U PASS

UHF READER

CPR-303US

U Pass co., Ltd

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⚠ CAUTION...

- Use a power cable rated for the voltage in question.
- Be sure however to use a power cable conforming to safety standard of your nation when using a product overseas.
- Do not place anything heavy on top of the power cable.
- Before turning on the power, be sure to check that the supply voltage matches the voltage requirements of the instrument.
- Use a power have suitable specifications.
- Use a power plug normally.
- Handle a power adaptor as follows.
  a. Remove a dust or foreign body of the surface before plug in.
  b. Insert a power plug completely.
  c. Do not use a loose power plug.
  d. Do not drag a power cable when pull out a power plug.
  This can cause a cable short or a fire.
  e. Pull out a cable in a dried hand. In case of touching by a wet hand, an electric shock can be occurred.
- Turn off the power before connecting of a communication cable or some peripheral devices.This can cause an electric shock.
- Do not the heavy things on the reader to reduce the risk of body injury when the reader clash to the floor.
- When a strange smoke,small or abnormal temperature occure,stop the reader operating.
  a. This is the major cause of an electric shock or a fire.
  b. Remove a power cable.
  c. Do not disassemble the reader.
- Do not disassemble or convert the reader for repair.
- This can cause hurts,an electric shock or a fire.
- Check the connecting of a antenna port, when the state of tagging is not good.
- Set a reader at the stable place. The vibration can cause to make a fault reader by falling or damaging.

Chapter 1. Introduction

1.1 Reader Define

The CPR-303US is high performance RFID reader that reliably operated in outdoor circumstances.
The I/O structure of the CPR-303US enables inputting sensor signal and outputting controller. With internal antenna and simple construction, CPR-303US provides a seal against adverse environmental conditions.
It is designed based on ISO18000-6 so that it supports major tag protocols.
The CPR-303US can be operated not only in stand-alone mode but also in remote control mode by adjusting internal selection switch which enables wide application range.
The most suitable application range of this reader is parking-lot application, vehicle and human access control.

1.2 Operation Specifications

- ISO18000 6A, 6B, 6C singular which is satisfied a standard or it will recognize multiple Tag and there is a possibility which it will write a data in Tag memories.
- External Interface support : RS -232, TCP/IP
- To use LED, the operation state identification is possible from the external.
- User Mode Possibility.
- Firmware upgradable by Bootloader

1.3 Communication Specifications

External Interface	Serial	9600bps / 38,400bps / 115,200bps
	Ethernet	TCP/IP
Air Protocol	Tag Air Protocol	ISO 18000 - 6A ISO 18000 - 6B ISO 18000 - 6C

1.4 Enviroment Specifications

Operating Temp.	-30 ° C ~ 40 ° C
Storage Temp.	-30 ° C ~ 70 ° C
Humidity	10% ~ 95%

1.5 Antenna Specifications

Form	Micro Fatch Array
Gain	< 6dBi
Polarization	Circular
3dB Beamwidth	20 ° (E-plane)
Impedance	50 Ohm
Size	220x220x13 (mm)

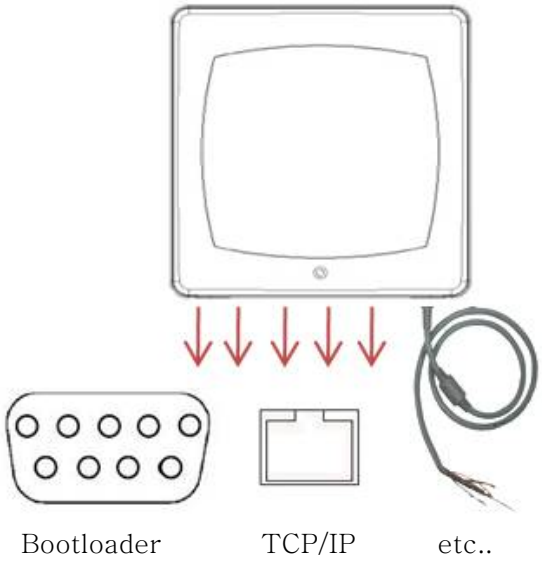
1.6 Reader Specifications

Operation Frequency	902 ~ 928MHz
Operation Tag	ISO 18000 - 6A,6B,6C
RF Output	1 W
Modulation	PR - ASK
An Antenna Type	Circular
Operation Type	
Hopping Channel	50 Channel
Read Range	4 ~ 5 m
Channel band widwh	500KHz@1FA
Operating Voltage	DC 24V
Current	0.5A
Size	235x255x55 (mm)
Height	1.5Kg
LAN	RJ - 45 Protocol:TCP/IP

1.7 Product Image

Chapter 2. HARDWARE INSTALLATION

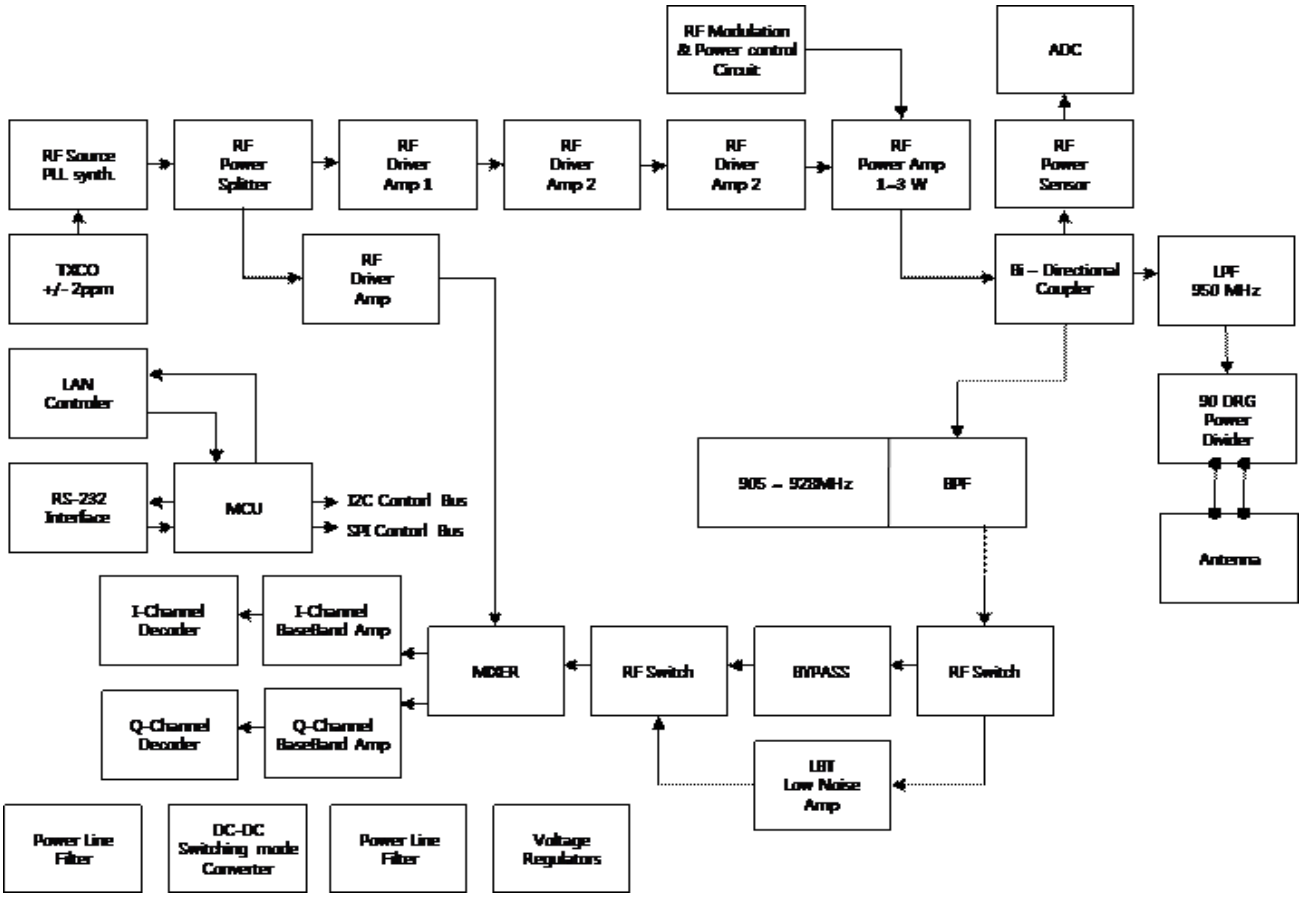
2.1 Each partial by summary of hardware



- Bootloader : Firmware upgrade, Interface, Baudrate, Tag Type
- TCP/IP
- etc : RS -232 , TCP/IP, RELAY, LOOP

Chapter 3. READER THEORY OF OPERATION

3.1 Blockdiagram

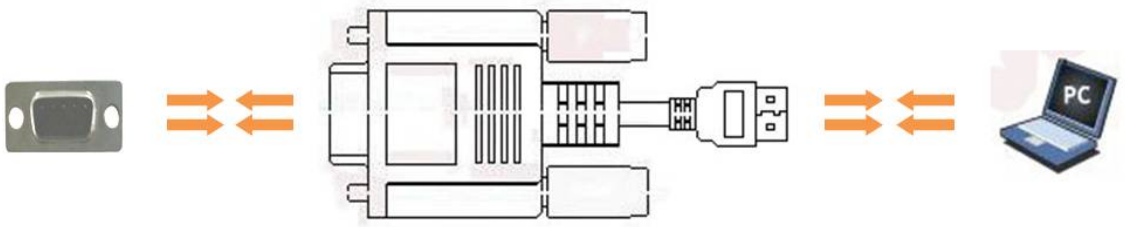


3.2 Reader Theory Of Operation

CPR-303US device is intended to use as interrogator for UHF RFID system for access control or industrial automation. Device consist of RF transmitter section and RF receiver section. Tranmitter section radiates RF power in the UHF ISM frequency band with narrow band modulation within 500KHz bandwidth and receiver section receiver signal in the same frequency as transmitter radiates within same frequency channel.
CRP-303US has internal build-in 6dBi gain antenna. Transmitter and receiver sections of device shares the same antenna for normal operation. As option, receiver section can be switched to employ additional external antenna for better operation. For this mode of operation it is needed to soldering a coaxial jumper cable inside of device and connection of a one more standalone antenna.
Device has auxiliary input signal to control an intended transmission, so to avoid continuous radiation of RF power CRP-303US must be configured to using of this signal to start radiation of RF power.
Device also has electrically decoupled pair of connector, used to control external executive mechanism, like a gate motor or door lock.

Chapter 4. USER MANUAL

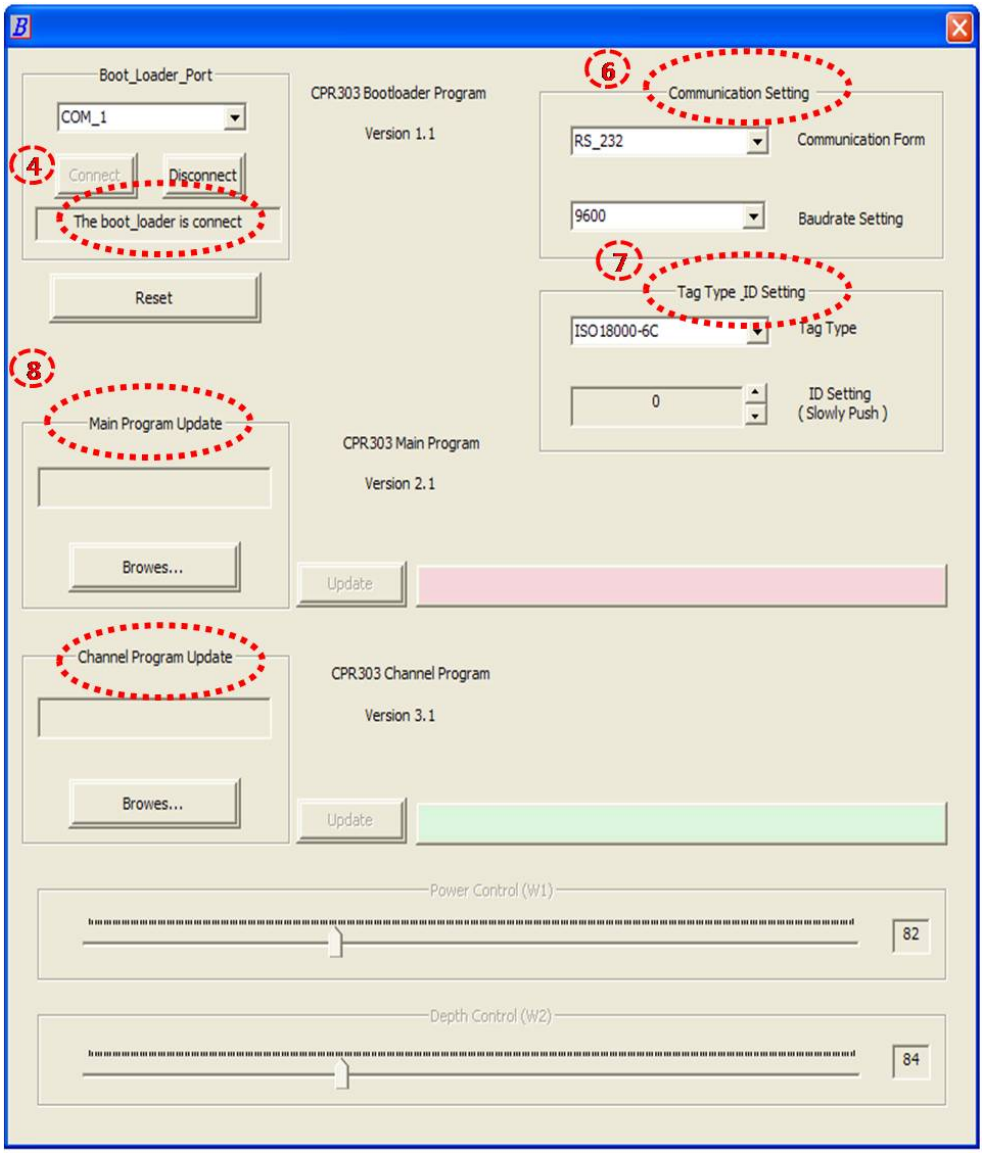
4.1 Bootloader Connectivity



Reader SUS USB Cable (male) PC

Figure 1

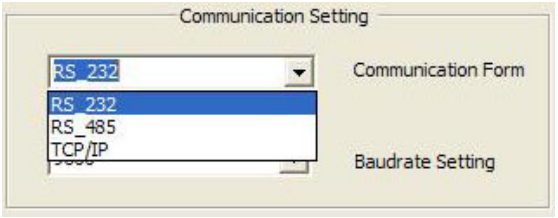
4.2 Bootloader Manual

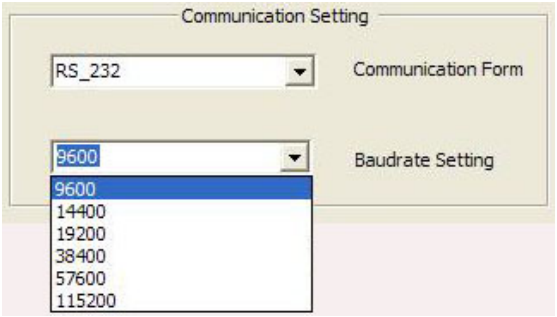


1. Cable Connection. (Figure 1. Connection Reference)
2. **aLOADER_APP.exe** Execution.
3. UHF READER(CPR-303US) Power ON.
4. **The boot_loader is connect.**

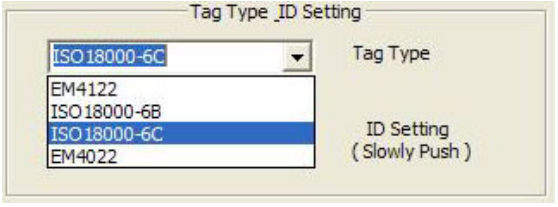
5. In Order.

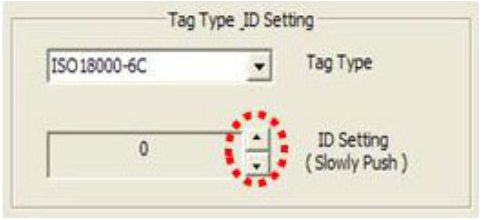
6. Communication & Baudrate Setting





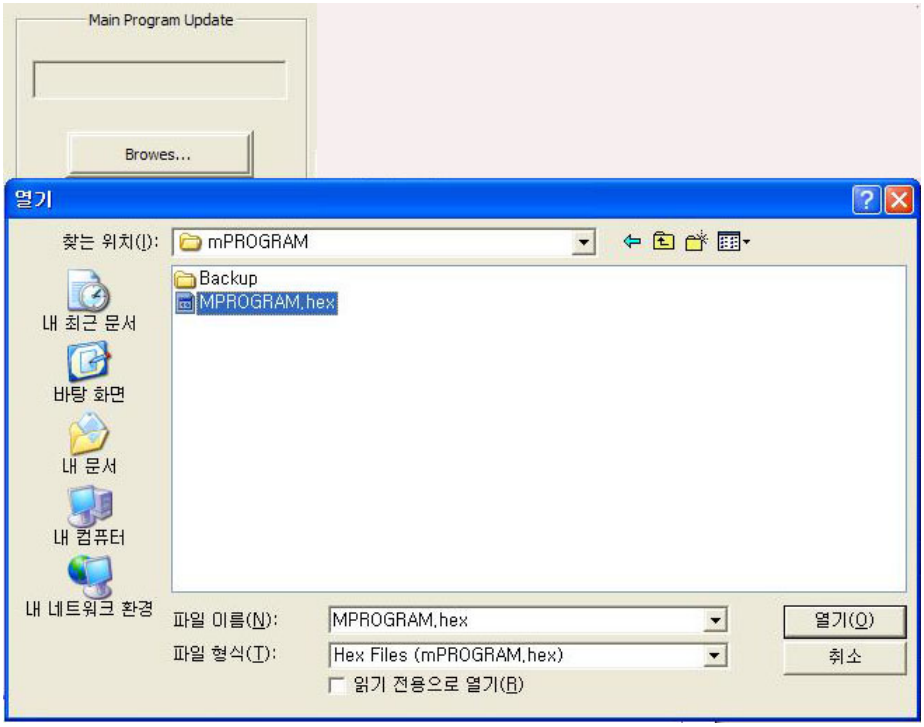
7. Tag Type & ID Setting

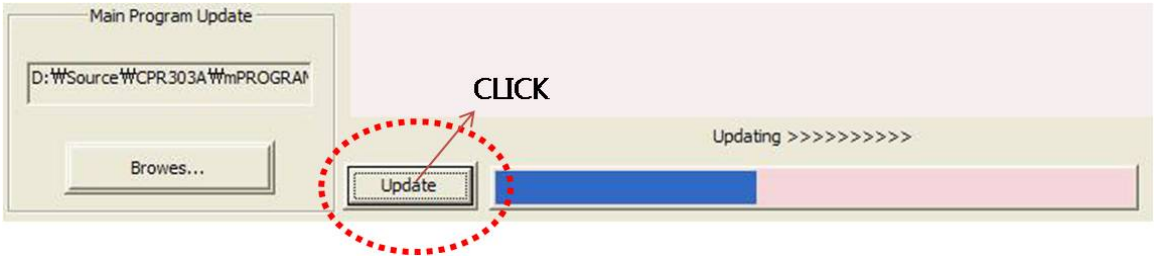




8. READER Firmware Download

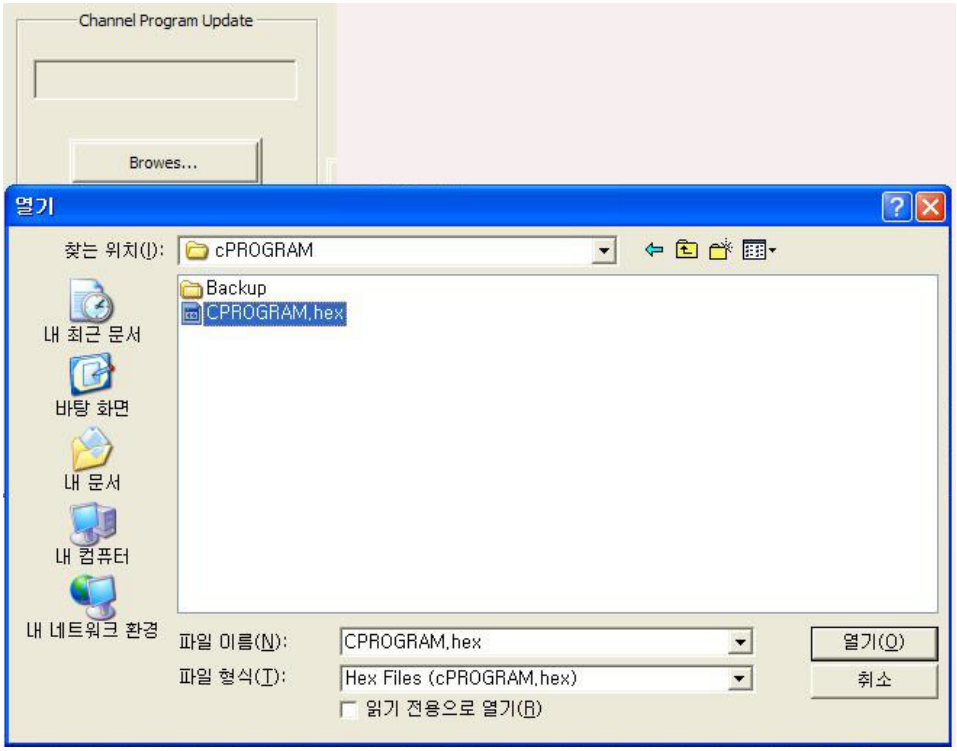
8.1 Main Program

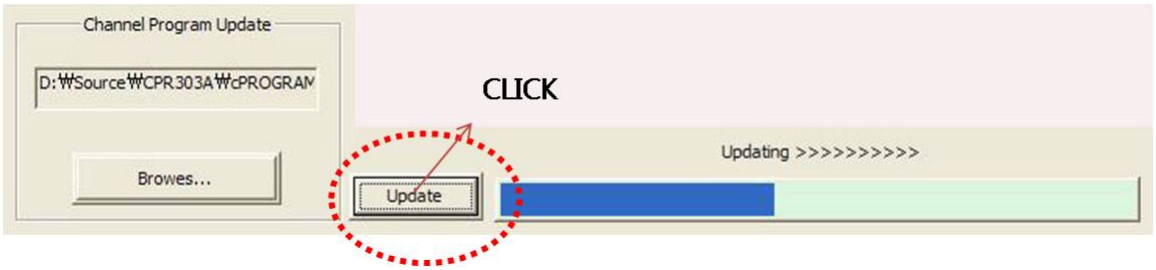




Directory Select (Source File)
−>> mPROGRAM −>> MPROGRAM.hex CLICK.
−>> Main Program Update Completion...

8.1 Channel Program





Directory Select (Source File)
−>> cPROGRAM −>> CPROGRAM.hex CLICK.
−>> Channel Program Update Completion...
−>> **private use Of Credipass**

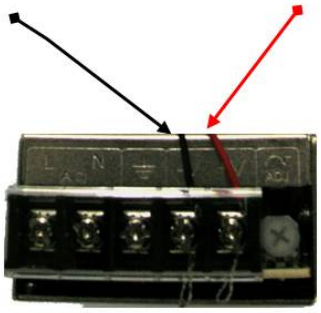
4.3 PIN ASSIGN

4.3.1. Power (DC 24V) UHF READER [RED] [BLACK]

->(Connection without Polarity)

Black

Red



Ex) Power Supply
DC 24V 1A

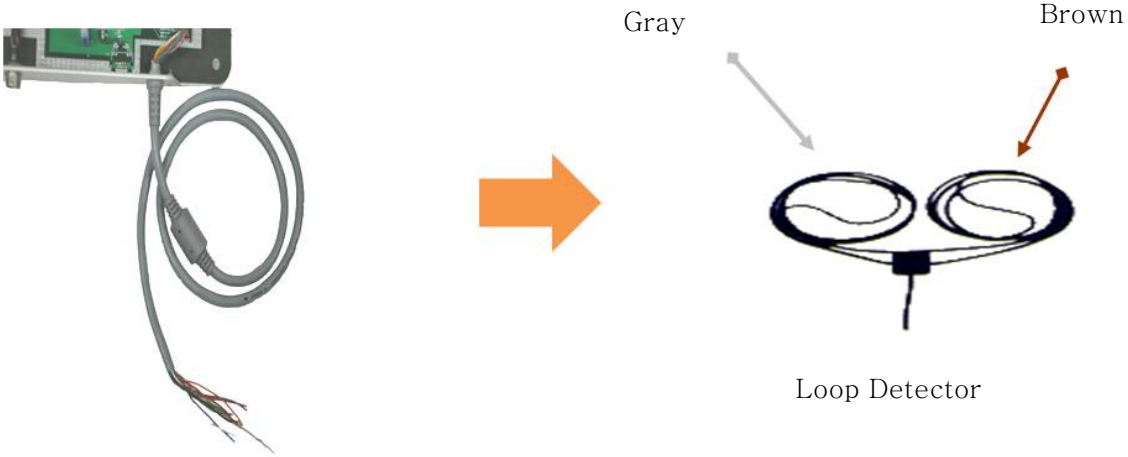
4.3.2. RS-232 [GREEN] [WHITE] [GRAY]

READER	P C (D-sub)
TX [White]	2pin RX
RX [Green]	3pin TX
GND [Gray]	5pin GND

4.3.3 RELAY [ORANGE] [VIOLET]

-> Connection without Polarity because NO VOLTAGE BIAS.

4.3.4 Loop Detector [BROWN] [GRAY]



Chapter 5. Contact

U Pass Office & Technic Support

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152-847 Korea.

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FAX:+82-2-488-8277

WARNING STATEMENT

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

“NOTE: This equipment has been tested and found to comply with the limits for a Class A 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.”