Appendix I: Manual

Please refer to the following pages.

ContactlessONE

PnP USB User Guide

Preliminary Document v0.10

Table of Contents

1 – PnP USB Module Overview

1.1 Description

Model Name: PnP USB RFID Reader
Model Number: PnP USB
FCC ID: M4ZPNPUSB
Industry Canada ID: 3637B-PNPUSB

Description:
The Sirit PnP USB RFID Reader is a modular high-frequency radio frequency identification (RFID) reader operating in the 13.560 MHz ISM band. It is designed to interface to a host computer using USB protocol. It uses ISO 15693, 14443A and B, 18000-3 Mode 1, and several other proprietary protocols.

Antenna Specification:
Magnetic loop, 3-turn planer spiral.
Partial Faraday shield on bottom side PCB; 7.1-cm OD, 6.5-cm ID.
Modeled gain: -50dBi (EZNEC, Ver.4).

1.2 PnP USB Start-Up Guide

Operational Sequence:
First load software on the Host computer as per section below.
Then plug USB module in to host computer.
Start application program in host computer.
Read RFID tags.

Other information or help with this document or the module, please visit the Sirit website at www.pnprfid.com or email support at support@pnprfid.com.

=========Host Software Setup=========

1.3 Loading Software into Host Computer

========= USB Reader Setup=========

1. Open the CD and locate the installation files.
2. Run the ContactlessONE_USB installer package by double-clicking on the "ContactlessONE_USB.msi" program.
3. Plug in your USB reader, then choose "No" when prompted to search the Internet for drivers.
4. Choose "Install software automatically". If prompted for the FTDI drivers, point to the USB Drivers directory on the CD.
5. If you do not have the Microsoft .NET environment on your computer you will need to download it from www.microsoft.com/.net and load it.
6. Disconnect and reconnect the USB Reader.
7. Open the ISOBench demo program that was installed in "C:\Program Files\TWT\ContactlessONE\Examples".
8. Run the diagnostic program "Iso-bench.exe" from this location.

2- Hardware Description

2.1 Hardware

The PnP USB module uses the Inside Contactless (France) PicoRead chip set consisting of the PicoRead RF processing chip and a custom programmed MicroChip Corporation (USA) 18F2550 micro controller unit (MCU). The USB interface uses a FTDI Chip (England) FT232BM chip to translate from the serial data stream of the PicoRead MCU to the host device USB interface.

The host unit provides 5.0 volt power to the module.

The two Inside Contactless chips share a common 13.560 MHz crystal, using the MCU as the common oscillator and drive source. The FT-232 USB interface chip uses a 6.00 MHz crystal for its internal oscillator.

3- Safety Instructions

Power Disconnect Device
This device gets its power from the host computer. Unplug the device to take power away from it. Do not use the device if it becomes wet. Do not use the device while it is immersed in water.

WARNING:
FCC Radiation Exposure Statement: This device emits low levels of RF energy when in operation. Do not allow the use of this device by someone using a cardiac pacemaker or other medical devices sensitive to RF energy.

4- FCC Compliance

Changes or modifications not expressly approved by Sirit Corporation will void the user's authority to operate the equipment.

FCC Compliance
This device complies with Part 15 of the U.S. Federal Communications Commission (FCC) Rules. Operation is subject to the following Conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference that may cause undesired operation.

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 means:

1. Rotate or relocate the receiving antenna;
2. Increase the separation between the equipment and receiver;
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
4. Consult the manufacturer customer service department for help.