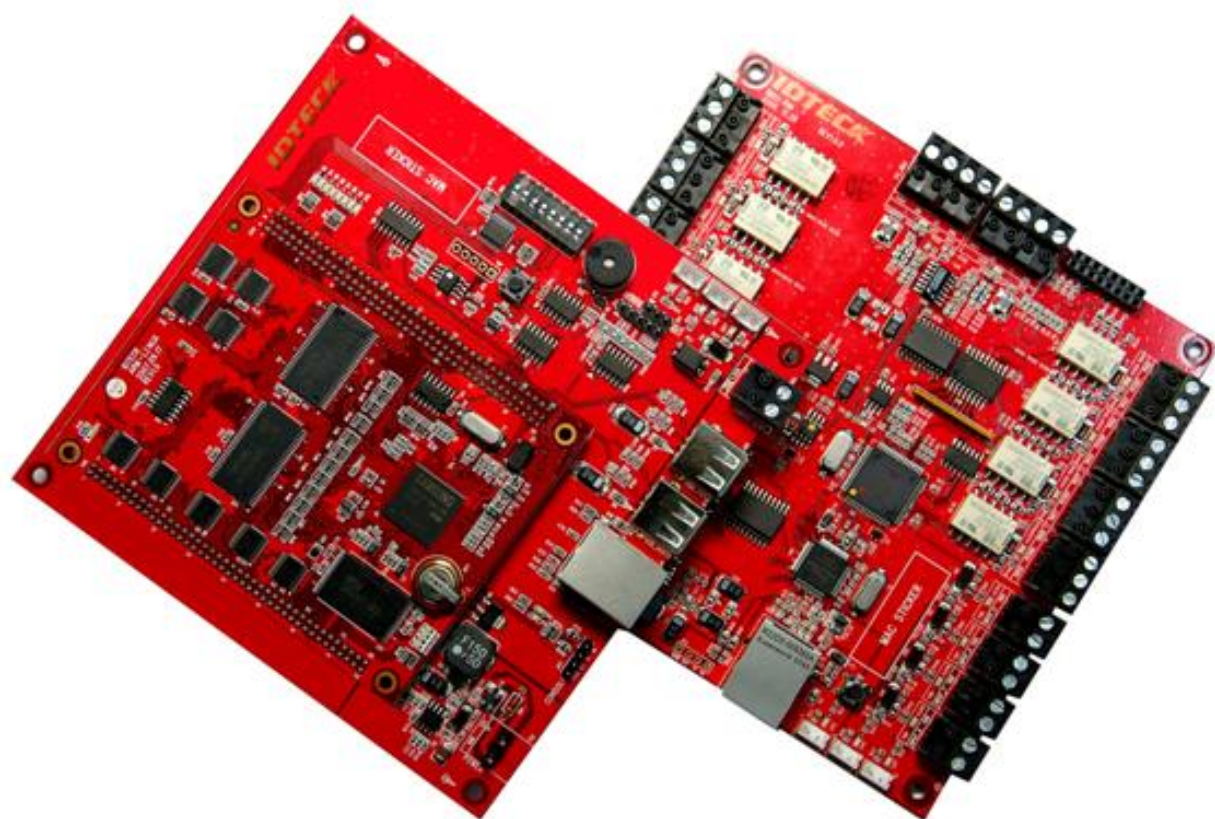


iMDC-MAIN iMDC-RIM

MULTI DOORS ACCESS CONTROL SYSTEM



IDTECK

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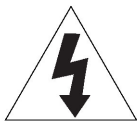
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Safety Information

1



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.



This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.

3. Do not connect multiple controllers to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.
5. When installing the controller, fasten it securely and firmly. The fall of controller may cause personal injury.
6. Do not place conductive objects (e.g. screwdrivers, coins, metal parts, etc.) or containers filled with water on top of the controller. Doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
8. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way. (SAMSUNG is not liable for problems caused by unauthorized modifications or attempted repair.)
10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

CAUTION

1. Do not drop objects on the product or apply strong blows to it. Keep away from a location subject to excessive vibration or magnetic interference.
2. Do not install in a location subject to high temperature (over 50°C), low temperature (below -30°C), or high humidity. Doing so may cause fire or electric shock.
3. If you want to relocate the already installed product, be sure to turn off the power and then move or reinstall it.
4. Remove the power plug from the outlet when there is a lightning storm. Neglecting to do so may cause fire or damage to the product.
5. Keep out of direct sunlight and heat radiation sources. It may cause fire.
6. Install it in a place with good ventilation.
7. Avoid aiming the controller directly towards extremely bright objects such as sun.
8. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
9. The Mains plug is used as a disconnect device and shall stay readily operable at any time.

1 IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
13. Unplug this apparatus when a card is used. Use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1 FEATURES

INTELLIGENT MULTI DOORS CONTROL SYSTEM

iMDC is an Intelligent Door Access Control System designed to manage not only small scale but also large scale of site with controlling maximum of 32 doors per an iMDC-MAIN. iMDC allows the user to register up to 200,000 User IDs and 200,000 events of passer or alarm status. The reader ports of iMDC can be connected with Proximity Readers, Proximity + PIN Readers or biometric fingerprint (or face recognition) readers. Each reader can have its own operation mode, RF only, RF + Password, Fingerprint, RF + Fingerprint, RF + PIN + Fingerprint. The input ports of iMDC can be connected with various devices such as Exit Buttons, Door Contact Sensors, PIR Sensors, Window Breakage Sensors and Fire Sensors to strengthen security.

iMDC consists of iMDC-MAIN and iMDC-RIM, between these are connected by Ethernet communication. And iMDC-MAIN can establish the independent or multiple network connection via network communication.

All system setting such as user card registration, input/output operation setting, time schedule setting, can be configured by application software, STARWATCH ENTERPRISE, and the status of entrance/alarm can be monitored in real-time.

ANTI-PASSBACK

Anti-Pass-Back mode can be set up to strengthen security level and control entrance/exit history accurately. Anti-pass-back mode prevents any entry or exit when the registered user does not properly follow one entry and one exit by the Anti-pass-back rule.

APB only allowed exit for the user who has once got into the door first and it doesn't allow any user trying twice entry or twice exit in a row. As it were, as 2 of card reader s equipped on the both sides of the entrance and exit of one door, the user has to let the card-reader read the user card properly each time of entrance/exit so that only person who got in with the card read by the card reader equipped on the entrance side can get out also only by letting the card reader read the card for exit. When this rule was not kept, the internal memory saves APB error.



There are three levels of Anti Pass back for user's convenience.

- Hard Anti Pass-back: When Anti Pass-back error occurs, access is denied and Anti Pass-back event is generated.
- Soft Anti Pass-back: When Anti Pass-back error occurs, access is granted and Anti Pass-back event is generated.
- Timed Anti Pass-back: When Anti Pass-back error occurs, access is denied. After a specific time, Anti Pass-back error is released and access is allowed.

USER EXPIRATION READER SETTING

The reader set this function makes the card expiration automatically when the card is recognized on the reader.

When expired cards by this function are read by the reader connected from iMDC, the card can't gain access anymore and the validity expiration event is generated.

WIEGAND OR 4/8BIT BURST INPUT CAN BE PROCESSED

iMDC automatically recognizes standard 26bit and 36bit weigand. You can use whichever reader using 26bit or 34bit weigand format without any setting process.

ARM / DISARM

The administrator who has the authority of arm/disarm can set arm/disarm mode.

In the condition where ARM/DISARM code is specified, if the ARM/DISARM code is entered and the card of the administrator presented to the reader, all connected readers will not accept the card and keypad input any further. This function can generate output signal in sync with the security system.



There are four levels of ARM/DISARM for users' convenience.

- ARM/DISARM: If you set ARM/DISARM, all of the readers connected from iMDC apply ARM/DISARM.

- Timed ARM: After specific time set by user, iMDC becomes ARM mode.
- Free ARM/DISARM: Using by free ARM/DISARM card, ARM/DISARM mode can be set without keypad.
- Group ARM/DISARM: If you want to set alarm to grouped reader, the ARM/DISARM groups which belong to applicable readers are set the alarm automatically.

VARIOUS SETTING OPTIONS FOR TIME SCHEDULE SETTING

Time schedule function allows user to grant access only within the set-up time range. Upon each time schedule code, the user can select the time zone and it is transferred to the applicable device. Time schedule has maximum of 12 holiday codes, 128 week day codes and a day can be divided and set up in to 24 sections.



There are five kinds of Time Schedule for user's convenience.

- Card time schedule: You can set the time schedule to grant user's access only within set-up time range. When you register cards, you can set time schedule to the applicable reader individually. The access that occurs in set-up time range is granted and the access that occurs out of set-up time range is denied and time schedule error is recorded.
- Reader time schedule: If reader mode is set to RF+PW mode, only RF card is needed to gain an access in the time schedule range and RF+PW is needed to gain an access out of the time schedule range.
- Input time schedule: You can input time schedule code you want to use to each input port. The input signal of the applicable input port occurs automatically within set-up time range.
- Output time schedule: You can input time schedule code you want to use to each output port. The output signal of the applicable output port occurs automatically within set-up time range.
- Manual output time schedule: The output signal of the applicable output port occurs after authorized card is read within set-up time range.

GUARD TOUR MANAGEMENT

iMDC can issue Guard Tour Management card. If Guard Tour Management card is used, the card history will be saved and checked. When Guard Tour Management card is read, relay isn't generated so that entering inside is protected, but the event is saved. This function is effective to check how the guard tour man works.

HOLIDAY SCHEDULE SETTING

Except for Sunday, 128 holidays (public holidays and day-off for shift working system) can be programmed. Maximum of 64 days holidays can be set by one holiday code. Maximum of 3 time schedule codes can be set by one user ID so total available days to set holiday code is 192 (64X3=192). (As for those selected dates, it is possible to set up the time schedule so the entrance/exit can be possible only for the permitted time range.) Each holiday code can be set-up at each time schedule code.

USER DEFINED POWER FAIL SAFE/POWER FAIL SECURE

When the communication between iMDC-MAIN and iMDC-RIM is interrupted because of a blaze or disaster etc, iMDC offers two output modes, Power Fail Safe and Power Fail secure.

Because the default setting of iMDC is Power Fail Safe, door opening is continued when the network between iMDC-MAIN and iMDC-RIM is disconnected.

You can set the Power Fail Safe mode and Power Fail Secure mode by using STARTWATCH ENTERPRISE in the place where you want to set.



Power Fail Safe mode: The door is opened when the emergency occurs.

Power Fail Secure mode: The door is closed when the emergency occurs.

DOOR OPEN TIMEOUT ALARM, FORCED DOOR OPEN ALARM

The Door Open Timeout Alarm function is to notice the administrator that any case of the door opening even after the normal opening time and waiting time.

The Door Open by Force Alarm function is to activate the alarm when the door is opened by force. If the waiting time passed with this status, the door open time excess status will be activated again.

DURESS ALARM

Duress Alarm Function is used to notice any case that the door has to be opened by force. In case of duress, enter the 2 digits Duress Password and then press <ENT> key before the normal access process then the door will be opened as normal but the duress alarm is also generated at the same time and the duress alarm output will be activated to TTL output and alarm event will be sent to the Host PC.

☒ EVENT PRIORITY SETTING

All of entrance and exit information is saved as events. The manager can search all of user's information about the entrance time and place by event record. Events are saved and searched in chronological order. If users want to search specific event list not in

chronological order, set the event priority then the event list is checked in the event priority order.

☒ **2 MEN OPERATION FUNCTION**

2 Men Operation function is used to control the place where high level of security is needed. If this function is used, the access by visitors is allowed only under the control of the visitor guide. Access will be permitted only if two cards are presented within a specified time.

☒ **LOST OR STOLEN CARD REGISTRATION**

When user's cards are lost or stolen, the card ID can be registered as lost/stolen card by the manager. If the lost/stolen card is used by another person, iMDC saves lost/stolen ID events. The manager can check card using time and place by the saved event information.

☒ **ABSENCE MANAGEMENT**

Several users can have the authority for absence management. Specific doors can be grouped and set as absence management section. Only the manager who has the authority of Absence Management can open and close the grouped door (absence management section). If the door group is closed by Absent Management function, people can't open any door in absence management section. After the authorized manager revoke the absence management, the door can be opened again.

☒ **REDUNDANCY FUNCTION**

You can install sub iMDC-MAIN for redundancy. If communication between main iMDC-MAIN and iMDC RIM is disconnected because of the hardware defects or network problems, sub iMDC-MAIN will be automatically changed to redundant iMDC-MAIN to substitute damaged iMDC-MAIN. The redundant iMDC-MAIN downloads the setting information from STARTWATCH ENTERPRISE and start normal operation.

☒ **DATA BACKUP**

All user information and event/alarm data are retained permanently in flash memory even in the event of Power Failure.

☒ **CARD EXPIRED DATE SETTING**

Card expired date of each card holder can be set. If card expired date is specified, the card holder can gain access only within specified period. After the card is expired, cardholder should register the card to use it again. This function is used to effectively control card validity of temporary visitor.

☒ VARIOUS IN/OUTPUT SETTING

iMDC is equipped with maximum of 128 input ports and 128 output ports.



- Input port type setting: You can specify whether the format of the input signal is blocked (NO) or connected (NC) in normal operation. Various input devices you want to use can be connected by specifying NO or NC status.
- Input type setting: you can use the input ports to receive signal from the exit button and the fire sensor and the door open sensor.
- Output type setting: Output type is Relay output and you can set the output time for output ports.

VARIOUS READER MODE SETTING

The reader connected from iMDC has various operation modes.



- RF Card Only: Only RF card is necessary to grant access.
- PIN Only: Only PIN (keypad) is necessary to grant access.
- RF Card + PW: Both RF card and password are necessary to grant access.

DATA AND EVENT UP/DOWNLOAD

User data, event information and setting values are downloaded / uploaded from/to the host computer by application software, STARWATCH ENTERPRISE.

DOOR SETTING

iMDC offers interfaces of 32 RF readers; therefore the number of controlled doors can be up to 32ea. In this case, exit button must be used to exit from inside. Also entrance and exit reader can be set to the each doors, in this case, maximum of doors to control are 16. If you want to use the function 'ANTI PASSBACK', entrance/exit reader has to be installed to each door.

iMDC has maximum of 128 relay output and TTL input ports. The lock device of each door is controlled by relay and Exit input, Door contact sensor are by TTL Input.

iMDC can set the Exit button and Door contact sensor input to each door. And you can set the door open time alarm function, forced door open alarm function by using door contact sensor

2 IDENTIFYING SUPPLIED PARTS

Please unpack and check the contents of the box.

2.1 Supplied Parts in iMDC-MAIN Gift Box



iMDC-MAIN(1ea)



Quick Installation Guide



Manual CD



Diode(4ea)

2.2 Supplied Parts in iMDC-RIM Gift Box



iMDC-RIM(1ea)



Quick Installation Guide



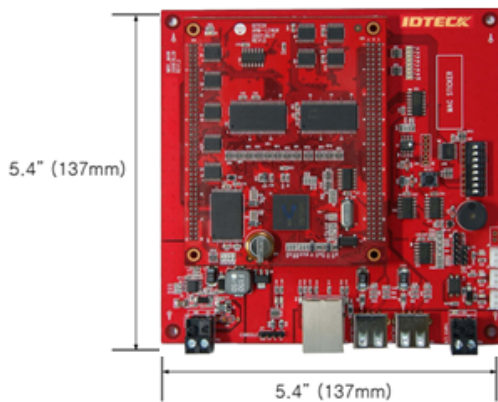
Manual CD



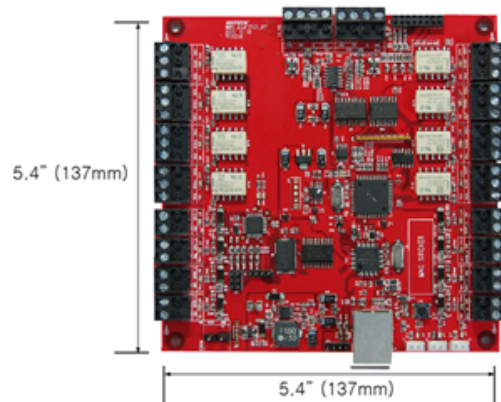
Diode(4ea)

3 DIMENSION

Unit: inch (mm)

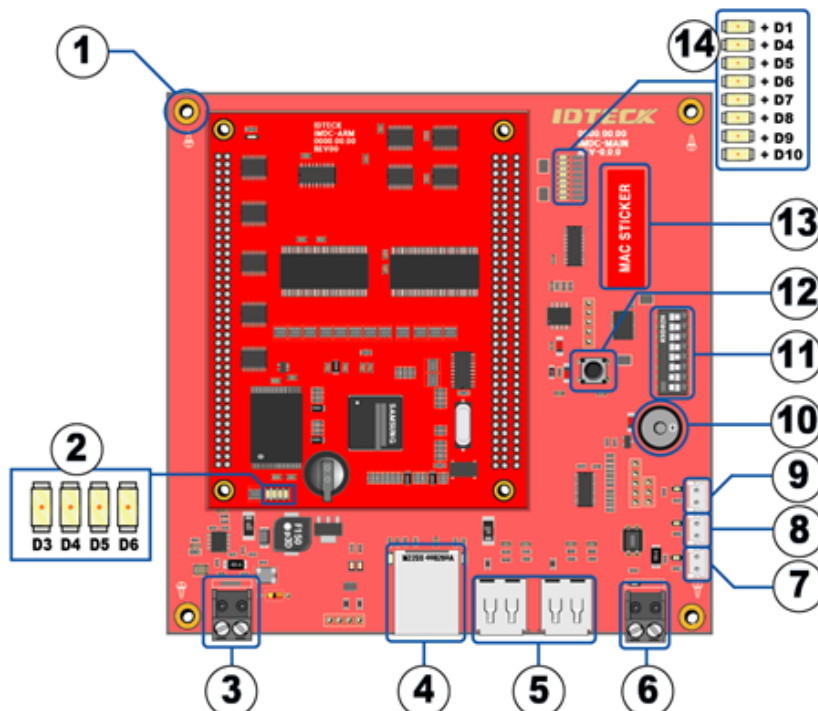


iMDC-MAIN



iMDC-RIM

4 iMDC-MAIN BOARD



4.1 iMDC-MAIN BOARD ARRANGEMENT AND DESCRIPTION

No.	Code	Description
1	Fixing Hole	It's the hole to fix up iMDC on enclosure.
2	Firmware Status LED	It's the LED to show the firmware status. Refer to 'Firmware Operating Status LED' for more detail.
3	Power Port	It's the port to accept power source. iMDC uses DC +12V, Max.700mA current. (When external devices such as door lock, alarm, sensor and reader are not connected.)
4	RJ45	It's the Ethernet connection port to perform communication between iMDC-MAIN and Host PC, iMDC-MAIN and the other iMDC-MAINs, iMDC-MAIN and iMDC-RIM.
5	USB Port	It's the port to connect USB memory.
6	Temper Switch Port	It's the temper switch port to recognize opening status of enclosure.
7	Communication Status LED Connector	It's the connector to be connected to enclosure using cable. Green LED indicates status of Ethernet communication.
8	Communication Status LED Connector	It's the connector to be connected to enclosure using cable. Yellow LED indicates status of Ethernet communication.
9	Power Status LED Connector	It's the connector to be connected to enclosure using cable. If power is normally supplied to iMDC-MAIN, red LED is turned on.
10	Buzzer	It's the buzzer to generate beep sound.
11	DIP Switch	It's the DIP switch to set communication ID.
12	Reset Switch	It's the reset switch to reboot iMDC-MAIN. Information is maintained even after reset.
13	Mac Address Sticker	It's the sticker to indicate Mac address.
14	Firmware Operating Status LED	It's the LED to show firmware operating status. Refer to below table (FIRMWARE OPERATING STATUS LED) for more details.

4.2 iMDC-MAIN OPERATING STATUS LED DESCRIPTION

LED	Code	Normal Status	Description
D3	iMDC Operating Start LED	ON	It's the LED to indicate iMDC-MAIN is operated to start.
D4	iMDC-MAIN Official Version Verification LED	OFF	It's the LED to verify whether the iMDC-MAIN is official version before starting operation. The LED turns on during processing verification and it's off when verification is finished.
D5	Polling Mode Status LED	FLICKER	It's the LED to indicate iMDC-MAIN and STAR WATCH ENTERPRISE are communicating under Polling mode.

4.3 Firmware Operating Status LED description

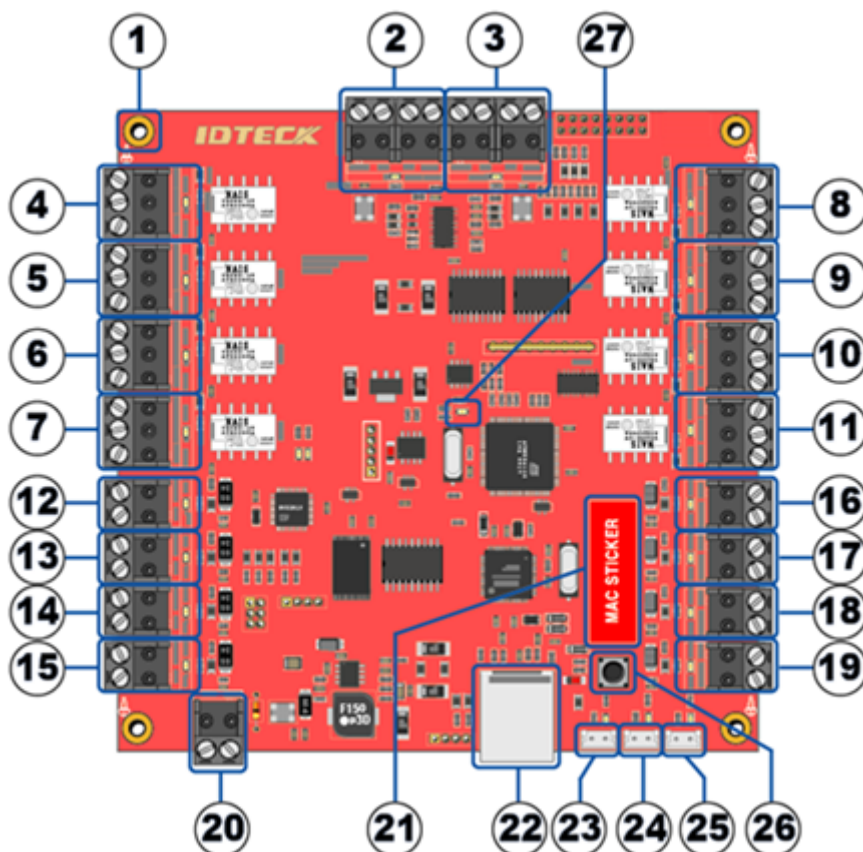
LED	Code	Normal Status	Description
D1	Communication Status LED between iMDC-MAIN and Host PC	FLICKER	It's the LED to indicate communication status between iMDC-MAIN and Host PC. The LED flickers when communication between iMDC-MAIN and PC is processed.
D4	Reader Data Process Status LED	FLICKER	It's the LED to indicate reader data process status. The LED flickers when reader data transmitted from iMDC-RIM is processed.
D5	Communication Status LED between iMDC-MAIN and iMDC-RIM.	FLICKER	It's the LED to indicate communication status between iMDC-MAIN and iMDC-RIM. The LED flickers when communication between iMDC-MAIN and iMDC-RIM is processed.
D6	TTL Input, Relay Output	FLICKER	It's the LED to indicate the process status of TTL input and Relay output. The LED flickers when TTL input and Relay output is processed.

LED	Code	Normal Status	Description
	Process status LED		
D7	Peer to Peer Communication Status LED	FLICKER	It's the LED to indicate Peer to Peer communication status between iMDC-MAINs. The LED flickers when communication between iMDC-MAINs is processed.
D8	iMDC-MAIN Setting Status LED	FLICKER	It's the LED to indicate iMDC-MAIN function setting is possible by STARWATCH ENTERPRISE.
D9	Event Saving Status LED	FLICKER	It's the LED to indicate event saving status happened in iMDC-MAIN.
D10	iMDC-MAIN Operating status LED	FLICKER	It's the LED to indicate iMDC-MAIN function operating status.

5 iMDC-RIM BOARD

5.1 iMDC-RIM (Remote Interface Module) Board Configuration:

- 2ea Reader Ports
- 8ea Input Ports
- 8ea Output Ports (Relay Output)



iMDC-RIM BOARD ARRANGEMENT AND DESCRIPTION

No.	Code	Description
1	Fixing Hole	It's the hole to fix up iMDC on enclosure using screws.
2	Reader #1 Port	It's the reader port to process Wiegand Reader Input.
3	Reader #2 Port	It's the reader port to process Wiegand Reader Input.
4	Relay Output # 1 Port	It's the ports for FORM-C (COM, NO, NC) Relay Output.
5	Relay Output # 2 Port	
6	Relay Output # 3 Port	
7	Relay Output # 4 Port	
8	Relay Output # 5 Port	
9	Relay Output # 6 Port	

No.	Code	Description
10	Relay Output # 7 Port	
11	Relay Output # 8 Port	
12	TTL Input #1 P ort	It's the ports to accept TTL input.
13	TTL Input #2 P ort	
14	TTL Input #3 P ort	
15	TTL Input #4 P ort	
16	TTL Input #5 P ort	
17	TTL Input #6 P ort	
18	TTL Input #7 P ort	
19	TTL Input #8 P ort	
20	Power Port	It's the port to accept power source. iMDC uses DC +12V, Max.350mA current. (When external devices such as door lock, alarm, sensor and reader are not connected.)
21	Mac Address S ticker	It's the sticker to indicate Mac address.
22	RJ45	It's the Ethernet connection port to perform communication between iMDC-MAIN and Host PC, iMDC-MAIN and the other iMDC-MAINS, iMDC-MAIN and iMDC-RIM.
23	Power Status L ED Connector	It's the connector to be connected to enclosure using cable. If red LED is turned on, it means power has properly supplied.
24	Communicatio n Status LED Connector	It's the connector to be connected to enclosure using cable. Green LED indicates status of Ethernet communication.
25	Communicatio n Status LED Connector	It's the connector to be connected to enclosure using cable. If communication between iMDC-MAIN and iMDC-RIM starts, the yellow LED turns on.
26	Reset Switch	It's the reset switch to reboot the device. The set information main

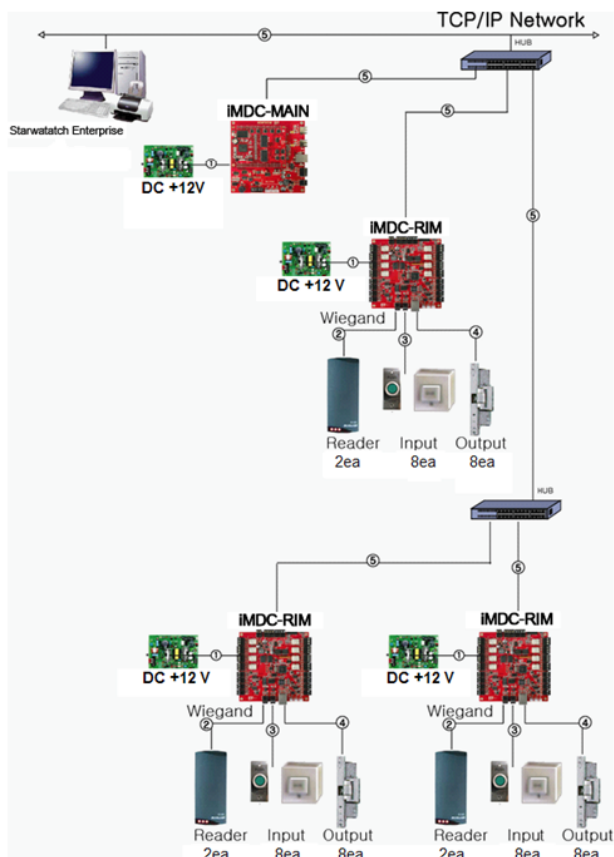
No.	Code	Description
		tains even after reset.
27	Status LED	It's the LED to indicate iMDC-RIM's status. The LED turns off during normal status.

INSTALLATION TIPS & CHECK POINTS

3

1 INSTALLATION CONFIGURATION

The system installation cables should be connected as follows;



2 RECOMMENDED CABLE TYPE AND PERMISSIBLE LENGTH OF CABLE

Reference	Description	Cable specification	Maximum distance
1	DC +12V → Power iMDC-MAIN DC +12V → Power iMDC-RIM	Belden #9409, 18 AWG 2 conductor, unshielded	3m
*2 ¹	Reader (Power and Data) Reader → iMDC-RIM	Belden #9512, 22 AWG 4 conductor, shielded Belden #9514, 22 AWG 8 conductor, shielded	150m
3	Door Contact Exit Button Sensor Input Input → iMDC-RIM	Belden #9512, 22 AWG 4 conductor, shielded Belden #9514, 22 AWG 8 conductor, shielded	300m
4	Door Lock, Alarm Device Lock (Alarm) → iMDC-RIM	Belden #9409, 18AWG 2 conductor, unshielded	300m
5	iMDC Cable iMDC-RIM Cable iMDC-MAIN ↔ iMDC-MAIN iMDC-MAIN ↔ iMDC-RIM iMDC-MAIN ↔ Host P.C	UTP Cable CAT5(Catagory5)	100m ~ 150m

3 CHECK POINT DURING INSTALLATION

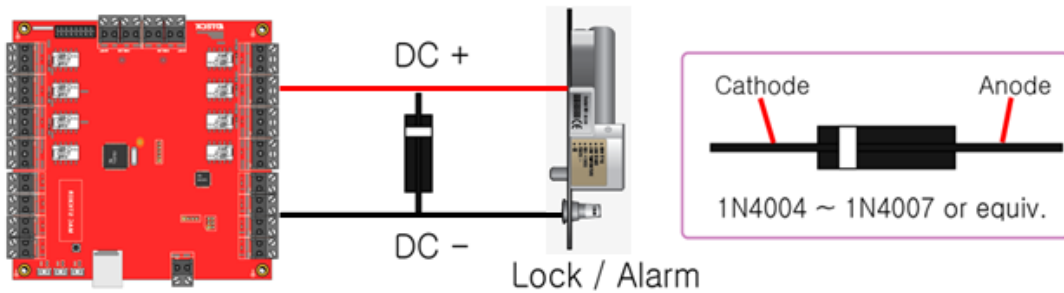
3.1 REVERSE DIODE CONNECTION

If you connect an inductor (Door Locks or Alarm device) to the output relays, there will be a high surge voltage created while the inductor is turning on and off. To protect this problem, connect the reverse diode as the figure below.

¹ You need thicker wire if you connect the reader with high current consumption



It is strongly recommended to add a reverse diode between the inductor coils to absorb this surge voltage. If you do not connect a reverse diode, the surge voltage will transfer and damage the electronic circuit of the controller. 1N4004 - 1N4007 or equality efficiency diode is included in gift box.



INITIAL SETTING

4

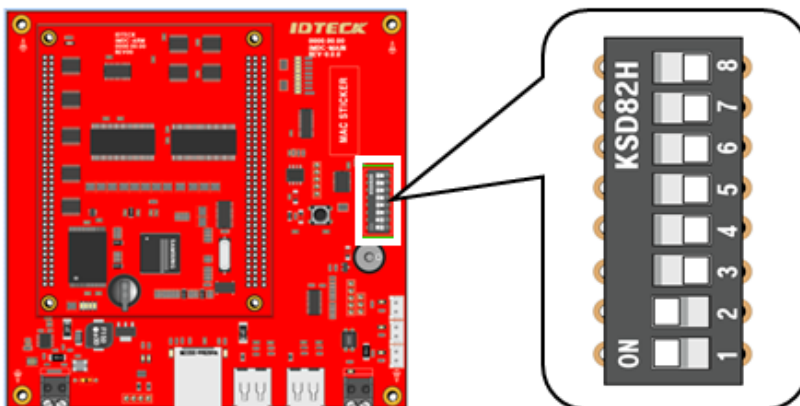
1 BOARD ID SETTING

Board ID is used for redundancy function and global anti pass-back. If more than one iMDC-MAIN board is used, Board IDs must be different than each others.

There is an 8 channel DIP switch on the right middle of the iMDC-MAIN for Board ID setting. Each channel of DIP switch has assigned address values and the Board ID is the sum value of each switch set to “ON” position. Refer to the example below.



Board ID must be set before main power connection to the iMDC-MAIN.
If more than one iMDC-MAIN boards are installing, you must set different Board ID for each iMDC-MAIN board.



Example 1	Example 2	Example 3
1+2 = 3 (Board ID = 3)	4+32 = 36 (Board ID = 36)	128 = 128 (Board ID = 128)

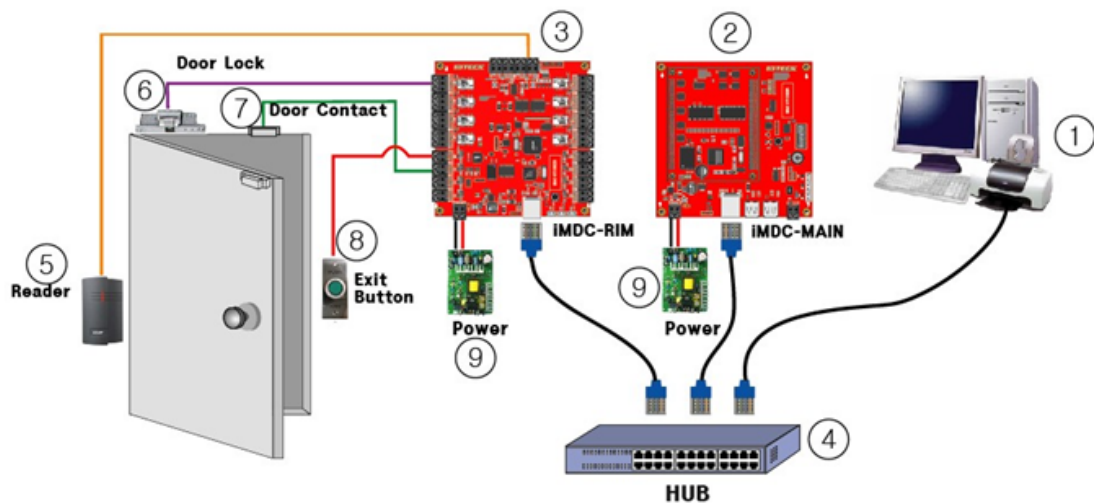
DIP Switch Number	1	2	3	4	5	6	7	8	Board ID
Setting	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0
Status	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	1
	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	2
	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	3
	OFF	OFF	ON	ON	ON	ON	ON	ON	253
	OFF	ON	ON	ON	ON	ON	ON	ON	254
	ON	ON	ON	ON	ON	ON	ON	ON	255



Wiring must be done before main power switched on to the iMDC-RIM. Wiring after main power switched on may cause electrical shock.

1 iMDC WIRING CONFIGURATION

The figure below is basic installation configuration for iMDC-MAIN and iMDC-RIM. Wire iMDC as the configuration below.



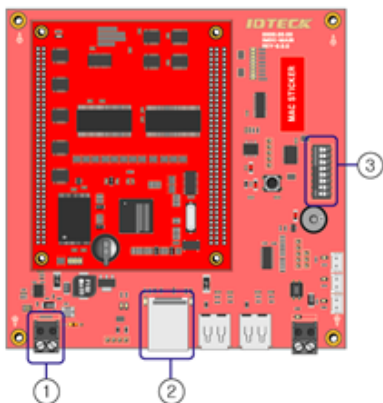
No.

Code

No.	Code
1	PC for installing application software ,STARWATCH ENTERPRISE
2	iMDC-MAIN
3	iMDC-RIM
4	HUB
5	Reader
6	Door Lock
7	Door Contact
8	Exit Button
9	Power

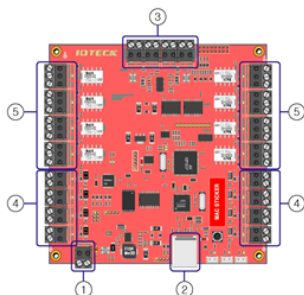
2 WIRING PARTS CODE

2.1 IMDC-MAIN



No.	Code
①	Power Terminal Block
②	RJ45 Ethernet Port
③	Board ID Setting Switch

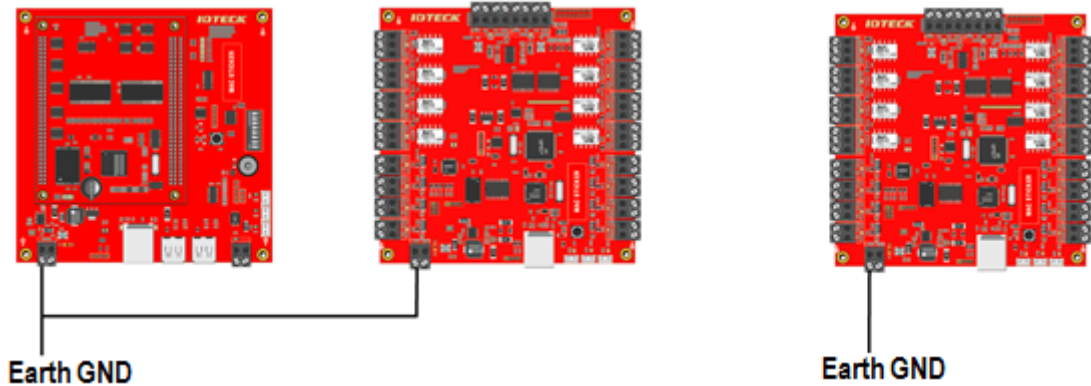
2.2 IMDC-RIM



No.	Code
①	Power Terminal Block
②	RJ45 Ethernet Port
③	Reader Port Terminal Block
④	Input Port Terminal Block
⑤	Output Port Terminal Block

3 GND WIRING

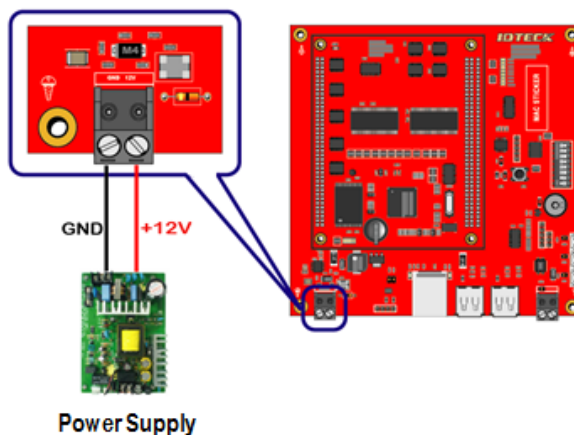
When installing iMDC-MAIN and iMDC-RIM, you must connect GND wire of Power terminal block to 1ST class EARTH GROUND. EARTH GROUND wiring equalizes all ground level to zero and protects from the thunderbolt or surge voltage.



4 iMDC-MAIN POWER WIRING

Confirm that main power switched OFF before wiring.

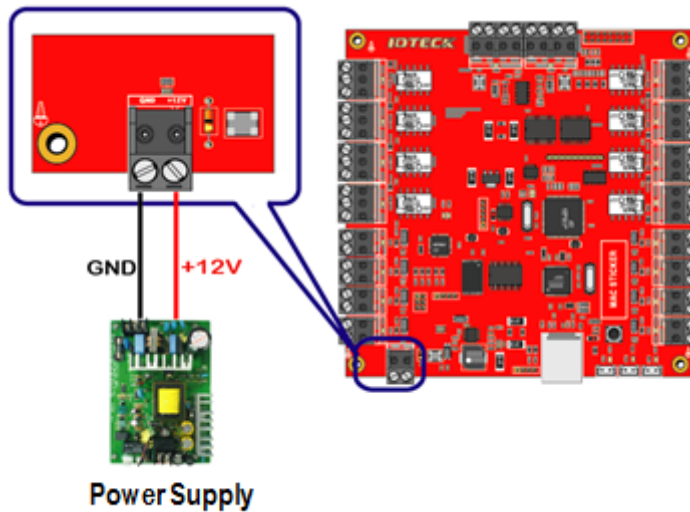
- Connect +12V (red) wire of DC12V power supply to Power terminal block (+12V) of iMDC-MAIN.
- Connect GND (-) (black) wire of DC12V power supply to Power terminal block (GND) of iMDC-MAIN.



5 iMDC-RIM POWER WIRING

Confirm that main power switched OFF before wiring.

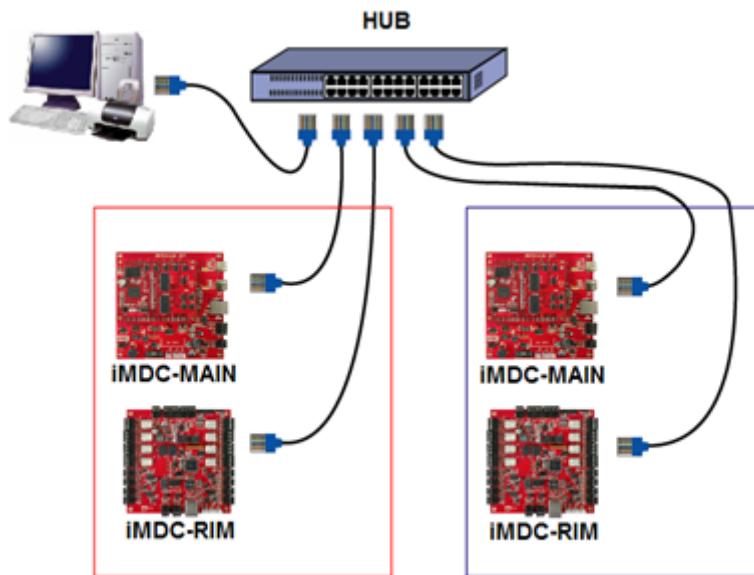
- Connect +12V (red) wire of DC12V power supply to Power terminal block (+12V) of iMDC-RIM.
- Connect GND (black) wire of DC12V power supply to Power terminal block (GND) of iMDC-RIM.



6 NETWORK CABLE WIRING BETWEEN iMDC-MAIN AND iMDC-RIM

6.1 WIRING WHEN PORTS ARE ENOUGH TO CONNECT NETWORK DEVICE

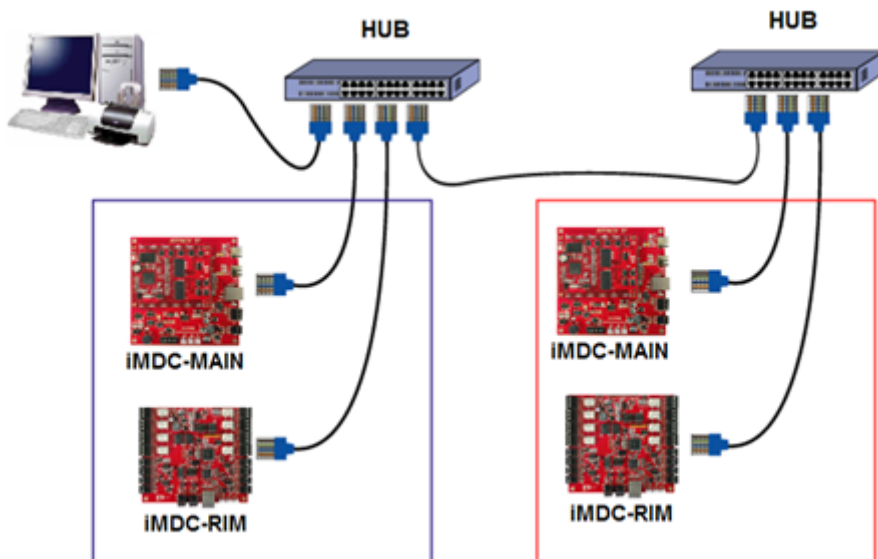
Follow below the '(Figure: solution.1)' for wiring if there are enough TCP/IP ports to connect network devices (hub, router, etc).



(Figure: Solution.1)

6.2 WIRING WHEN PORTS ARE NOT ENOUGH TO CONNECT TO NETWORK DEVICE

If there are not enough TCP/IP ports to connect network devices (hub, router, etc), configure equality network using by cross cable and then follow the '(Figure: Solution 2)'. Please refer to '6.Network setting' for more information about IP setting between iMDC-MAIN and iMDC-RIM.

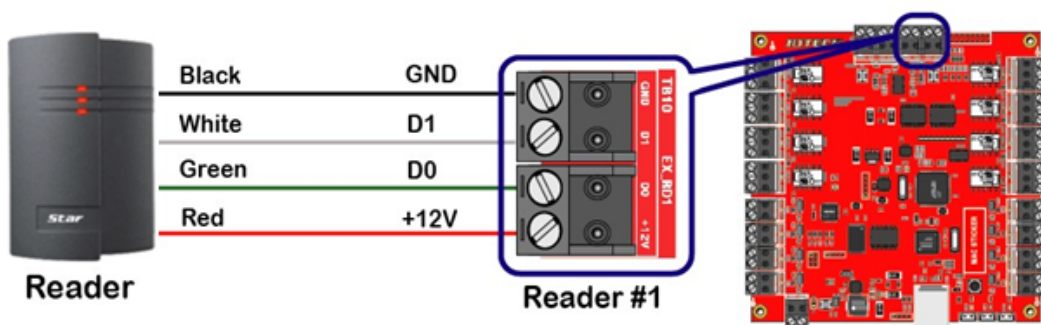


7 READER WIRING

Connect RF reader to Reader Port of iMDC-RIM as follow.

Wiring below is an example of Reader Port #1(EX_RD1) connection. If you want to connect second reader, use Reader Port #2(EX_RD2) for connecting second reader.

- Connect +12V (red) wire of RF reader to Reader Port terminal block (+12V) of iMDC-RIM.
- Connect GND (-) (black) wire of RF reader to Reader Port terminal block (GND) of iMDC-RIM.
- Connect DATA0 (green) wire of RF reader to Reader Port terminal block (D0) of iMDC-RIM.
- Connect DATA1 (white) wire of RF reader to Reader Port terminal block (D1) of iMDC-RIM.



You can use external +12V DC power source for RF reader. But in this case you should connect GND of external power source to GND Reader Port terminal block of iMDC-RIM.

If you do not connect GND of external power source to iMDC-RIM, Wiegand data can't be transferred to iMDC-RIM due to the voltage differences of GND level.

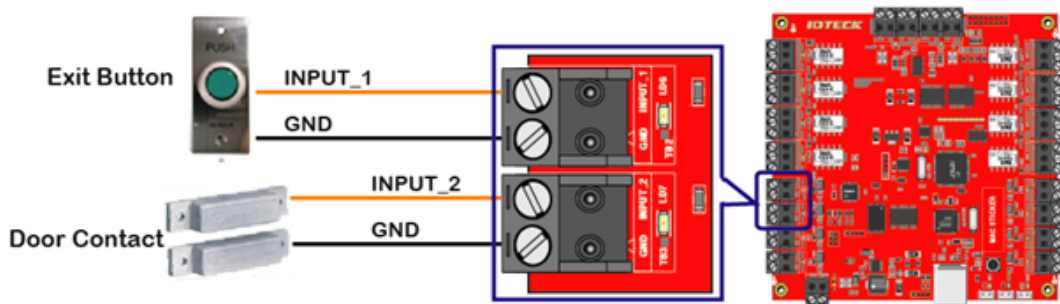
7.1 COMPATIBLE READERS

- 26Bit Wiegand Format Proximity Readers
- 26Bit Wiegand + 8Bit (or 4Bit) Burst Format Proximity and Keypad Readers
- 34Bit Wiegand Format Proximity Readers
- 34Bit Wiegand + 8Bit (or 4Bit) Burst Format Proximity and Keypad Readers

8 INPUT WIRING

Connect Door contact and exit button to Input Port terminal block (INPUT_1 ~ INPUT_8) of iMDC-RIM as follow.

- Connect Exit Button to Input Port terminal block (INPUT_1) of iMDC-RIM.
- Connect Door Contact to Input Port terminal block (INPUT_2) of iMDC-RIM.



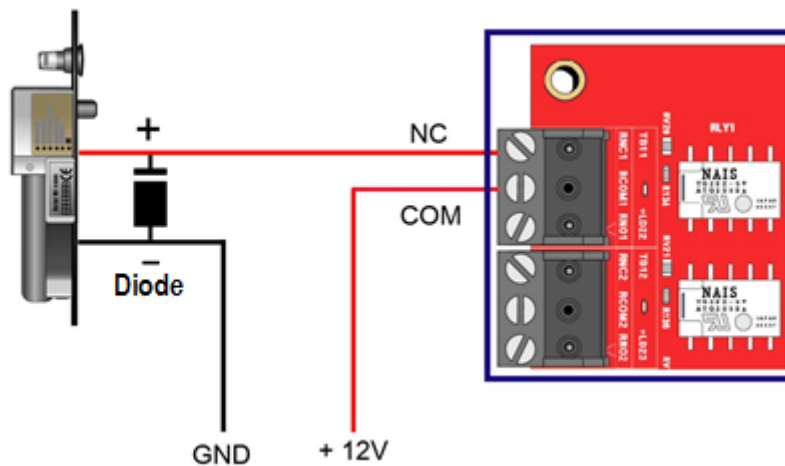
9 OUTPUT WIRING

Connect Door Lock and Alarm Device to Output Port terminal block (Relay outputs) of iMDC-RIM as follow.

9.1 DOOR LOCK WIRING

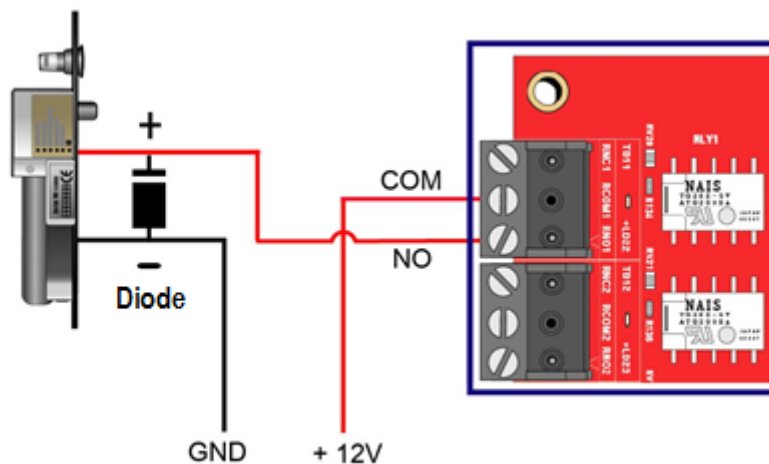
IN CASE OF POWER FAIL SAFE DOOR LOCK;

- Connect +12V wire of DC12V power supply to Output Port terminal block (RCOM1) of iMDC-RIM.
- Connect (+) wire of Door Lock to Output Port terminal block (RNC1) of iMDC-RIM.
- Connect (-) wire of Door Lock to GND(-) wire of DC12V power supply.
- Must connect reverse diode between (+) wire and (-) wire of Door Lock. [IMPORTANT]



IN CASE OF POWER FAIL SECURE DOOR LOCK;

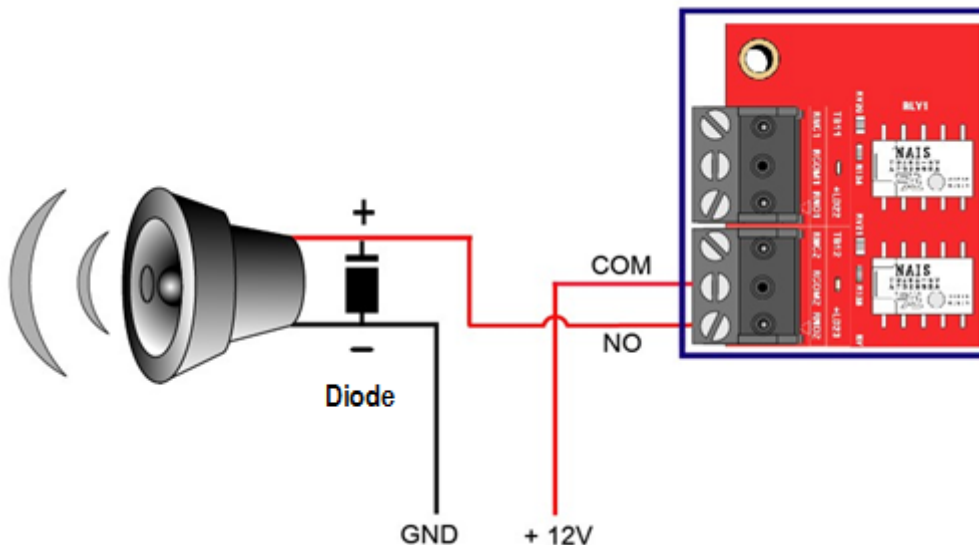
- Connect +12V wire of DC12V power supply to Output Port terminal block (RCOM1) of iMDC-RIM.
- Connect (+) wire of Door Lock to Output Port terminal block (RNO1) of iMDC-RIM.
- Connect (-) wire of Door Lock to GND(-) wire of DC12V power supply.
- Must connect reverse diode between (+) wire and (-) wire of Door Lock. [IMPORTANT]



9.2 ALARM DEVICE WIRING

- Connect +12V wire of DC12V power supply to Output Port terminal block (RCOM2) of iMDC-RIM.
- Connect (+) wire of Alarm Device to Output Port terminal block (RNO2) of iMDC-RIM.

- Connect (-) wire of Alarm Device to GND(-) wire of the DC12V power supply.
- Must connect reverse diode between (+) wire and (-) wire of Alarm Device. [IMPORTANT]



9.3 READER LED/BUZZER CONTROLLING IN POWER FAIL SECURE MODE

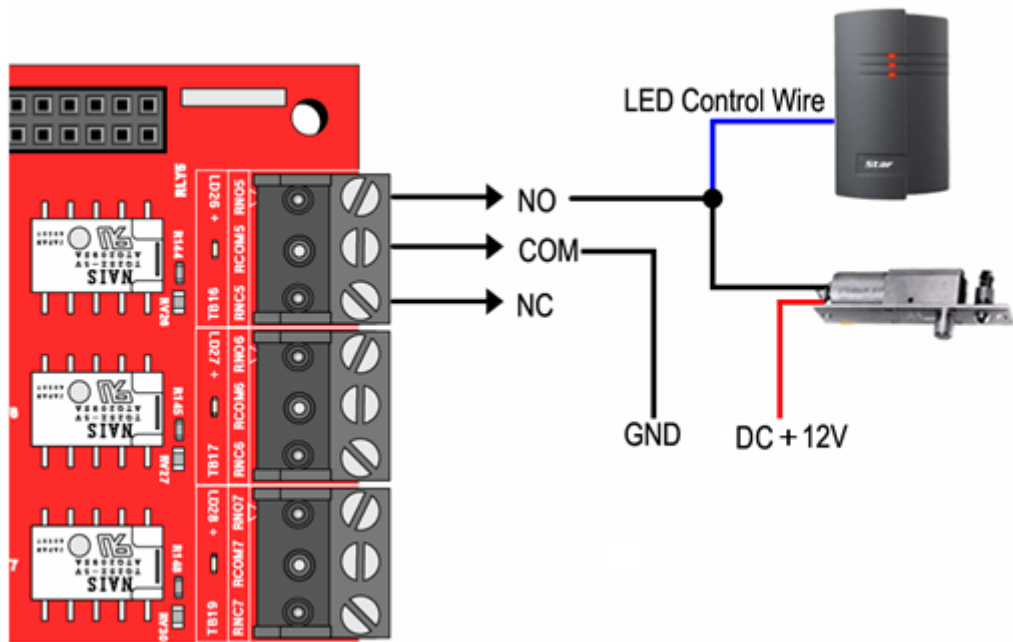
Power Fail Secure Mode

In this mode, if power is failed or emergencies occur, the door is closed automatically.

In this mode, security level can be higher because all of the doors are closed automatically, but people inside may not exit.

How to Indicate Door Opening Status Using LED of Reader in Power Fail Secure

If you connect the LED control wire of the reader to Relay output connected with door lock, Door lock operation is indicated with LED.



How to operate

The Wiegand wire of reader is being connected to reader #1, and then if LED control wire is connected as figure above, LED color is changed from Red to Green.

9.4 READER LED/BUZZER CONTROLLING IN POWER FAIL SAFE MODE

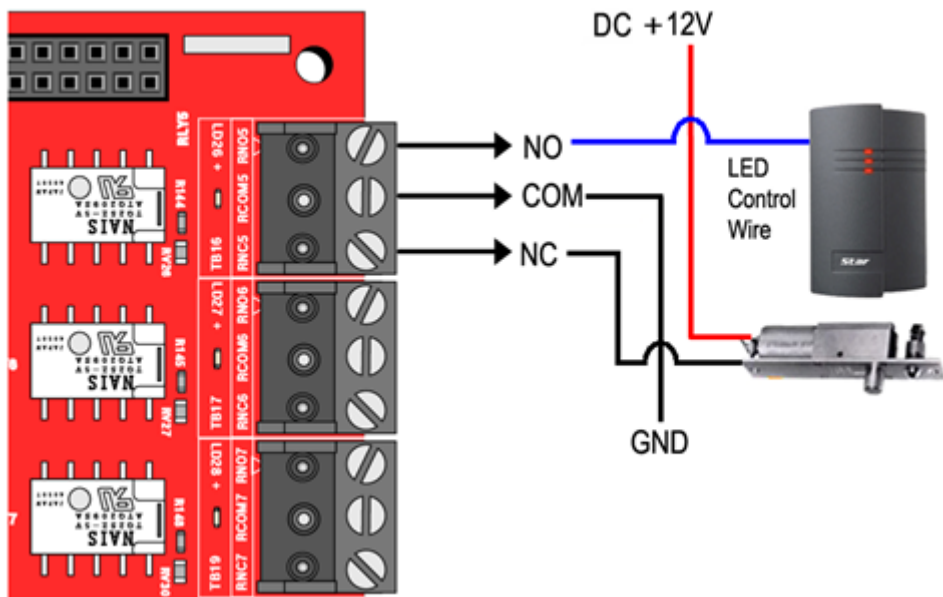
Power Fail Safe Mode

In this mode, if power is failed or emergencies occurs, the door is opened automatically.

In this mode, security level can be lowered because all of the doors are opened automatically but people inside can exit.

How to Indicate Door Opening Status Using LED of Reader in Power Fail Safe

If you connect the LED control wire of the reader to Relay output connected with door lock, Door lock operation is indicated with LED.



How to operate:

The Wiegand wire of reader is being connected to reader #1, and then if LED control wire is connected as figure above, LED color is changed from Green to Red.

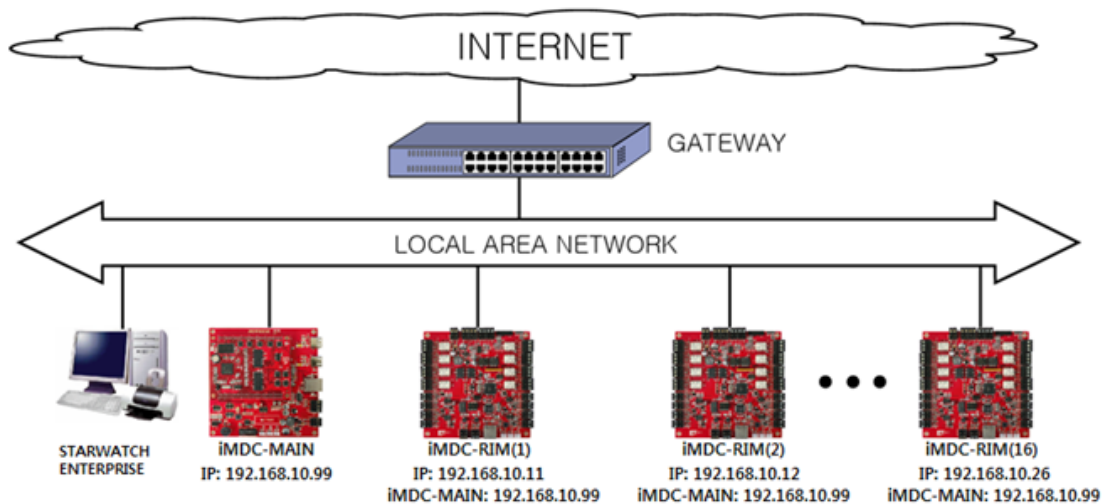


If you are using separate power sources for the iMDC and the Door Lock, it is recommended to ground each power source properly.

NETWORK SETTING

6

1 PRIVATE IP NETWORK SETTING



Above figure is the configuration using private ID. The configuration is the most stable network system for iMDC-MAIN and iMDC-RIM. It is advised to build up private LAN network for iMDC-MAIN and iMDC-RIM.

The IP is searched and set automatically using STARWATCH ENTERPRISE or iMDC EMULATOR. (Refer to '6.Network setting' and '7.iMDC EMULATOR')

1.1 CORRECT PRIVATE IP SETTING EXAMPLE

iMDC-MAIN Network Setting (When Using C-Class)

NO	iMDC-MAIN IP Address	Subnet mask	Gateway	DNS	Communication Server IP Address	Communication Port Number	RIM Port Number	P2P Port Number
1	192.168.10.99	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.3	6001	6005	6002

iMDC-RIM Network Setting (When Using B-Class)

NO	iMDC-RIM IP	Subnetmask	Gateway	DNS	iMDC-MAIN IP Address	iMDC-MAIN Port Number
RIM1	192.168.10.1	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM2	192.168.10.2	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM3	192.168.10.3	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM4	192.168.10.4	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM5	192.168.10.5	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM6	192.168.10.6	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM7	192.168.10.7	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM8	192.168.10.8	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM9	192.168.10.9	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM10	192.168.10.20	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM11	192.168.10.21	255.255.255.0	192.168.10.1	192.168.10.2	192.168.10.9	6005
RIM12	192.168.10.2	255.255.255.0	192.168.10.9	6005		

NO	iMDC-RIM IP	Subnetmask	Gateway	DNS	iMDC-MAIN IP Address	iMDC-MAIN Port Number
	2	0	9			
RIM13	192.168.10.2	255.255.255.	192.168.10.	192.168.10.	192.168.10.9	6005
	3	0	1	2	9	
RIM14	192.168.10.2	255.255.255.	192.168.10.	192.168.10.	192.168.10.9	6005
	4	0	1	2	9	
RIM15	192.168.10.2	255.255.255.	192.168.10.	192.168.10.	192.168.10.9	6005
	5	0	1	2	9	
RIM16	192.168.10.2	255.255.255.	192.168.10.	192.168.10.	192.168.10.9	6005
	6	0	1	2	9	

1.2 WRONG PRIVATE IP SETTING EXAMPLE

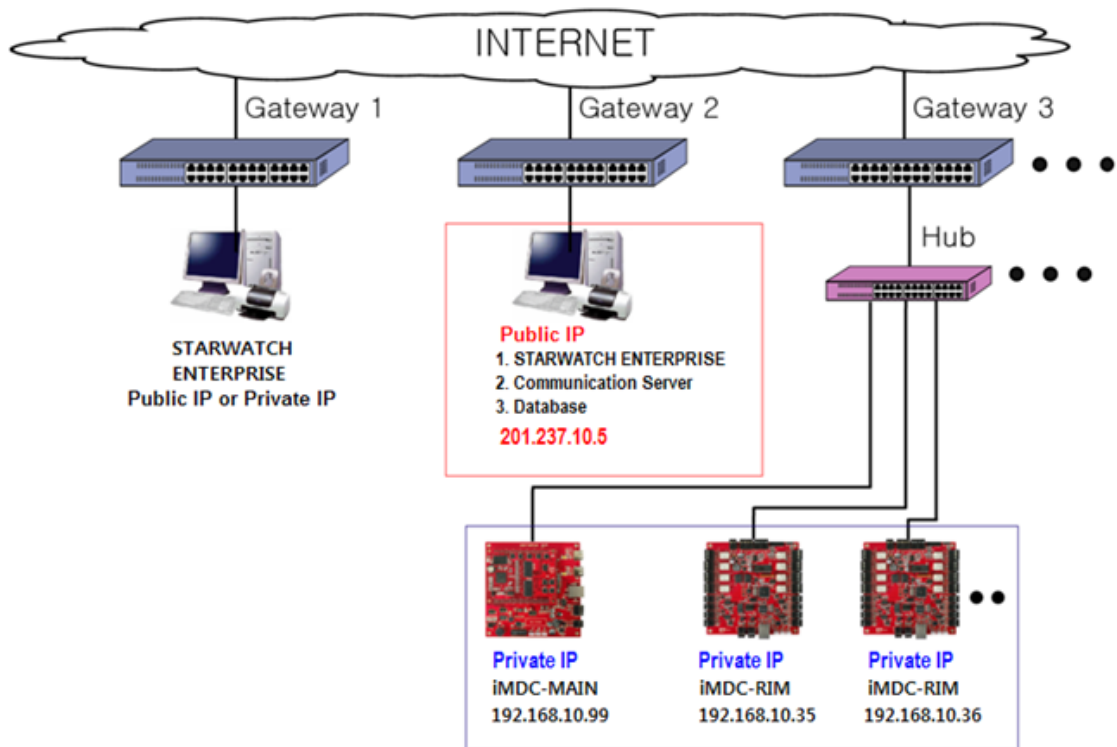
When Using C-Class (Subnetmask : 255.255.255.0)

iMDC-MAIN IP: 192.168.10.10 // iMDC-RIM (1): 192.168.11.30 // iMDC-RIM (2): 192.168.11.31

When Using B-Class (Subnetmask : 255.255.0.0)

iMDC-MAIN IP: 172.16.1.2 // iMDC-RIM (1): 172.17.10.1 // iMDC-RIM (2): 172.17.10.2

2 PUBLIC IP NETWORK SETTING



Above figure is the configuration using public IP broadband.

If you use the same public IP broadband, it is possible to search all of the iMDC-MAIN, iMDC-RIM board connected on the same network by using automatic searching function of STARWATCH ENTERPRISE or iMDC EMULATOR. (Please refer to '6.Network setting', '7.iMDC EMULATOR')

But if you use different IP broadband, it is possible to search the information of the iMDC-MAIN, iMDC-RIM board by manual searching function.

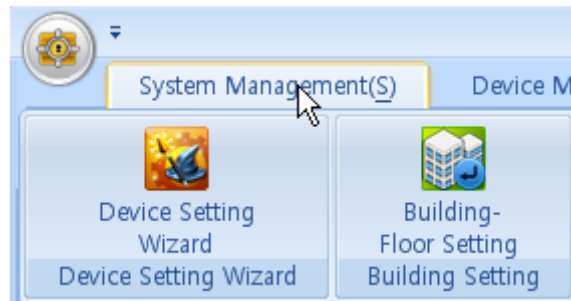
If firewall of PC blocks the port used for iMDC-MAIN and iMDC-RIM (iMDC-MAIN, iMDC-RIM, communication server), Set the firewall cancellation about the ports. Otherwise the firewall may block the applicable ports used to communicate with STARWATCH ENTERPRISE.

2.1 iMDC-MAIN IP ADDRESS SETTING

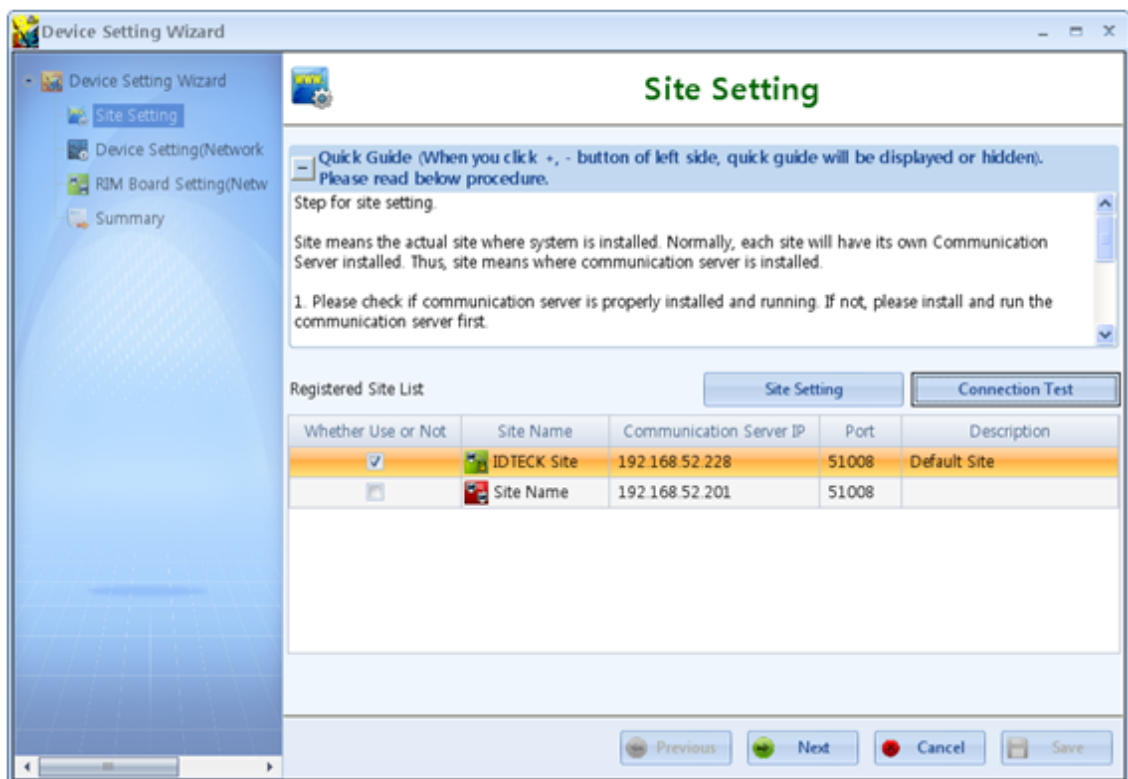
STARWATCH ENTERPRISE program is needed to set the IP address of iMDC-MAIN and iMDC-RIM board. Refer to the STARWATCH ENTERPRISE manual for the detailed installing method. The content below to set IP address of iMDC-MAIN and iMDC-RIM board would be described.

bed, STARWATCH ENTERPRISE program has been already installed.

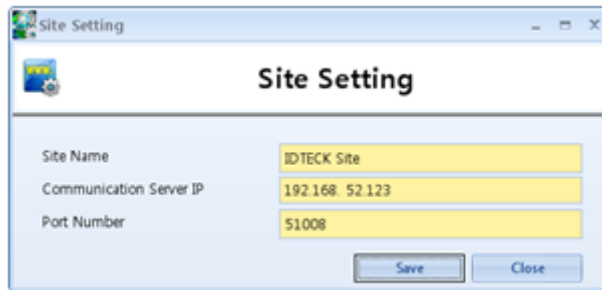
1. Select the Device Setting Wizard on main tool bar.



2. Site setting is displayed. If there are already existed sites, double click the registered site.



3. To register new site, click the 'Site Setting' button. Input the 'Site Name' where you want to install the device. Input the IP address of your PC that has installed communication server for 'Communication Server IP'. For example if your IP address is 192.168.52.10, input 192.168.52.10 for 'Communication Server IP'. Input the 51008 (default values) for 'Port Number'.



4. Click the 'Save' button to save your Site Setting registration and click the 'Close' button.
5. It's Device Setting Wizard. All iMDC-MAINS on the same network are searched and then set Device Name, RIM Board IP Address, Sub-net Mask, Gateway, and DNS Address to the applicable iMDC-MAIN board. Click the 'Auto Search iMDC Controller' button then all of the iMDC-MAINS connected on the same network is searched. Select the iMDC-MAIN you want to register and move down with drag and drop. Refer to the table below for appropriate setting.



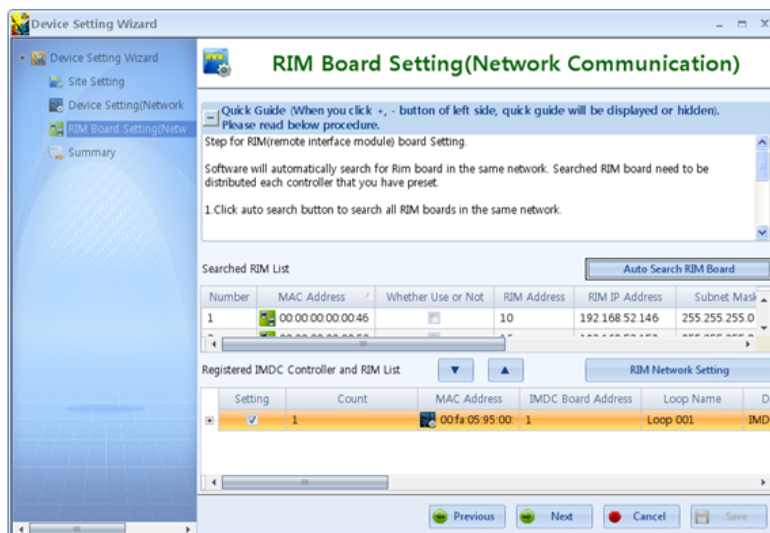
Column Name	Description
Loop Name	Insert loop name. Loop Name should not be duplicated.
Device Name	Insert device name. Device Name should not be duplicated.
iMDC IP Address	Insert IP address for iMDC-MAIN board.

Column Name	Description
Sub-net Mask	Insert sub-net mask address for iMDC-MAIN board.
Gateway	Insert gateway address for iMDC-MAIN board.
DNS Server Address	Insert DNS address for iMDC-MAIN Board.
Communication Server IP	Insert IP address of PC installed Communication Server. Same as the one used for Site Setting section.
Communication Server Port Number	Insert port number to connect iMDC-MAIN and communication server. Default is 6001.
RIM Board Port Number	Insert port number to connect iMDC-MAIN and iMDC-RIM Board. Default is 6005.
P2P(Peer to Peer) Port	Insert port number to connect iMDC-MAIN. Default is 6002.

- After iMDC-MAIN setting is finished check all of settings in the first column then click the 'iMDC Network Setting' button to transmit input information to iMDC-Main.

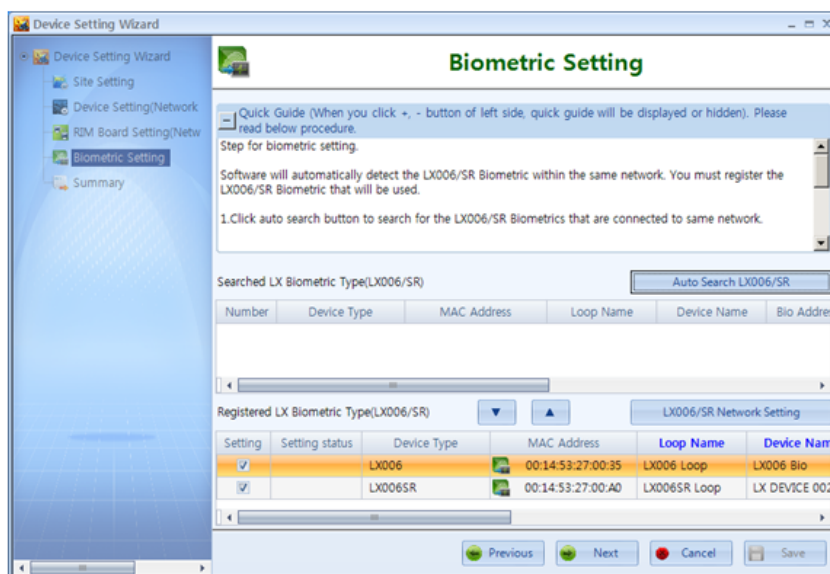
3 iMDC-RIM IP ADDRESS SETTING

- It's iMDC-RIM board network information setting. All iMDC-RIMs are searched on the same network and then, set Device Name, RIM Board IP address, Sub-net Mask, Gateway, and DNS Address to the applicable iMDC-RIM board. Click the 'Auto Search RIM Board' button then all of the iMDC-RIM boards connected on the same network is searched. Select the iMDC-RIM board you want to register and move down with drag and drop. Refer to the table below for appropriate setting.



Column Name	Description
RIM Name	Insert iMDC-RIM board name. RIM Name should not be duplicated.
RIM Address	Insert iMDC-RIM board address. RIM Address should not be duplicated with the other RIM boards registered in the same iMDC.
RIM IP Address	Insert IP address for iMDC-RIM Board.
Sub-net Mask	Insert Sub-net mask address for iMDC-RIM Board.
Gateway	Insert Gateway address for iMDC-RIM Board.
DNS Server Address	Insert DNS server address for iMDC-RIM Board.
iMDC IP Address	Insert iMDC-MAIN IP address that connects to iMDC-RIM Board. IP address which was registered during drag and drop stage will be set as default value.
iMDC Port	Insert port number to connect iMDC-RIM Board and iMDC-MAIN. Default is 6005.

- After each iMDC-RIM setting is completed, check all of settings in the first column. Click 'RIM Network Setting' button to link up with iMDC-RIM board and then click the 'Next' button.
- The step for Biometric Setting. In this step you can only search LX006 and LX006SR fingerprint reader. If you need to set other fingerprint device you need to go Loop and Device setting and set manually. Press to 'Auto Search LX006/SR' button. All connected LX006/SR reader is found on same network as above figure. Select LX006/SR to register the n, move to down by Drag and Drop to one of registered LX Biometric Type(LX006/SR). Set network information for each LX006/SR reader. After set network information check to all setting on first column. Press to 'LX006/SR Network Setting' button to send the information to LX006/SR then, move to next step by 'Next' button.



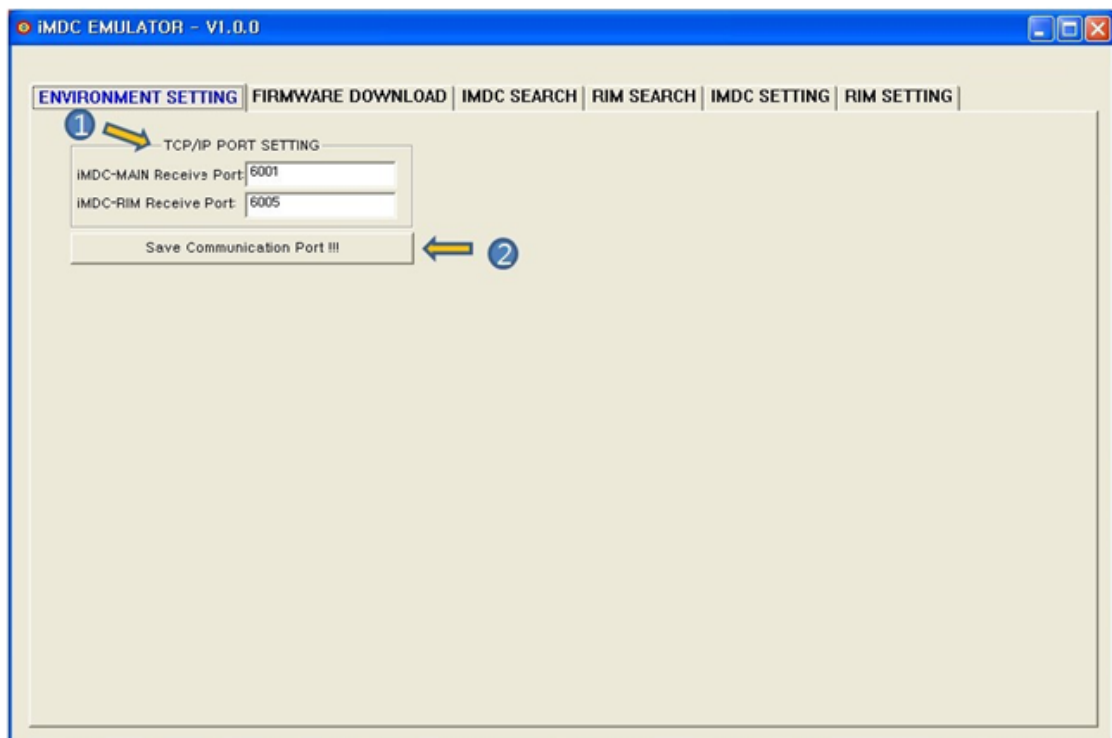
4. Check previous steps for iMDC-MAIN and iMDC-RIM board setting have completed properly and click the 'Save' button to finish setting.

iMDC EMULATOR

7

iMDC EMULATOR is made to basically test the network setting of iMDC-MAIN and iMDC-RIM. Refer to the description below for the setting.

1 ENVIROMENT SETTING

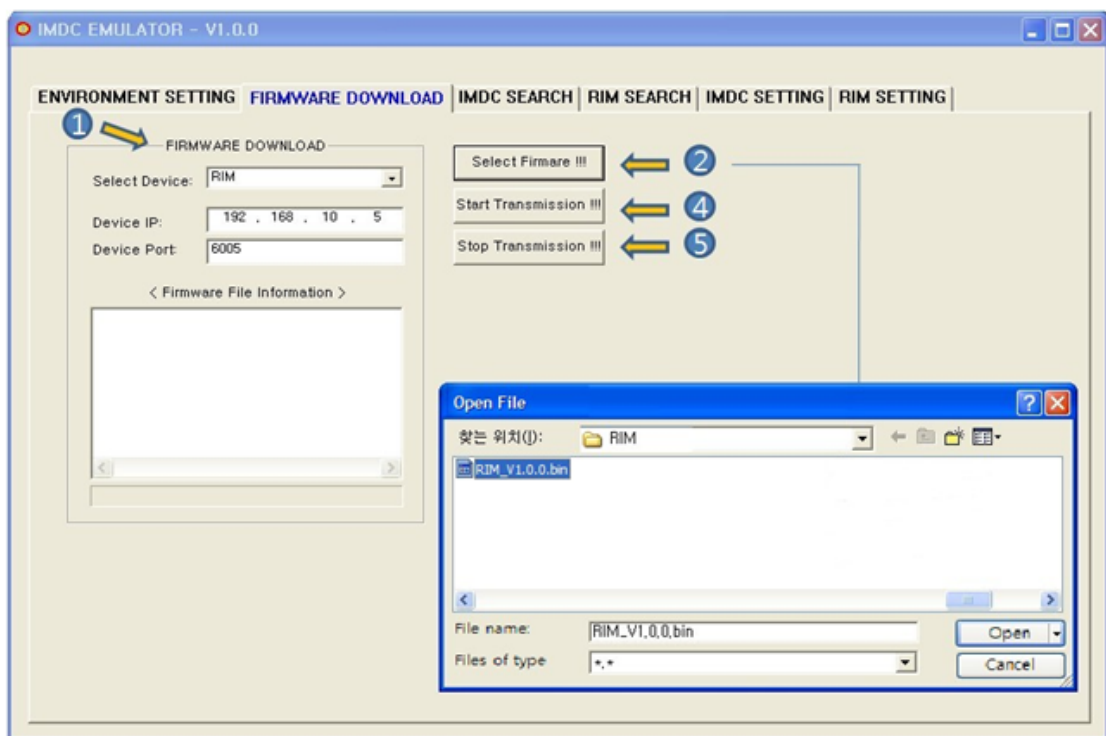


1. ENVIROMENT SETTING is to set the communication port between iMDC-MAIN, iMDC-R

Code	Description
iMDC-MAIN Receive Port	It is used for communication between STARTWATCH ENTERPRISE and iMDC-MAIN. Default value is 6001.
iMDC-RIM Receive Port	The port for communication between iMDC-MAIN and iMDC-RIM. Default value is 6005.

- [Save Communication port]: This button is used to save changed values of iMDC-MAIN and iMDC-RIM Receive Port. Using default port value is recommended.

2 FIRMWARE DOWNLOAD



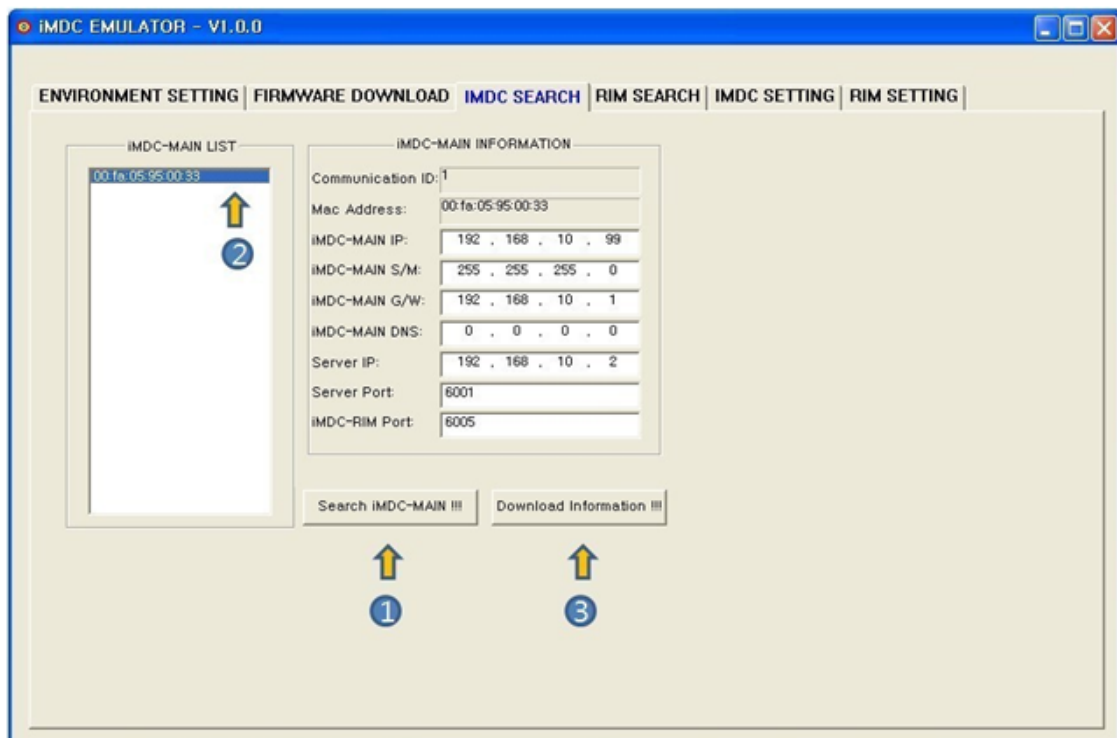
- Select the device to transmit firmware. Select one between iMDC-MAIN and iMDC-RIM. Input IP and port of the device to transmit firmware in 'Device IP' and 'Device Port'.

Code	Description
------	-------------

Code	Description
Select Device	select the device to transmit firmware
Device IP	Input device's IP to transmit firmware
Device Port	Set IP port to transmit firmware. Default setting is 6001 for iMDC-MAIN and 6005 for iMDC-RIM.

2. [Select Firmware!!!]: This button is to open window to transmit firmware.
3. Select the firmware you want to update.
4. [Start Transmission!!!]: This button is to send firmware to the device (iMDC-MAIN or iMDC-RIM). If you stop in the middle of transmitting process, you should restart from #2 step.
5. If you want to stop transmitting, click the [Stop Transmission!!!] button. Even though transmitting is stopped, any problem doesn't occur.

3 iMDC SEARCH

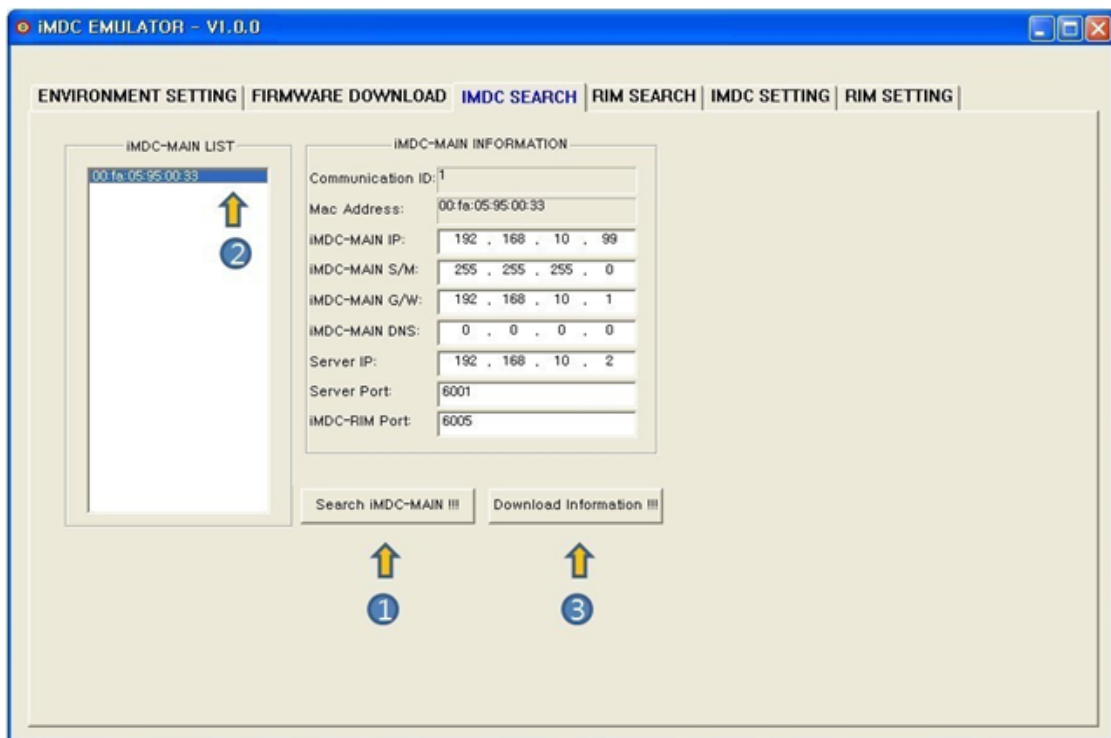


1. [Search iMDC-MAIN!!!]: This button is to search all existing iMDC-MAIN network information.

mation on the same network. Searched iMDC-MAIN's MAC Address is displayed on the iMDC-MAIN LIST.

2. Double click iMDC-MAIN's MAC Address you want to confirm or change.
3. [Download Information!!!]: This button is to change the network information of the iMDC-MAIN. In 'iMDC-MAIN LIST', double click iMDC-MAIN's MAC Address you want to change then applicable information is displayed in 'iMDC INFORMATION'. Check and change the information and then click the [Download Information] button to complete this process.

4 RIM SEARCH

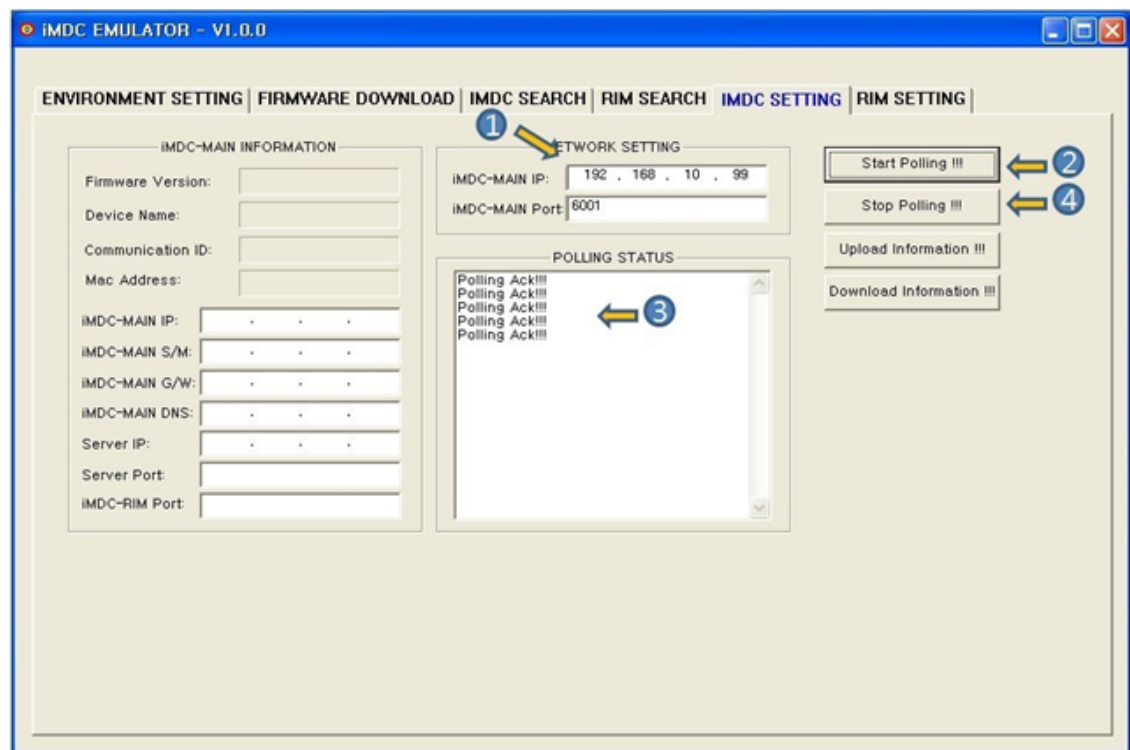


1. [Search RIM!!!] : This button is to search all existing iMDC-RIM network information on the same network. Searched iMDC-RIM's MAC Address is displayed on the iMDC-RIM LIST.
2. Double click iMDC-RIM's MAC address you want to confirm or change.
3. [Download Information!!!]: This button is to change the network information of the iMDC-RIM. Double click iMDC-RIM's MAC Address you want to change then the applicable iMDC-RIM information is displayed in 'iMDC INFORMATION'. Check and change the information and then click the [Download Information] button to complete this process.

5 iMDC SETTING

5.1 iMDC POLLING TEST

‘iMDC POLLING TEST’ is to change polling test and network information by selecting specific iMDC-MAIN.

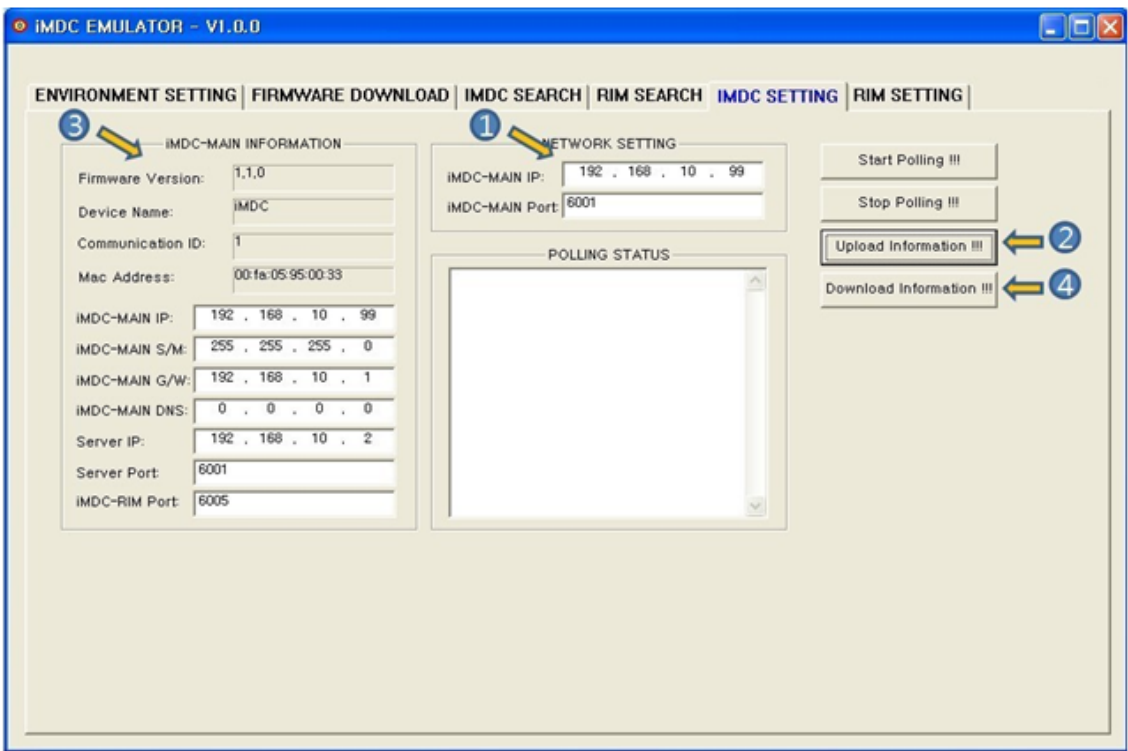


- 1. Set the iMDC-MAIN’s IP address and port for polling test

Code	Description
iMDC IP	It’s iMDC-MAIN’s IP address. Default value is 192.168.1.99
iMDC Port	It’s the port for communication between iMDC-MAIN and STARTWATCH ENTERPRISE. Using default value (6001) is recommended for stable communication.

- 2. [Start Polling!!!]: This button is to displays the information of polling status.
- 3. If the [Polling ACK!!!] message appears, it means polling function is normally operating.
- 4. [Stop Polling!!!]: If you want to stop the polling, click the [Stop Polling!!!] button.

5.2 iMDC-MAIN NETWORK SETTING



- 1. Enter the iMDC-MAIN’s IP address and port you want to use.
- 2. [Upload Information!!!]: This button is to search iMDC-MAIN network information.
- 3. Searched iMDC-MAIN’s network information is displayed.

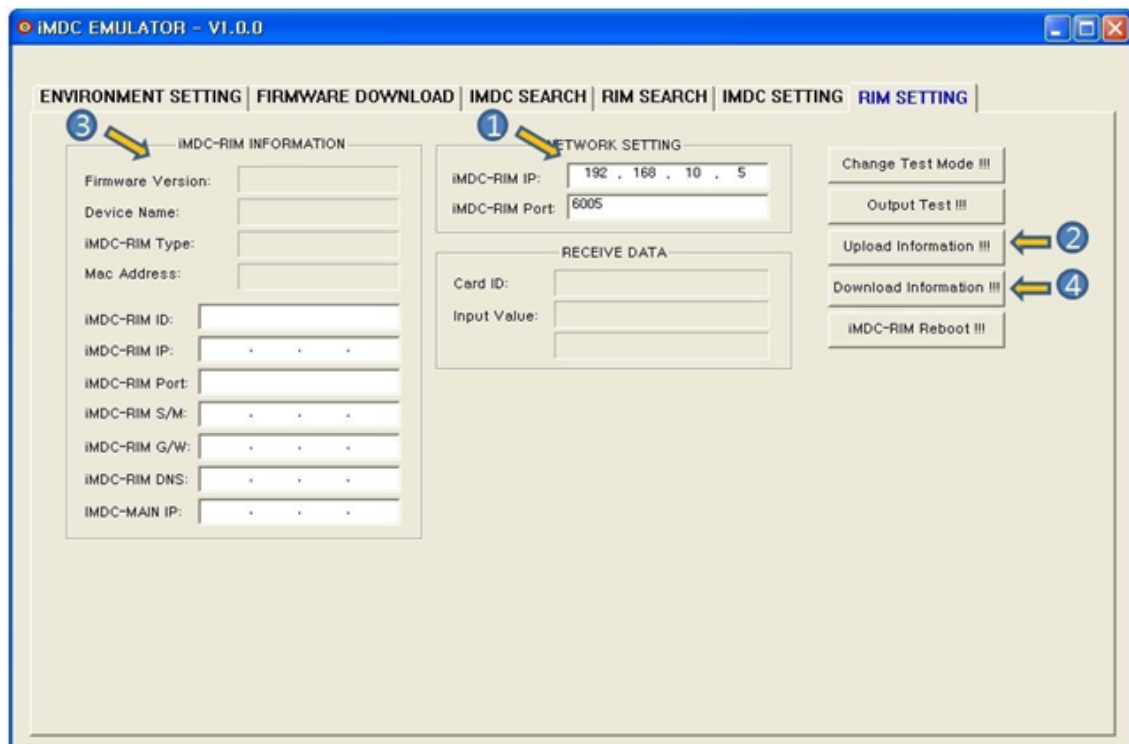
iMDC-MAIN INFOMATION	Description
Firmware Version	It shows version of iMDC-MAIN.
Device Name	It shows searched device name. iMDC-MAIN is displayed as iMDC.
Mac Address	It’s the Mac address for Ethernet Card.
Communication ID	It’s the address for communication.
iMDC-MAIN IP	It’s searched iMDC-MAIN board IP address.
iMDC-MAIN G/W	It’s searched gateway address of iMDC-MAIN board.
iMDC-MAIN DNS	It’s searched DNS address of iMDC-MAIN board.
Server IP	It’s PC’s IP address which installed communication server.
Server Port	It’s the PC’s port which installed communication server. Using default (6001) is recommended.
iMDC-RIM Port	It’s the port number to connect iMDC-MAIN and iMDC-RIM. Using default (6005) is recommended.

- If you want to change iMDC-MAIN's network setting, change network setting in 'iMDC-MAIN INFORMATION' and click the [Download Information!!!] button to complete.

6 RIM SETTING

6.1 iMDC-RIM NETWORK SETTING

In terms of the specific iMDC-RIM, you can test how to operate or change network information. The difference between 'RIM SEARCH' and 'RIM SETTING' is that 'RIM SETTING' is able to select specific iMDC-RIM you want to use.



- Input the iMDC-RIM's IP address and port you want to use.
- [Update Information]: This button is to search iMDC-RIM's network information.
- Searched iMDC-RIM's network information is displayed.

iMDC INFOMATION	Description
Firmware Version	It shows the version of iMDC-MAIN
Device Name	It shows searched device name. iMDC-MAIN is displayed as iMDC

iMDC INFOMATION	Description
Mac Address	It's Mac address of Ethernet card
iMDC-RIM IP	It's IP address of searched iMDC-RIM board.
iMDC-RIM G/W	It's gateway address of searched iMDC-RIM board.
iMDC-RIM DNS	It's DNS address of searched iMDC-RIM board.
iMDC-RIM PORT	It's port address of searched iMDC-RIM board. It is used to communicate between iMDC-RIM board and iMDC-MAIN. Using default (6005) is recommended.
iMDC-MAIN IP	It's IP address of iMDC-MAIN to connect iMDC-RIM board.

- If you want to change the iMDC-RIM's network setting, change the network setting in 'iMDC-RIM INFORMATION' and click the [Download Information!!!] button to complete.

6.2 iMDC-RIM TEST



- Input the iMDC-RIM IP address and port you want to search.
- [Change Test Mode!!!]: This button is to change the applicable iMDC-RIM (192.168.10.31) board to Test Mode.
- If the 'Env Setting Ack!!!' message appears. It means iMDC-RIM (192.168.10.31) is set a

s Test Mode.

- ④ The read card ID (number) is displayed.
- ⑤ It indicates that #8 input of iMDC-RIM is generated. Status of input is displayed as ON and OFF
- ⑥ If you click [Output test] button, 8 relay outputs of iMDC-RIM are generated for 3 seconds.
- ⑦ After test is finished, click the [iMDC-RIM Reboot] button to initialize iMDC-RIM.

1 NORMAL OPERATION

Power on

When Power is supplied to the iMDC, only the Red LED is turned on.

Reading of registered card

When a registered card (or PIN) is read, the door (Relay #1) will open for 3 seconds (Defaults) with the applicable LED on.

Exit Button

To go out of inside press an exit button or present a registered card on the external reader. In this case, the Door (Relay #1) is opened for 3 seconds (Defaults) with the applicable LED on.

Alarms

When an unregistered card is read or wrong password is input, the access is denied and the alarm (Relay #2) is activated for 3 seconds (Defaults) with the applicable relay status LED on.

2 INITIAL SETTING VALUE

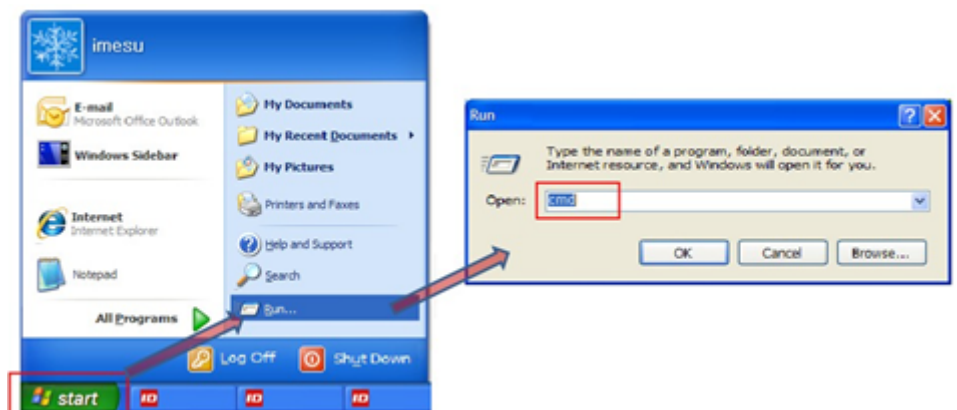
When you operate the iMDC first time or you initialize the iMDC, the controller will set up all values to the default settings (Factory Settings). You can change the settings for desired application environment. Please refer to the “10. APPENDIX” section for the default setting values.

☞ All iMDC-RIM's output status LEDs are lit up

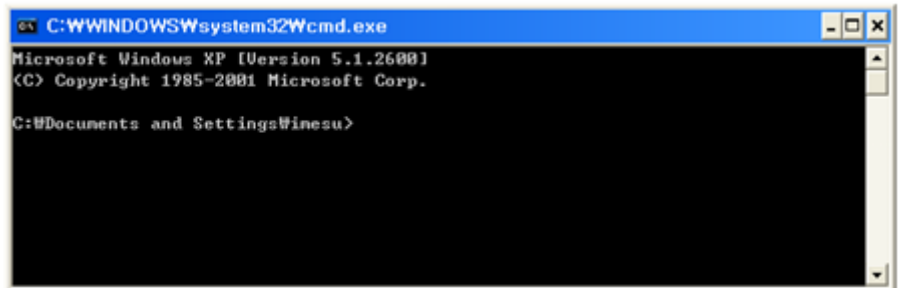
Cause It may be caused from operating disconnection mode or poor networking condition or wrong iMDC network setting.

Solution

1. If it occurs at the first boot after installation of iMDC
Once power is supplied after the first installment of iMDC, all output status LEDs of iMDC-RIM board is lit up. Because network setting information is not enough, iMDC-MAIN recognizes that the communication between iMDC-MAIN and iMDC-RIM is disconnected. iMDC-RIM operates Power Fail Safe mode and all doors are opened.
In this case, after device setting is finished using STARTWATCH ENTERPRISE, reboot iMDC-MAIN and iMDC-RIM. Then, iMDC-MAIN recognizes that the communication is connected and operated normally.
2. If it occurs during normal operation.
It occurs because network condition between iMDC-MAIN and iMDC-RIM is not stable. In this case, check network condition using network manager. Please refer to description below to test network condition.



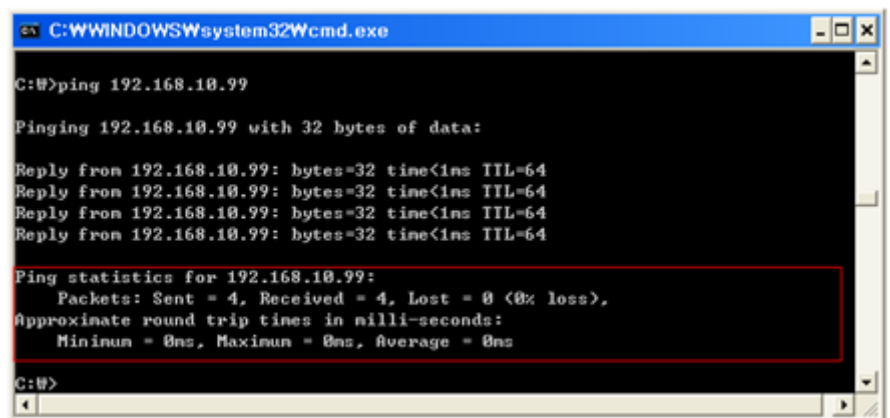
WINDOW START RUN window Input 'cmd' and click 'OK' button then MS-DOS window is displayed as below.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Winesu>
```

Ping test of iMDC-MAIN or iMDC-RIM installed by users is progressed in MS-DOS window. If It's normal status, the message below is displayed.



```
C:\WINDOWS\system32\cmd.exe

C:\W>ping 192.168.10.99

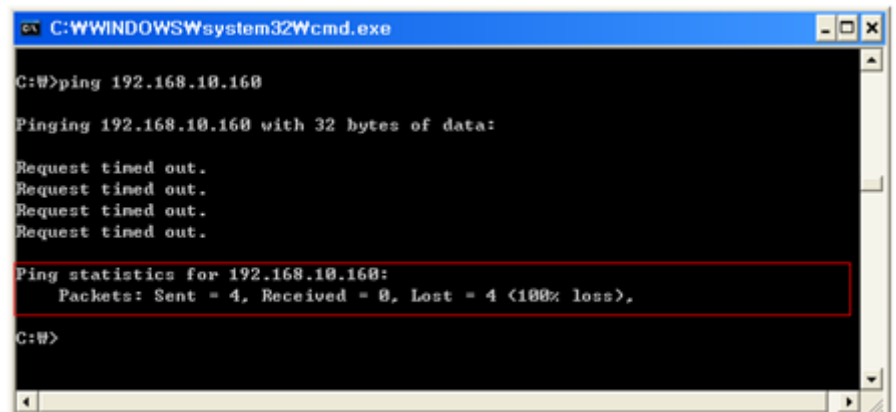
Pinging 192.168.10.99 with 32 bytes of data:

Reply from 192.168.10.99: bytes=32 time<1ms TTL=64
Reply from 192.168.10.99: bytes=32 time<1ms TTL=64
Reply from 192.168.10.99: bytes=32 time<1ms TTL=64
Reply from 192.168.10.99: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.10.99:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\W>
```

If network condition is not stable or network is set wrongly, fail message will be displayed as below.



```
C:\WINDOWS\system32\cmd.exe

C:\W>ping 192.168.10.160

Pinging 192.168.10.160 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.10.160:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\W>
```

3. If the problem occurs after installment using STARTWATCH ENTERPRISE. It occurs because setting information is not transmitted normally or wrong values are transmitted. In this case, transmit setting information again to iMDC-MAIN and iMDC-RIM.

☞ No problem with accessing by cards, but cannot access with the PIN input.

Cause	It may be caused from an error in Set-up.
Solution	1. Using STARWATCH ENTERPRISE software, check the reader mode. If KEYPAD is set in 'UNUSED', Keypad is not allowed to use. 2. Set the KEYPAD in 'USE' then you can use the KEYPAD.

☞ A card (visitor, manager) used for two men operation is registered, but this function is not operated.

Cause	two men operation mode is not set to the reader.
Solution	Two men operation mode can be set individually to readers connected from iMDC. If two men operation mode is not used for the reader, two men operation function is not operated. In this case, set two men operation function to the applicable reader.

☞ The reader seems to read cards, but iMDC does not respond or does not respond properly, such as displaying wrong card numbers.

Reason	It may be caused from reader defect, wiring error between the reader and the iMDC, or the electric noises around.
Solution	1. Check that the power is supplied to the reader. - confirms that the LED of the reader is lit up when you present a card to the reader 2. Check whether the reader has defects or not. - separate the reader from the iMDC and check the shape of signals from the reader using oscilloscope. 3. Check the connection between iMDC-MAIN and iMDC-RIM. - Check the wires of Wiegand data wires D0 and D1, which is connected correctly. - Connect the iMDC's GND to the GND wire of the reader and it is recommended to connect them to an earth ground. (Power can be used separately but GND must be connected by iMDC's GND.) 4. Check the network condition between iMDC-MAIN and iMDC-RIM. -Check the Ethernet cable between iMDC-MAIN and iMDC-RIM is connected.

-Try ping test using IP address of iMDC-MAIN and iMDC-RIM.

5. When noises are shown on the signals, it is recommended to use shielded wires and the unused wires to the common ground. You can use repeaters, also.

6. Check the maximum cable length (150m).

1 Default value of iMDC-RIM

Index No	1	2	3	4	5	6	7	8
READER	R1	R2						
INPUT	B	D	S	S	S	S	S	S
OUTPUT	L	A	E	A	A	A	A	A

1.1 Reader

R
Reader

1.2 Input

B
Exit Button

D
Door Contact

S
Sensor

1.3 Output

- L
 - Door Lock
- A
 - Alarm
- E
 - Etc

2 Event Output Number (32Door: RIM 12EA)

DOOR	READER	RIM	OUTPUT			INPUT		
			DOOR LOCK	ALARM	ETC	EXIT	CONTACT	SENSOR
1	1	1	1	2	3	1	2	3
1	2	1	1	2	3	1	2	3
2	3	2	9	10	11	9	10	11
2	4	2	9	10	11	9	10	11
3	5	3	17	18	19	17	18	19
3	6	3	17	18	19	17	18	19
4	7	4	25	26	27	25	26	27
4	8	4	25	26	27	25	26	27
5	9	5	33	34	35	33	34	35
5	10	5	33	34	35	33	34	35
6	11	6	41	42	43	42	43	44
6	12	6	41	42	43	42	43	44
7	13	7	49	50	51	49	50	51
7	14	7	49	50	51	49	50	51
8	15	8	57	58	59	57	58	59
8	16	8	57	58	59	57	58	59
9	17	9	65	66	67	65	66	67
9	18	9	65	66	67	65	66	67
10	19	10	73	74	75	73	74	75
10	20	10	73	74	75	73	74	75
11	21	11	81	82	83	81	82	83

11	22	11	81	82	83	81	82	83
12	23	12	89	90	91	89	90	91
12	24	12	89	90	91	89	90	91
13	25	13	97	98	99	97	98	99
13	26	13	97	98	99	97	98	99
14	27	14	105	106	107	105	106	107
14	28	14	105	106	107	105	106	107
15	29	15	113	114	115	113	114	115
15	30	15	113	114	115	113	114	115
16	31	16	121	122	123	121	122	123
16	32	16	121	122	123	121	122	123

Default value of output time is 3 seconds.

DOOR LOCK

DOOR LOCK output number when access is granted.

ALARM

ALARM output number when alarm events occur.

ETC

Output number about other events



Ex) If a card is presented to reader #1, # 1 iMDC-RIM board output is activated. If the error occurs, output is activated to #2 output port of #1 iMDC-RIM board for 3 seconds.

1 iMDC-MAIN Specification

Model		iMDC-MAIN
CPU		32Bit Micro processor
Operating System		Embedded Linux
Memory	Program Memory	128MByte SDRAM
	Data Memory	128MByte Flash Memory
User		200,000 Users
Event Buffer		200,000 Event Buffer
Power / Current		DC +12V, Max.700mA
Communication		Ethernet Communication
Ethernet		10/100 Mbps
Interface		Maximum 16 iMDC-RIMs can be connected(One iMDC-RIM can be connected with 2 readers, 8 In/Output) Processes Maximum 32 readers - 26Bit Wiegand, 4 / 8bit Burst - 34Bit Wiegand, 4 / 8bit Burst Processes Maximum 128 Input (Available to set input format) Processes Maximum 128 Output

(Available to set output format)

Operating Temperature	0 ~ +65C (+32 ~ +149F)
Operating Humidity	10% ~ 90% Relative Humidity Non-condensing
Dimension (W x H x T)	137mm x 137mm x 18mm (5.4" x 5.4" x 0.75")
Weight	148g (0.33lbs)
Certification	FCC, CE, KC

2 iMDC-RIM Specification

Model		iMDC-RIM
CPU		8Bit Micro Processor
Power / Current		DC +12V, Max.350mA
Memory	Internal Memory	128 Kbyte Flash Memory
	External Memory	4K SRAM
Reader		2ea
Input Port		8ea (Available to set input format)
Output Port		8ea (2 FORM-C Relay Output(COM, NO, NC) / DC +12V~ +18V, Rating Max. 2A)
Ethernet Speed		10/100 Mbps
LED Indicator		Status LED indicator
Operating Temperature		0 ~ +65C (+32 ~ +149F)
Operating Humidity		10% ~ 90% Relative humidity non-condensing
Dimension(W x T x T)		137mm x 137mm x 18mm (5.4" x 5.4" x 0.75")
Weight		168g (0.37lbs)
Certification		FCC, CE, KC

3 DIODE SPECIFICATION

Model	1N4007
Power / Current	50 ~ 1000 V / Min.1.0 A

FCC REGISTRATION INFORMATION

12

FCC Requirements Part 15

***Caution:** Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the equipment.*

***NOTE:** 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 interface, and
2. This device must accept any interference received, including interference that may cause undesired operation.

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 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.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

If you have any questions or problems regarding the RMA services, please contact us using the contact information below. Friendly representatives at IDTECK are always standing by to provide the best after sales services.

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The specifications contained in this manual are subject to change without notice at any time.