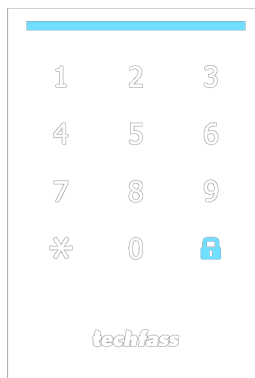
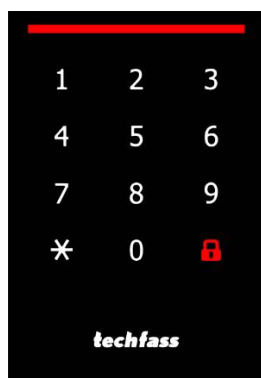


APS Configurator

Configuration program for WRE readers

User's guide



1 Content

1	Content.....	2
2	Product description	3
3	Program installation	3
3.1	System requirements	3
3.2	Installation.....	3
3.3	Program update	3
4	Working with program.....	4
4.1	Working with files	5
4.2	Program options.....	6
4.3	Help	8
4.4	Working with reader	9
4.5	Configuration	13

2 Product description

The *APS Configurator* is a software tool for configuring all operation parameters of new generation of readers *WRE 120*, *REM 191.USB* and successive products. The program enables to connect to the device on RS 485 bus using a *USB* or *TCP/IP* converter, or using a direct connection to a *USB reader*.

3 Program installation

3.1 System requirements

The program requires a PC with OS *MS Windows XP* or *newer* and *MS .NET Framework 4.6.1* installed to run.

3.2 Installation

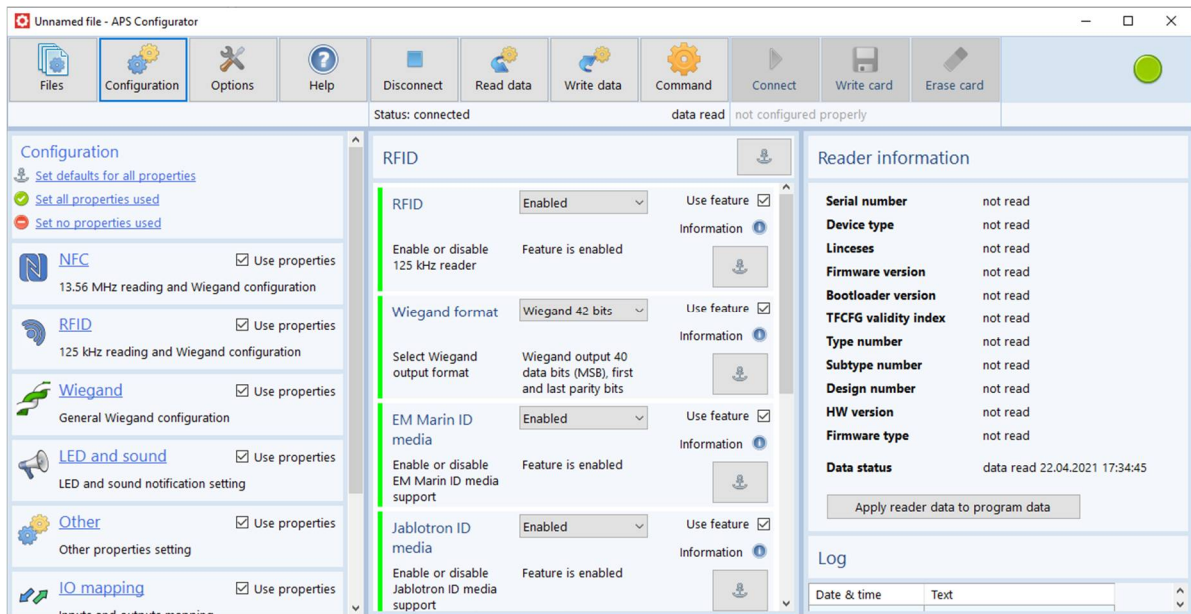
The program installation is performed by its installer, which is available for download at the web pages www.techfass.com. The program is installed in *Program Files (x86)\TechFass\APS Configurator* folder and there are shortcuts for its execution created in the *Start* menu and at the desktop.

3.3 Program update

The *APS Configurator* program performs an automatic search for update on its start. For an instant update search use *Options > Update > Button with refresh symbol*.

4 Working with program

The program working area is divided in several panels, which contain elements for program control and information about connected device (pic. 4.1).



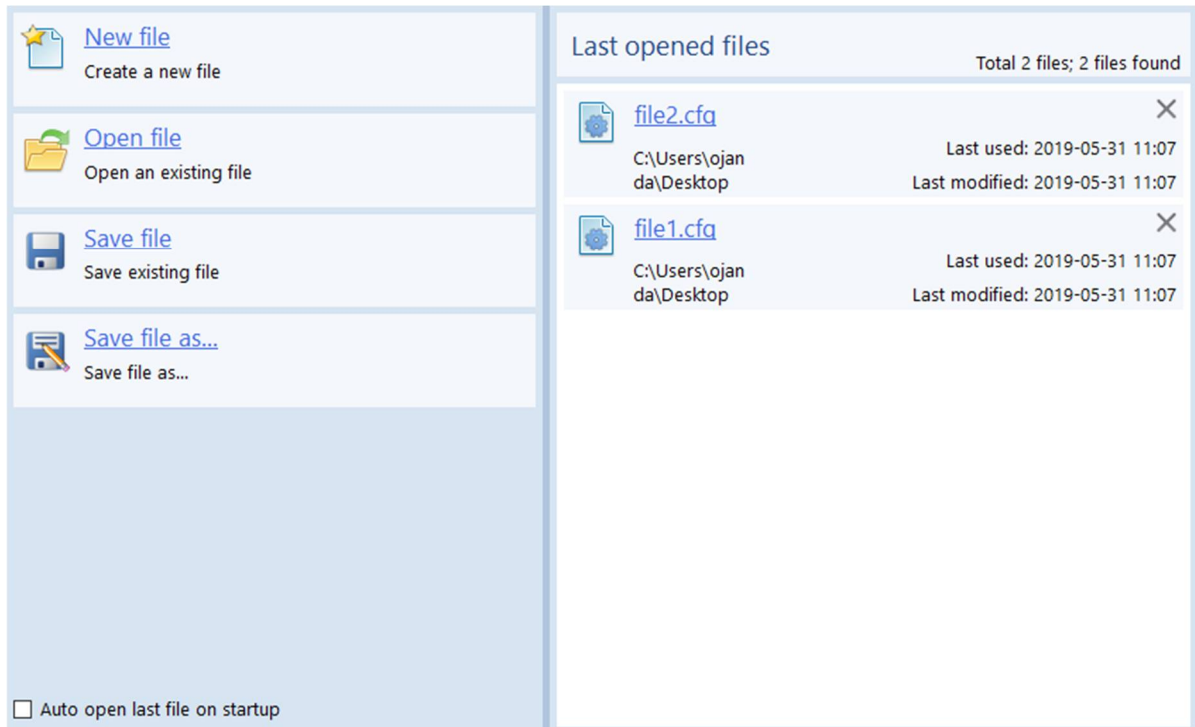
Pic. 4.1: APS Configurator program

In the left part of the upper bar there is a menu with *main control buttons*, which are used to change the content of control panels in the lower part of the program window. The middle section of the upper bar contains a menu with *buttons for controlling the communication with connected reader*. The right part displays the current reader connection status.

The right part of the program window contains the *information about currently connected reader* and *a log of operations* with the program and connected reader. The left and central part contains *currently selected control panel* then.

4.1 Working with files

The readers configuration can be stored in **.xml** files. You can work with these files after pressing the **Files** button at the top menu bar (pic. 4.1.1).



Pic. 4.1.1: Files panel

The left panel contains buttons for usual operations:

- **New file** – creates a new file with default setting
- **Open file** – opens an existing file
- **Save file** – saves currently opened file
- **Save file as...** – displays a dialog for saving the configuration in a new file

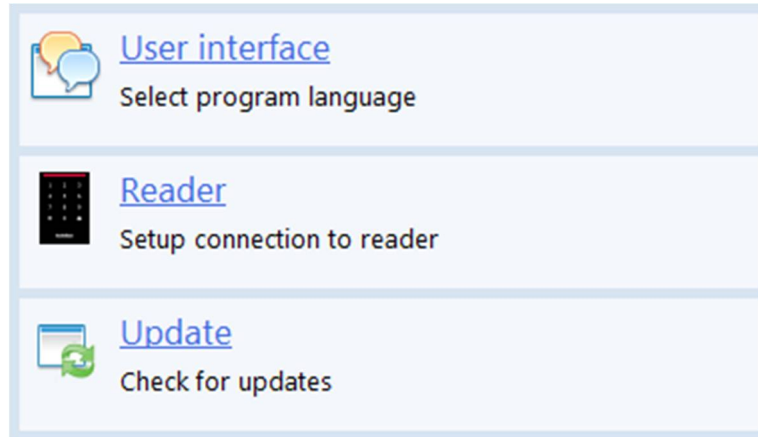
If you want to reopen the last used file on program start, check the **Auto open last file on startup** option.

In the right panel there is a list of last opened data files. After **clicking the specific item**, the file is opened. Individual items in the list can be removed from the list by pressing the **cross icon** at the item.

Removing an item from the list of last used files does not delete the data file at computer disk.

4.2 Program options

The program options are displayed at the panel displayed after pressing the *Options* button at the top menu bar (pic. 4.2.1).



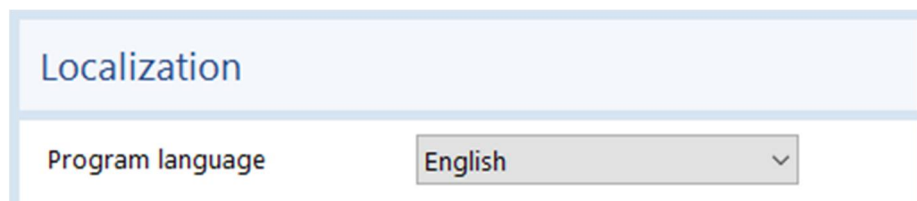
Pic. 4.2.1: Options panel

The panel contains following options:

- *User interface* – select the program localization
- *Reader* – set up the connection to the reader
- *Update* – check and download program updates

4.2.1 User interface

The *User interface* panel offers the options to select the program language localization (pic. 4.2.1.1).



Pic. 4.2.1.1: User interface panel

4.2.2 Connection to reader

The *Connection to reader* panel offers the options to set up the connection to the reader you want to configure with the program (*pic. 4.2.2.1*).

Pic. 4.2.2.1: Connection to reader panel

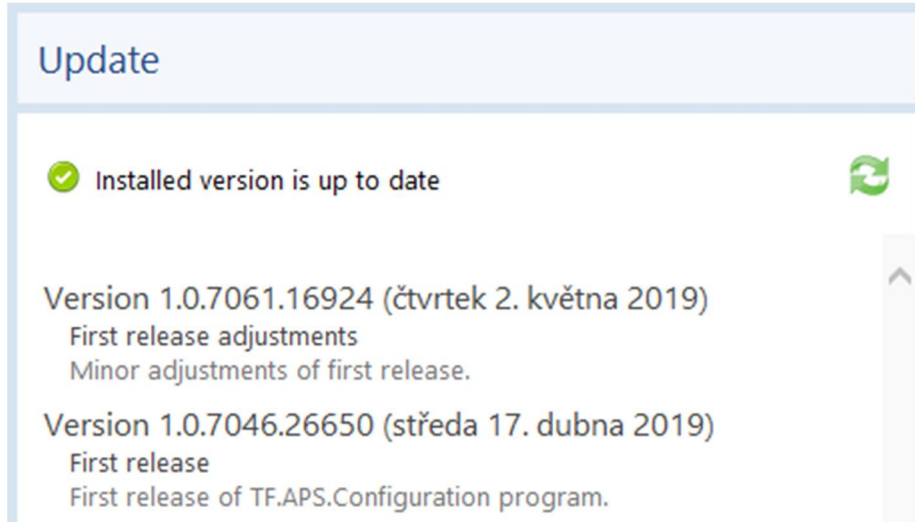
When using an USB converter, select the *Serial line* option and select a COM port, which is assigned to the converter (installing proper drivers may be required).

When using a TCP/IP converter, select the *Network line* option and enter the IP address and IP port of the converter. Default values (IP address 192.168.1.253 and IP port 10001 - valid for APSLAN converter) can be restored by pressing the button with anchor symbol.

When connection a USB reader, select the *USB reader* option and select a COM port, which is assigned to the reader.

4.2.3 Update

The **Update** panel contains resources for automatic search for a new version of the program (pic. 4.2.3.1).



Pic. 4.2.3.1: Update panel

The program performs an automatic search for new updates after its start. If a newer version is found, it is offered to be downloaded and installed. This action can be run at any time by pressing the button with “refresh” symbol.

After getting all information about the program versions the program displays a history of released versions with associated news for each release.

4.3 Help

The help panel is displayed after pressing the **Help** button located at the top menu bar (pic. 4.3.1).



Pic. 4.3.1: Help panel

The panel contains following options:

- **About program** – basic information about the program
- **Documentation** – links for selected documents and drivers

4.3.1 About program

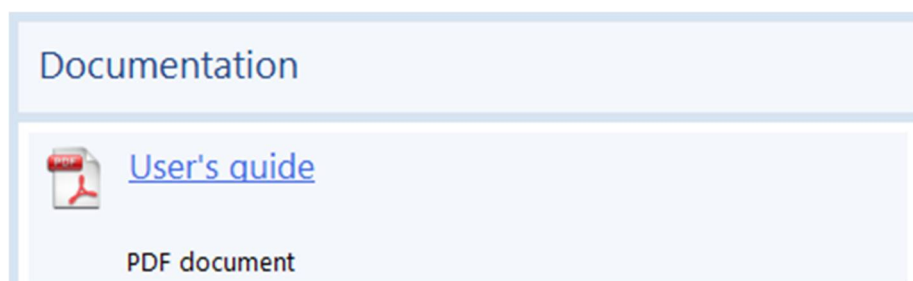
The *About program* panel shows the basic information about the program, like the program version and date of release (*pic. 4.3.1.1*).



Pic. 4.3.1.1: About program panel

4.3.2 Documentation

The *Documentation* offers an option to display selected documentation (*pic. 4.3.2.1*).

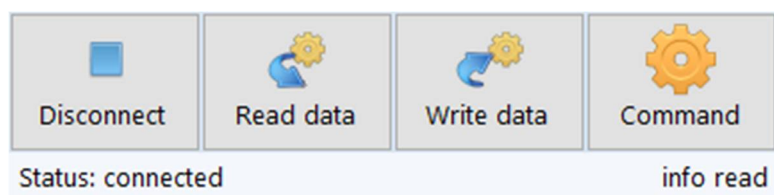


Pic. 4.3.2.1: Documentation panel

The document is opened after it is clicked.

4.4 Working with reader

The connection to the reader is controlled from a menu with buttons located at the top bar (*pic. 4.4.1*).



Pic. 4.4.1: Working with reader panel

First button (*Connect* / *Disconnect*) starts or ends the communication with the reader on selected communication line. The *Read data* button is used to read all used configurable properties from the reader. The *Write data* button saves all used configurable properties to the reader. The *Command* button offers following options in a submenu:

- *Use TFCFG file...* – displays a dialog, in which a TFCFG file can be selected to be uploaded to the reader. The file can contain e.g. a new FW, new licenses or private configuration data for the reader.
- *Recalibrate tamper* – Running the command starts a tamper recalibration process. The tamper is recalibrated with selected sensitivity level. Higher the sensitivity is, stricter the rules for tamper raising are.

The tamper recalibration process must be run only when the reader is in standard status (i.e. the tamper is not active)!

After the communication with reader is established, the identification data and other data are read from the reader. Those are displayed in the information panel in the right part of the program then (pic. 4.4.2).

Reader information

Serial number	not read
Device type	not read
Linceses	not read
Firmware version	not read
Bootloader version	not read
TFCFG validity index	not read
Type number	not read
Subtype number	not read
Design number	not read
HW version	not read
Firmware type	not read
Data status	data read 22.04.2021 17:34:45

Apply reader data to program data

Pic. 4.4.2: Reader information

After reading data from the reader the **Apply reader data to program data** button is enabled. After pressing the button all properties' values in the program are set to the values read from the reader.

Every relevant operation with the program and the reader is also stored in the Log in the right bottom part of the program (pic. 4.4.3).

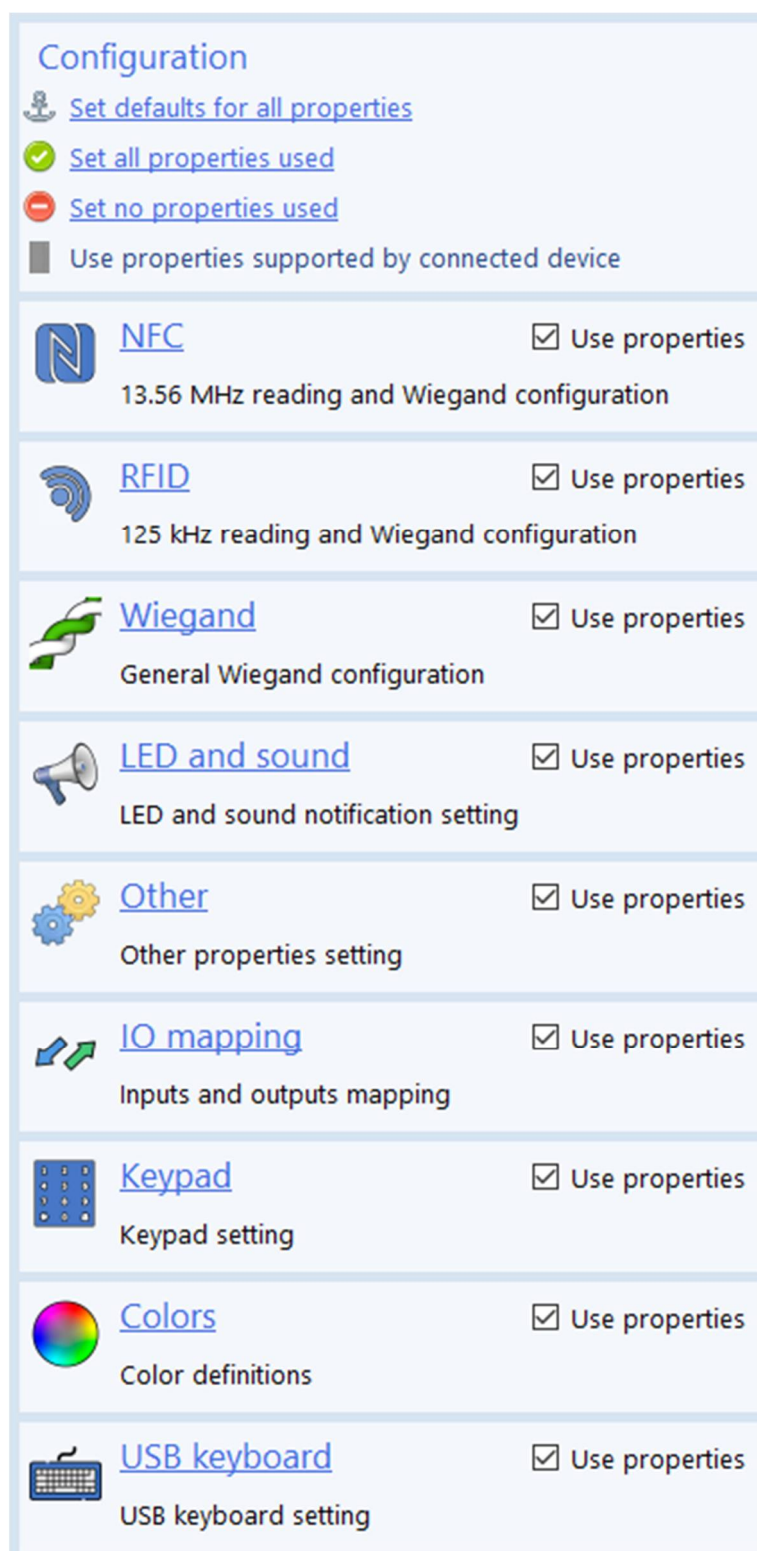
Log	
Date & time	Text
31.05.2019 13:53:53	Configuration read
31.05.2019 13:53:50	Reading configuration...
31.05.2019 13:40:43	Reader info read
31.05.2019 13:40:43	Connected
31.05.2019 13:40:42	Connecting to reader on 192.168.1.40:10001...
31.05.2019 11:20:40	Disconnected
31.05.2019 11:20:40	Disconnecting from reader...

Pic. 4.4.3: Log of operations with the reader and program

In the upper right corner of the program window there is an image symbolizing the current status of the reader connection. The icon is green in the moment, when the communication with the reader smooth; in other cases, the symbol is changed according to the type of the problem. When placing the mouse over the symbol, a help text with the description of the problem is displayed.

4.5 Configuration

Configuration of all configurable properties is done at the *Configuration* panel (pic. 4.5.1).



Pic. 4.5.1: Configuration panel

The panel contains several links for performing mass operations and a list of categories of configuration properties.

The triple of upper links enables to perform following mass operations:

- **Set defaults for all properties** – sets default values to all configuration properties of the program. If the reader is connected, it sets default values for the specific reader type; otherwise it sets general default values.
- **Set all properties used** – sets that all configuration properties will be used when writing/reading properties to/from the reader
- **Set no properties used** – sets that all configuration properties will not be used when writing/reading properties to/from the reader
- Use properties supported by connected device – sets that all properties supported by connected device are used, while the unsupported properties are not used when writing/reading properties to/from the reader

After clicking on selected category, it is selected and all properties from selected category are displayed. By clicking the **Use properties** checkbox, it is possible to change the usage of all properties in selected category.

4.5.1 Category of properties and individual properties

Individual categories contain a group of properties, which are configurable (pic. 4.5.1.1).

NFC		
NFC Enabled	Enabled	Use feature <input checked="" type="checkbox"/>
Enable 13.56MHz reading	Feature is enabled	
32 bit UID	Wiegand 32 bits	Use feature <input checked="" type="checkbox"/>
Define Wiegand output format for ID media with 32bit length of UID	Wiegand output 32 data bits (MSB)	
56 bit UID	Wiegand 56 bits	Use feature <input checked="" type="checkbox"/>
Define Wiegand output format for ID media with 56bit length of UID	Wiegand output 56 data bits (MSB)	
IMEI	Wiegand 56 bits reversed	Use feature <input checked="" type="checkbox"/>
Define Wiegand output format for TECHFASS Mobile ID	Wiegand output 56 data bits, data bytes reversed (LSB)	

Pic. 4.5.1.1: NFC category

Next to the header of the category there is a button with an anchor symbol, which can be pressed to set default values for all properties in the category.

Each property has its own button with anchor symbol, which sets the default value for the property itself only. Also, there is a checkbox, which sets, if the specific property will be used when writing/reading properties to/from the reader.

An important tool is a colored stripe in the left part of the property. This indicates the status of the property as a relation of the value in the program and value in the reader. The description of the status is displayed when you place the mouse over the stripe. The meaning is following:

- *No coloring* – reader not connected
- *Blue color* – the status of the property in the reader is not known
- *Black color* – the property is not supported for the specific reader type/FW version
- *Green color* – the value of the property in the reader matches the value in the program
- *Yellow color* – the value of the property in the reader does not match the value in the program
- *Red color* – selected value is not supported for the specific reader type/FW version

4.5.2 NFC category

This category contains the setting of properties for reading at 13,56 MHz frequency and the format of the Wiegand output for media read at this frequency.

- *NFC Enabled* – turns on/off reading at 13,56 MHz; this setting directly affects the 13,56 MHz part of the reader
- *32 bit UID* – definition of the Wiegand output format, which is used to send ID media with 32bit UID length (e.g. MIFARE Classic)
- *56 bit UID* – definition of the Wiegand output format, which is used to send ID media with 56bit UID length (e.g. MIFARE DESFire)
- *IMEI* – definition of the Wiegand output format, which is used to send ID media read from mobile application TF Mobile ID

4.5.3 RFID category

This category contains the setting of properties for reading at 125 kHz frequency and the format of the Wiegand output for media read at this frequency.

- *NFC Enabled* – turns on/off reading at 125 kHz; this setting directly affects the 125 kHz part of the reader
- *Wiegand format* – definition of the Wiegand output format, which is used to send ID media read at 125 kHz reader
- *EM Marin ID media* – enables/disables usage of EM Marin technology ID media
- *Jablotron ID media* – enables/disables usage of Jablotron technology ID media
- *Synchronization 125 kHz* – enables/disables sending proprietary Wiegand signal synchronization of a pair of 125 kHz readers to void mutual interference
- *EM: Swap bits in nibbles* – enables/disables altering read code (valid only for EM Marin media). Example: 000000010412D123 -> 000000080284B84C
- *EM: Swap bytes in 5byte code* – enables/disables altering read code (valid only for EM Marin media). Example: 000000010412D123 -> 00000023D1120401
- *EM: Swap nibbles in bytes* – enables/disables altering read code (valid only for EM Marin media). Example: 000000010412D123 -> 0000001040211D32

4.5.4 Wiegand category

This category contains the setting of general properties of Wiegand signal, which is sent by the reader. This setting requires expert knowledge, we recommend to keep the initial setting, if you are not fully sure, how the change would affect the reader function.

- *Wiegand period* – period of a single bit
- *Wiegand pulse width* – width of a single pulse
- *Synchronization – period* – synchronization period of 1 bit
- *Synchronization – pulse* – synchronization of pulse width

4.5.5 LED and sound category

This category contains the setting of LED signalization and acoustic signalization for various reader operating status.

- *Power supply – LED bar* – setting of color for signalization of default operating status (power supply signalization) on LED Bar – continuous shining
- *Tamper alarm – LED bar* – setting of color for signalization of tamper alarm on LED Bar – flashing
- *Tamper alarm – Beeper* – sets acoustic signalization of tamper alarm – repeated warning beeps
- *ID reading – LED bar* – setting of color for signalization of successful ID reading on LED Bar – single flash
- *Mobile ID reading – LED bar* – setting of color for signalization of NFC communication between the reader and the mobile phone using TF Mobile ID application
- *Reading ID – Beeper* – setting of acoustic signalization of successful ID reading on LED Bar – single beep
- *Beeper – Volume* – sets the level of volume of the beeper
- *LED Bar – Brightness* – sets the level of brightness for LED bar
- *Logo – Brightness* – sets the level of brightness for logo LEDs backlight
- *Low power mode LED Bar brightness* – light intensity of the LED bar in low power mode

4.5.6 “Other” category

This category contains setting of various properties.

- *Configuration cards* – enables/disables usage of configuration cards (these are the cards, that can be used within first 10 seconds after reader is started)
- *Card timeout* – defines timeout for repeated reading of the same ID
- *Behavior on tamper alarm* – defines the behavior of reader when tamper alarm occurs – on this occasion you can forbid some of the reader basic functions, such as cards reading and keypad functionality
- *Power saving mode timeout* – defines the timeout for reader to go to power saving mode (inactivity time)
- *Return to low power mode timeout* – defines the timeout for return to low power mode after waking up from low power mode; the setting is applied only in case the low power mode is driven by the input status

4.5.7 IO mapping category

This category contains the setting of reader reactions to bringing a specific signal on its input and sets up behavior of the reader output in reaction to specific operating status.

- *IN1 to signal* – sets the signalization for INPUT 1 = ON status
- *IN1 active level* – sets the active level for INPUT 1
- *IN2 to signal* – sets the signalization for INPUT 2 = ON status
- *IN2 active level* – sets the active level for INPUT 2
- *OUT1 function* – sets the function of OUTPUT 1
- *OUT1 active level* – sets the active level for OUTPUT 1

4.5.8 Keypad category

This category contains the setting of configuration properties related to the keypad of a reader.

- *Lock – LED Color* – setting of color for signalization of default operating status (power supply signalization) on lock LEDs backlight – continuous shining
- *Lock – Brightness* – sets the level of brightness for lock LEDs backlight
- *Keypad – brightness* – sets the level of brightness for keypad LEDs backlight
- *Keypad sound feedback* – enables/disables acoustic response of the reader when a key is pressed – short beep
- *Wiegand format* – definition of the Wiegand output format for keypad data

4.5.9 Colors category

This category contains the definition of colors, which can be used at RGB LEDs of the reader. Keep in mind, that the color rendering in the program may differ from the color rendering on the reader itself; therefore, a practical test at the reader itself is always recommended.

- *Red color* – default color #FF0000 
- *Green color* – default color #00FF00 
- *Blue color* – default color #0000FF 
- *Yellow color* – default color #FFFF00 
- *Cyan color* – default color #00FFFF 
- *Purple color* – default color #FF00FF 
- *Orange color* – default color #FFA500 
- *White color* – default color #FFFFFF 
- *Custom color #1* – default color: azure #007FFF 
- *Custom color #2* – default color: violet #9400D3 
- *Custom color #3* – default color: lime #E3FF00 
- *Custom color #4* – default color: brown #8B4513 

4.5.10 USB keyboard category

This category contains the setting of configurable properties related to the keyboard emulation of REM 191.USB reader.

- *Operating mode* – defines the general operating mode of the reader
- *Numbers to keyboard mapping* – defines method used to map number part of read IDs to keyboard
- *Letters to keyboard mapping* – defines method used to map letter part of read IDs to keyboard
- *Capitalization of letters* – defines if letters are sent in uppercase or lowercase
- *Caps lock detection* – defines if the reader should automatically detect the status of Caps Lock
- *Termination key* – defines if the reader should send a termination key after the code is sent