RFID READER
RFID-IDR-232N

USER'S MANUAL

V1.2

September 2010

Index

1. INTRODUCTION AND OVERVIEW

RFID-IDR-232N is plug and use RFID reader. It has been designed with capabilities and features of:

- Low cost solution for reading passive RFID transponder tags.
- Industrial grade casing for better outlook and protection.
- Every reader has been tested before is being shipped.
- **9600 baud** RS232 serial interface (output only) to PC.
- Fully operation with **5VDC** power supply from USB port.
- Buzzer as sound indication of activity.
- Red and green color LED for visual indication of activity.
- Standard RS232 serial cable (female) ready to plug to desktop PC.
- USB as power source from desktop PC.
- 2cm reading range.
- 0.1s response time.
- 12 bytes of data received include start of heading, RFID ID and start of text.

RFID-IDR-232N is fully working RFID tags reader and can be applied in:
- Security system.
- Car parking.
- Office.
- Hypermarket for item pricing.
- Student projects

RFID-IDR-232N can be connected to PC or microcontroller as part of embedded system.

This document elaborates the method in using RFID-IDR-23

2. PACKING LIST

Please check the parts and components according to the packing list. If there are any parts missing, please contact us at sales@cytron.com.my immediately.

1. 1 x RFID-IDR-232N with:

    - Female RS232 cable with USB and RJ11

3. POWER SUPPLY

RFID-IDR-232N power source is from USB connection. There is no communication through USB connector, only 5V is taken from this connector. The communication line is RS232 cable (serial port with female DB9)

• **Connect the USB to the USB port of PC or laptop.**

After providing power to RFID-IDR-232N, the LED will light ON with the RED color and buzzer will beep.
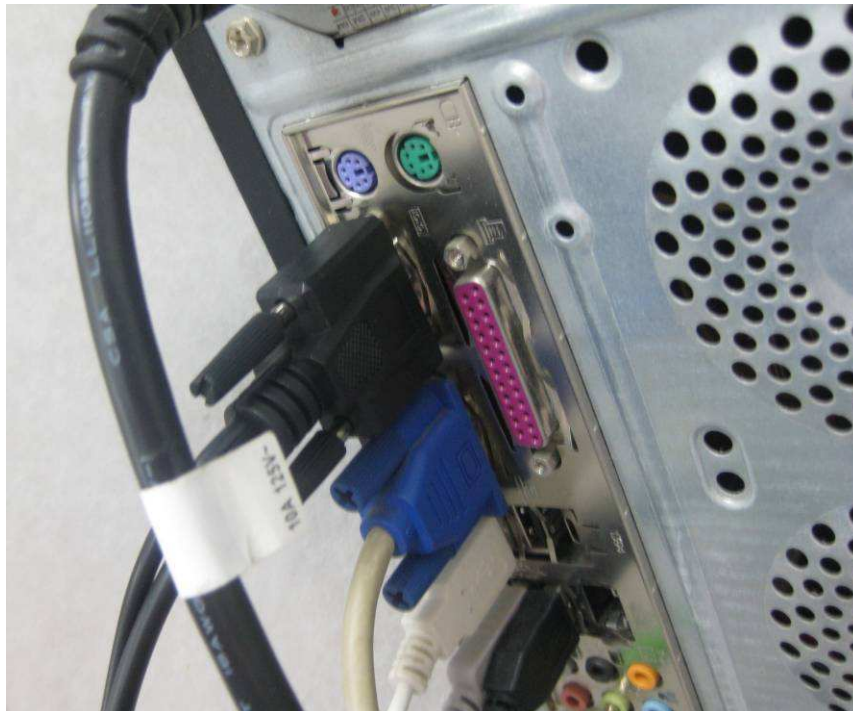
4. USING RFID-IDR-232N

The hardware connection must be setup before RFID-IDR-232N can be used.

Connect RJ11 cable connector into RFID Reader as shown in figure.
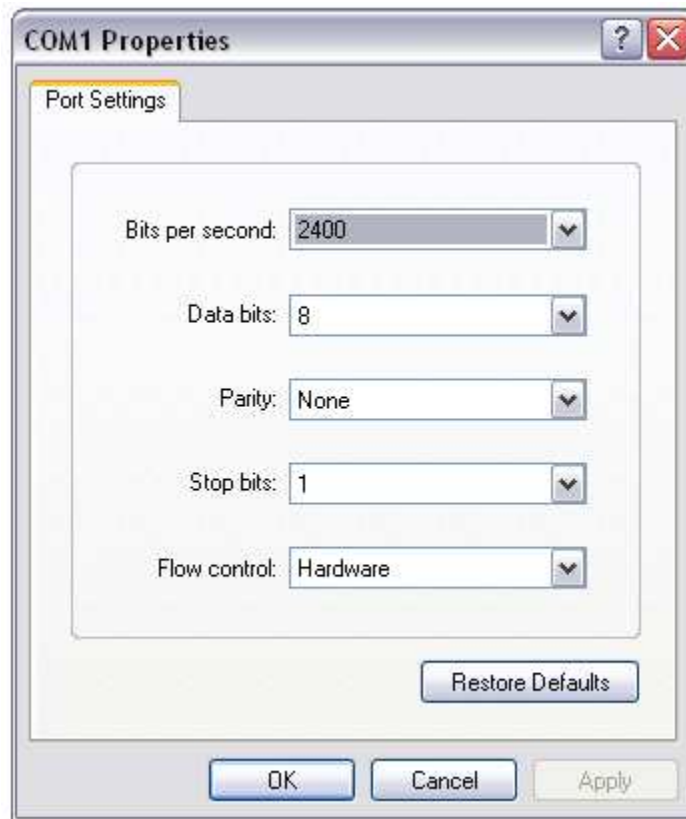

The communication line has to be connected to serial port of PC.

After both power and communication line are connected, the HyperTerminal (software) need to be configured:

a. Open HyperTerminal
b. Choose COM1 (if you connect to COM1)
c. Configure the properties of COM1 to:
   i) Baud rate (Bits per second) = 9600
   ii) Data bits = 8
   iii) Parity = None
   iv) Stop bits = 1
   v) Flow control = None

Now, RFID-IDR-232N is ready to read address of a 125 KHz passive tag. Move the tag slowly towards RFID-IDR-232N (top), at approximately 2cm from the casing, the buzzer will sound, LED will turn to green when the tag move slowly towards RFID-IDR-232N and HyperTerminal will show the tag's ID in ASCII.
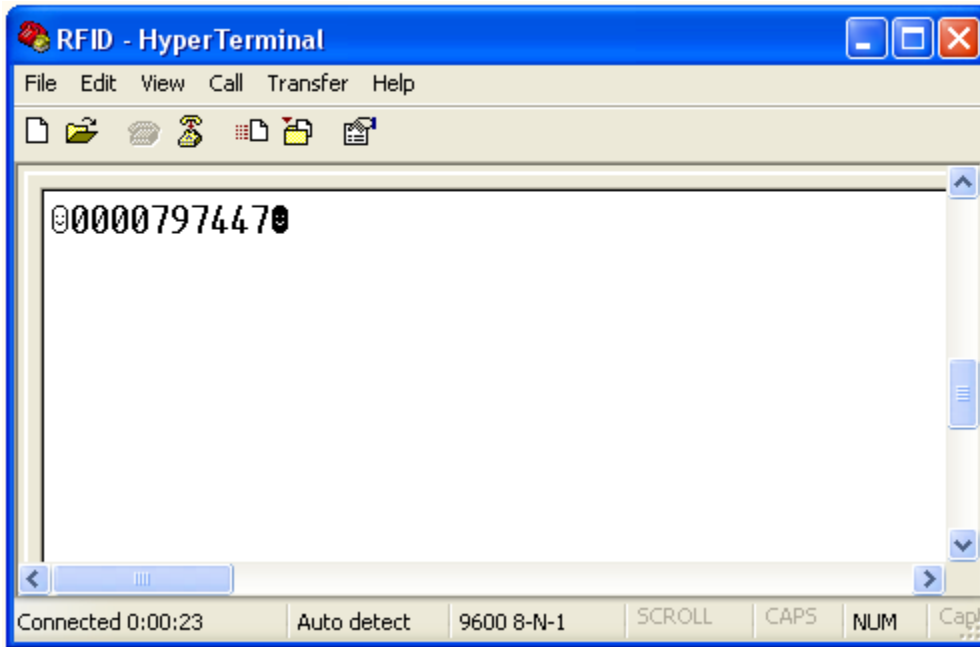
Figure above show the protocol of the RFID Reader. The extra byte of data at the first and the last of tag ID's. If the protocol users have is different from the protocol above, please contact us at sales@cytron.com.my immediately.
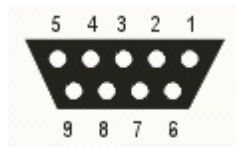
5. PIN CONFIGURATION

If RFID-IDR-232N is require on embedded system where no PC is available, hardware modification and interface is necessary. USB will provide 5V and ground to RFID-IDR-232N, while female DB9 is communication line to PC. Below show the pin configuration of USB, RJ11 and DB9 of RFID-IDR-232.
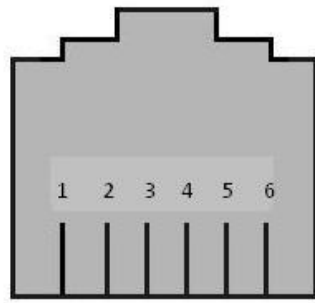
PIN No	Function
1	VCC
2	NA
3	NA
4	GND

USB female Connector

PIN No	Function
1	NA
2	**Tx**
3	**Rx**
4	NA
5	**Gnd**
6	NA
7	NA
8	NA
9	NA

Female DB9 pin Configuration

PIN No	Function
1	**5V**
2	NA
3	NA
4	**Tx**
5	**Rx**
6	**Gnd**

RJ11 female socket Configuration
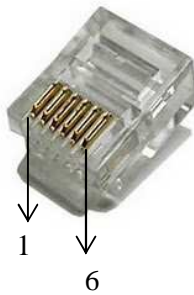
RJ11 male pin Configuration

6. RFID-IDR-232N Protocol

High level language which can access to serial port can be used to develop program for RFID-IDR-232N on desktop PC or laptop. Some examples of high level language are Visual Basic, Labview and Visual C++.

If RFID-IDR-232N is connected to microcontroller, Assembly language or C compiler (depending on microcontroller type) can be used to write program.

RFID-IDR-232N will read the ID from RFID tag if the tag is near enough to RFID Reader. The ID is normally 10 digit of number. RFID-IDR-232N will automatically send this ID with 1 byte of Start of heading (0x01), followed by 10 byte of ASCII character (ID) and 1 byte of Start of text (0x02).

1 byte Start of Heading	10 byte RFID Identification	1 byte Start of Text
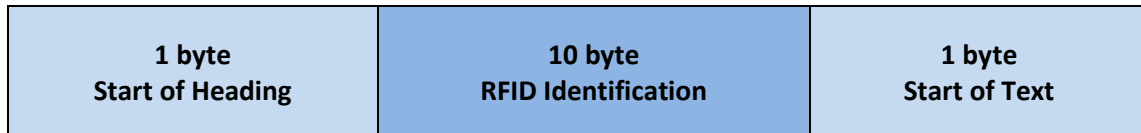
The 1st byte will be read is "Start of heading" followed with 10 bytes of RFID Identification number. The last 1 byte is "Start of Text"

7. WARRANTY

> ➤ Product warranty is valid for 6 months
> ➤ Warranty only applies to manufacturing defect.
> ➤ Damage caused by mis-use is not covered under warranty.
> ➤ Warranty does not cover freight cost for both ways.

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