RFID Deskpad Reader

Model RFID-READER PL
User Guide

Revision 1.0

Contents

1. Product Description

RFID-READER PL is a high performance ISO15693 protocol HF RFID reader. It is designed upon fully self-intellectual property. Based on proprietary efficient anti-collision algorithm, it supports fast tag read/write operation with high identification rate. It can be widely applied in many RFID application systems such as logistics, personnel identification, conference attendance system, access control, anti-counterfeit and industrial production process control system.

2. Features

- Self-intellectual property;
- Support mainstream ISO15693 protocol tag
- RF output power 1w;
- Advanced anti-collision algorithm.
- Integrated in 50ohm antenna, read distance up to 30cm (Depends on Tag chip);
- Support transparent command;
- Support tag data scan mode, stand-alone mode and EAS scan mode
- Support external input and command synchronization in scan mode;;
- Support RS232 and USB2.0
- Low power dissipation with single +12V DC needed;
- Provide DLL and demonstration software to facilitate development

3. Specifications

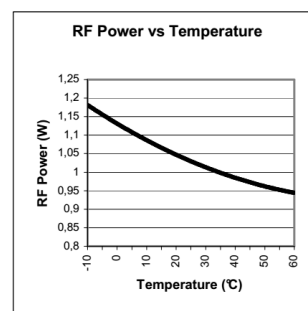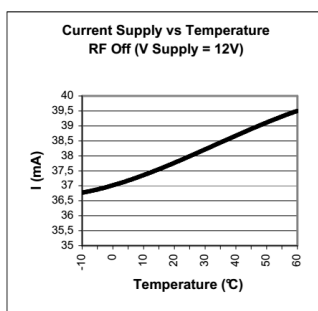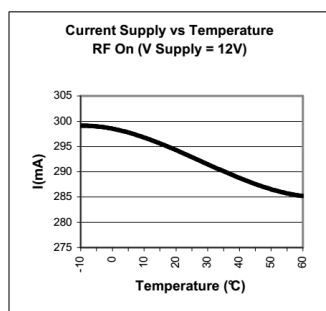| Reference	RFID-READER PL
Size	376 mm x 276 mm x 27 mm (14,8 inch x 10,9 inch x 1,1 inch)
Weight	Approx. 2kg (4.4 Ibs)
DC Power	12V
Operating Frequency	13.56MHz
Chip Compatibility	EM HF ISO Chips, Fujitsu HF ISO Chips, IDS Sensor Chips, Infineon my-d, KSW Sensor Chips, NXP I-Code, STM ISO Chips, TI Tag-it
Communication Interface	USB2.0 and RS232
RF Output Power	1W
Power consumption	3.6w
Reading Range	Up to 30cm (Depends on Tag chip);
Operating Temperature	0° to +55°C

Storage Temperature	-20° to +70°C
Supported Transponders	ISO 15693 (ISO 18000-3 MODE 1)
Protection class	IP30
Relative air humidity	5...95 % (non-condensing)

4. Absolute Maximum Ratings

Parameter	Value
Ambient Operating Temperature	0°C to +55°C
Storage Temperature	-20°C to +70°C
Supply Voltage with respect to GND	25 V
Total Power Dissipation	3.6 W
Total Power Dissipation on Antenna	1 W

5. DC Characteristics

Value	Description		Max.	Typ.	Min.	Unit
V_{Supply}	Supply Voltage		13.2	12	10.8	V
I_{RFOff}	Supply Current – RFOff – USB Plugged (V_{Supply} = 12V)		44	39	35	mA
I_{RFOn}	Supply Current (RFOn, Dummy Load 50Ohm, V_{Supply} = 12V)		304	290	275	mA
I_{RFOn}	Supply Current (RFOn, V_{Supply} = 12V, Antenna connected)	AERO LI		271		mA
		LSA-2		290		mA
		LSA-3		276		mA
I_{Open}	Supply Current (RFOn, No connection on RF Connector)			202		MA
T_{Op}	Operating Tempature		0		55	°C
V_{USB}	Supply Voltage on USB cable		5.25	5	4.35	V
I_{Usb}	Supply Current on USB cable		25	20	-	mA
U_{VOH}	D+/D- Static Output high		3.6		2.8	V
U_{VOL}	D+/D- Static Output low		0.3		0	V
U_{VSE}	Single Ended Rx Threshold		2.0		0.8	V
U_{VCOM}	Differential Common Mode		2.5		0.8	V
U_{VDIF}	Differential Input sensitivity				0.2	V
Z_{DRV}	Driver Output impedance		44		29	Ohm

Current Supply vs Temperature RF On (V Supply = 12V)

Current Supply vs Temperature RF Off (V Supply = 12V)

RF Power vs Temperature

6. Connections

	Description
DC 12V	Support 5.5*2.1 DC 12V power supply
Power LED	Green, when power supply connected, the power LED will on.
USB	Support USB Type-A to Type-B USB cable
SW1	Switch for select which communication port to use. Turn to left side to enable USB and right side to enable RS232
RS232	DB-9 type RS232 connector.

7. Installing the USB Drivers

At first connection to the PC USB port, Windows® will detect the RFID-READER PL and will ask to install a driver. The USB drivers are located into the USB Drivers folder on the product CD-ROM or download the drivers in following address: http://www.ftdichip.com/Drivers/VCP.htm

Two drivers will be installed:
- The USB device driver.
- The virtual COM port (VCP) driver. The VCP driver emulates a standard PC COM port.
After installation of the drivers, power up and connect your RFID-READER PL to a spare USB port on your PC to launch the Windows Found New hardware Wizard
- Select "No, not this time" and click next to proceed with the installation.
- Select "Install from a list or specific location (Advanced)" and then click "Next".
- Select "Search for the best driver in these locations" and click the Browse button to select the USB Drivers folder on the Product CR-Rom. Then click "Next" to proceed.
- Windows should then display a message indicating that the installation was successful.
Click Finish to complete the installation.

Repeat the procedure above when Windows® asks for drivers again (virtual com port).

8. Reader setup tool--Px Explorer

The RFID-READER PL is delivered with the Px Explorer software tool intended to easily setup the reader, test it and perform reading and writing operations according to the antenna and type of tag to be used. In addition, Px Explorer can display additional information such as the Product Reference and Firmware version and revision. This section describes how to start with Px Explorer.

9. Install Px Explorer

To install Px Explorer software, insert the product CD-ROM into the disk drive on your PC and run the Setup from the Software\Px Explorer folder and click "Next"
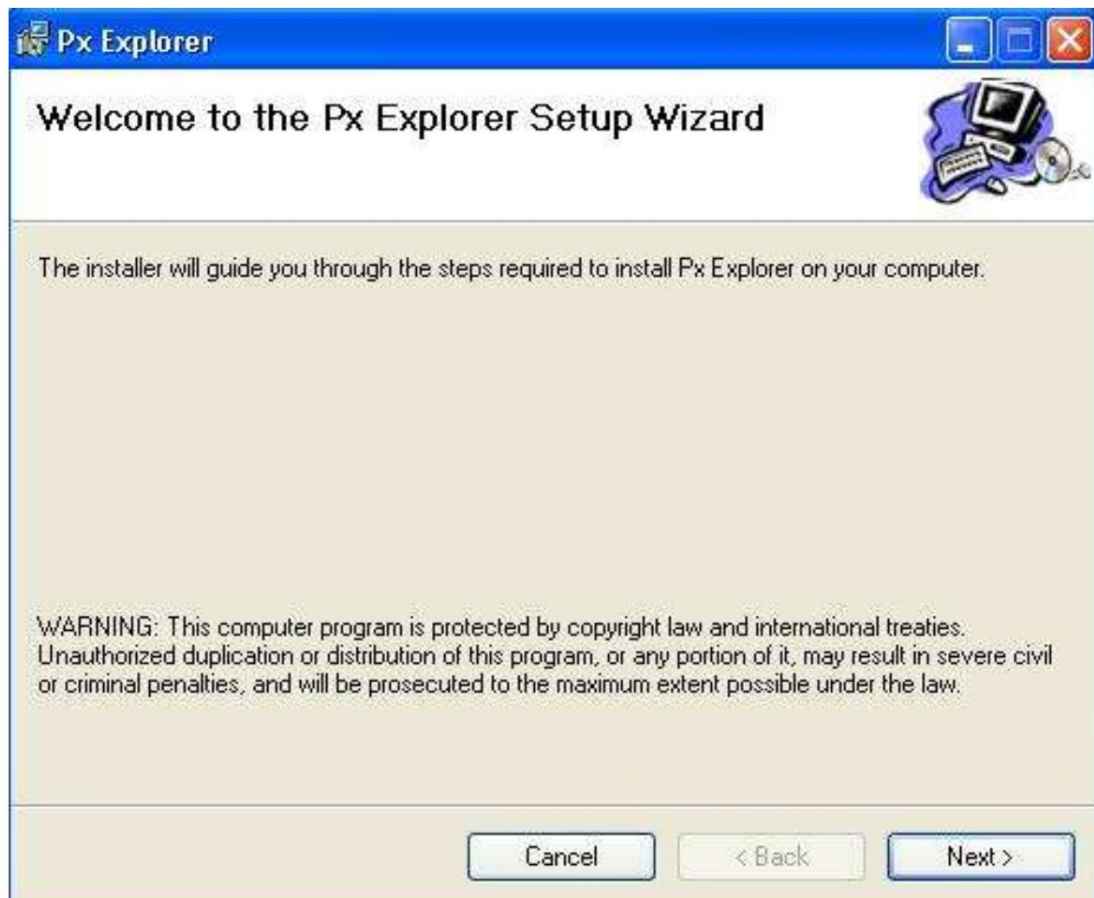
Click the "Browse" button if you want to choose a specific installation folder. Once the correct folder is selected, click "Next"

Click "Next" to start the installation process. A shortcut will be created on your desktop and a program group will be created in the start menu.

Running Px Explorer
Before launching Px Explorer be sure which COM port number is assigned to the T
P200u reader. Open the Device Manager and select "View > Devices by type"

Power up the RFID-READER PL and connect the USB cable to both your PC and the RFID-READER PL. Run Px Explorer. If the following window is displayed click yes.

Open the Communication Settings window (CTRL+C) and check the COM port number and the communication speed. The default communication speed for the

RFID-READER PL is 115200 Bauds
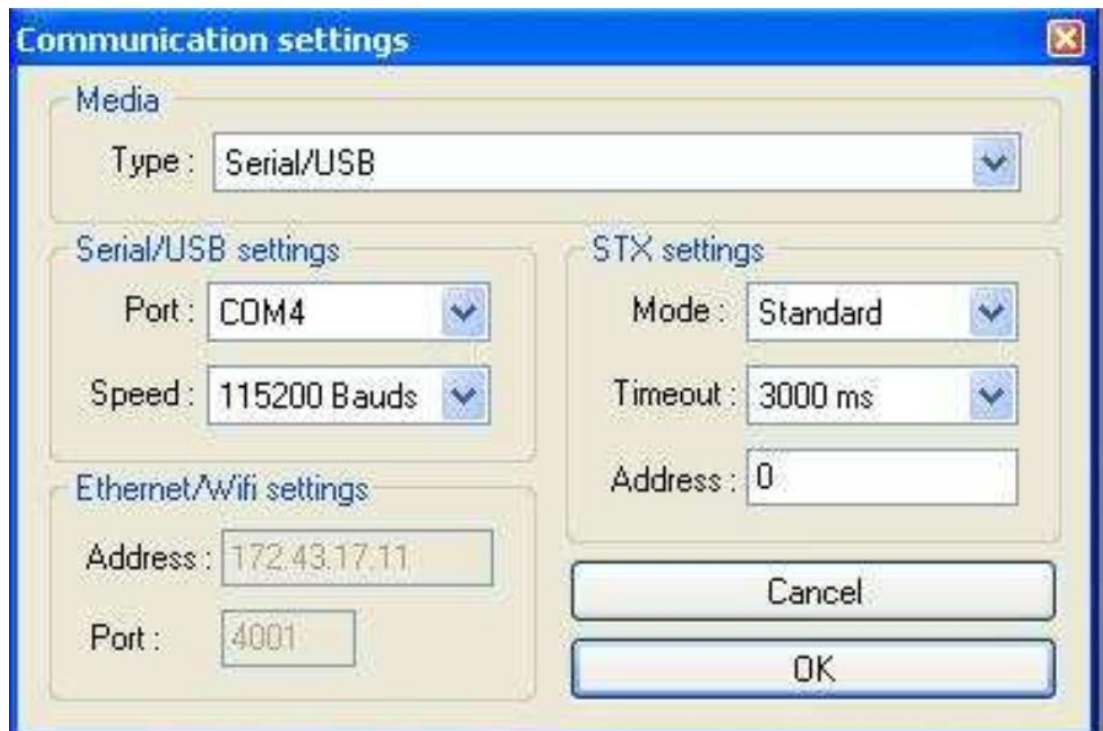
Click OK. Now Px Explorer is ready to communicate with your RFID-READER PL.

10.   Reading and Writing a Tag

Px Explorer includes a Wizard function used to guide you each step of how to read or program a tag. We recommend using the Wizard function for users who are not familiar with all Px Explorer capabilities and features.

Click on the Wizard icon (magic wand) to open the Px Explorer Wizard dialog box.

Select the type of chip from the drop–down menu or place the tag on the antenna and click the "Detect " button to automatically detect the tag type.

Select the desired operation (Read or Write) and then click OK. All the necessary windows to perform the desired action will be automatically displayed on the screen.

For more details concerning Px Explorer select the info menu and click Help (CTRL+H) to display the Px Explorer User's Guide

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.