I1-5000N

RFID Reader

User Manual

ISSUE DATE : 2021.09.13

The pictures and screens shots on this document may be different to actual. .
Please thoroughly read the caution section before installing the reader.
Reasonable measures have been taken to ensure that the information included in this manual is complete and accurate.
However, ioTware reserves the right to change any specification at any time without prior notice.

Contents

FCC information

FCC notice "Declaration of Conformity Information"

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:

1. Reorient 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 dealer or an experienced radio/TV technician for help.

FCC Conditions

This equipment has been tested and found to comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference

(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Notice "Equipment Authorization" Information

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.

This device is authorized under Title 47 CFR 15.519 (the FCC Rules and Regulations).

The operation of this device is subject to the following restriction:

The changes or substitutions of the antennas which are furnished with the device is prohibited.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled

environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator

& your body.

Chapter 1. Introduction

1.1 Operation specification

- I1-5000N supports multi-protocols (ISO-18000-3, IEC-15693) to read and write tags.

- I1-5000N supports RS-232 and TCP/IP.

- I1-5000N supports external I/O and controls other devices through the digital I/O.

- Easy to monitor the status of reader through LED.

- Easy to control the reader through the reader's API.

- I1-5000N provides online upgrade.

- Preferable mode can be saved by the user.

- Possible to operate the programmable multi port antennas.

1.2 Communication Specification

External Interface	Serial	38,400bps
	Ethernet	10 BaseT(TCP/IP)
Air Protocol	Tag Air Protocol	ISO-18000-3, IEC-15693

1.3 Reader specification

Item	Specification	Remark
Model name	I1-5000N	
Air interface protocols	ISO-18000-3, IEC-15693	
Frequency range	13.56 MHz $\pm$ 20ppm	
Antenna connector	4 monostatic	SMA
Antenna operation	Operate programmable multi-antenna ports	
Operating program	Window 2K / XP / Vista/7	
User API	API for Window	
Program upgrade	Through the use of Network or RS232	
Power supply voltage	DC 12V ($\pm$10%)	
DC Current	MAX 3000mA	
Weight	3.5kg	
Dimensions	169 x 88 x 47 (mm)	
LAN	Connector:RJ45, Standard : IEEE802.3, 10Base T Protocol: TCP/IP	

Serial	RS-232C, Baud Rate : Max 230,400bps	
Extended I/O	4 Inputs and 4 outputs	

1.4 Product images

- I1-5000N reader (Top view, front view)

TopView

FrontView

Chapter 2. Hardware Installation

2.1 Hardware

2.1.1   Reader I/O Panel

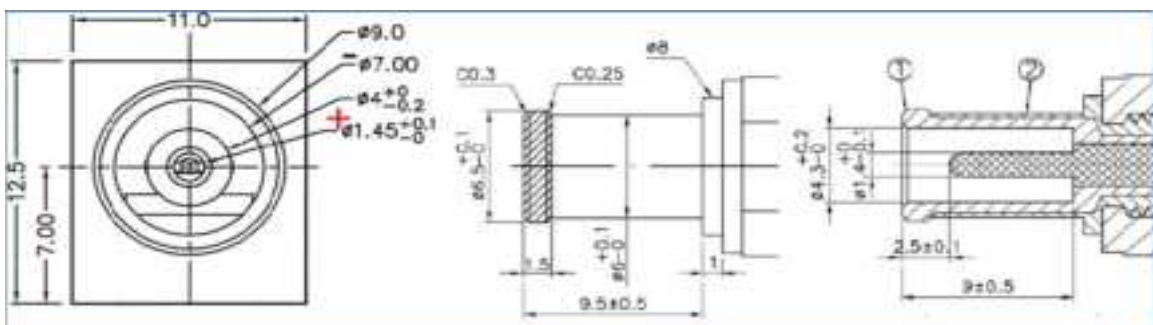DC12V DC Jack

EXT I/O 1
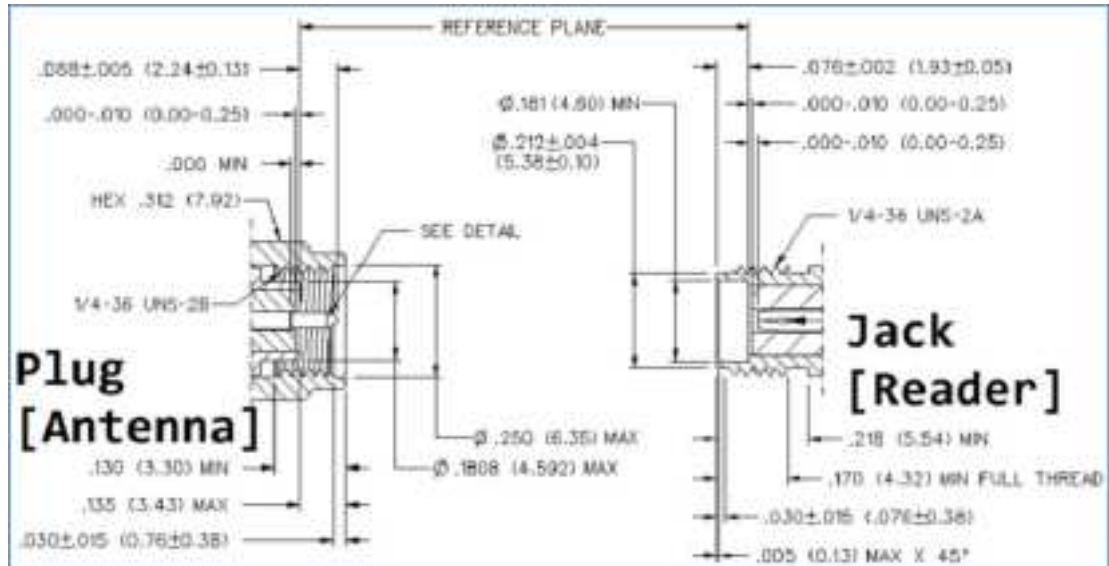
EXT I/O 2

RS-232

LAN

ANT1

ANT2

ANT3

ANT4

● Power

Table 1] 입력전원 요구 사항

Input voltage	DC 12V (±10%)	
Input Cur	3000mA more than	
Ripple and ripple noise	50mVp-p or less	Spike at the moment: 100mVp-p or less

Power Connector (DC Power Socket & Jack)

- Antenna Port

Antenna Connector

- RF specification

Item	Specification	Remark
Frequency Range	13.56 MHz ± 20ppm	
Air interface protocol	ISO-18000-3, IEC-15693	
Antenna ports	4 monostatic	

1.2.2   LED Panel

- POWER (Red): It indicates the power; ON/OFF
- READ (dual color): It flashes when the reader reads the tags.

2.2 Hardware installation

① Locate the host PC.

② Connect the reader with the RS-232C cable.

③ Connect the RS-232C cable with the host PC.

④ Connect the power adaptor to the reader..

RS-232C Cable & Power Adaptor Connection

⑤ Connect the antenna port (1) with the antenna cable.

⑥ Connect the antenna with the antenna cable.

Reader & Antenna with Connection by Antenna Cable

⑦ Plug the power code.
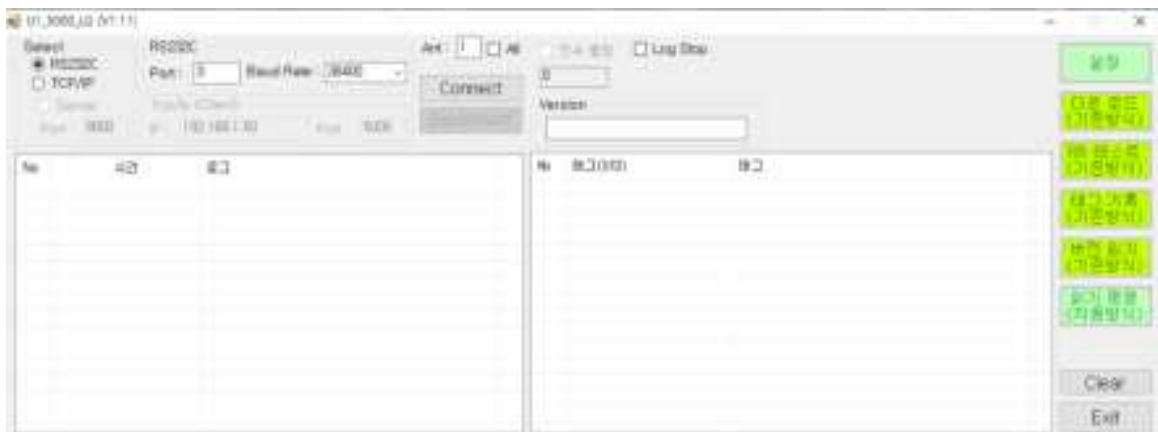
⑧ Operate the host PC and execute the PC program.

Chapter 3. Software Installation

3.1 Check before installation

① Confirm the appropriate software.

② Confirm the host PC that connects to the network.

3.2 Software installation

① Copy the software into the host PC (E.g.. Copy the I1-5000 folder onto D:)


Software Folder

Chapter 4. Software Operation

There are two ways to operate the I9-5000N UHF Reader. One is to operate the reader with directly received input and the other is the Machine-to-Machine(MtoM) mode, in other words, to operate automatically by the connected host or software which has been programmed in the middleware. In order to operate in MtoM mode.

In this chapter, it describes how to control the reader by the program that uses binary protocols and also discusses how the user reads and writes the tags.
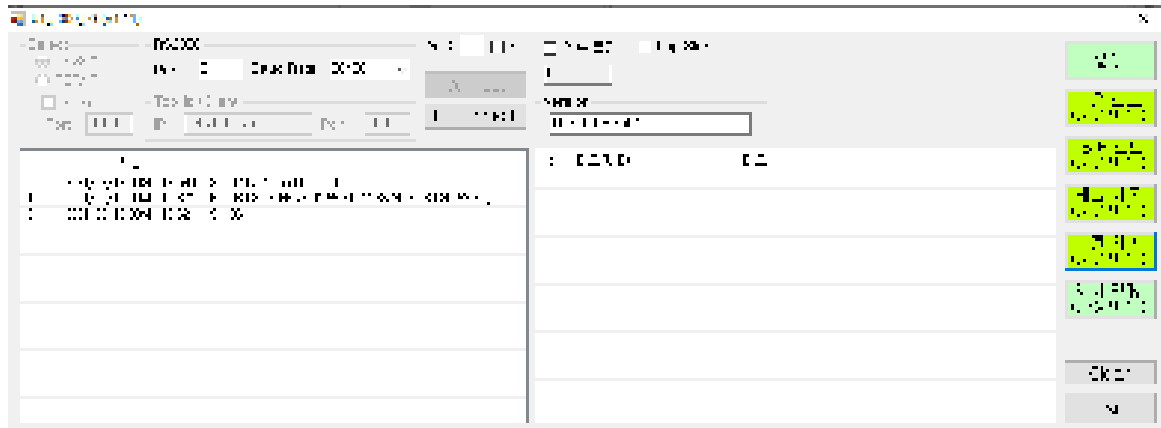
4.1 Execute the U1_5000 (PC Application Program)

①   Choice RS232C of TCP/IP

②   If user choose RS232C, select part and Baud Rate

        If user choose TCP/IP, select IP and Port

③   Click Connect button
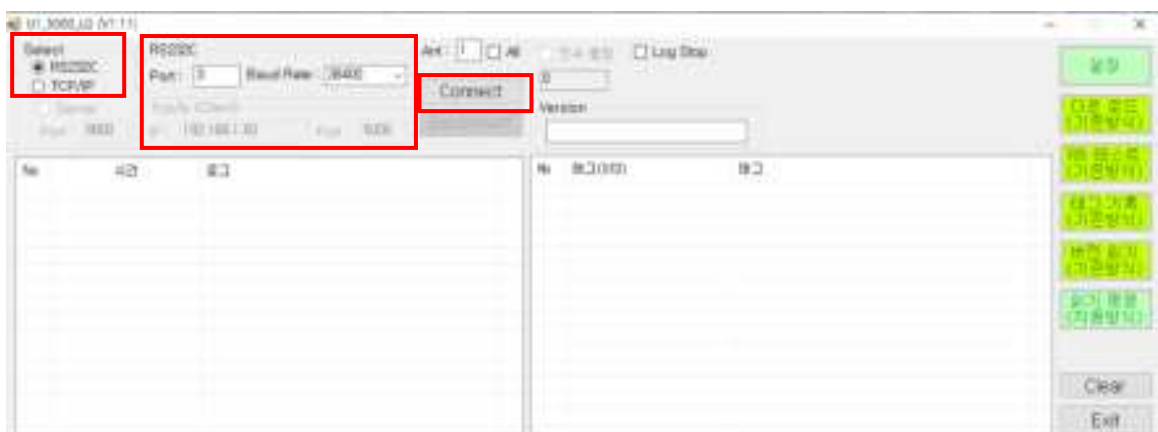
④ Click RB Test button

Start Tag reading

⑤ Click RB Poling(End) button

End Tag reading