

ACTIVE RFID RANGE USER GUIDE



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1 INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

The purpose of this document is to present the **ELA RFID Tags and Sensors ranges**, the use cases and the implementation mode of each tag or sensor. You will thus be guided from the reception of your RFID equipment, with its factory configuration, to its implementation in a typical use case.

1.2 PRODUCT CONCERNED

The **PUCK** format differs from the **COIN** format in that it offers **increased transmission power without reducing the autonomy**. In addition, the RHT (humidity + temperature) sensor is only available in PUCK format.

PRODUCTS	REFERENCES
SLIM ID	IDF0348X
COIN ID	IDF1034X
WATCH ID	IDP2735X
THINLINE IR	IDP0231X
PUCK ID	IDF2573X
PUCK T	IDF2574X
COIN T	IDF1044X
PUCK RHT	IDF2572X
PUCK MOV	IDF2562X
COIN MOV	IDF1062X
PUCK MAG	IDF2564X
COIN MAG	IDF1064X
ITEM TD	IDF1075X
COIN LUX	IDF0943X

1.3 REQUIREMENTS

- ELA Innovation **Tag**
- A **SCIEL range reader** with **ETER Software** (available on our web site)
- An antenna to be connected to the reader



2 IMPLEMENTATION

2.1 DOWNLOAD AND INSTALLATION OF THE DRIVER FOR ELA READERS

http://www.silabs.com/Support%20Documents/Software/CP210x_Windows_Drivers.zip



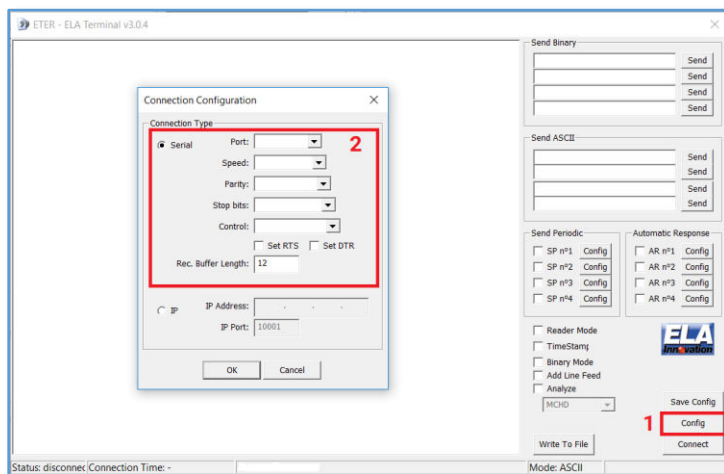
Install the USB Driver before connecting the Reader

- The USB driver contains files in .zip format.
- This type of file can be opened with the 7zip application (usually provided with Windows) or WinRar (free).
- The archive contains 2 executable files.

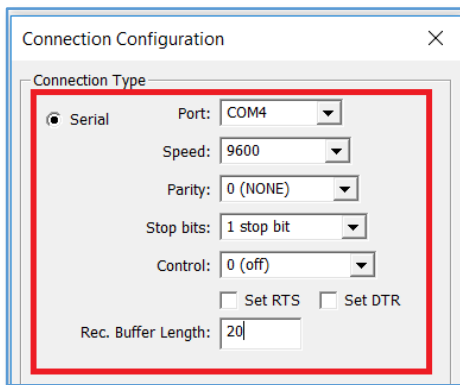
To install the USB Driver, extract the contents of the archive and run the file CP210x_VCPInstaller_xx.exe, xx corresponding to the version of your system (32 or 64 bits) and follow the installation steps.

2.2 DOWNLOAD AND INSTALLATION OF THE ETER APPLICATION

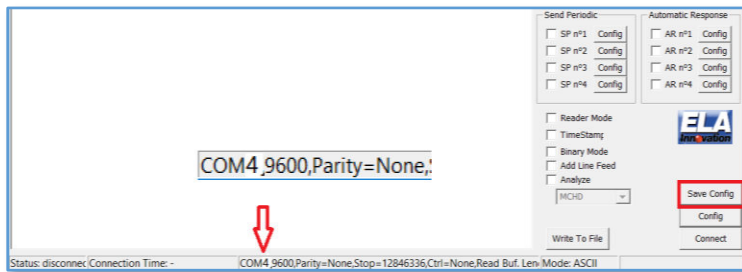
1. Go to the **RFID software** page of the ELA Innovation web site
2. Save the file and then run it
3. Follow the installation instructions provided
4. Open the ETER application
5. Click on the Config button (1)
6. Select the type of Serial connection (2)



7. Select the COM port of the reader



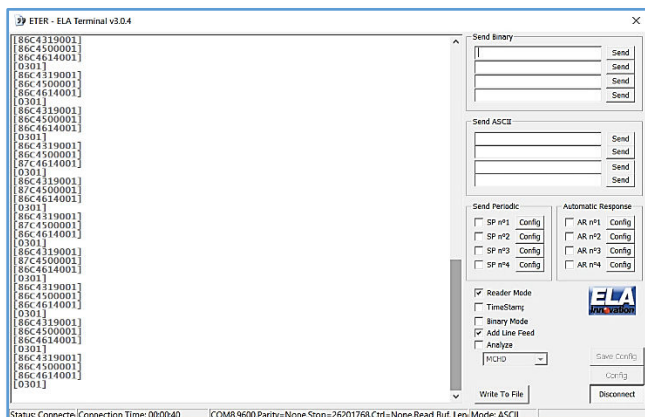
8. Save the configuration using the « Save Config » button



9. Click on the « Connect » button to connect to the reader



10. The data transmitted by Tags then scrolls on the screen.



3 FRAME SPECIFICATIONS

Here's how the information from each tag or sensor is encoded for 24-bit frames:

3.1 ID

[**NN****XXXXXXX****LL**]

- **NN** : Reception level
- **XXXXXX** : Tag ID number
- **LL** : Receiver ID number
- Low Bat alert : **2XXXXX**

3.2 SLIM ID

The frame is the same as for the ID, there is in addition a tear-off alert :

- Low Bat alert : **2XXXXX**
- Tear-off alert: **1XXXXX**
- Low Bat + Tear-off alert : **3XXXXX**

3.3 MOV

[**NN****XXX****FFF****LL**]

- **NN** : Reception level
- **XXX** : Tag ID number
- **FFF** : Sensor information: acceleration or corner crossing. Refer to the MOV user's guide for more details. (In Low bat, value is : **XXX7FF**)
- **LL** : Receiver ID number

3.4 MAG

[**NN****XXX****PP****LL**]

- **NN** : Reception level
- **XXX** : Tag ID number
- **PP** : Sensor information: Presence of the magnet + counter (**XXX7FF** for Low Bat alert)
- **LL** : Receiver ID number

3.5 LUX

[NNXXX~~YZZ~~LL]

- **NN** : Reception level
- **XXX** : Tag ID number
- **ZZZ** : Sensor information: Lightness (In Low bat, value is : XXX7FF)
- Y : result exponent (EXP)
- ZZ : mantissa of the result (MAN)
- Lightness (in lux) = (MAN) x 0.16 x 2^{EXP}
- **LL** : Receiver ID number

3.6 T

[NNXXX~~TTT~~LL]

- **NN** : Reception level
- **XXX** : Tag ID number
- **TTT** : Sensor information: Temperature. (In Low bat, value is XXX7FF)
- **LL** : Receiver ID number

3.7 RHT

[NNXXX~~HHH~~LL]

- **NN** : Reception level
- **XXX** : Tag ID number
- **8XXTTT**: temperature information (In Low bat, value is XXX7FF)
- **9XXHHH**: Relative humidity information (In Low bat, value is : XXXFFF)
- **LL** : Receiver ID number



It is possible to configure tags and sensors in 32-bit format.
The ID will include two additional quarters.

4 OTHER DOCUMENTS

The following documentation may be useful in addition to this documentation.

- Guide de démarrage rapide des lecteurs :
 - SCIEL READER Lite
 - Reader R, RU, R24,
 - SCIEL READER IP2
 - SCIEL READER WF2