Identification with Radio and Optical

IDRO900F User's Manual

Key Features

- ISO 18000-6C(Gen2) protocol support
- Dynamic RF output power : 30dBm~0dBm
- Customized GPIO
- Small SIZE, Compact design

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FCC Compliance Information

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

WARNING TO USER :

The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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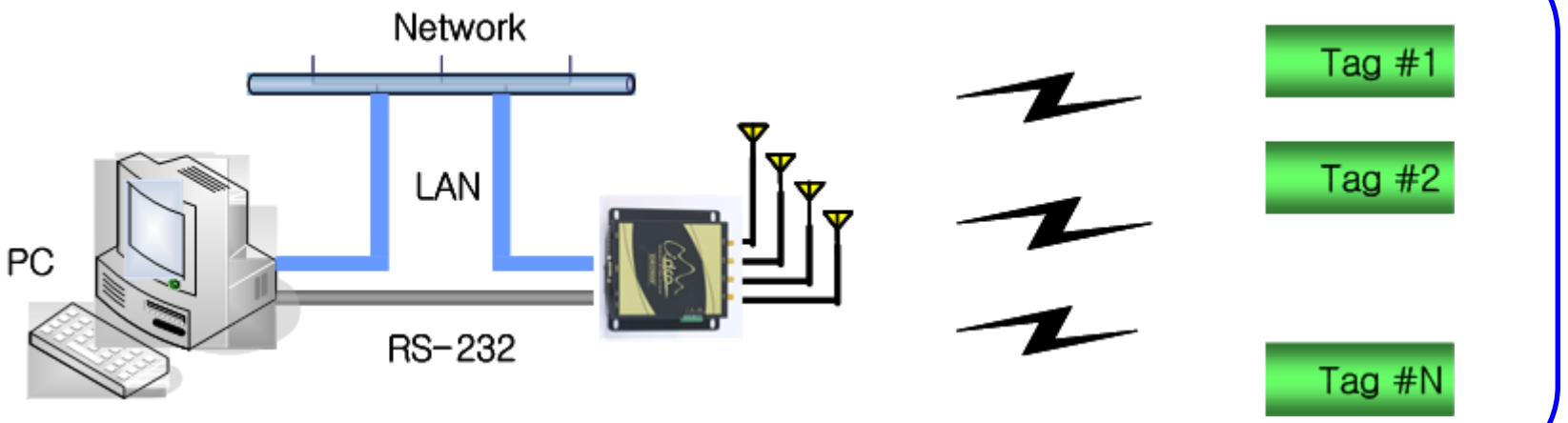
Introduction & System composition diagram

◈ Introduction ◈

- The IDRO900F support the EPC generation 2 standards.
- The host computer can be locally connected to the reader via RS-232, or ethernet interface.
- The system comprises of five parts : the 900MHz reader, ANT(6dBi), power adaptor, 50 Ohm coxial cable, and RS-232 Cable.
- Target Application
  - Parking management system
  - Factory conveyor system
  - Bagging management system
  - Other application

◈ System composition diagram◈

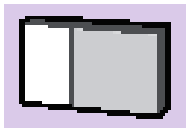


Reader

Antenna(6dBi)

Antenna cable (6m)

RS-232 Cable



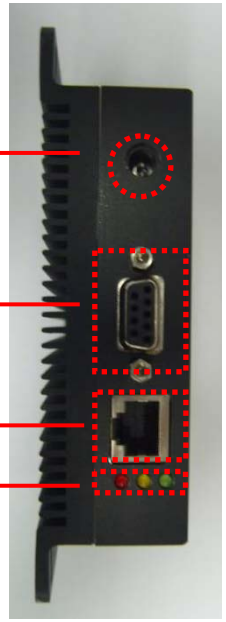
User manual

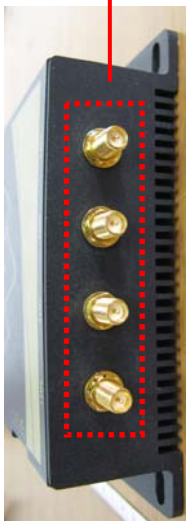
SERIAL : It can be locally connected to the host pc and Use to information transfer or firmware update.

DC9V : RFID Reader power supply port, recommend a DC9V/3A Adaptor.

ANT1 / ANT2 / ANT3 / ANT4 :

Use a 50 Ohm coxial cable to connect the reader with the patch antenna. It is possible to connection until four antenna..





GPIO : I/O port for control external device

LED : The LED comprises of GREEN LED (READ), YELLOW LED(LINK/ACT), and RED LED(POWER).

LAN : It can be locally connected to the host pc and Use to information transfer or firmware update.

◈ Reader assembly ◈

1. In order for the reader main body not to move, tight fixes.
2. Connect cable to reader. (ANT cable, serial cable, LAN cable, Power cable)

◈ Use DC power supply or a stabilized laboratory power supply with current rating of at least 3A at output voltage with a voltage setting of 9Vdc for supply the reader.

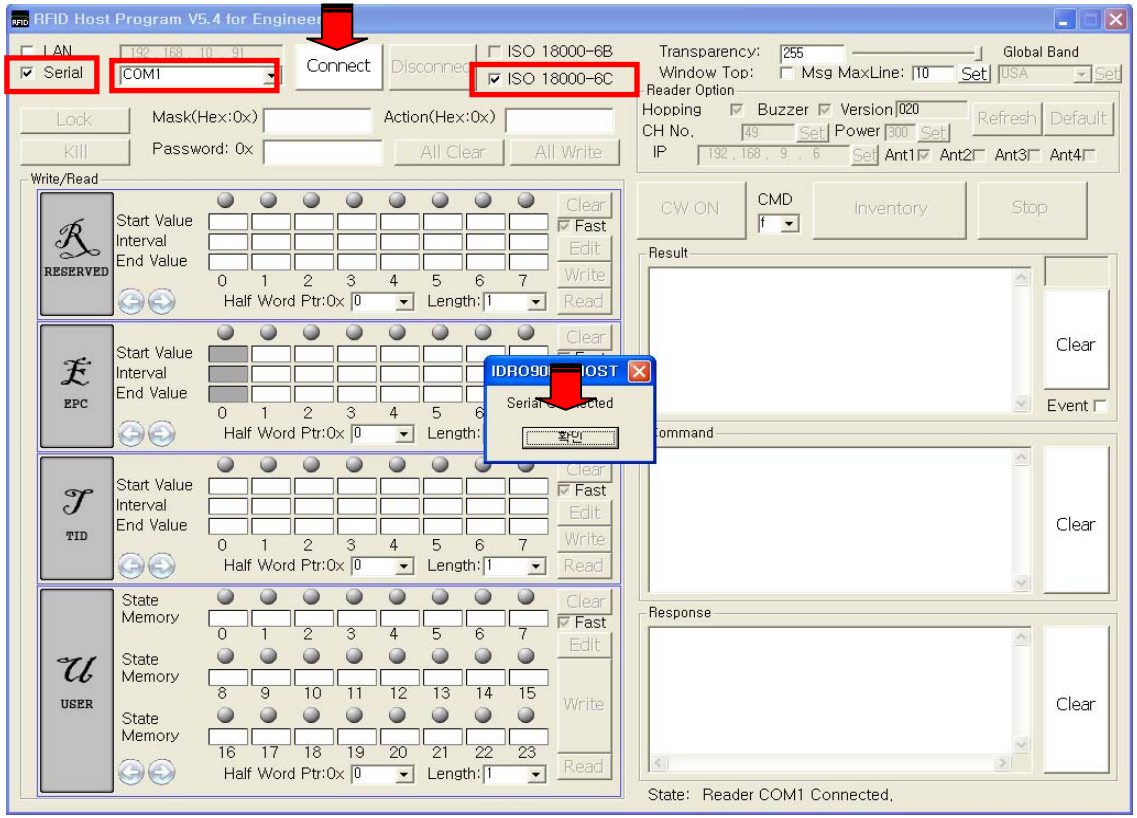
◈ Use a 50ohm coaxial cable to connect the SMA connector on the reader with the N connector on the patch antenna.

◈ Use serial cable to connect PC and the reader.

◈ Use LAN cable to connect PC and the reader.

◈ Graphic User Interface setting_1◈

1. Run “IDRO900F_HOST_Engineer” with window XP
2. Connect serial data cable between PC and Reader.
3. First, check “Serial, ISO18000-6C and COM1”
4. Supply power(DC9V) to Reader. Waiting until the buzzer is sounded “BEEP”
5. Click “Connect” → Click “확인”



◈ Graphic User Interface setting_2 ◈

1. Reader option
   - → Hopping : Control the frequency hopping on/off (If the CW is ON, Hopping check box can't check)
   - → Buzzer : Control the Buzzer on/off
   - → CH No. : allow user to select channel number(0~49)
   - → Power : Antenna transmission Power in 1/10dBm increments.(ex : 200→set, output power→20dBm)
   - → Ant1, ANT2, ANT3, ANT4 : indicating the physical connector(1 thru 4) to which the logical antenna is bound for transmission of data.
2. CW ON : transmit CW signal at ANT port
3. Inventory : transmit ASK modulation signal at ANT port
4. STOP : Stop the running CW or Inventory

◈ TEST ◈

1. CW TEST

   Double click on the "IDRO900F_HOST_Engineer" → Serial ,COM1,and ISO 18000-6C check → Connect → click"확인" → Select USA in "Global Band" → Hopping(NO check) → Setting CH No. → Setting Power → Select ANT port → CW ON → TEST → STOP

2. ASK TEST

   Double click on the "IDRO900F_HOST_Engineer" → Serial ,COM1,and ISO 18000-6C check → Connect → click"확인" → Select USA in "Global Band" → Hopping(NO check) → Setting CH No. → Setting Power → Select ANT port → Inventory ON → TEST → STOP

3. Hopping TEST

   Double click on the "IDRO900F_HOST_Engineer" → Serial ,COM1,and ISO 18000-6C check → Connect → click"확인" → Select USA in "Global Band" → Hopping,Buzzer(check) → Setting Power → Select ANT port → Inventory ON → TEST → STOP

◈ Channel allocation table(FCC) ◈

FCC			
CH No.	Frequency	CH No.	Frequency
0	902.75	25	915.25
1	903.25	26	915.75
2	903.75	27	916.25
3	904.25	28	916.75
4	904.75	29	917.25
5	905.25	30	917.75
6	905.75	31	918.25
7	906.25	32	918.75
8	906.75	33	919.25
9	907.25	34	919.75
10	907.75	35	920.25
11	908.25	36	920.75
12	908.75	37	921.25
13	909.25	38	921.75
14	909.75	39	922.25
15	910.25	40	922.75
16	910.75	41	923.25
17	911.25	42	923.75
18	911.75	43	924.25
19	912.25	44	924.75
20	912.75	45	925.25
21	913.25	46	925.75
22	913.75	47	926.25
23	914.25	48	926.75
24	914.75	49	927.25

◈ Power control level table ◈

Power control level	Power(dBm)	Power control level	Power(dBm)
300	30	140	14
290	29	130	13
280	28	120	12
270	27	110	11
260	26	100	10
250	25	90	9
240	24	80	8
230	23	70	7
220	22	60	6
210	21	50	5
200	20	40	4
190	19	30	3
180	18	20	2
170	17	10	1
160	16	0	0
150	15		

◈ Specification ◈

ITEM	SPECIFICATION	ITEM	SPECIFICATION
Model	IDRO900F	Protocols	ISO 18000-6 Type C
Frequency	902~928MHz (50ch, FHSS)		EPC Class1-Gen2
Frequency Accuracy	±20ppm	External Communication Ports	RS-232C (DB-9F) LAN (RJ-45)
RF Power	< 1W (30dBm)		
Power control	0dBm to +30dBm(1dB step)		
RF Output Port	4 Ports	Operating Temperature	-10 ~ +50 ℃
Hopping Channels	Random	Operating Humidity	0 ~ 95%
Channel Spacing	500KHz	Dimensions	136 x 126 x 35 mm
Cannel Max Dwell Time	< 400msec	Weight	630g
Modulation	ASK		
Bit rates	40kbps		
Reading Distance Range	> 5m		
LED Indicators	Read, Link/ACT, POWER,		
Power Consumption	9V±0.9V, 1.9A		

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