STid
Electronic Identification

ultrys

Designed in France
Made in France

www.stid.com

1 Sommaire

2 Acknowledgment

Welcome in the world of the identification!

You have just purchased Ultrys software; it will allow you to program configuration and user cards.

We thank you for your trust and hope that this solution developed by STid will be to your entire satisfaction.

We remain at your disposal for any question.

Don't hesitate to contact us on our web site www.stid.com for more information.

The STid team

3 Information

3.1 PC Requirements

- A PC with Windows98ME, 2000/XP, Vista or Windows 7 & 8 operating system
- An USB or RS232 free communication port
- 50 MB of free disk space

3.2 CD content

- Driver USB FTDI for Windows 95ME, 2000/XP, VISTA and Windows 7.
- Ultrys Version 2.x.x

3.3 Hardware required

- UHF 866-915 MHZ STid encoder
  - ✓ USB (Ref. STR-W45-E-U04-5AA-1)

  Or
  - ✓ RS232 (Ref. STR-W42-E-U04-5AA-1)
- USB or RS232 cable

3.4 Installation

Insert Ultrys ® CD-ROM in the CD drive of your PC.
Wait for the autorun installation.
Follow the instructions on the screen.

4 Overview

The software is divided into two distinct parts allowing the configuration of UHF STid readers (variant E only) and the creation of ISO18000-6C / EPC1GEN2 user tags.

4.1 Startup

4.1.1 Starting SeCard

When starting the software, a window appears for entering the login data.

There are several connection identifiers (Access level) managing different permissions within the software.

Access level	*Default Password*
Administrator	*STidA*
User	*STidU*

✓ « *Administrator* » Mode

This mode allows you to configure the software and use it without any restrictions.

✓ « *User* » Mode

This mode only allows user badge creation. All parameters are defined in 'Administrator' mode.

Warning

Settings file used in « User » mode is the LAST file loaded into Ultrys (« User » mode doesn't allow to load a settings file, so you have to load the file you want to use in « User » mode when you are in « Administrator).

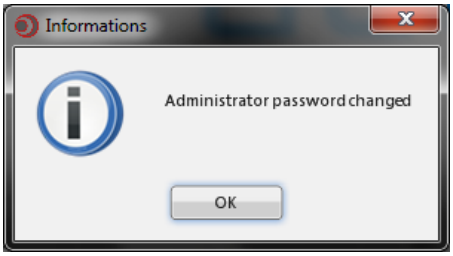
4.1.2 *Changing Passwords*

To change the Passwords, it is necessary to be logged as the Administrator.

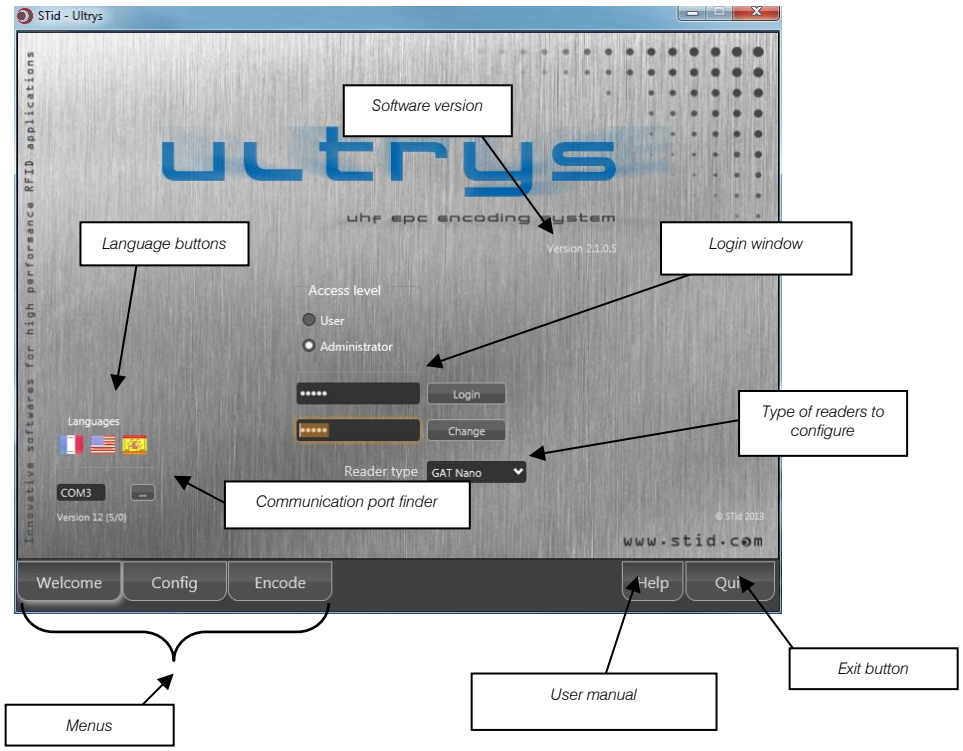
Choose the access level that you want to change.

Fill the field "*Change*" with the new password.

Click on the button "*Change*" to register the complete modification.



4.2 Home menu



4.3 Communication settings

The communication between Ultrys software and the encoder is done by serial link. The choice of the communication port is made by clicking on the button " ... ". If a serial port is connected to the encoder, so it will appear in the field "*Port* COM2 ". The baudrate is fixed at 115200 bauds.
Furthermore, the communication port detection will display the firmware version of the reader as:

Version X (A/B)
X = Firmware version
A = Day
B = Month

Caution

Please, install the USB driver before using the encoder.

5 Application settings

5.1 « *Configuration Tag* » definition

Ultrys® has a module for creating the configuration tags whose allow the settings of the STid UHF 866-915 MHZ readers:

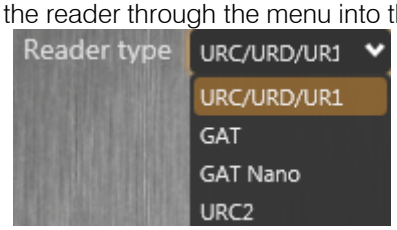
UR1 *URC* *URD* *GAT* *GAN* *URC2*	*- Rx1 -*	*- E -*	*- U04 -*	*- xx - 3*
UR1 *URC* *URD* *GAT* *GAN* *URC2*	*- Rx3 -*	*- E -*	*- U04 -*	*- xx - 3*

RS485 (Customizable protocol)

UR1 *URC* *URD* *GAT* *GAN* *URC2*	*- Rx2 -*	*- E -*	*- U04 -*	*- xx - 3*
UR1 *URC* *URD* *GAT*	*- Rx5-*	*- E -*	*- U04 -*	*- xx - 3*

USB (Customizable protocol)

It is necessary to define the type of the reader through the menu into the "*Welcome*" menu.

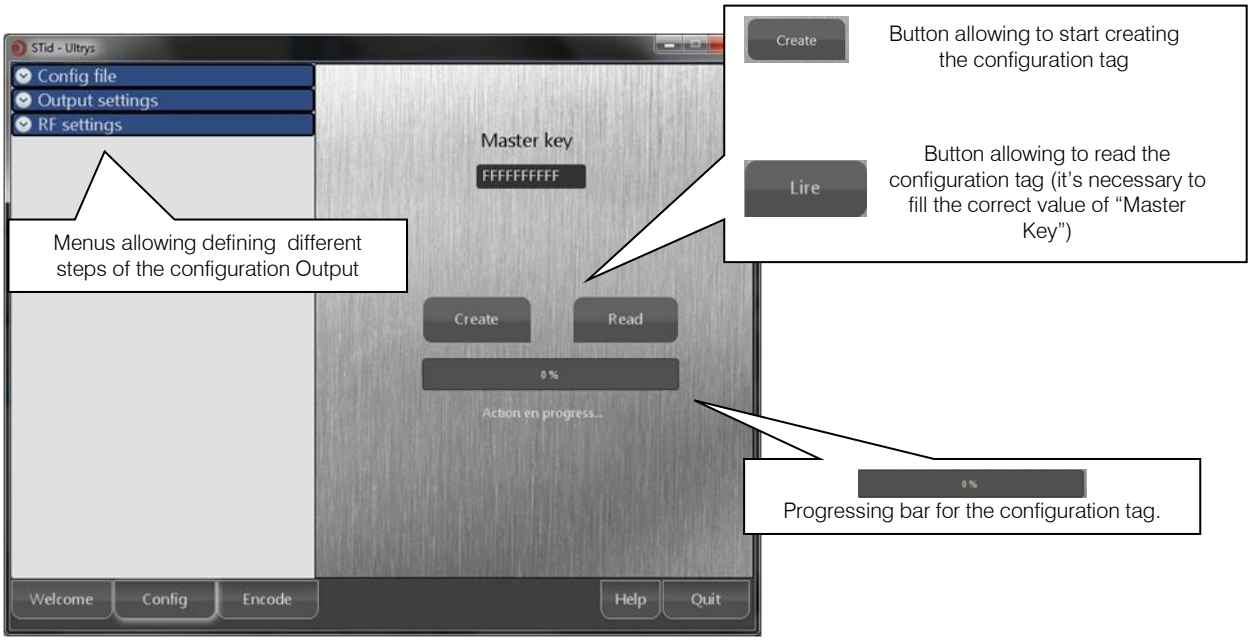


Caution

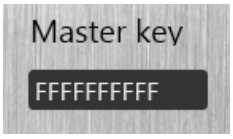
Configuration tags are created with STid's tags reference ETA-W42M.

5.2 Configuration window

This menu can be reached via the button « *Config* ».



5.2.1 *Protection of the configuration: « Master Key »*



URC/URD/UR1/URC2

GAT/GAT NANO

Configurable readers are initially supplied with blank configuration. These can be configured by any "Master Key".

The size of this key is 5 bytes or 10 hexadecimal characters.

After the initial setup and in order to reconfigure the reader, it will be necessary to show it a configuration tag that had a "Master Key" identical to that recorded by the reader.

Caution

This key is important and should definitely be known to the administrator. It protects the data from the tag and allows changes to the configuration of readers.

If you lose this key, you won't be able to reconfigure the reader again and the reader must be reset at the factory.

It is possible to change the master key on the GAT reader only. It will be necessary to know the current key in order to do that.

5.2.2 Configuration file

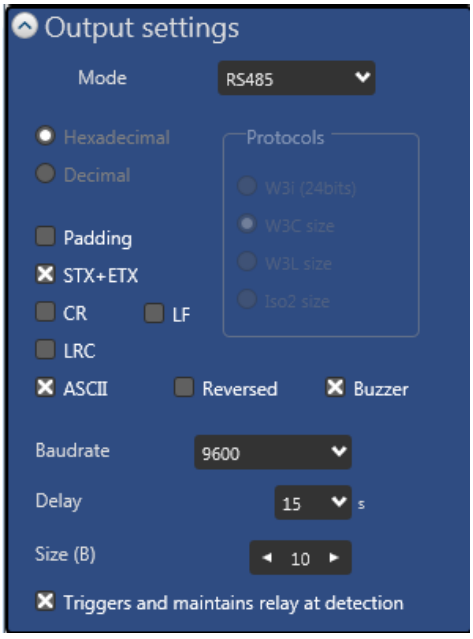
The "Configuration File" allows saving and loading configuration files with all settings parameters: keys, formats, application configuration etc…

It is available in the tab "Configure" in Administrator mode

Note:

- ✓ The extension name of those file is .ese.
- ✓ The last file (.eSe) saved configuration is automatically loaded at start-up Ultrys. If the software does not find the path of the file, a new configuration file will be created with the default settings.
- ✓ Use the « *Load* » button to load the .ese file.
- ✓ These files are encrypted, unreadable, and are useless without Ultrys.

5.2.3 Output settings configuration



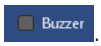
This window lists the parameters of the communication protocols (RS232, RS485, Wiegand or Clock & Data).

It is possible to define the format of the output: RS232, RS485 or TTL.
Some options are common to these 3 choices such as:

- ✓ The filtering time for the same ID 6, 9, 12 or 15 seconds 

.
- ✓ Id size sent by the reader (in byte) 

.
- ✓ The way of reading (normal or reversed) 

.
- ✓ Activate or deactivate the buzzer for each reading 

.
- ✓ Triggers and maintains relay at detection of tag. 

Configuration of RS232 & RS485 protocols

To configure a serial protocol (RS232 or RS485), please choose in the menu « *Mode* » RS232 or RS485 

.

It is possible to configure the structure of the frame with the options set out below:

- ✓ Decimal or hexadecimal. 

- ✓ Padding : Add on the frame leading zeros. If this option is not activated, the leading zeros won't be sent
- ✓ STX+ETX : Add STX (0x02) and ETX (0x03) in the frame.
- ✓ CR : Option Retour chariot (0x0D)
- ✓ LF : Option Line feed (0x0A).
- ✓ LRC : Checksum byte by XORing of all previously characters without the STX.
- ✓ ASCII : If this option is activated, the Data will be sent in ASCII mode

Example:

1 byte	*X bytes **	*1 byte*	*1 byte*	*1 byte*	*1 byte*
STX	*Data*	*LRC*	*0x0D*	*0x0A*	*ETX*

* *Doubled if the ASCII option is activated.*

Configuration of TTL protocols

This window contains the different TTL protocols:

- ✓ W3i – Hexadecimal 26 bits Wiegand.
- ✓ Iso2 size – Decimal Clock&Data. Up to7 bytes.
- ✓ W3L size – Custom hexadecimal Wiegand.
- ✓ W3C size – Custom hexadecimal Wiegand+ 4 bits LRC

STid protocols are defined as shown below:

- ✓ ISO 2H (32 bits) – Clock&Data decimal 10 characters (4 bytes)
- ✓ ISO 2B (40 bits) – Clock&Data decimal 13 characters (5 bytes)
- ✓ W3Ca (32 bits) – Wiegand 32 bits hexadecimal + 4 bits LRC (4 bytes)
- ✓ W3Cb (40 bits) – Wiegand 40 bits hexadecimal + 4 bits LRC (5 bytes)
- ✓ W3La (32 bits) – Wiegand 32 bits hexadecimal (4 bytes)
- ✓ W3Lb (40 bits) – Wiegand 40 bits hexadecimal (5 bytes)

5.2.4 Configuration for URC/URD/UR1

5.2.4.1 Configuration of antennas / lanes

For URD-Rxx-E-U04-xx readers, the number of antennas / lanes can be changed as shown below:

Number of antennas / Number of lanes	1 n°0	2 n°0 n°1	3 n°0 n°1 n°2	4 n°0 n°1 n°2 n°3
1	x	x	x	x
2		x		x
3			x	
4				x

With: n°0 = antenna number 0
n°1 = antenna number 1
n°2 = antenna number 2
n°3 = antenna number 3

Attention

The number of antennas connected has to be the same than the number of antennas configured.

5.2.4.2 Power settings

- Defaults & maximum values for URC readers:
  - ETSI: the value is indicated on a label stuck to the URC UHF module.

  - FCC: 30 dBm

- Defaults & maximum values for URD readers are: ETSI 31 dBm
  FCC 30.5 dBm

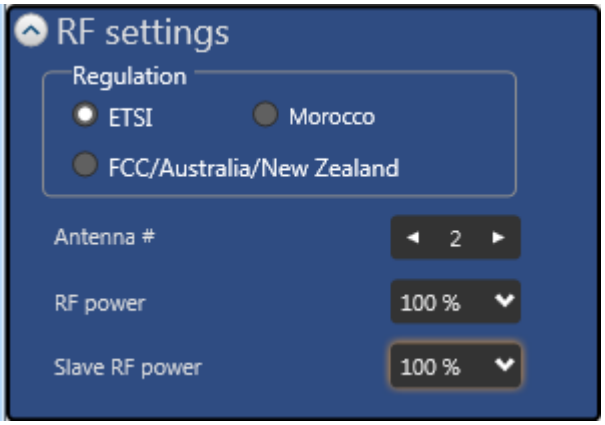
Note: A decrease of 3 dBm represents a 50% power drop.

Warning

These values represent the default and maximum values of the readers.
It is possible to overtake the current norm if you do not respect those values.
It is important to respect these ranges of values for each product and regulation.
ETSI 302-208 V1.4.1 and FCC Part 15.
This tool has to be only used to decrease the power or to reset it.
In case of doubt, please contact STid company.

5.2.5 Configuration for GAT reader

5.2.5.1 RF settings



Regulation

The regulation depends on the country of installation (**ETSI, Morocco** or **FCC/Australia/New Zealand**) (we invite you to contact the autority in charge of this part in your country in order to know the regulation to used):

Example:

France ➔ ETSI
Mexico ➔ FCC

Configuration of the number of antennas and power

The GAT reader has one main bloc for the mono bloc version and two blocs for the gate version. Each bloc is composed by two antennas.

That is represented into the field « *Antenna #* » by a multiple of two.

2 for the GAT-Rxx-E (mono bloc) version and 4 for the GAT-Rxx-F (gate) version.

It is possible to adjust the power of each antenna by step of 25% (100, 75, 50, 25).

Note: This setting is not available for the regulation "Morocco", the power is limited by the regulations of the country.

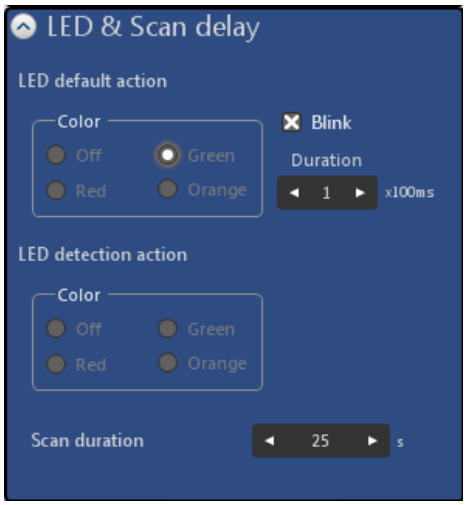
RF power representing the main bloc (which contains the electronic part of the reader) and Slave RF power representing the second bloc (only in gate version GAT-Rxx-F).

5.2.5.2 Configuration of the LED and scan duration

The led status can be defined with the window « *LED & Scan delay* ».

Action by default (without reading):

- ✓ Off
- ✓ Green
- ✓ Red
- ✓ Orange
- ✓ Blinking by step of 100 ms (max 3,1s).



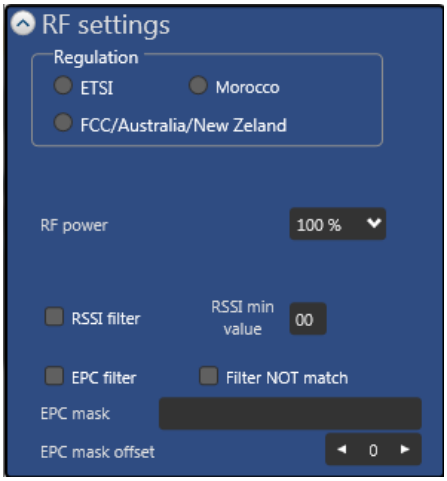
Action for a reading:

- ✓ Off
- ✓ Green
- ✓ Red
- ✓ Orange

It is also possible to adjust the delay for a scan (reading) by step of 1 second (max 25s).

5.2.6 Configuration for GAT Nano Reader

5.2.6.1 RF settings



Regulation

The regulation depends on the country of installation (**ETSI, Morocco** or **FCC/Australia/New Zealand**) (we invite you to contact the autority in charge of this part in your country in order to know the regulation to used):

Example:

France ➔ ETSI
Mexico ➔ FCC

Power

It is possible to adjust the power of antenna by step of 25% (100, 75, 50, 25).

RSSI Filter and RSSI min value

Enables RSSI filtering identifiers: only tags with a higher RSSI or equal to the specified hexadecimal value in the "RSSI min value" field will transmitted to the user. This will ignore tags that are present near the antenna and you do not want to read.

RSSI (Received Signal Strenght Indication) is a measure of the power in reception of the response of the tag. The value returned by the reader is proportional to the amplitude of the reception signal. If the value is zero, the receiver receives no signal, if it is high, the signal is maximum.

This value should be determined based on the antenna environment and tags used, a prior test phase is therefore necessary.
The limit values are: min 0x30 &max 0x80. The usual values are: min 0x40 & max 0x60.

EPC filter, Filter NOT match, EPC mask and EPC mask offset

EPC filter activate + *Filter NOT match* deactivate : Ascent tags corresponding to the mask of the mask area *EPC mask*

EPC filter activate + *Filter NOT match* activate: Ascent tags different to the mask of the mask area *EPC mask*

Example:
Code EPC Tag 1: AAAAABCD0000000000000001

Code EPC Tag 2: AA02ABCD0000000000000002

Code EPC Tag 3: AA02ABCD0000000000000003

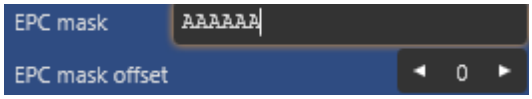
Code EPC Tag 4: AA02FFFF0000000000000003

1- *EPC mask* = AA AA and *EPC mask offset* = 0

Tag 1: AAAA ABCD0000000000000001
Tag 2: AA02 ABCD0000000000000002
Tag 3: AA02 ABCD0000000000000003
Tag 4: AA02 FFFF0000000000000003

Only tag 1 is transmitted.

2- *EPC mask* = AA AA AA and *EPC mask offset* = 0



Tag 1: AAAA ABCD0000000000000001
Tag 2: AA02 ABCD0000000000000002
Tag 3: AA02 ABCD0000000000000003
Tag 4: AA02 FFFF0000000000000003

No tag is transmitted.

3- *EPC mask* = 01 and *EPC mask offset* = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 01
Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02
Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03
Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue, the filter is done on byte 12.
Only tag 1 is transmitted.

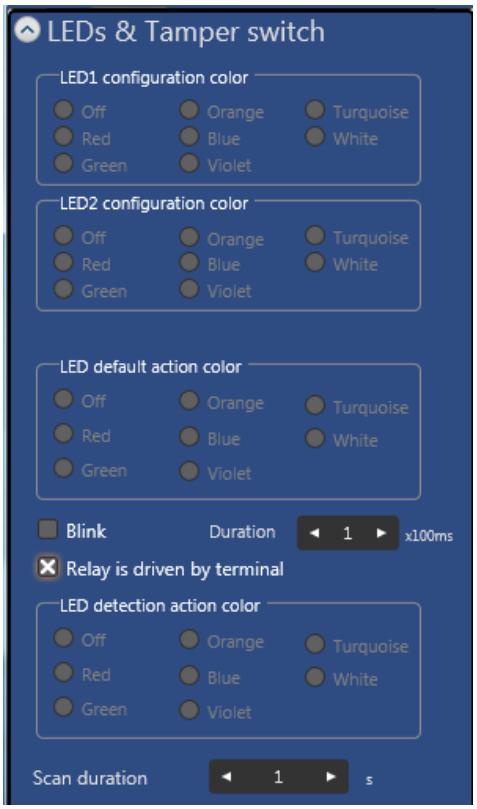
4- *EPC mask* = AB and *EPC mask offset* = 2

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 01
Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02
Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03
Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Tags 1, 2 and 3 are transmitted.

5.2.6.2 LEDs & Tamper switch

LEDs configuration



Led action can be defined with box "LEDs & Tamper Switch"

Led1 and Led2 lanes control two colors from the following seven (default Led1: red, Led2: green):

- ✓ Off
- ✓ Red
- ✓ Green
- ✓ Orange
- ✓ Blue
- ✓ Violet
- ✓ Turquoise
- ✓ White

It's possible to define default action color (within reading):

- ✓ Off
- ✓ Red
- ✓ Green
- ✓ Orange
- ✓ Blue
- ✓ Violet
- ✓ Turquoise
- ✓ White

Note:

- ✓ If Default Color = Color control: Led is Off
- ✓ If Default Color ≠ Color control: Color Led is Color Control.
- ✓ If Led1 and Led2 are activated together, Led take the color defined by two defined colors:
  Red + Green = Orange; Green + Blue = Turquoise; Blue + Red = Violet;
  White = Orange + Blue = Turquoise + Red = Violet + Green = Orange + Turquoise
  = Turquoise + Violet = Violet + Orange
- ✓ Commands Led1 and Led2 are higher priority than other Led color defined for default and action badge.
  Led for tamper switch is a higher priority than other Led.

It's possible to adjust the blink by step of 100ms (max 1.6s)

The duration of scans (reading) can be adjusted in steps of one second (max 25s).

Relay on line Led2

By default, the relay is activated for each reading identifier.

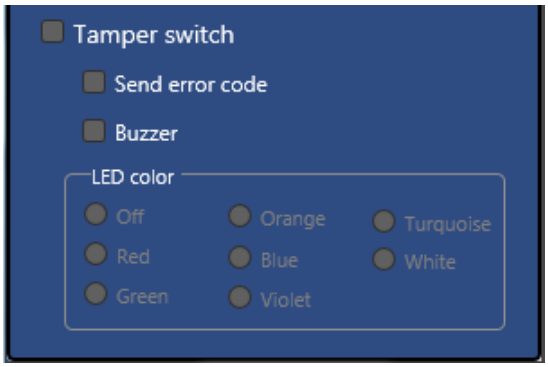
By selecting 

the relay is controlled by line LED2 (independently of the color configured for this entry).

Note: If 

option was activated, the relay cannot be driven by the terminal.

Tamper Switch



If the cover of Gat Nano is removed from the control board, the reader can report it by one or more action:

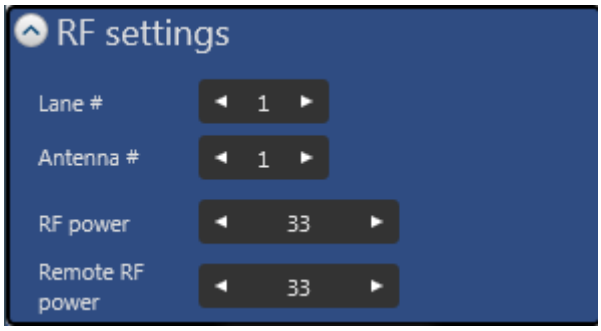
- ✓ Send error code: 0xAA code (1 byte) is sent every two seconds long as the tearing is effective.
- ✓ Buzzer: the buzzer is activated long as the tearing is effective.
- ✓ LED: Led is turned on with predefined color long as the tearing is effective (high priority).

Note:

To reduce the influence of rebounds on the tamper switch, actions are executed after at least 400ms consecutive tearing.

5.2.7 *Configuration for URC2 Reader*

Number of antennas / Number of lanes	1 n°0	2 n°0 n°1
1	x	x
2		x



Power setting:

ETSI :

- RF Power for integrated antenna: the value is indicated on a label stuck to the URC UHF module.

- Remote RF power: the default and max value is 31 dBm

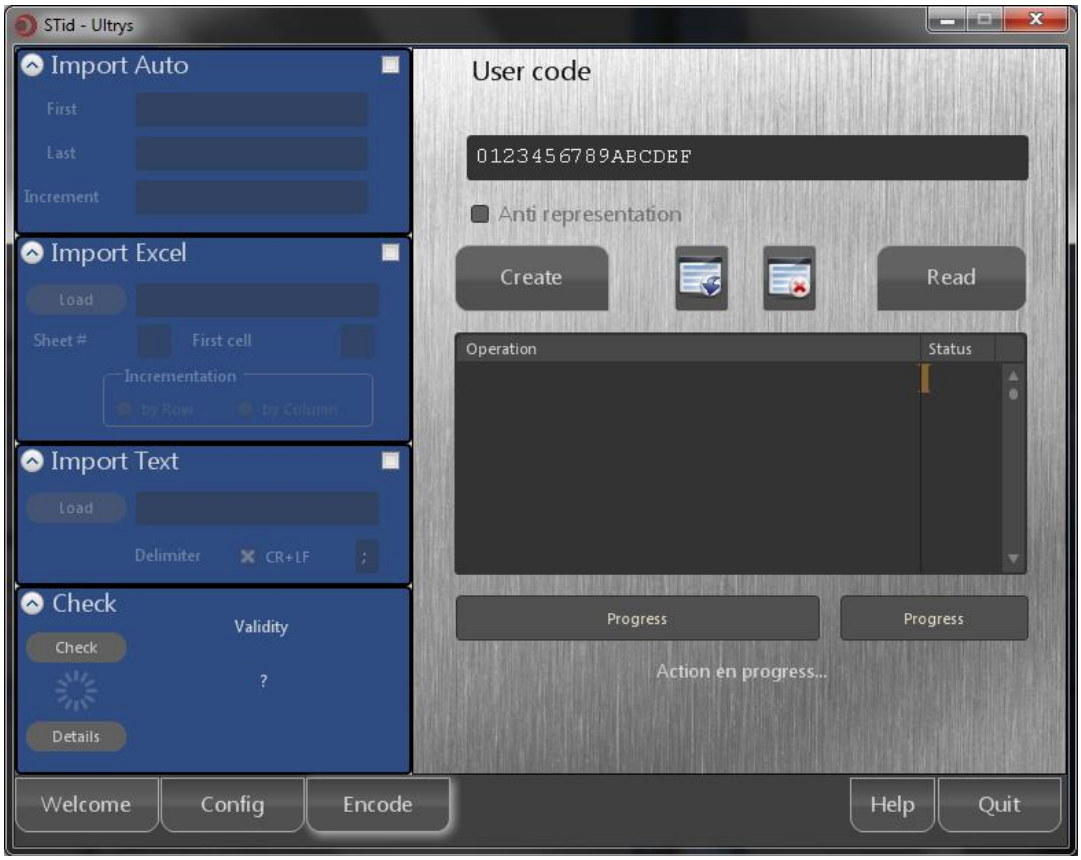
FCC :

- RF Power for integrated antenna: default and max value is 30 dBm
- Remote RF power: the default and max value is 30.5 dBm

Note: A decrease of 3 dBm represents a 50% power drop.

5.3 Encoding user cards

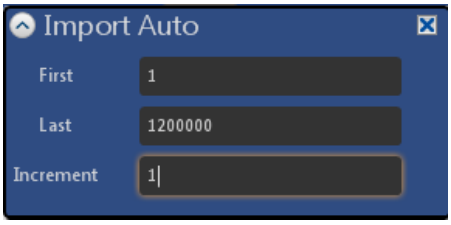
Ultrys® has a module to encode user IDs (available in the menu « *Encode* »). The encoding is made according the settings defined in the menu *"Config").* The encoding concerns only the EPC part of the tag.



5.3.1 Methods to input codes

It is possible to enter the private code in four ways (described below). ID size is constrained by the protocol defined in the menu « *Config* ». If it is not respected in the input fields, then the software will complete with « 0 » (by default MSB).

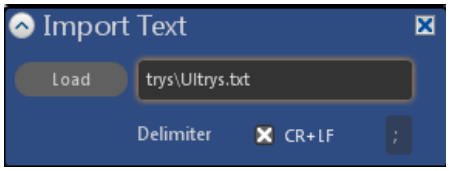
5.3.1.1 Automatic list generator

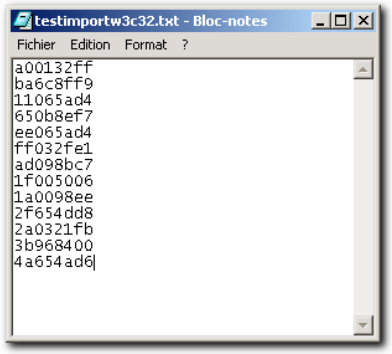


Fill in each corresponding frame, the beginning, the end and the increment to generate the list of user IDs to encode.

5.3.1.2 *Text files import*

This mode allows you to import lists in Text format to be used for programming the user badge.





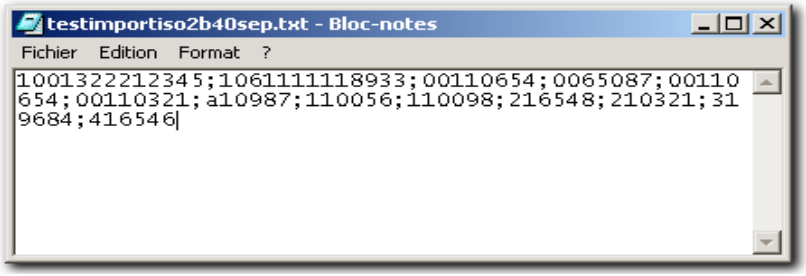
Example: the following Text file allows you to program user IDs using W3CA format.

Text files import parameters:

File name = testimport.txt
Separator: CR/LF

The operator will encode all user code found in file (ONE code par line, from a00132ff to 4a654ad6).

Using a ";" as the separator enables as well the following file format for a Iso2b 40bits 13 char. Decimal.



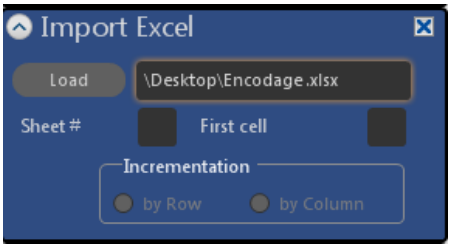
Note :

- ✓ Ultrys® will add some « 0 » (LSB) if size is less than protocol size.

Warning

The text import is not importing the values if:
- With the separator CR/LF: intermediate empty lines.
- With another separator : multiple separators like i.e. 12313;12385485;;;5646;;12;041

5.3.1.3 *Excel files import*



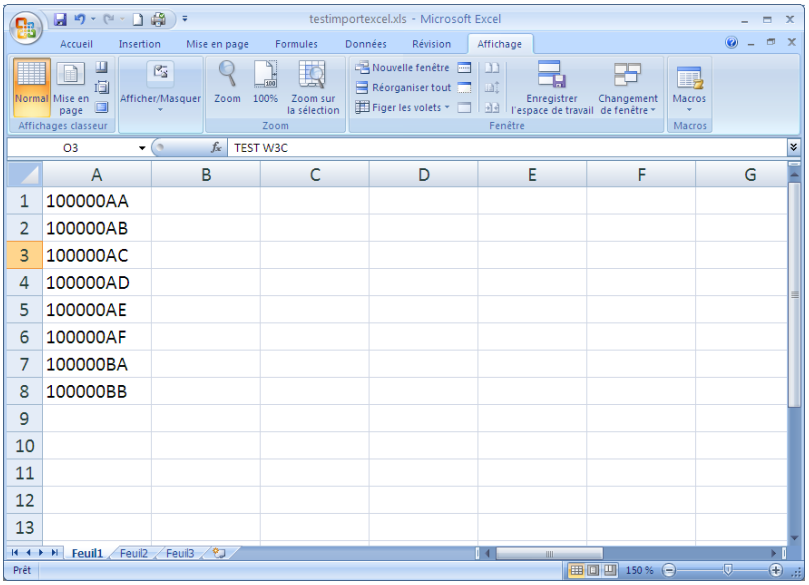
This mode allows you to import lists in Excel format to be used for programming the user badge.

Example: the following Excel file allows the encoding of user ID with W3CA format.

Excel import parameters:

File name: testimportexcel.xls
Sheet nb: 1
First cell nb: A1
Incrementation by Row

The operator will program all user codes found in column A (from 100000AA to 100000BB)



Note:

- ✓ In Wiegand 3i protocol, le company code and the card code must be separated with a space, such data being considered as a text string by Excel.
- ✓ To use Excel import, Microsoft© Excel must be installed.

Warning

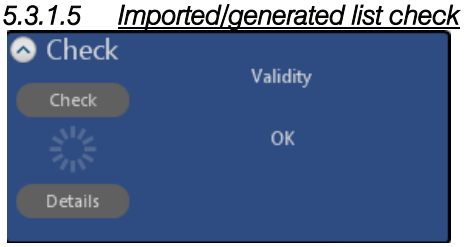
Import from Excel is supporting only continuous list. If the user has inserted empty cells, it will cause Ultrys® to stop the programming.

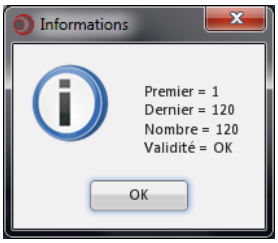
5.3.1.4 *Free user code input*

It is simply necessary to enter the user code to be programmed in the field suggested by the software.

The input field has a "mask" according to the data format.
This input method is available in the menu "*Encode*".

5.3.1.5 *Imported/generated list check*





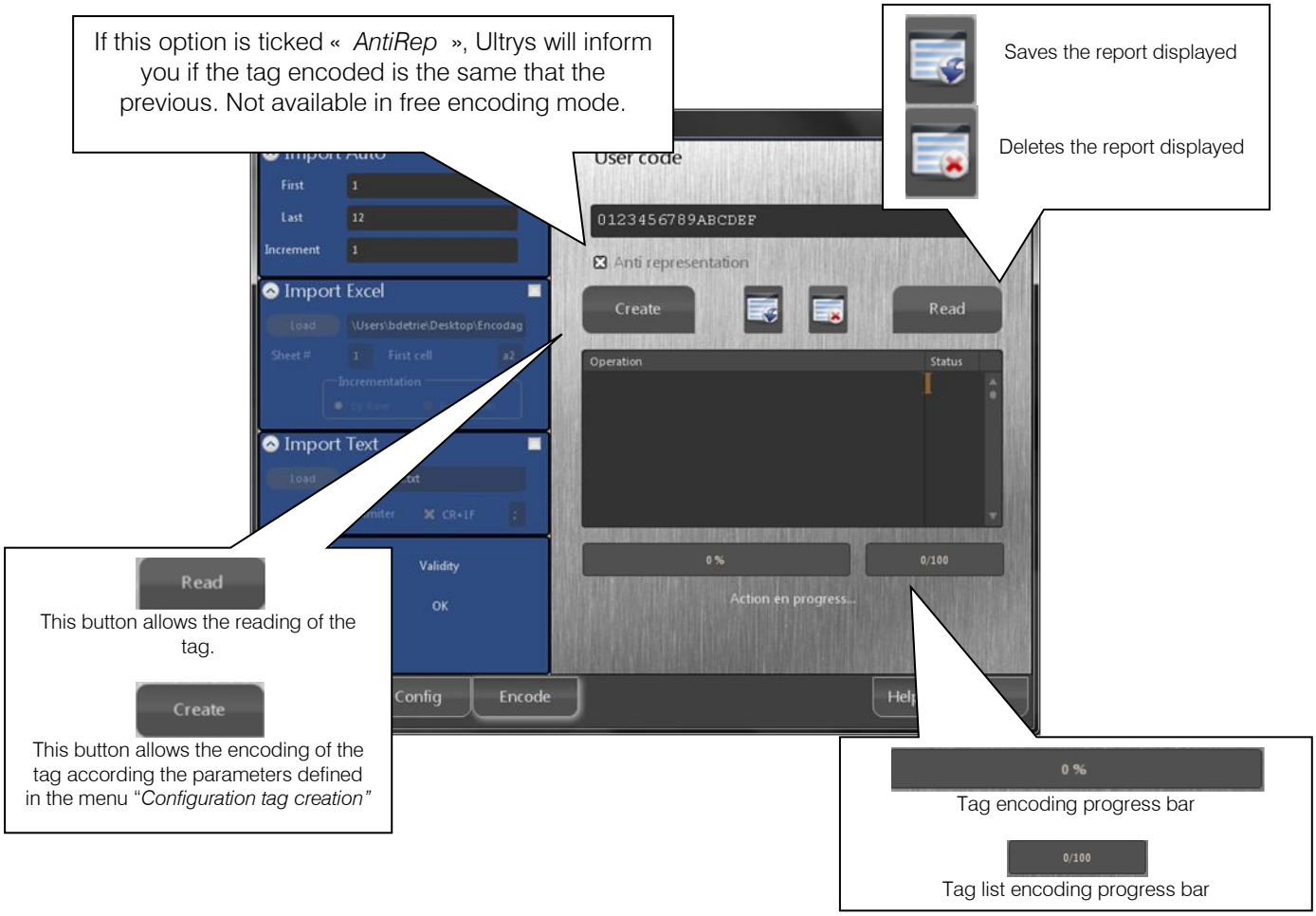
Click on the "*Check*"& "Details" buttons to check the validity of the code to program. Ultrys® checks the first, the last and the increment values to encode.

Note:

- ✓ The software will only verify that the first and last values of the Text and Excel files are corrects. This function does not check the maximum and/or minimums.

5.3.2 *Encoding and reading user codes*

Once software parameters set and user codes to be programmed are determined, user code can be programmed by the user.



6 Glossary

6.1 Lexique

- ✓ **Master Key:** Protection key of the reader.
- ✓ **Encoding:** EPC User code writing.

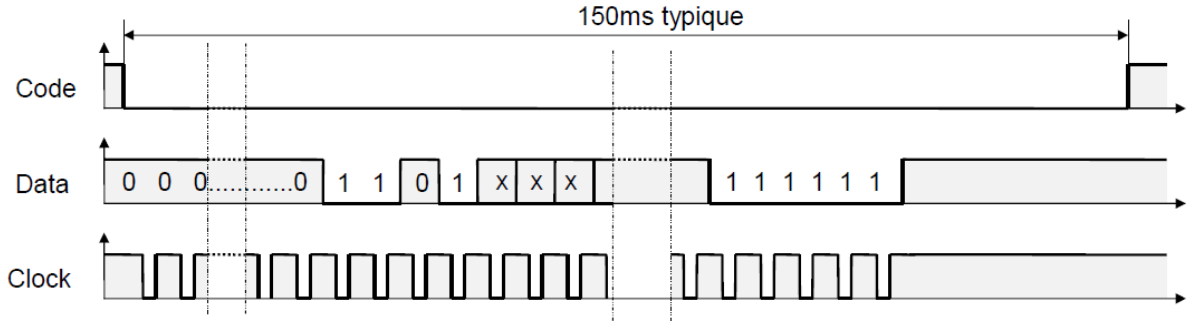
6.2 Configuring of the reader

It is necessary to reset the reader (switch off / switch on) and wait the end of the initialization (12 seconds indicated by the activation of the green LED(s) on the reader or 2 seconds indicated by the activation of the white Led for the Gat Nano).
At the end of the initialization, the will wait a configuration tag on the antenna 0 for 4 seconds (indicated by the blinking of the green LED(s) on the reader or orange for Gat Nano).

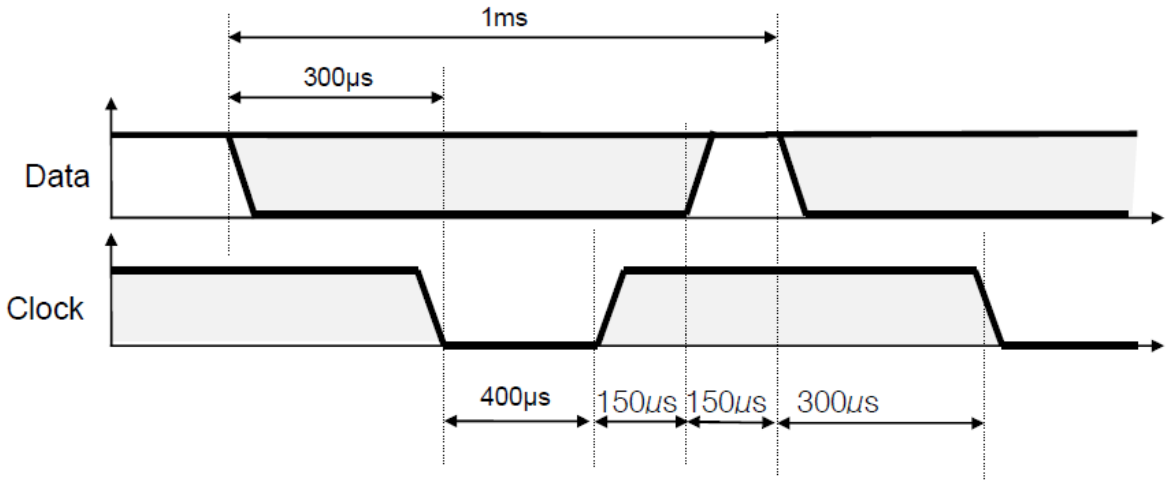
6.3 Communication protocols

6.3.1 ISO2 Clock&Data protocol

Chronograms



Clock details



Message structure

Leading zeroes	*Start Sentinel*	*Datas*	*End Sentinel*	*LRC*	*Trailing zeros*

Message description

The frame is made of a first series of 16 zeros followed by synchronization characters of 5 bits (4 bits, LSB first, plus 1 parity bit). It ends the frame with trailing zeros without a clock. The message consists of the following:

Start Sentinel : 1 character 1011b (0x0B) – parity bit 0. Transmission 1101 0
Data : According to ID type : 13 or 10 decimal characters
End Sentinel : 1 character 1111b (0x0F) - parity bit 1. Transmission 1111 1
LRC : 1 control character , which is the « XOR » of all characters.

6.3.1.1 ISO 2B

Variant	Decoding	Full frame of 112 bits	Values
2B	*Decimal (BCD)*	*13 characters*	*0 to 9*

Reading an ID of 5 bytes (40 bits) and convert to decimal.

Example:

For a hexadecimal user code of « 0x187E775A7F », the output code will be: « *0105200966271* ».

Frame sent by reader will be:

000...	1101 0	0000 1	1000 0	0000 1	1010 1	. . . .	0110 1	0100 0	1110 0	1000 0	1111 1	1111 1	000...
	B	*0*	*1*	*0*	*5*	*2 0 09 6*	*6*	*2*	*7*	*1*	*F*	*F*	
Zeros	*S.S*	*Char.1*	*Char.2*	*Char.3*	*Char.4*	*Char ….*	*Char.10*	*Char.11*	*Char.12*	*Char.13*	*E.S*	*LRC*	*Zeros*

6.3.1.2 ISO 2H

Variant	Decoding	Full frame of 97 bits	Values
2H	*Decimal (BCD)*	*10 characters*	*0 to 9*

Reading of 4 bytes (32 bits) ID and conversion to decimal.

Example:

For a hexadecimal user code of « 0x06432F1F», the output code will be: « *0105066271* ».

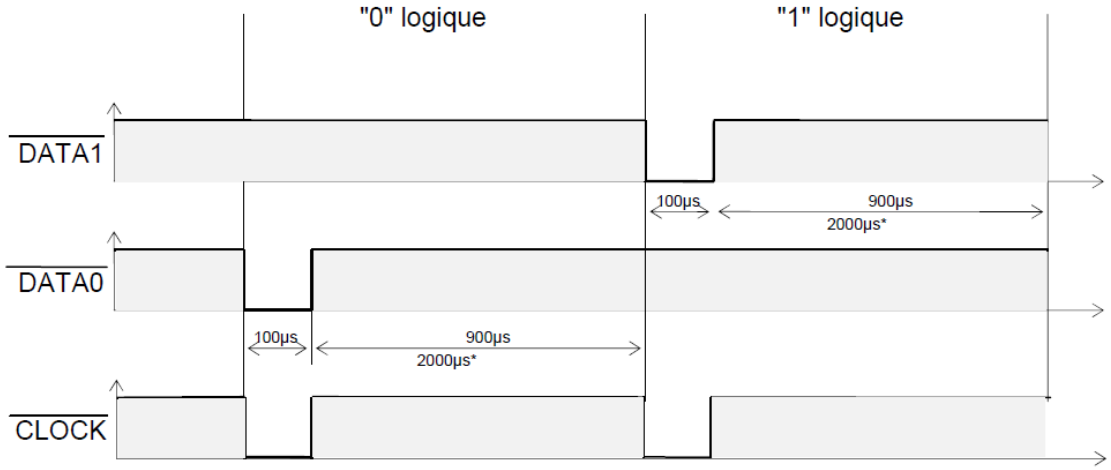
Frame sent by reader will be:

000...	1101 0	0000 1	1000 0	0000 1	1010 1	. . . .	0110 1	0100 0	1110 0	1000 0	1111 1	0010 1	000...
	B	*0*	*1*	*0*	*5*	*0 6*	*6*	*2*	*7*	*1*	*F*	*4*	
Zeros	*S.S*	*Char .1*	*Char .2*	*Char .3*	*Char .4*	*Char ….*	*Char .7*	*Char .8*	*Char .9*	*Char .10*	*E.S*	*LRC*	*Zeros*

In the case of 5 bytes (40 bits) ID, reader will truncate the MSB byte (8 bits) before decimal conversion.

6.3.2 Wiegand protocol

Chronograms



* = variant 3i timings

6.3.2.1 Wiegand 3CA

Message structure

Bit 1 ... Bit 36	Bit 37... Bit 40
Data « MSB first »	*LRC*

Message description

The frame consists of 40 bits as follows:

- **Data** : *8 hexadecimal characters « MSB first » (32 bits)*
- **LRC** : *1 control char , all characters « XORed »*

For the hexadecimal code « *0x001950C3* », the frame sent will be:

0000	0000	0001	1001	0101	0000	1100	0011	0010
0	*0*	*1*	*9*	*5*	*0*	*C*	*3*	*2*
Char.1	*Char.2*	*Char.3*	*Char.4*	*Char.5*	*Char.6*	*Char.7*	*Char.8*	*LRC*

In the case of 5 bytes (40 bits) ID, reader will truncate the MSB byte (8 bits) before decimal conversion.

6.3.2.2 Wiegand 3CB

Message structure

Bit 1 ... Bit 40	Bit 41... Bit 44
Data « MSB first »	*LRC*

Message description

The frame consists of 44 bits as follows

- **Data**: 10 *hexadecimal characters « MSB first »*
- **LRC** : *1 control char , all characters « XORed»*

For the hexadecimal code « *0x01001950C3* », frame sent will be :

0000	0001	0000	0000	0001	1001	0101	0000	1100	0011	0011
0	*1*	*0*	*0*	*1*	*9*	*5*	*0*	*C*	*3*	*3*
Char.1	*Char.2*	*Char.3*	*Char.4*	*Char.5*	*Char.6*	*Char.7*	*Char.8*	*Char.9*	*Char.10*	*LRC*

6.3.2.3 Wiegand 3LA

Same as « *Wiegand 3CA* » WITHOUT LRC.

6.3.2.4 Wiegand 3LB

Same as « *Wiegand 3CB* » WITHOUT LRC.

6.3.2.5 Wiegand 3i

Variant	Decoding	24 bits data	Values
3i	*Hexadecimal*	*6 characters*	*0 to F*

Message structure

Bit 1	Bit 2 ... Bit 25	Bit 26
Even parity from bit 2 to bit 13	*Data (24 bits)*	*Odd parity from bit 4 to bit 25*

Message description

The frame consists of 26 bits as follows:

- First parity : *1 bit even parity of next 12 bit*
- Data : *6 hexadecimal characters « MSB first »*
- Last parity : *1 bit odd parity of previous 12 bits*

For the hexadecimal code « *0x0FC350* », frame sent will be:

0	0000	1111	1100	0011	0101	0000	1
	0	*F*	*C*	*3*	*5*	*0*	
Parity	*Char.1*	*Char.2*	*Char.3*	*Char.4*	*Char.5*	*Char.6*	*Parity*

Note :

- ✓ A site code is generally associated with the third octet (byte [2]). In the example above, it is 0x0F or 15 in decimal (up to 255 decimal - 0xFF in hexadecimal).
- ✓ The card code is generally associated with the first and second byte (byte [1] and byte [0]). In the example above, it is 0xC350, 50000 in decimal (decimal max is 65535 - 0xFFFF in hexadecimal).

7 Revisions history

Date	Version	Description
22/06/2010	*1.0*	*Initial release*
22/09/2010	*1.1*	*Modification of the first page*
04/06/2012	*1.2*	*Software graphical interface modified.* *Login part added.* *GAT reader part added.* *Power management part added.*
02/04/2013	*1.3*	*GAT NANO reader part added.*
23/06/2014	*1.4*	*Relay option added*
03/09/2014	*1.5*	*Morocco / Austria / New Zealand regulation added*
21/05/2015	*1.6*	*RSSI filter and mask EPC added for GAT NANO v2 / URC2 reader added*

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