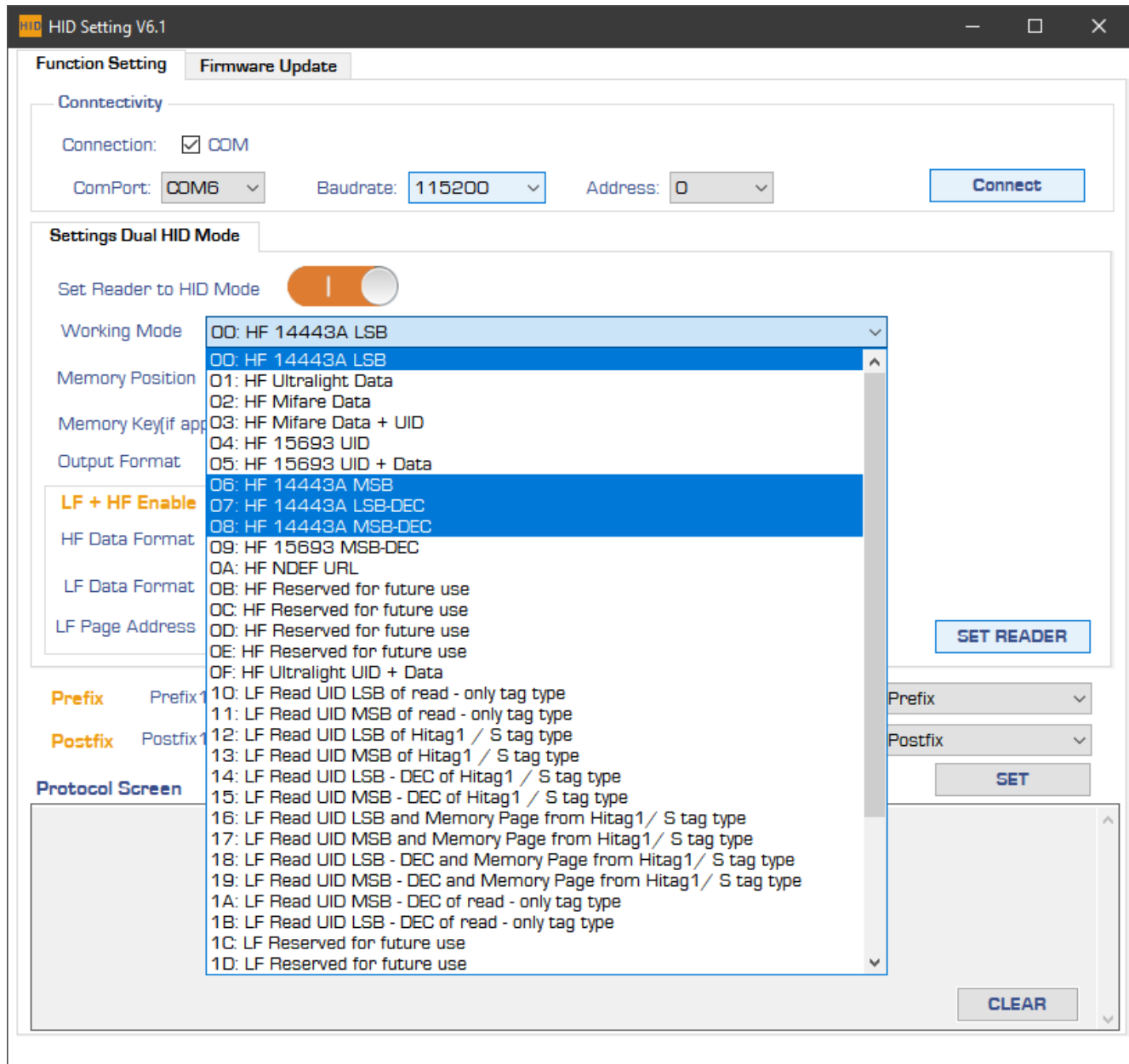
2 33 2D 30 31 2D 31

CLEAR

Version: R855-SET-HF_LF_LEGIC 2023-01-13 15:42 / SN: 2020052003184401

3.3 Capturing the UID of HF RFID tags of Standard ISO 14443A

- 1: As of 2022-09-13, the firmware uses 115200 Baud
- 2: Click on [Connect]
- 3: Switch the HID function on.
- 4: The functions 00, 06...08 will read and output the UID in various Byte order and number representations.
- 5: Store the configuration in the RFID device with [Set Reader]



If you want to read data from a memory block or page, use functions 01, 02, 03 or 0F.

3.4 Capturing the UID of HF RFID tags of Standard ISO 15693

- 1: As of 2022-09-13, the firmware uses 115200 Baud
- 2: Click on [Connect]
- 3: Switch the HID function on.
- 4: The functions 04 and 09 will read and output the UID in various Byte order and number representations. The function 05 will add the memory contents of one page to the UID.
- 5: Store the configuration in the RFID device with [Set Reader]

HID Setting V6.2

Function Setting | Firmware Update

Connectivity

Connection: ☒ COM

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

Settings Dual HID Mode

Set Reader to HID Mode ☒

Working Mode: 00: HF 14443A LSB

Memory Position: 01: HF Ultralight Data

Memory Key(if app): 02: HF Mifare Data

Output Format: 04: HF 15693 UID MSB

HID Format: 05: HF 15693 UID + Data

LF + HF Enable ☒

HF Data Format: 0A: HF NDEF URL

LF Data Format: 0B: HF Customized use

LF Page Address: 0C: HF 15693 UID LSB

Prefix: Prefix

Postfix: Postfix

Protocol Screen

0D: HF 15693 UID MSB-DEC

0E: HF Customized use

0F: HF Ultralight UID + Data

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

11: LF Read UID MSB of read - only tag type

12: LF Read UID LSB of Hitag1 / S tag type

13: LF Read UID MSB of Hitag1 / S tag type

14: LF Read UID LSB - DEC of Hitag1 / S tag type

15: LF Read UID MSB - DEC of Hitag1 / S tag type

16: LF Read UID LSB and Memory Page from Hitag1/ S tag type

17: LF Read UID MSB and Memory Page from Hitag1/ S tag type

18: LF Read UID LSB - DEC and Memory Page from Hitag1/ S tag type

19: LF Read UID MSB - DEC and Memory Page from Hitag1/ S tag type

1A: LF Read UID MSB - DEC of read - only tag type

1B: LF Read UID LSB - DEC of read - only tag type

1C: LF Reserved for future use

1D: LF Reserved for future use

SET READER

SET

CLEAR

3.5 Read Memory Block and UID from a Mifare classic

Select an HID Mode with Mifare and Data.
Set the memory block to read from.
Chose the Key to use for authentication.
Finally configure the HID output format.

Set Reader to HID Mode ☒

Working Mode **03: HF Mifare Data + UID**

Memory Position **3D** 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

Example Output

0C9CF822031401000000000000035452309010055

0C9CF822 Is the 4 Bytes long UID of this tag in hexadecimal interpretation.
031401000000000000035452309010055 Are the 16 Bytes from memory block 0x3D (#62)

3.6 Read Part of Memory Block and UID from a Mifare classic

Now we cut the first 4 Bytes from the memory block and limit the data to 8 Bytes.

Working Mode **03: HF Mifare Data + UID**

Memory Position **3D** Data Position **4** Data Length **8**

Example Output

0C9CF82200000000000354523

0C9CF822 Is the 4 Bytes long UID of this tag in hexadecimal interpretation.
00000000000354523 Are the trimmed 8 Bytes from memory block 0x3D (#62)

3.7 Capturing UIDs and Data from LF and HF Type Tags (Dual Mode)

If you have a NEO2 with LF and HF electronics inside, you can use both with the HID operation mode.
The important step is to select the “Working Mode 30: LF + HF Enable”. Then you can select separate working modes for HF “HF Data Format” and LF “LF Data Format”.

Working Mode **30: LF+HF Enable** **1**

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** **2**

LF Data Format **10: LF Read UID LSB of read-only tag type** **3**

LF Page Address **00**

SET READER

3.8 Additional Settings of the Output Format

Output Format ☒ Number ☐ ASCII

3.8.1 Output Format

With the two radiobuttons, you can select either the output as number value or the ASCII numbers.

Example of Mifare with 4 Bytes UID operation mode

- Hexadecimal value: 03e7fb6b
- ASCII Numbers: 3033453746423642

Example of Mifare with 4 Bytes UID-DEC operation mode

- Decimal value: 65534827
- ASCII numbers: 3635353334383237

3.8.2 HID Format

HID Format ☒ Lowercase ☐ Uppercase

Example of Mifare with 4 Bytes Lowercase

- Hexadecimal value: 03e7fb6b

Example of Mifare with 4 Bytes Uppercase

- Hexadecimal value: 03E7FB6B

4 Shut Off the automatic HID Operation Mode

If you need to do advanced tag operations, you must send commands on the virtual com port (USB-VCP). Before you can do this, the automatic HID operation mode must be shut off.

- Start the software.
- Chose the correct Baudrate if needed.
- Click on [Connect].
- Do not change any other setting and leave the switch “Set Reader to HID Mode” in the default OFF position.
- Click on [Set Reader].
- Watch for incoming confirmation telegrams.
- Click on [DisConnect].

The screenshot shows the 'HID Setting V6.1' window with two tabs: 'Function Setting' and 'Firmware Update'. The 'Function Setting' tab is active and contains the following sections:

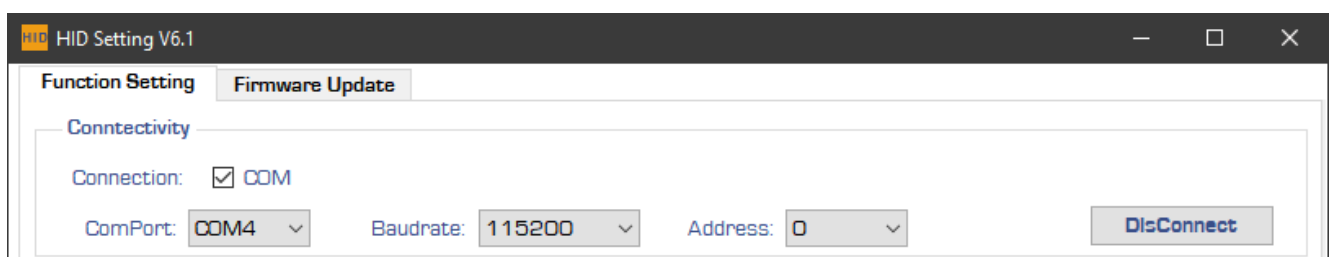
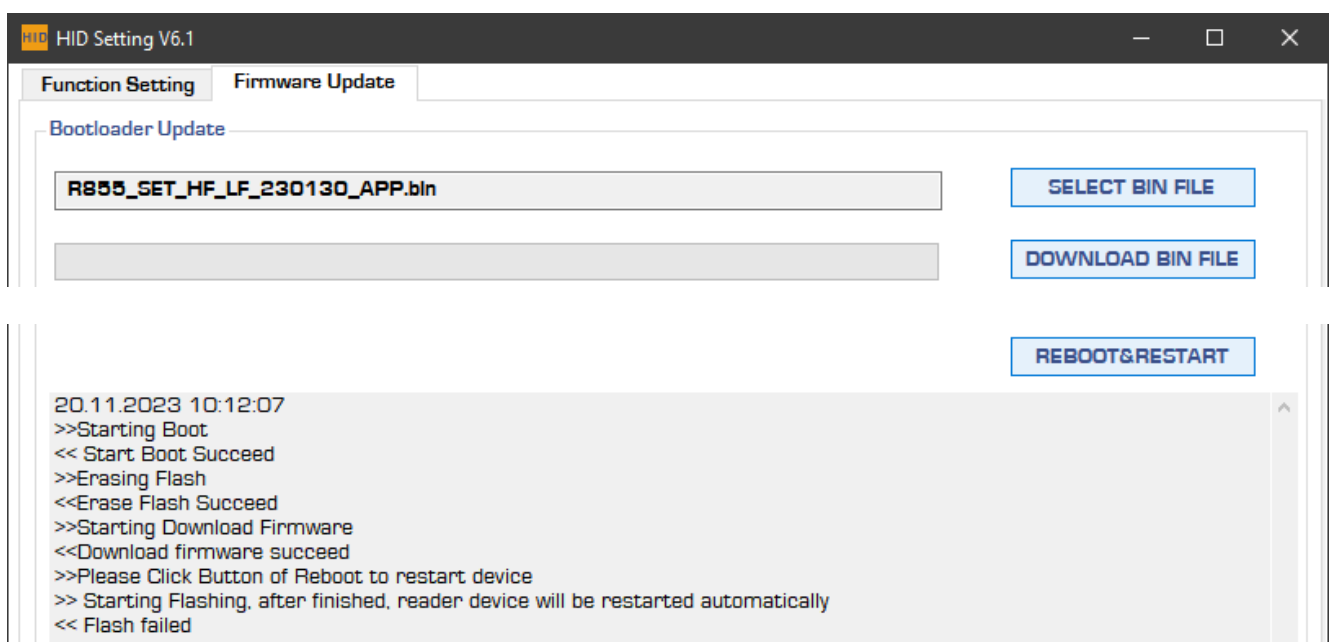
- Connectivity**: Includes a 'Connection' checkbox for 'COM' (checked), a 'ComPort' dropdown set to 'COM1', a 'Baudrate' dropdown set to '115200' (marked with a green '1.'), and an 'Address' dropdown set to '0'. A blue 'Connect' button (marked with a green '2.') is located to the right.
- Settings Dual HID Mode**: Contains a 'Set Reader to HID Mode' toggle switch (marked with a green '3.') which is currently turned off. Below it are several settings:
 - 'Working Mode' dropdown set to '00: HF 14443A LSB'.
 - 'Memory Position' dropdown set to '00', 'Data Position' spinner set to '0', and 'Data Length' spinner set to '16'.
 - 'Memory Key(if applicable)' section with 'Key A' checked, 'Key B' unchecked, and a 'Key' text field containing 'FF FF FF FF FF FF'.
 - 'Output Format' section with 'Number' checked and 'ASCII' unchecked.
- LF + HF Enable**: Contains three settings:
 - 'HF Data Format' dropdown set to '00 = 00: HF 14443A LSB'.
 - 'LF Data Format' dropdown set to '10: LF Read UID LSB of read-only tag type'.
 - 'LF Page Address' dropdown set to '00'.

A blue 'SET READER' button (marked with a green '4.') is located at the bottom right of the 'Settings Dual HID Mode' section.

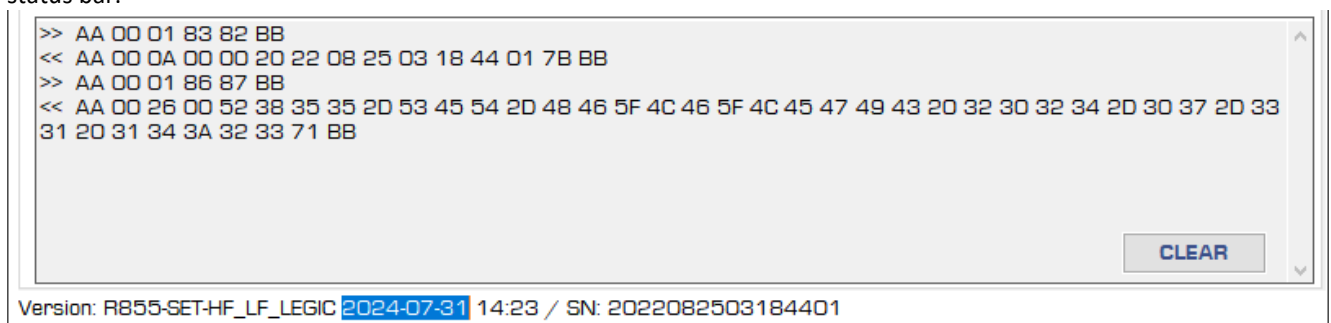
5 Firmware Update

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.



6 Revision History

Date	Version	Description
2023-03-03	0.3	First English draft
2023-08-03	0.4	More examples in a nutshell
2023-11-20	0.5	FW Update added
2024-08-12	0.6	Screenshots updated, Software Designation updated
2025-04-24	0.7	Dual-Mode config added, HID Off added