TECHNICAL INFORMATION MANUAL

Revision 4 – 23 January 2018

Slate R1260E/EB

RFID UHF Desktop Reader

easy2read

CAENRFID

Visit Slate R1260 web page, you will find the latest revision of data sheets, manuals, certifications, technical drawings, software and firmware. All you need to start using your tag in a few clicks!

Scope of Manual

The goal of this manual is to provide the basic information to work with the SLATE R1260E/EB UHF Desktop Reader.

Change Document Record

Date	Revision	Changes	Pages
11 Apr 11	01	First release	-
19 Jun 12	02	Modified *Driver installation* paragraph	8
		Added *Getting Started* chapter	8÷12
		Renamed *Slate R1260E Functional Description* chapter into *Slate R1260E External Interfaces Description*	14
		Moved *Firmware Upgrade* paragraph into the *Reader Upgrade* chapter	15
		Modified *CE Compliance* paragraph	19
		Modified *R1260E/EB CE Declaration of Conformity*	20
28 Jul 16	03	Modified *RoHS EU Directive*	19
		Modified *R1260E/EB CE Declaration of Conformity*	20
23 Jan 2018	04	Updated *Getting Started* chapter	8
		Modified *Product Description* and *Ordering Options* paragraph	5, 6
		Modified *R1260E/EB CE Declaration of Conformity*	20

Reference Document

[RD1] EPCglobal: EPC Radio-Frequency Identity Protocols Class-1 Generation-2 UHF RFID Protocol for Communications at 860 MHz – 960 MHz, Version 2.0.1 (April, 2015).

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Disposal of the product

Do not dispose the product in municipal or household waste. Please check your local regulations for disposal/recycle of electronic products.

Index

List of Figures

List of Tables

1 INTRODUCTION

Product Description

The Slate (Model R1260E, R1260EB), the new desktop reader of the easy2read© Family, is an UHF multiregional RFID reader with integrated antenna for short to medium range applications.

The Slate Reader is powered and controlled directly by an USB cable, thus allowing to read EPC Class 1 Gen 2 UHF RFID tags in an easy desktop environment.

Thanks to its low profile (15 mm) and its size (approximately an A4 page), the Slate reader is the perfect choice for various applications such as point-of-sales, document tracking, RFID programming stations, access control and so on. It can be used as a building block for smart shelves and smart displays.

The core component of the Slate reader is the CAEN RFID Quark module, the lowest power consuming module available on the market.

The reader is compliant with European regulation (ETSI EN 302-208).

Fig. 1.1: Slate reader (Model R1260E)

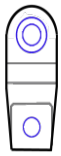
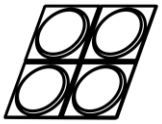
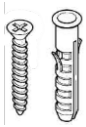
Fig. 1.2: Slate reader (Model R1260EB)

Ordering Options

	Code	Description
Reader	WR1260EZAAAA	R1260E - RFID UHF Desktop Reader (ETSI 302-208)
	WR1260EZBAAA	R1260EB - RFID UHF Desktop Reader (ETSI 302-208) Black version

Accessories

Check for the supplied accessories below:

 No.2 wall hooks	 No. 4 rubber feet
 No.2 rawlplugs (ø 4 mm) +screws	 No. 2 small screws (ø 3 mm)

Installation Notice

The Slate R1260E/EB can be easily placed on a table for desktop applications or it is possible to hang it on the wall.

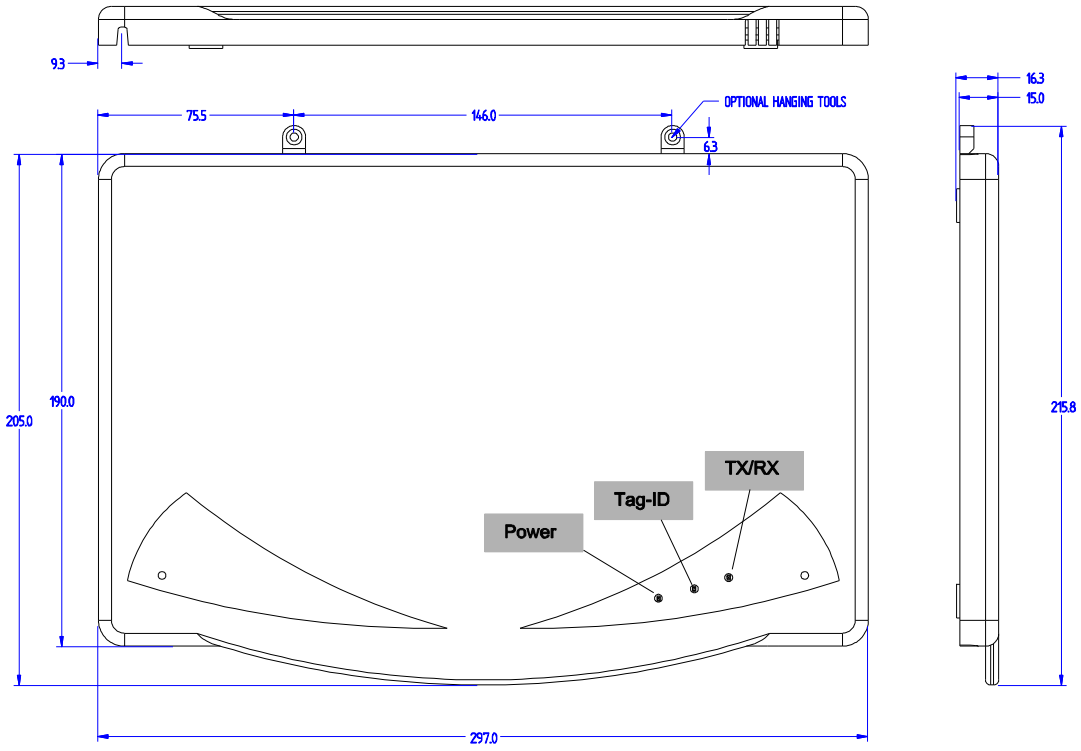


Fig. 1.3: Slate R1260E/EB Technical drawings: top view

Horizontal Installation:

The Slate can be easily placed on a table for desktop applications affixing the 4 rubber feet to the bottom of the Slate R1260E/EB to prevent it from sliding.

Vertical Installation:

The Slate can be hanged on the wall (see *Fig. 1.4: Slate R1260E/EB Wall* mounting).

First of all, use the two small screws (ø 3 mm) to fix the 2 hooks on the Slate.

Then, to hang the Slate on the wall, fix the hooks to the wall using the 2 rawlplugs (ø 4 mm) + screws at a distance of 146 mm each other.

If you want to hang the Slate on a wood panelling, fix the hooks to the wall just using the 2 screws.

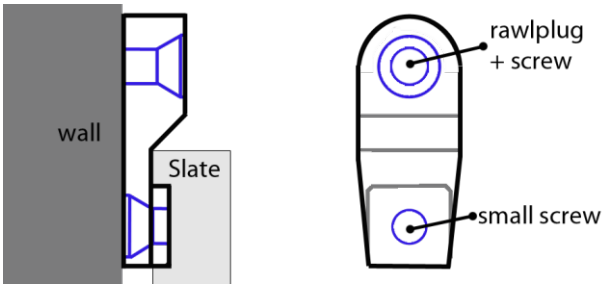


Fig. 1.4: Slate R1260E/EB Wall mounting

2 GETTING STARTED

Introduction

This quickstart guide will help you to get started with your Slate R1260E/EB reader.

For more detailed information on reader configuration, connections and setup options please refer to the next chapters.

To begin, you need first to download and install the .NET framework 2.0 (only required if .NET is not already installed on your PC).

Serial Port Emulator

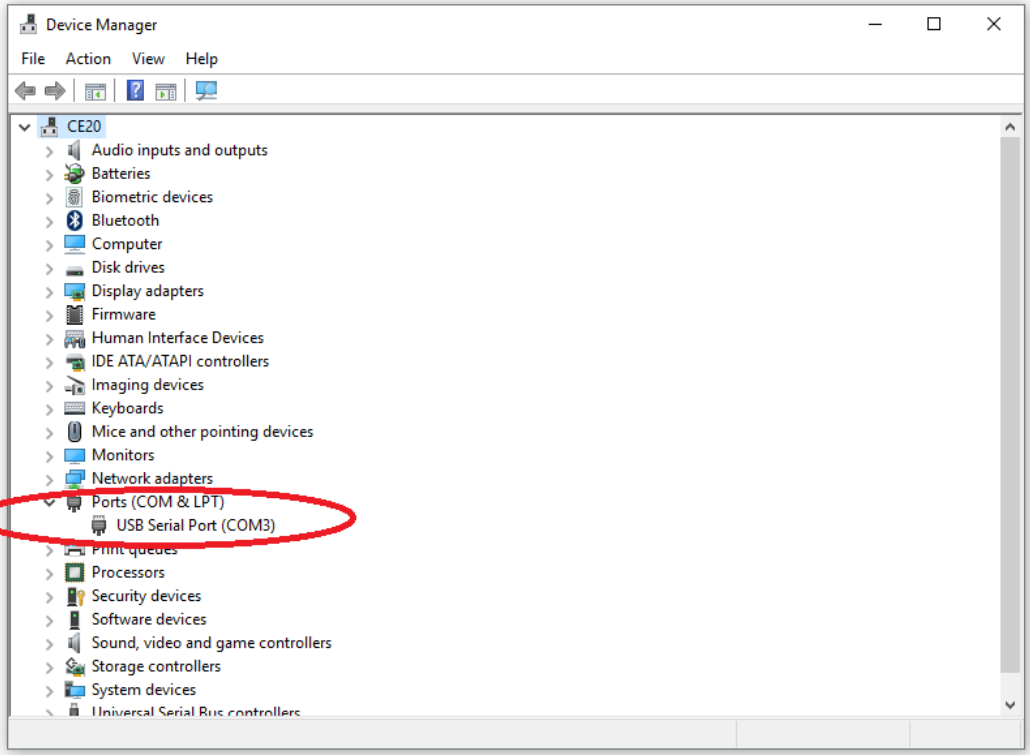
The SLATE R1260E/EB can be connected to a PC via USB connection. The RFID reader emulates a serial port. In the next paragraph the procedure to install the required driver is presented.

Driver installation

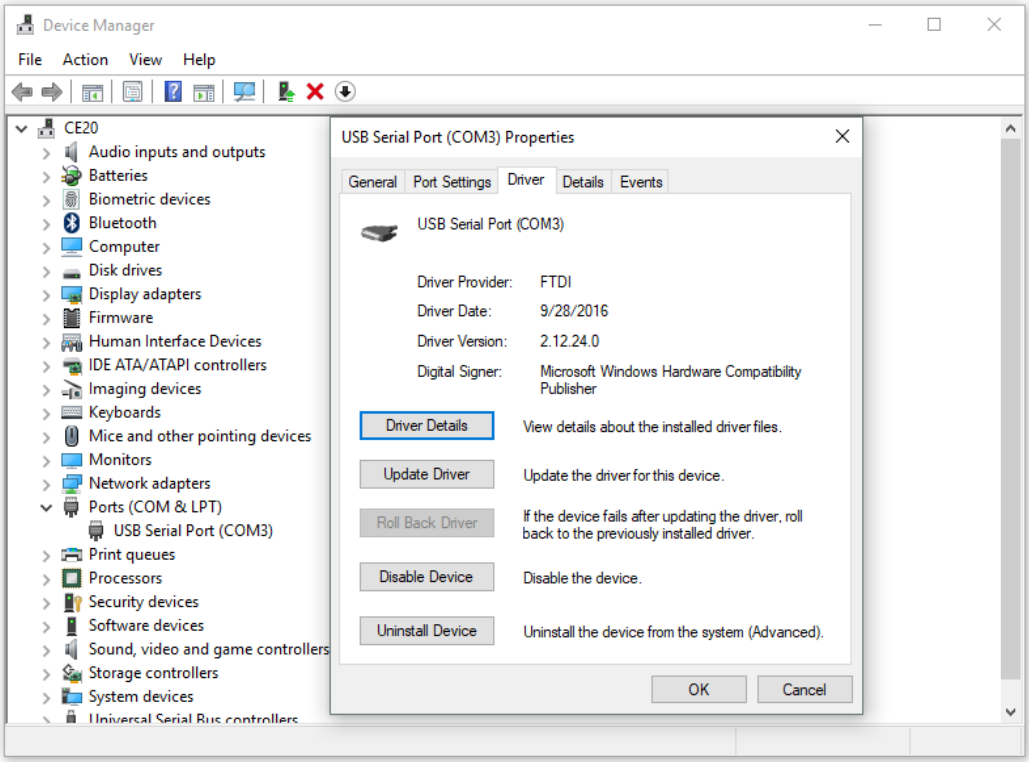
The Slate reader is based on a FTDI chip. To connect it to the PC you need to install the VCP (Virtual Com Port) drivers for your operating system.

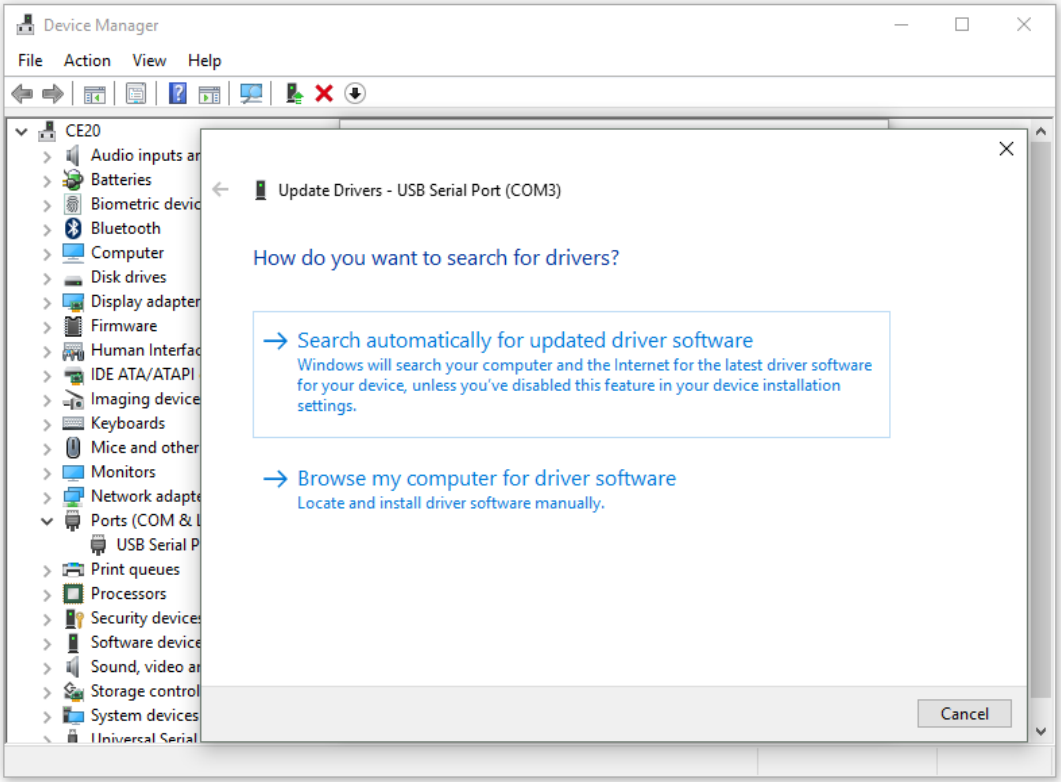
The procedure to install the USB driver is presented below:

1. Connect the Slate to your pc using the USB connection.
2. Download VCP drivers for Windows based systems at http://www.ftdichip.com/Drivers/VCP.htm
3. Open the System properties (right click on *My computer* icon)→ *Device Manager*.
4. Double click on "*USB Serial Port*":

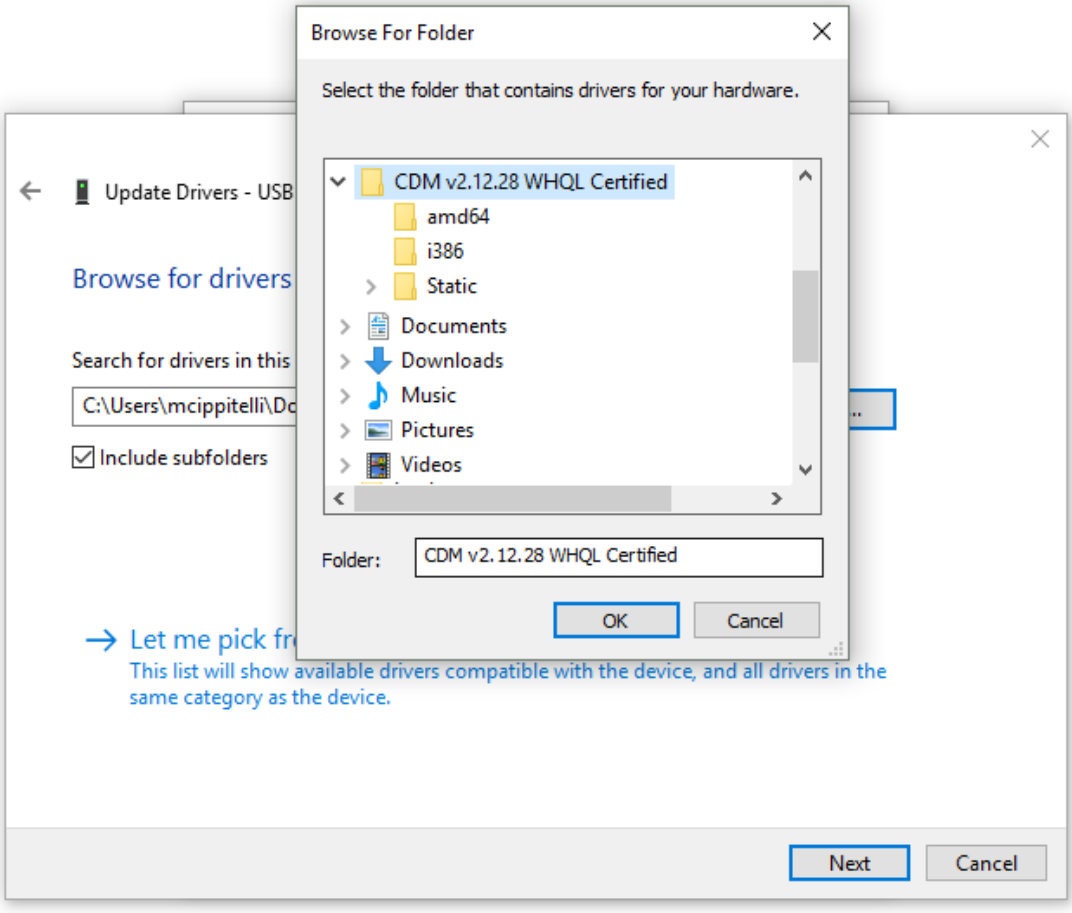


5. Click on *Driver->Update Driver*

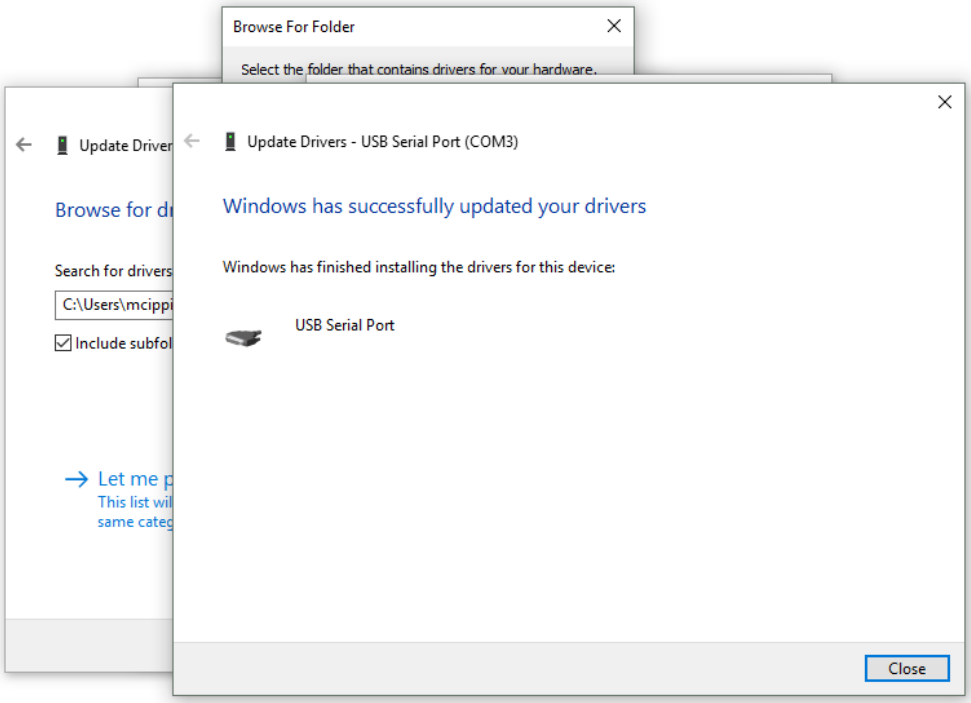




6. Click on "*Browse my computer for driver software"* and select the VCP drivers folder:



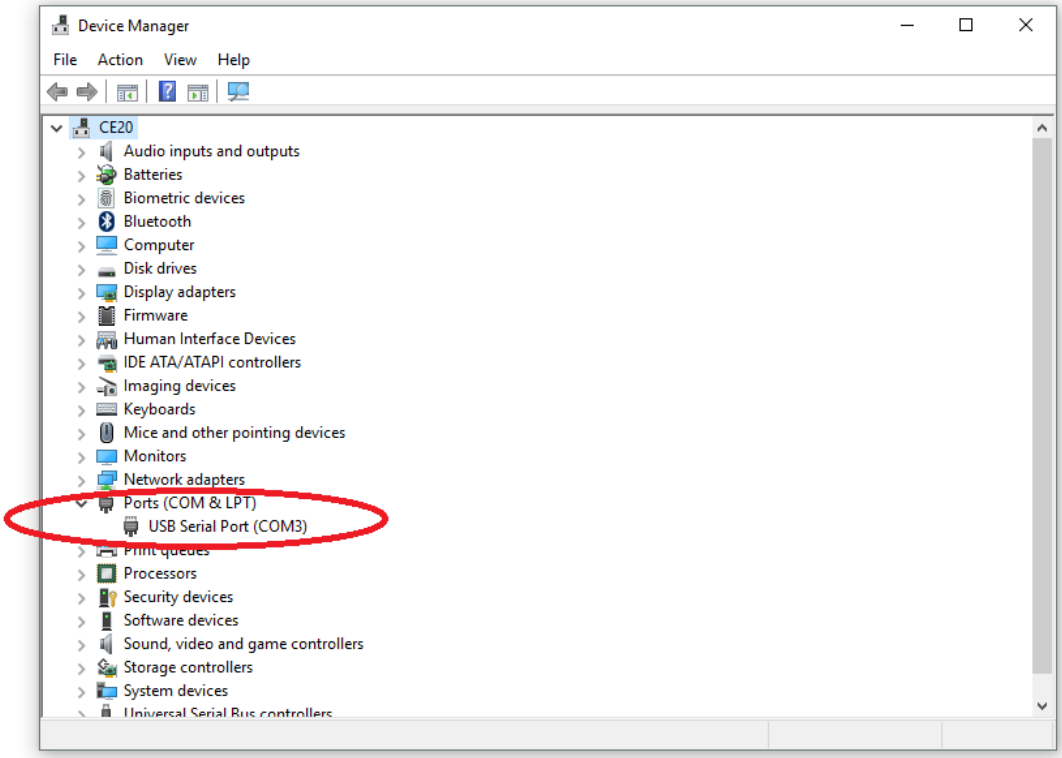
7. Now the driver installation procedure is completed:



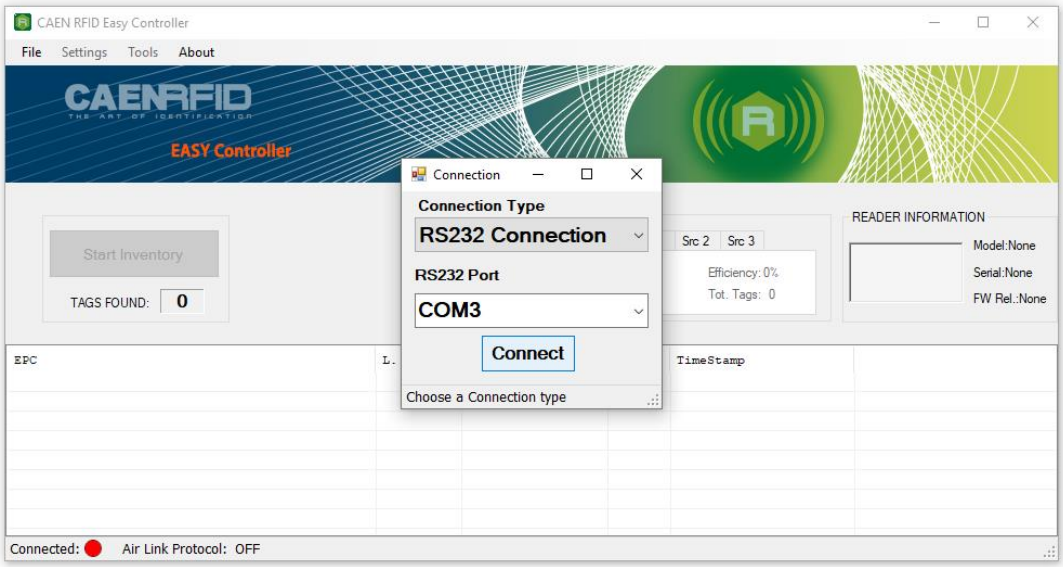
Connecting the Slate Reader using the EasyController

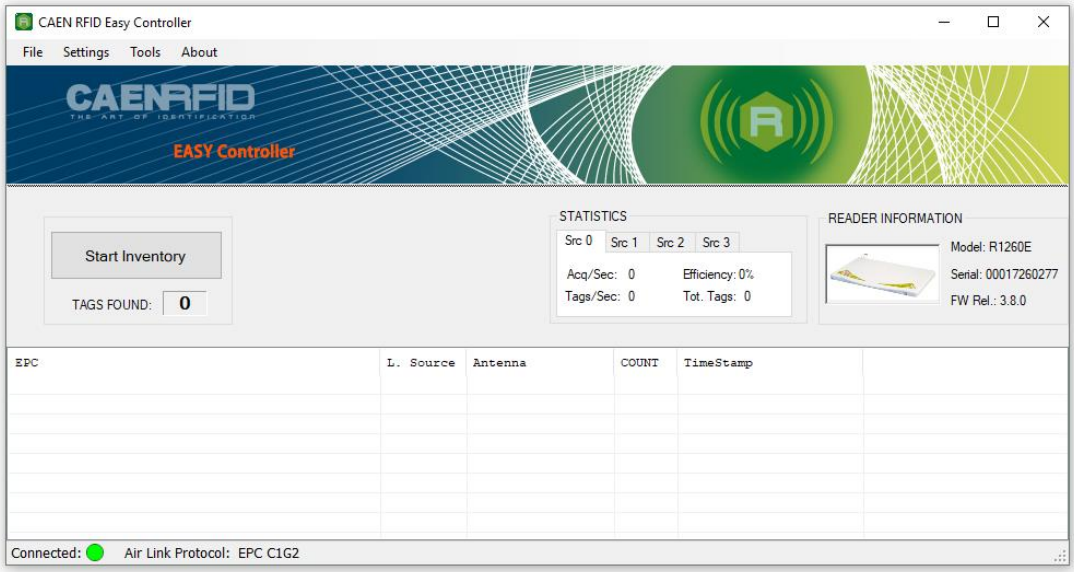
Once the driver installation procedure has completed, you can connect your PC to the Slate R1260E/EB Reader via USB connection using the *EasyController* software:

1. Download from the CAEN RFID web site the latest version of the *EasyController* software and install it:
2. Connect the Slate to your pc using the USB connection.
3. Open the System properties (right click on *My computer* icon)→ *Device Manager*.
4. See the emulated serial port in the "USB serial port (COM X)", in the case below COM3.



5. Launch the EasyController by double clicking on the icon on your desktop.
6. Click on *File* → *Connect*, select the RS232 Connection Type and select from the pull-down menu the COM port number where the driver has mapped the virtual port for the Slate (in the example COM3) and then click on **connect**:





7. Place a tag on the reader, click on *start inventory* and see the tag information displayed on the main window.

For more info on the use of the *EasyController Software*, please refer to the manual *Easy Controller Software Technical Information Manual*.

3 EXTERNAL INTERFACES DESCRIPTION

External Connection

The external connection is via USB port.

The USB cable is located in the back side of the Slate. You can pass the USB cable through the opening at the bottom or at the top of the Slate back side. The mechanical specification of the USB Port is as follows:

- USB Port: USB Type A plug connector

The Slate R1260E/EB is powered through the USB host.

Front Panel LEDs

The Slate R1260E/EB front panel houses the following LEDs (see figure below):

LED	FUNCTION	TYPE
POWER	Power ON	Green LED
TAG-ID	Tag detection	Blinking Red LED
TX/RX	USB communication activity	Blinking Yellow LED

Tab. 3.1: Slate R1260E/EB Front Panel LEDs

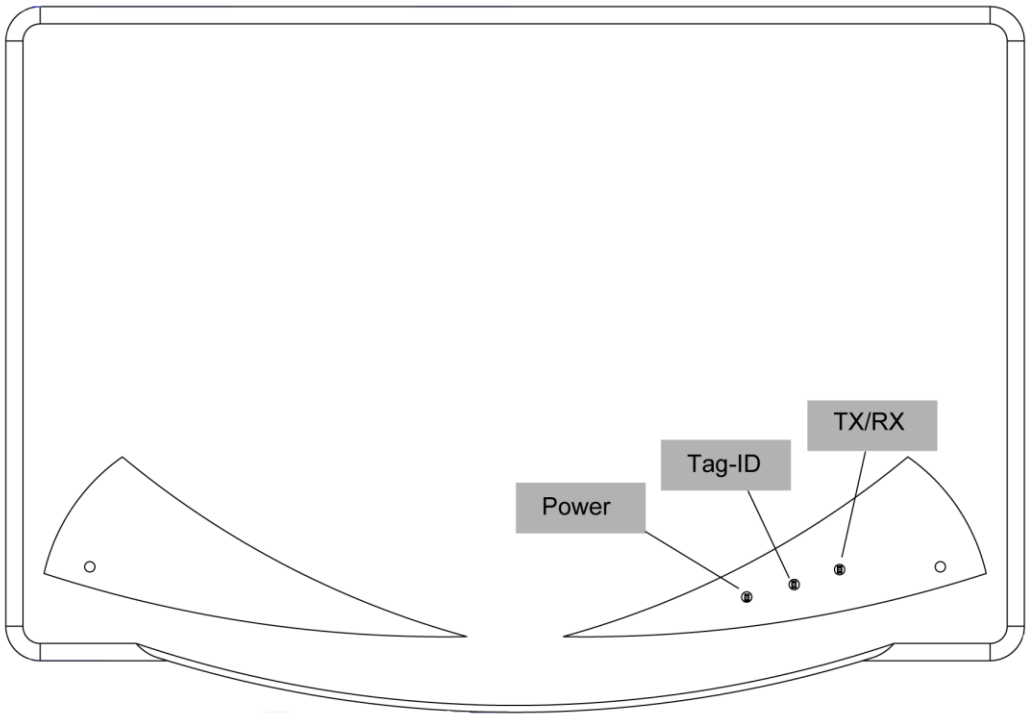


Fig. 3.1: Slate R1260E/EB Front Panel LEDs

4 READER UPGRADE

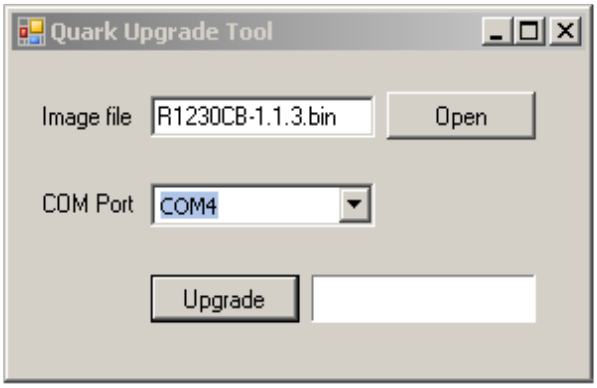
Firmware Upgrade

The Slate Upgrade Tool is available for free at *Slate R1260 page* of the CAEN RFID Web Site.

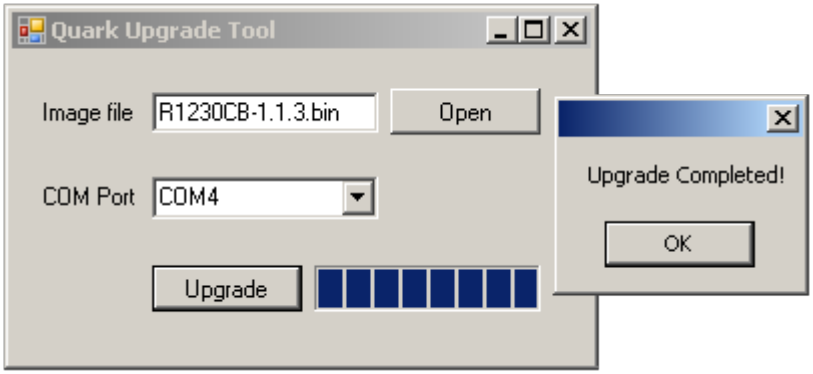
The Slate R1260E/EB firmware upgrade can be managed via USB.

In order to upgrade the firmware follow the steps below:

- Verify the virtual COM port associated to the reader (in this example COM4)
- Open the FW upgrade program
- Select the COM port
- Select the image file by clicking on “Open” button



- Click on “Upgrade” button
- Wait for the upgrade to be completed



- Disconnect the USB cable
- Connect again the USB cable: now the reader is ready

5 TECHNICAL SPECIFICATIONS

Technical Specification

Frequency Band	865.600÷867.600 MHz (ETSI EN 302 208)
RF Power	Programmable in 15 levels (1dB step) from 4dBm ERP to 18dBm ERP (from 2.5mW ERP to 67mW ERP)
Antenna	Integrated Circular Polarized Antenna
Number of Channels	4 channels (compliant to ETSI EN 302 208 v3.1.1)
Standard Compliance	EPC C1G2/ISO 18000-6C
User Interface	Green LED: Power Blinking red LED: Tag detection Blinking yellow LED: USB communication activity Buzzer: user programmable event signalling
USB Device Port	USB Type A plug connector Bus powered USB 2.0 device Must be connected to Hight-power Port (500 mA @ VBUS) It appears as USB serial port Virtual Com Port (VCP) drivers for Windows XP/Vista/Seven (7), Windows CE 4.2, Linux 2.40 and greater Baudrate: 115200 Databits: 8 Stopbits: 1 Parity: none Flow control: none
Dimensions	(W)297 x (L)205 x (H)15 mm^3 (11.7 x 8 x 0.6 $inch^3$)
Electrical Power	5 V DC bus powered (USB) Max 400 mA
Operating Temperature	-10 °C to +55 °C
Weight	525 g
Length of USB cable	1.5 m

Tab. 5.1: Slate R1260E/EB Technical Specifications

***Warning**: The RF settings must match the country/region of operating to comply with local laws and regulations.*

The usage of the reader in different countries/regions from the one in which the device has been sold is not allowed.

Reader – Tag Link Profiles

Slate R1260E/EB reader supports different modulations and return link profiles according to EPC Class1 Gen2 protocol.

In the following table are reported all profiles that have been tested for the compliance with ETSI regulation.

Link profile #	Regulation	Modulation	Return Link
0	ETSI	DSB–ASK; f=40kHz	FM0; f = 40kHz
1	ETSI	DSB–ASK; f=40kHz	Miller (M=4); f = 256kHz

Tab. 5.2: Slate R1260E/EB Reader to tag link profiles

Radiation Patterns

The radiation patterns of Slate R1260E/EB are shown in the following figures.

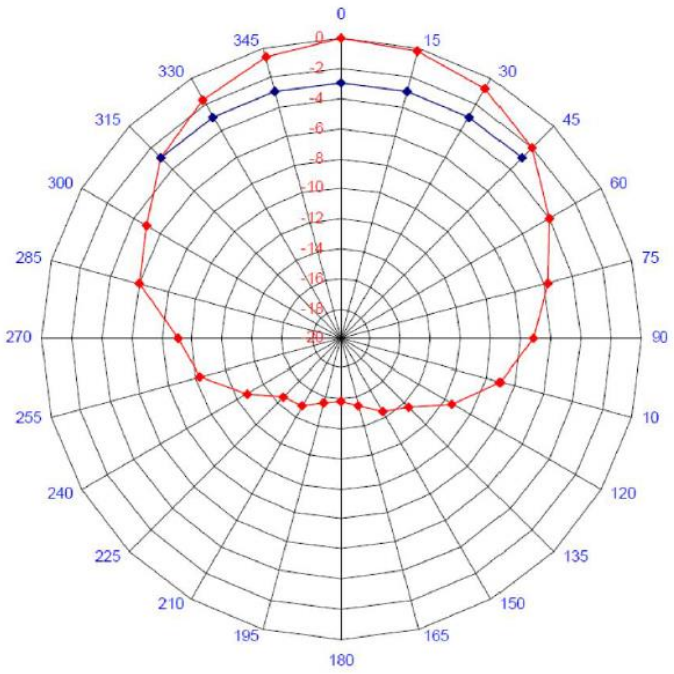
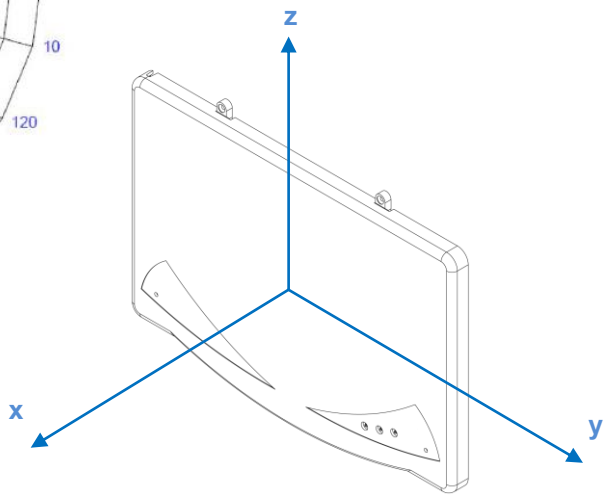


Fig. 5.1: Slate R1260E/EB Radiation pattern H plane



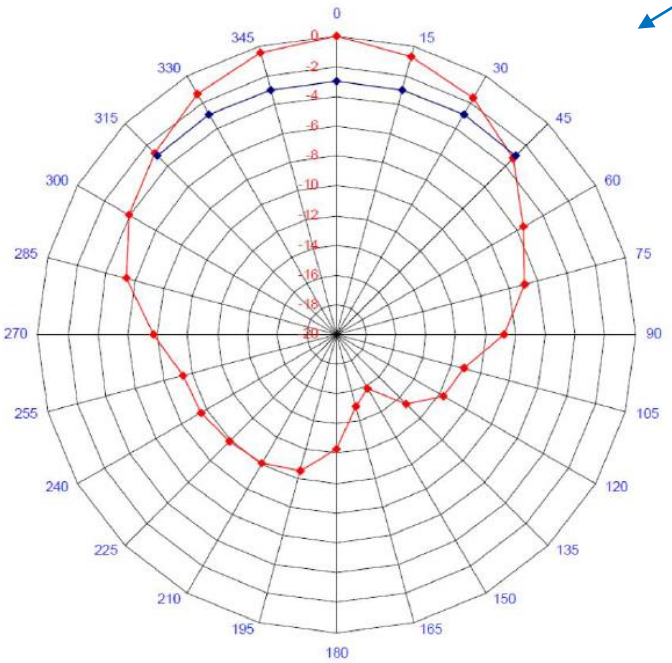


Fig. 5.2: Slate R1260E/EB Radiation pattern V plane

6 REGULATORY COMPLIANCE

CE Compliance

Reference standard:

ETSI EN 301 489-1 V. 1.9.2:2011

EN 55032:2012

CEI EN 55024:2013

ETSI EN 302 208 V3.1.1:2017

CEI EN 60950-1:2007 +/A11:2010 +/A1:2012 +/A12:2012

CEI EN 50364:2011

EN 50581:2012

See § *R1260E/EB CE Declaration of Conformity* page 20 for the Slate R1260E/EB CE Compliance Certificate.

RoHS EU Directive

Slate - R1260E/EB - RFID UHF Desktop Reader is compliant with the EU Directive 2011/65/CE on the Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS2).

Slate R1260E/EB
CE DECLARATION OF CONFORMITY

We

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herewith declare under our own responsibility that the products:

Code:	**WR1260EZAAAA**
Description:	**R1260E - RFID UHF Desktop Reader (ETSI 302-208)**
Code	**WR1260EZBAAA**
Description:	**R1260EB – RFID UHF Desktop Reader (ETSI 302-208) Black version**

correspond in the submitted version to the following standards:

ETSI EN 301 489-1 V. 1.9.2:2011

EN 55032:2012

CEI EN 55024:2013

ETSI EN 302 208 V3.1.1:2017

CEI EN 60950-1:2007 +/A11:2010 +/A1:2012 +/A12:2012

CEI EN 50364:2011

EN 50581:2012

and declare under our sole responsibility that the specified products meet the principle requirements and other applicable regulations of directives 2014/53/EU (RED) and 2011/65/EU (RoHS2)

Date: 05/09/2017

Adriano Bigongiari (Chief Executive Officer)

On the basis of this declaration, this product will bear the following mark: CE