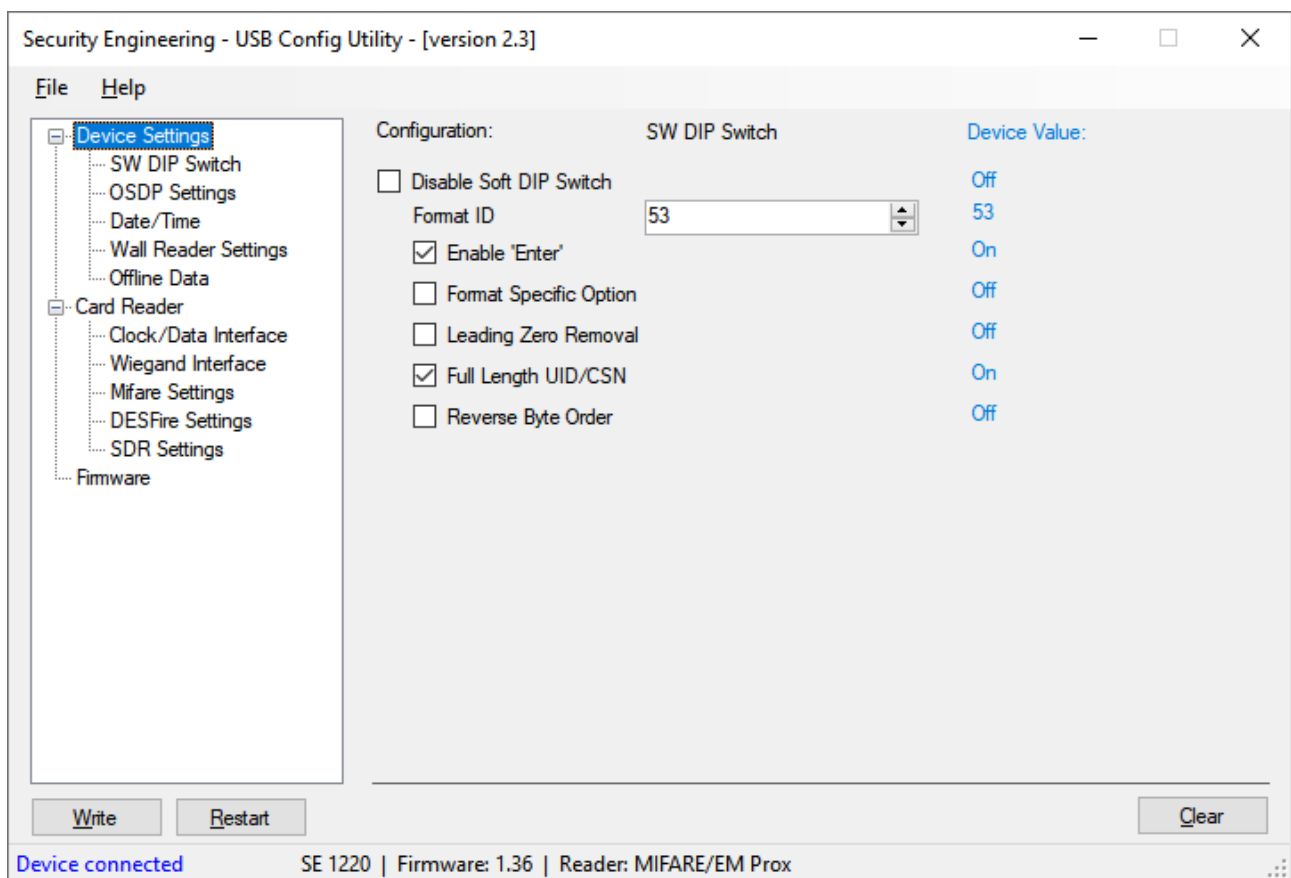


USB Device Configuration Utility

User Manual



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The Configuration Utility is designed for the Security Engineering USB card reader family of devices and for Security Engineering family of devices with USB port for configuration and firmware update:

Concept:

To allow for field programming of the USB card readers a configuration mode has been introduced with firmware 2.25 for 2nd Generation USB card readers. All products released after this has configuration/firmware update mode as standard.

When the USB device is started in boot loader mode, the device will allow update of the firmware and read/write the E²prom of the USB card reader or USB device.

The E²prom holds the configuration data for Field Programmable Formats and the data to enable reading of secure data from multiple card types like:

- MIFARE® Classic
- MIFARE® DESFire®

Configuration data for OSDP, Real time clock, Bluetooth® , Offline access data etc. is also stored in the E²prom.

Supported Hardware:

2nd Generation USB card reader / Interface:

- SBR 0814 with firmware 2.31 or later.
- SBR 0904 with firmware 2.31 or later.
- SBR 0940 with firmware 1.xx or later.
- SBR 0951 with firmware 2.31 or later.
- SBR 0962.
- SBR 0970 / 0971 (Not for IP configuration)
- SBR 0981 / SBR 0983.
- SBR 1030.

3rd Generation USB card reader / Interface:

- SBR 0993.
- SE 0994.
- SBR 1001.

4th Generation USB card reader / Interface:

- SE 1190.
- SE 1220.

1st Generation Wall card reader:

- SE 1042 / 1043 / 1044
- SE 1140
- SE 1150
- SE 1250 / 1251

2nd Generation Wall card reader:

- SE 1090
- SE 1360

2nd Generation I/O Modules:

- SE 1110
- SE 1320
- SE 1340

Unsupported hardware:

1st Generation USB card reader / Interface:

- SBR 0812.
- SBR 0840.
- SBR 0900 / 0902.

1st Generation Wall card Reader:

- SE 1041

1st Generation Network device

- SBR 1021.
- SBR 1022.

Use Network Device Utility (sendu.exe).

Software:

The Security Engineering USB Configuration Utility requires Microsoft Visual C++ framework version 2013 x86 to be installed prior to launching the program.

The Microsoft Visual C++ Redistributable Packages can be downloaded from:

<https://www.microsoft.com/en-us/download/details.aspx?id=40784>

Boot loader Mode:

To bring a USB reader into boot loader / configuration mode one of the following procedures must be used depending on USB device type:

For the following devices:

- SBR 0814
- SBR 0904
- SBR 0970 / 0971

Do the following:

- Disconnect the USB cable.
- Set DIP switch to :
1 2 3 4 5 6 7 8
Off Off Off Off Off Off Off On
- Reconnect the USB cable.
- The LED will turn red and then yellow.
- The USB reader is now in boot loader / configuration mode and will be automatically detected by the Security Engineering USB Configuration Utility.

To return to normal mode of operation

- Disconnect the USB cable.
- Set DIP switch to the desired Format ID.
- Reconnect the USB cable.

For the following devices:

- SBR 0981 / 0983

Do the following:

- Disconnect the power supply to the device.
- Set DIP switch to :
1 2 3 4
Off Off Off On
- Connect the USB cable.
- The red and the green LED will turn on.
- The data converter is now in boot loader / configuration mode and will be automatically detected by the Security Engineering USB Configuration Utility.

To return to normal mode of operation

- Disconnect the USB cable.
- Set DIP switch to the desired Program ID.
- Reconnect the power supply.

For the following devices:

- SBR 0940
- SBR 0950
- SBR 0962
- SBR 0993
- SE 0994
- SBR 1001
- SBR 1030
- SE 1220

Do the following:

- Disconnect the USB cable.
- Press and HOLD the mode switch.
- Reconnect the USB cable.
- The LED will turn red and then yellow.
- Release the mode switch.
- The USB reader is now in boot loader / configuration mode and will be automatically detected by the Security Engineering USB Configuration Utility.

To return to normal mode of operation

- Click the 'Restart' button in software

Or

- Disconnect the USB cable.
- Reconnect the USB cable.

For the following devices:

- SE 1042 / 1043 / 1044
- SE 1090
- SE 1110
- SE 1140
- SE 1150
- SE 1190
- SE 1250 / 1251
- SE 1320
- SE 1340

Do the following:

- Disconnect the power supply to the device.
- Connect the USB cable.
- The status LED will turn red and then yellow or red+green.
- The device is now in boot loader / configuration mode and will be automatically detected by the Security Engineering USB Configuration Utility.

To return to normal mode of operation

- Disconnect the USB cable.
- Reconnect the power supply.

Configuration:

The parameter blocks organized in the following way:

- SW DIP Switch (USB Card Readers only)
- OSDP Settings (OSDP Devices only)
- Data/Time (SE 1110 Only)
- Wall Reader settings
- Offline Data
- Clock/Data Programmable Format
- Wiegand Programmable Format
- MIFARE® Settings (Card Readers only)
- DESFire® Settings (Card Readers only)
- SDR Settings (Card Readers only)

Clock/Data Programmable Format:

When using SBR 0814/SBR 0904/SBR 0950 with a card reading module that outputs data using Clock/Data interface (aka ABA2 or ISO 7918 – Track 2), format no. 31 can be selected using DIP or Software Select, which allows for in field programming of format parameters listed below:

Size - Number of characters to be received (1 - 37)

Offset - Characters that will be skipped (0 - 36)

Length – Characters that will be send (1 - 37)

Pre – Character that is send BEFORE data (See appendix A)

Post – Character that is send AFTER data (See appendix A)

Output Type – Select Decimal or Hexidecimal

Example:

Card data received: 00001230001234567890

Required output: 0123456789 + 'Enter'

Size: 20

Offset: 9

Length: 10

Pre: Non

Post: CR

Output Type: Dec

Wiegand Programmable Format:

When using SBR 0814/SBR 0904/SBR 0950 with a card reading module that outputs data using Wiegand interface, format no. 63 can be selected using DIP or Software Select, which allows for in field programming of format parameters listed below:

Size - Number of bits to be received (1 - 128)

Offset - Number of bits that will be skipped (0 - 127)

Length - Number of bits that will be send (1-128 Hex/1-40 Dec)

Pre - Character that is send BEFORE data (See appendix A)

Post - Character that is send AFTER data (See appendix A)

Output Length - Number characters to be send

Output Type - Select Decimal, Hexidecimal or ASCII

Example:

Card data received: 0x012F0123AE (37 bit)

b0000100101111000000010010001110101110 (37 bit)

Required data: ^^^^^^^^^^^^^^^^^^

Required output: '%' + 37335 + '%'

Size: 37

Offset: 13

Length: 18

Pre: %

Post: %

Output Length: 5 - Removes leading zero in 037335

Output Type: Dec

MIFARE® Classic Sector Parameters:

When using SBR 0904 MIS, SBR 0940, SBR 0993 MIX, SE 0994 MNP, SBR 1030 MIX or SE 1220 MNP for reading data encode into a MIFARE® Classic sector, the access key and block number must be specified.

To format the data read from a MIFARE® Classic sector format no. 63 must be used – Please see the Wiegand Programmable Format section above.

MIFARE® Block: Memory location in card (0x00 – 0x3F for S50)

MIFARE® key type: A-key or B-key

MIFARE® key: Specify key in Hex (0x000000000000 – 0xFFFFFFFFFFFF)

Example:

ASCII encoded card number (7 digits) in sector 04, first block.

MIFARE® A-key = 0x44B0FE872C8A

MIFARE® Section:

MIFARE® Block: 16

MIFARE® key type: A-key

MIFARE® key: 44B0FE872C8A

Wiegand Section:

Size: 128

Offset: 72

Length: 56 – 7 x 8 Bits ASCII code

Pre: Non

Post: Non

Output Length: 7

Output Type: ASCII

SW DIP Switch / Format ID:

When using SBR 0814/SBR 0904 the format selection can be done in software, but when using later models of USB card readers, the format ID selection **MUST** be done in software as there is no DIP switch on the device.

Please note that activating Software Selected Format ID will override DIP settings.

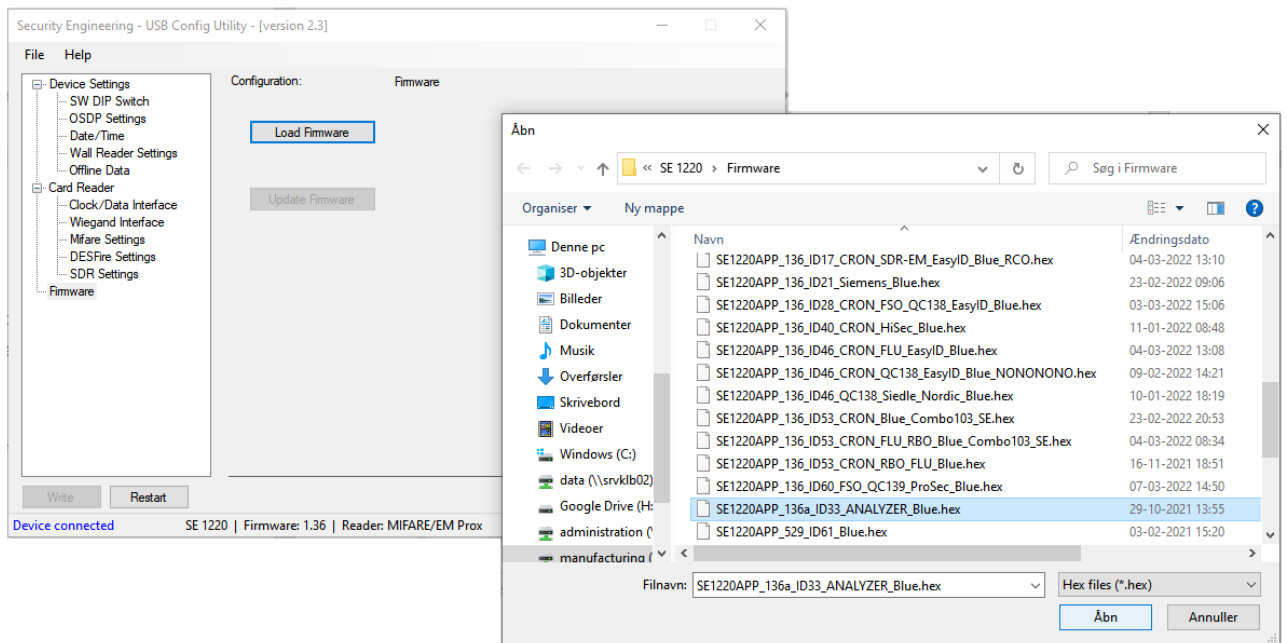
Format ID: (Off, 0 – 63)

- ☐ Enable Enter
- ☐ Format Specific Option
- ☐ Leading Zero Removal
- ☐ Full Length UID
- ☐ Reverse Byte Order

Firmware update:

To update the firmware in a device, put the device into boot loader / configuration mode.

The USB device will be automatically detected by the Security Engineering USB Configuration Utility – seucu.exe



Press the 'Load Firmware' button -> Select the firmware file.

Start firmware update process by pressing the 'Update Firmware' button (or alt+u).

Please note that there can be multiple series of firmware for a device which has different functionality.

Example: For the SE 1220 MNP readID One - USB Card Reader the following firmware types are available:

Version:	Interface:	Function:
1.xx	USB HID Keyboard	Read Only
3.xx	USB CDC COMport	Read/Write
4.xx	USB CDC COMport	Read Only
5.xx	RS 232	Read Only
6.xx	USB HID Keyboard	Standalone encoder

Pre and Post characters available for selection:

ID	Character	ASCII	ID	Character	ASCII
0	Space	0x20	32	@	0x40
1	!	0x21	33	A	0x41
2	"	0x22	34	B	0x42
3	#	0x23	35	C	0x43
4	\$	0x24	36	D	0x44
5	%	0x25	37	E	0x45
6	&	0x26	38	F	0x46
7	'	0x27	39	G	0x47
8	(	0x28	40	H	0x48
9	)	0x29	41	I	0x49
10	*	0x2A	42	J	0x4A
11	+	0x2B	43	K	0x4B
12	,	0x2C	44	L	0x4C
13	-	0x2D	45	M	0x4D
14	.	0x2E	46	N	0x4E
15	/	0x2F	47	O	0x4F
16	0	0x30	48	P	0x50
17	1	0x31	49	Q	0x51
18	2	0x32	50	R	0x52
19	3	0x33	51	S	0x53
20	4	0x34	52	T	0x54
21	5	0x35	53	U	0x55
22	6	0x36	54	V	0x56
23	7	0x37	55	W	0x57
24	8	0x38	56	X	0x58
25	9	0x39	57	Y	0x59
26	:	0x3A	58	Z	0x5A
27	;	0x3B	59	[	0x5B
28	<	0x3C	60	\	0x5C
29	=	0x3D	61	]	0x5D
30	>	0x3E	62	Tab	0x09
31	?	0x3F	63	CR (Enter)	0x0D

Revision history:

Date:	Notes:
2023-07-05	Updated list of supported devices
2022-02-12	seucu.exe - Version 2.3 Updated list of supported and unsupported devices. Updated with new screen shoots. Firmware function added. Wall Reader configuration added.
2020-11-06	SE 1220 MNP added.
2015-04-11	SBR 0993 MIX added.
2015-03-23	Updated to Security Engineering.
2009-09-12	ASCII table added.
2009-08-12	Formatting changed & Microsoft link changed.
2009-02-09	First draft.