



# DCM5

Installation Guide



[www.ictgroup.com.tw](http://www.ictgroup.com.tw)



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## **Use of Materials Limitations**

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## **1. Limited Warranty:**

International Currency Technologies Corporation (ICT) warrants this product (including any accessories) against defects of material or workmanship as follows:

### **1. LABOR:**

For a period of one (1) year from the date of purchase, if this Product is determined to be defective, ICT will repair or replace the Product, at its option, at no charge, or pay the labor charges to any ICT authorized service facility. After the Warranty Period, you must pay for all labor charges.

### **2. PARTS:**

In addition, ICT will supply, at no charge, new or rebuilt replacements in exchange for defective parts for a period of one (1) year. After the warranty period, you must pay for all parts costs.

### **3. ACCESSORIES:**

Parts and labor for all accessories are for one (1) year.

To obtain warranty service, you must take the Product, or deliver the Product freight prepaid, in either its original packaging or packaging affording an equal degree of protection, to any authorized ICT service facility.

This warranty does not cover cosmetic damage or damage due to acts of accident, misuse, abuse, negligence, modification, or to any parts of the Product.

This warranty does not cover damage due to improper operation or maintenance, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by ICT to service the Product.

This warranty does not cover Products sold AS IS or WITH ALL FAULT, or consumables (such as cleaning cards or bezel stickers).

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

This warranty is invalid if the factory applied serial number has been altered or removed from the Product.

To locate the service or dealer nearest you, or for service assistance or resolution of a service problem, for product information, or operation, please call:



Taiwan: 886-2-2797-1238

Europe: +49-0-2102-123-775-0

or visit the ICT Web Site: [www.ictgroup.com.tw](http://www.ictgroup.com.tw)

## 2. Model Number Configuration:

DCM5   X   X   X   X   XX   X  
 ↓   ↓   ↓   ↓   ↓   ↓   ↓  
 A   B   C   D   E   F   G

Example : DCM5-2TPM-DE3

(A). Product name

Product name
DCM5

Table 1.

(B). Voltage

Code	Voltage
2	12VDC

Table 2.

(C). Back plate

Code	Back plate
T	For TOB (Tabaccoland)

Table 3.

(D). Cover

Code	Cover
P	Anti-dirt cover

Table 4.

(E). Interface

Code	Interface
M	MDB (Multi Drop Bus)
P	Pulse
R	RS232

Table 5.

(F). Country of Document

Code	Country
DE	Germany

Table 6.

(G). Accept document type

Code	Document type
3	*DL/OID/NID

Table 7.

\*DL/OID/NID: Driver License/ Old ID Card/ New ID Card.

### **3. Introduction:**

DCM5 is an outstanding product to provide the function of age verification. It is designed by ICT, which can be installed in equipments as an auxiliary device.

DCM5 checks the date of birth of customers' driver license, old identification card, or new identification card for the age 18.

It is fully complied the privacy act. It checks the date of birth only.

This device can be used to perform age verification for restricted products or services such as alcohol, tobacco, erotic toys, movies, night clubs, or membership clubs to the people who are older than 18 years old for purchasing.

This device is designed for both indoor and installation and outdoor environments..

Power saving is available for outdoor machine (by battery or solar cell system) for longer batter lifetime.

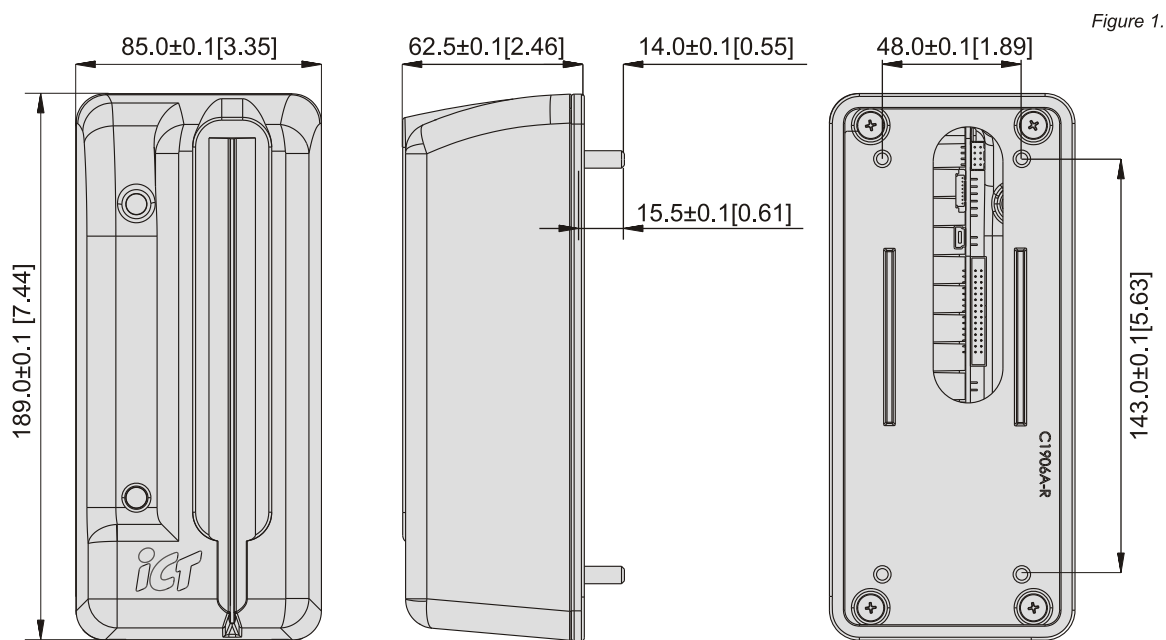
#### **3-1. Features:**

- Fast Recognition Speed with High Acceptance Rate.
- Strong & Water Proof Structure Design.
- Sleep Mode for Power Saving.
- Simple & Easy Installation.
- Build In IrDA Function for Software Upgrade.
- High System Security.

## 4. Specification:

<b>Power Requirement</b>	9~45V DC
<b>Swipe Way</b>	One Way
<b>Recognition Speed</b>	Approx. 2 seconds after swiping
<b>Interface</b>	Pulse, MDB, RS232
<b>Power Consumption</b>	12V DC- Standby : 0.1A, 1.2W Operation : 0.2A, 2.4W Maximum : 0.25A, 3W Sleep Mode: 80μA, 0.96mW
<b>Operation Environment</b>	Operation Temperature: -20°C~60°C Storage Temperature : -30°C~70°C Operating Humidity : 30%~95%RH(no condensation) Storage Humidity : 0%~95%RH(no condensation)
<b>Real Time Counter</b>	Deviation: ±8 mins/year
<b>Weight</b>	Approx. 0.82 kg
<b>Installation</b>	Indoor/ Outdoor

## 5. Dimension:



Unit: mm [inch]

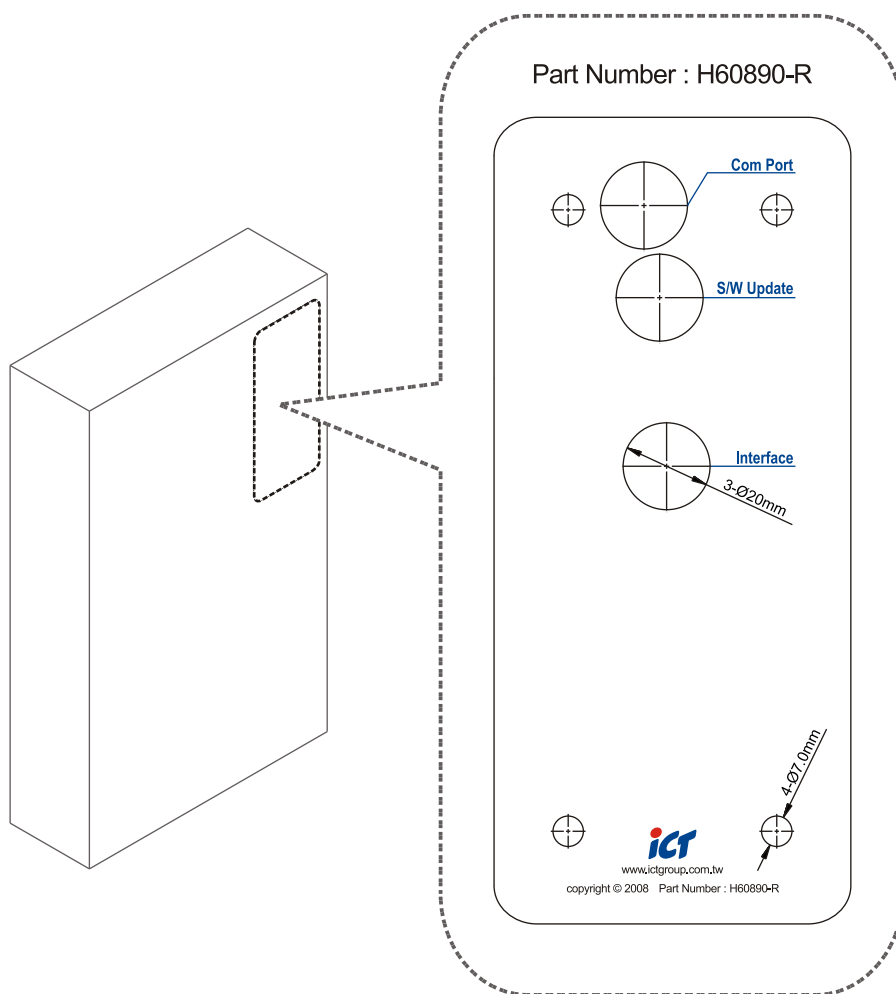


## 6. Installation:

### Step 1.

Attach the drilling sticker on an appropriate spot of VMC for installation (as shown in *Figure 2*).

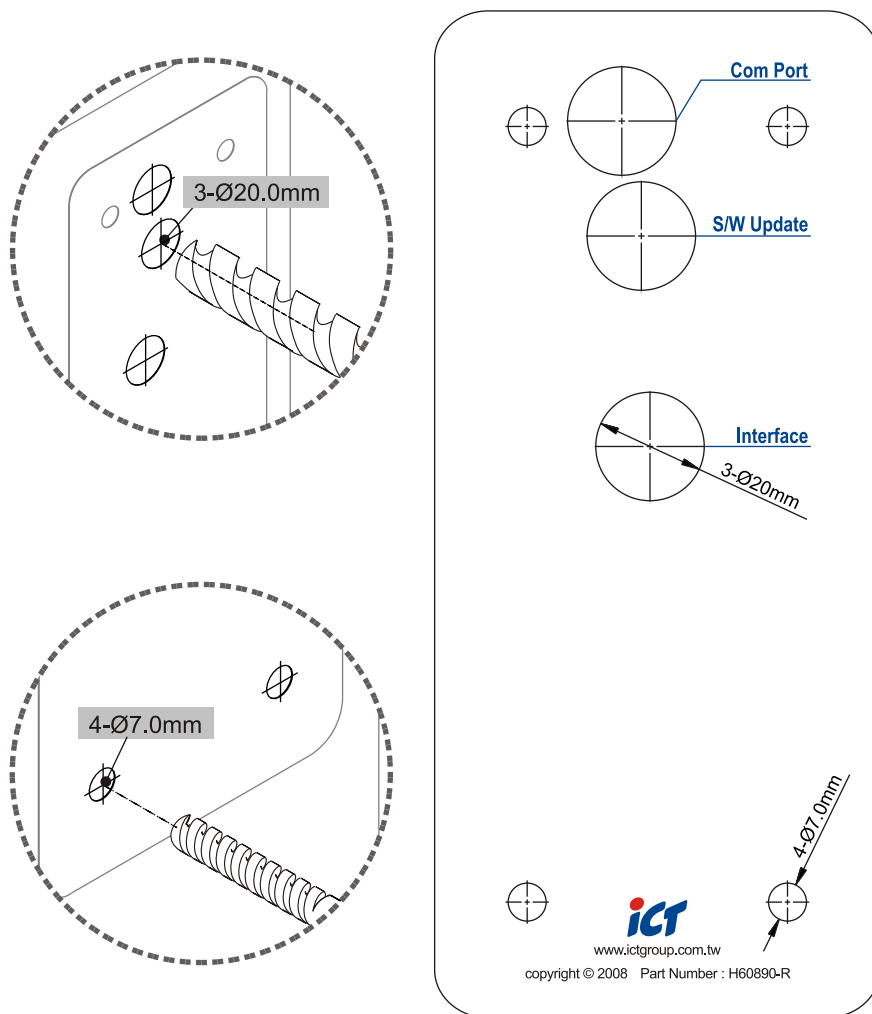
Figure 2.



**Step 2.**

Drill a small hole on every center of seven crosses by a  $\varnothing 2\text{mm}$  drill, then switch the drill to diameter  $\varnothing 7.0\text{mm}$  &  $\varnothing 20.0\text{mm}$  (as shown in *Figure 3*) to enlarge the holes.

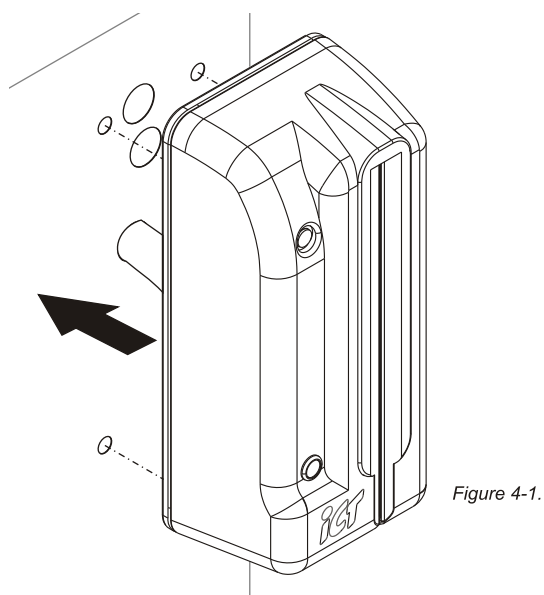
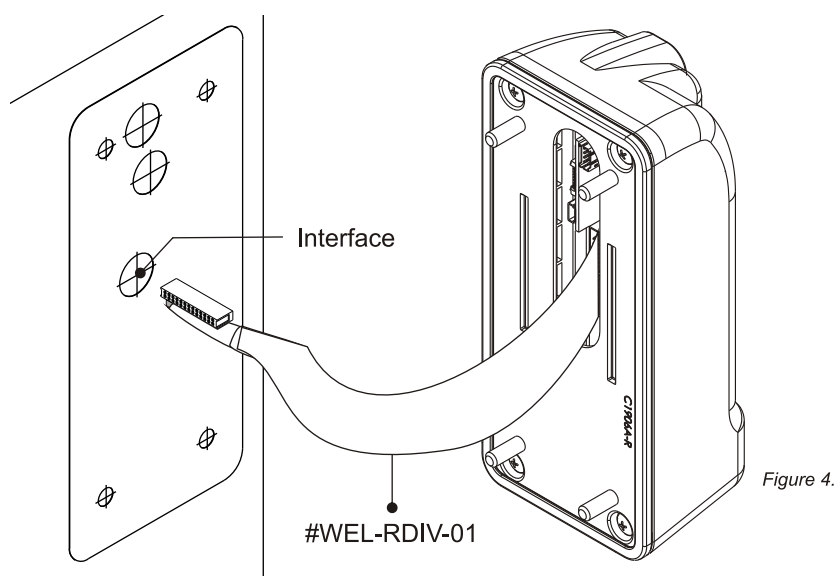
Figure 3.



After drilling, please smooth the holes' edges to make sure there is no deckle.

**Step 3.**

Put harnesses(#WEL-RDIV-01) into the hole from rear side and connect to DCM5 (please refer to P.9- **Step 5. Standard MDB Connection**), install DCM5 after connection (as shown in *Figure 4*).

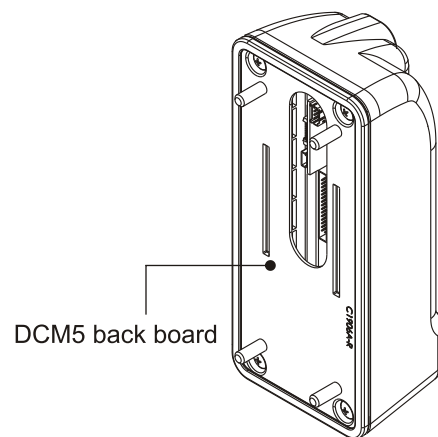
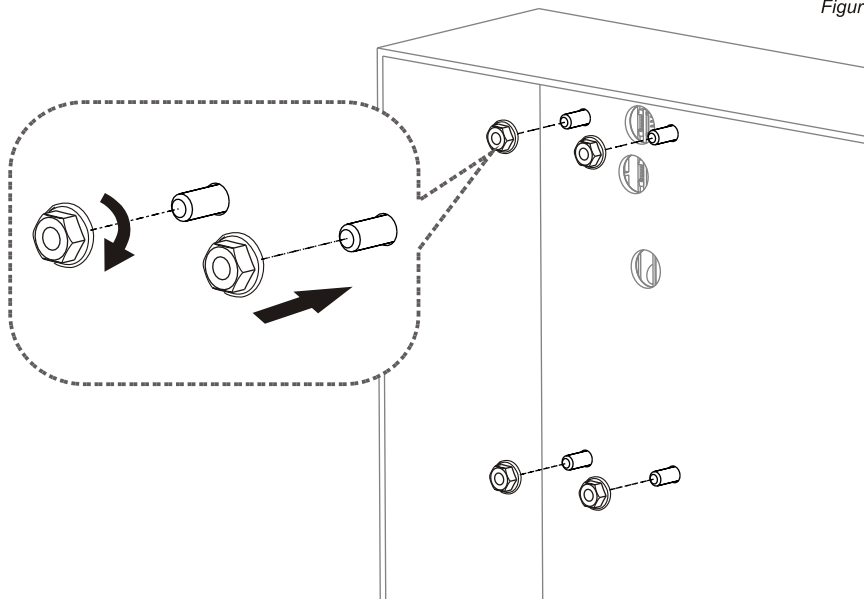


Please roll the cable and then bore it through VMC (Figure 4) to prevent cable damage. Change a new cable whenever a cable is broken.

**Step 4.**

Open the front door of the vending machine and fasten the screw nuts.  
(as shown in *Figure 5*).

Figure 5.



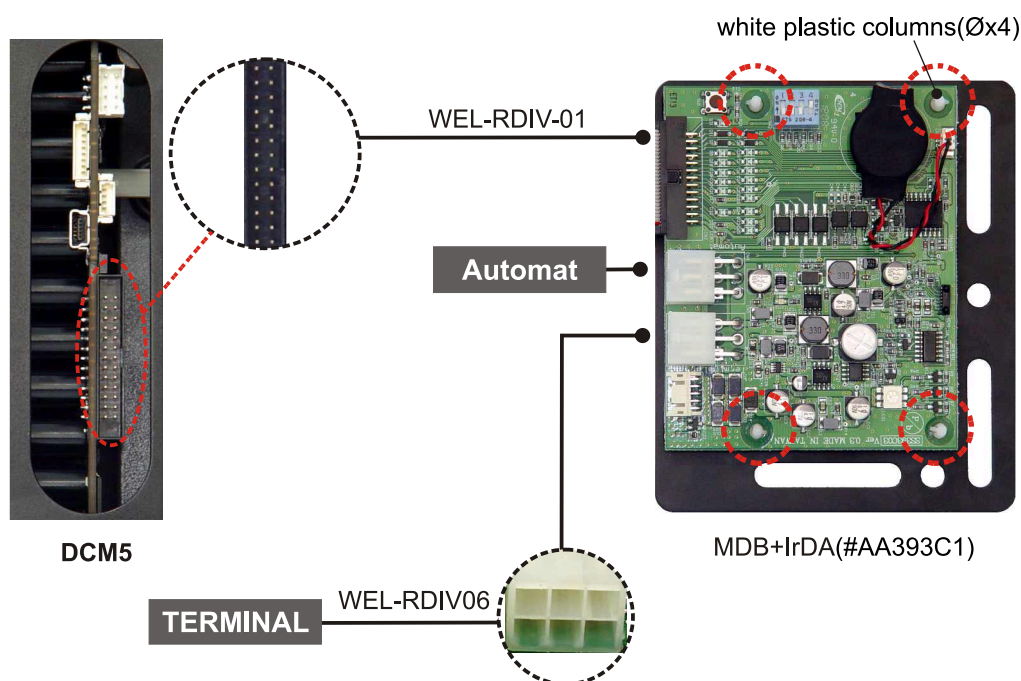
The screw thread is able to abide by maximum 1/4 turn when it is tight already, over tighten screw nuts can cause screw thread abrasion.  
Please change DCM5 back board when screw thread on it is abraded.  
Please replace the screw when it is broken.

**Step 5.****Standard MDB Connection.**

Before connecting the harness (#WEL-RDIV01) to IrDA MDB module (#AA393C1), please make sure the battery was installed on the board. The wire of battery was connected firmly to the board; and PCBA is firmly placed in white plastic columns.

Then connect the harness (#WEL-RDIV01) to IrDA MDB module (#AA393C1).

Figure 6.



Please turn the power off before connecting.

## Step 6.

### Installation MDB Filter on DCM5

1. Please make IrDA MDB Module (#AA393C1) connector side to downward as shown in *Figure 7*.
2. Fit the holes on IrDA MDB module to the lowest two screws on DCM5 as shown in *Figure 7-1*.
3. Move the module metal frame to right to appropriate location and fasten the screw nuts as shown in *Figure 7-2*.

Figure 7.



Figure 7-1.

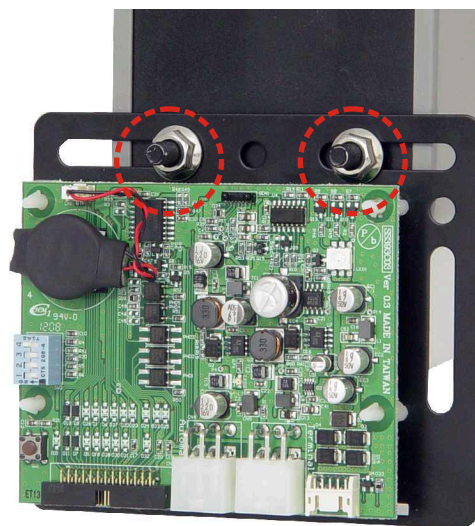
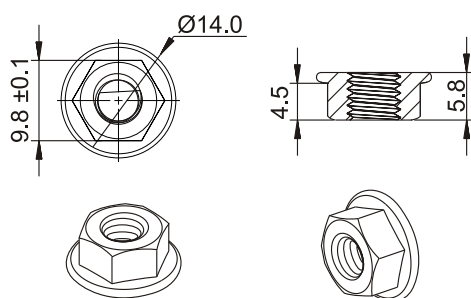


Figure 7-2.



- ❖ Bush Screw Nuts (optional parts) are available and also customize if the screws on DCM5 are too short to install on VMC after MDB Filter installation.

(Please refer to "Accessory List".)

**Step 7.**

After DCM5 has been installed firmly completely, apply power to DCM5.

All wires and parts of DCM5 can be neither on-line plugged nor on-line unplugged.

DCM5 will flash green light when power is applied. And then you may test it by valid OID, valid DL, or NID.

Please refer to page 21 for further light message information.

After testing OID/ DL/ NID, please test sleeping function.

- ◆ Set dip switch 4 to **“ON”**.

DCM5 will not sleep when dip switch 4 is ON.

Then set dip switch 4 to **“OFF”**.

When VMC does not send any signals to DCM5, DCM5 will sleep in 5 seconds.

- ◆ Make sure DCM5 has been well installed; and it will work well correctly after these tests successfully.

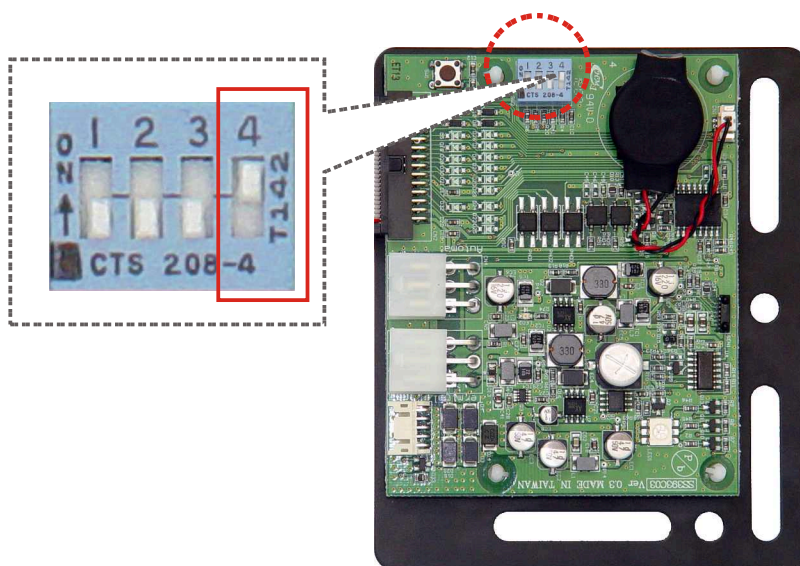


Figure 8.



Please contact ICT-E for support when you have any questions about DCM5.

## 7. Download:

### 7-1. Software Download and Upgrade by FP-004.

#### ❖ Download Directly:

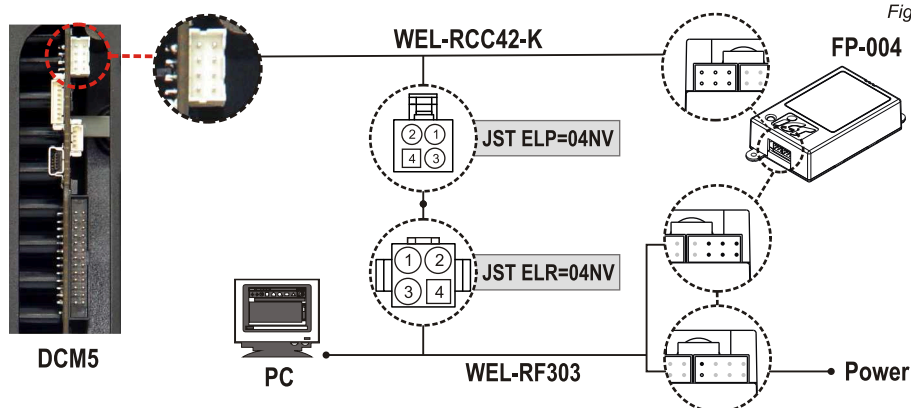


Figure 9.



Please turn the power off before connecting.

#### ❖ Download Indirectly:

##### Step 1.

Connect FP-004 to PC as Figure 10 and download firmware from PC to FP-004. When the firmware is saved completely in FP-004, you may disconnect it.

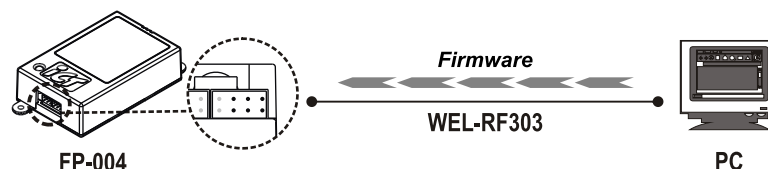


Figure 10.

##### Step 2.

Connect FP-004 to DCM5 as Figure 11 and download the firmware which is saved in FP-004 from Step1 to PC.

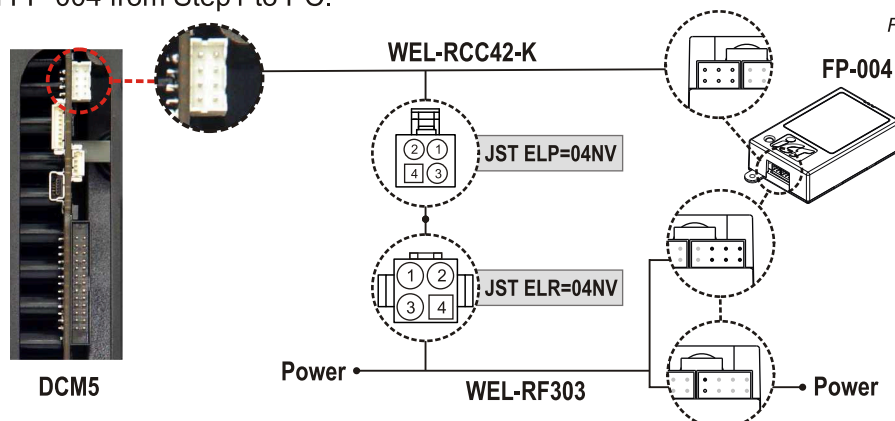


Figure 11.



- ◆ Power must be applied to DCM5 after connecting.
- ◆ Please contact ICT-E for support when you have any questions about DCM5.



## 7-2. Upgrade Power Saving MCU.

### Step 1.

Connect FP-004 to PC as shown in *Figure 12* and download firmware from PC to FP-004.

When the firmware is saved completely in FP-004, you may disconnect it.

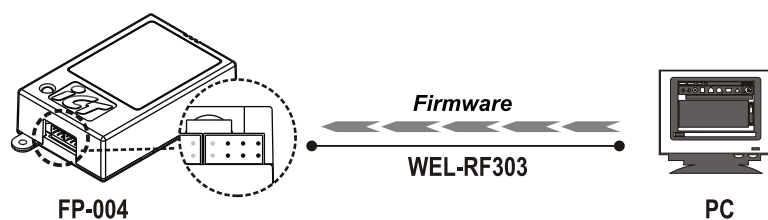


Figure 12.

### Step 2.

Connect FP-004 to DCM5 as *Figure 13* and download the firmware which is saved in FP-004 from Step1 to PC.

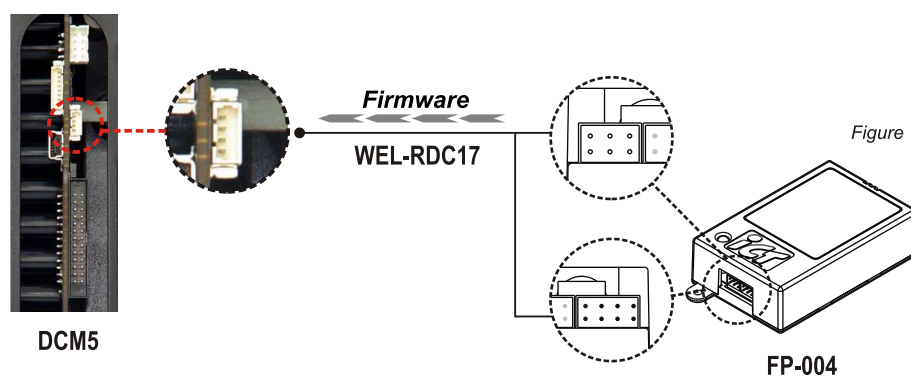


Figure 13.



Power must be applied to DCM5 after connecting.

## 8. Software Download by IrDA Kit:

### Step 1.

Connect DCM5 as followings.

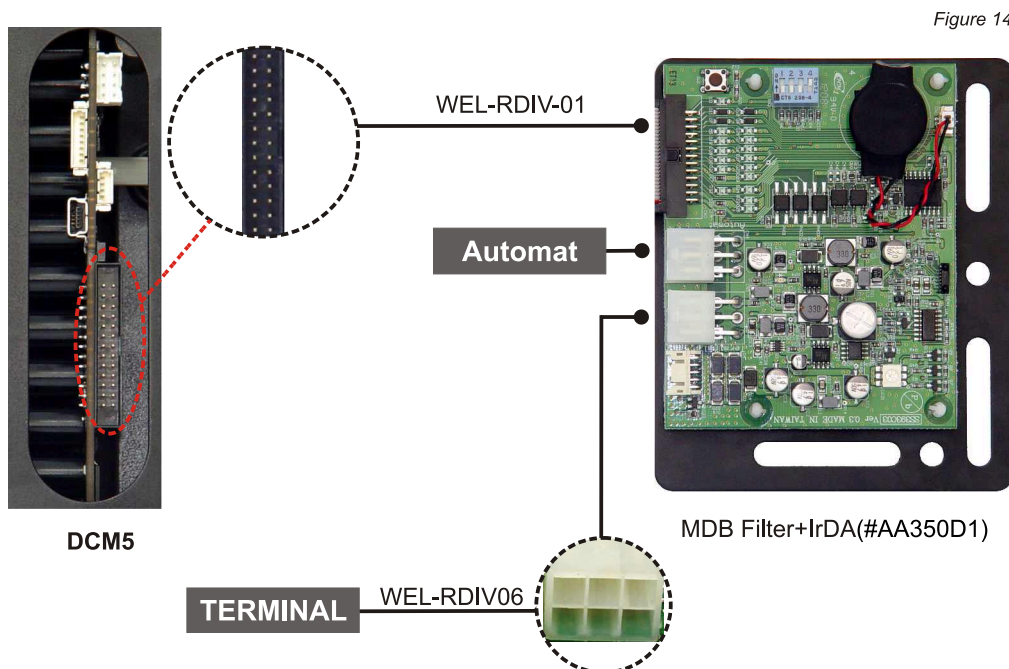


Figure 14.

### Step 2.

Switch SW4 into "ON" to wake DCM5 up and download.

(Switch SW4 back to "OFF" after downloading.)

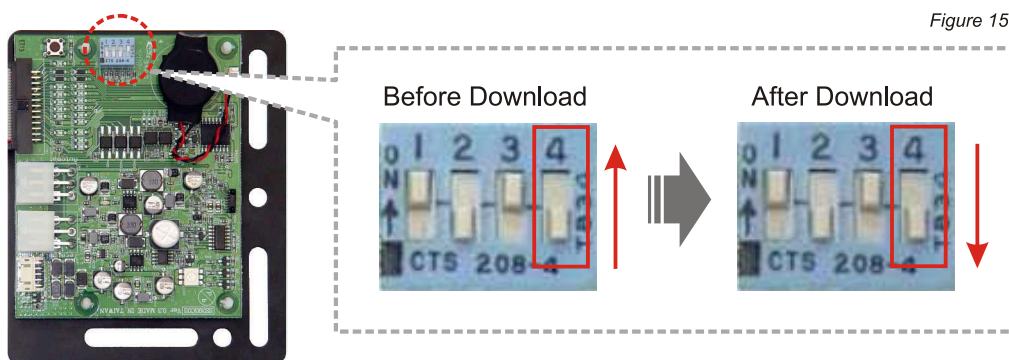


Figure 15.



Before downloading software, please turn on the power of vending machine.

**Step 3.**

Use the tools "TOB Psion PDA" or "Ready 2000" to download software.

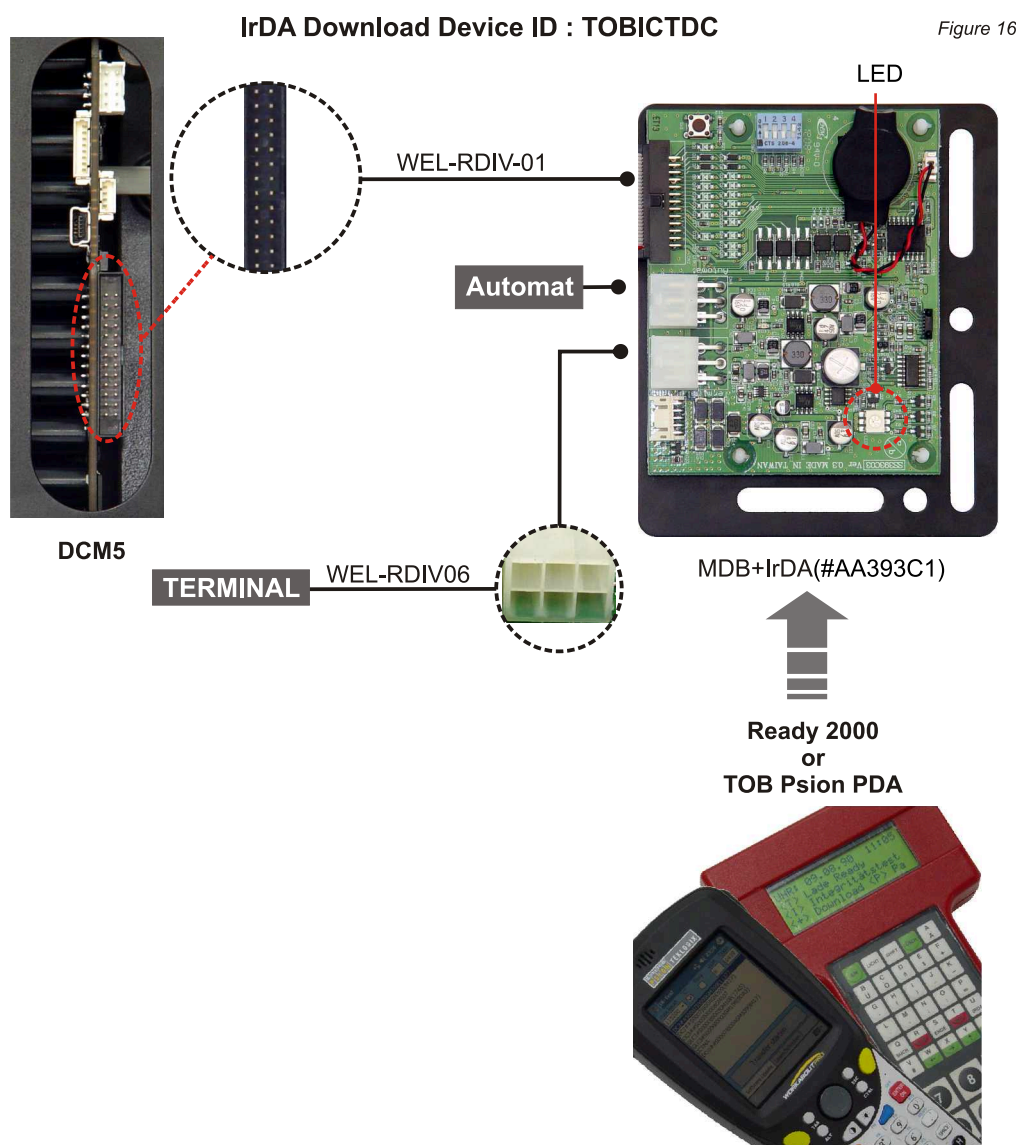
**LED Status:**

Table 8.

Color	Status	Definition
Blue	Flash	Download Successfully
Green	Flash	Receive Software from Tools
Red	Flash	Download Failed

## 9. DCM5 Connectors:

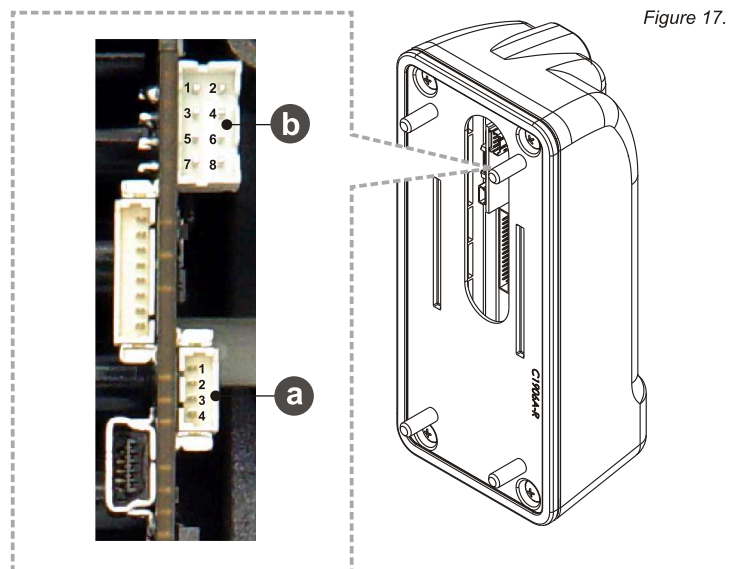
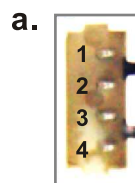
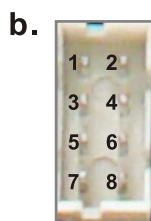


Figure 17.



Software Update Connector		
Pin No.	Define	Input/Output
1	SSS1	Input
2	GND	Input
3	/Reset	Input/Output
4	Test	Input

Table 9.



Com Port Connector		
Pin No.	Define	Input/Output
1	GND	Common
2	TX1(Debug)	Output
3	RX1(Debug)	Input
4	Reserved	Reserved
5	/Reset	Input
6	+5V DC	Output
7	RX2(Device)	Input
8	TX2(Device)	Output

Table 10.

## 10. MDB PCB Board Module:

### 10-1. MDB + IrDA :

Burglarproof System &  
Build-in IrDA Function.

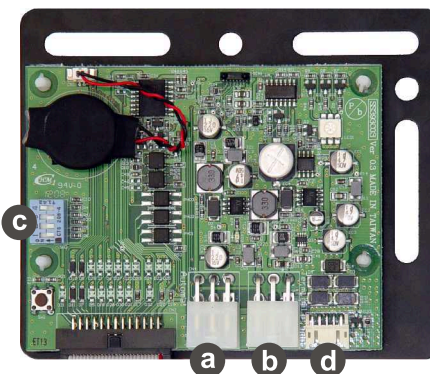


Figure 18.



To Automat Connector Pin Definition		
Pin No.	Pin Name/Function	Input/Output
1	9~45V DC	Input
2	GND	Input
3	Wakeup Trigger	Input/Output
4	Master Receive	Output
5	Master Transmit	Input
6	Communication Common	Common

Table 11.



To Terminal Connector Pin Definition		
Pin No.	Pin Name/Function	Input/Output
1	9~45V DC	Output
2	GND	Output
3	Wakeup Trigger	Input/Output
4	Terminal Transmit	Input
5	Terminal Receive	Output
6	Communication Common	Common

Table 12.



DIP SW				
Function	SW1	SW2	SW3	SW4
MDB	OFF	OFF		
MDB	ON	OFF		
Pulse	OFF	ON		
RS232	ON	ON	OFF	
Communication after Swiping Card: (under MDB protocol)				
keep Communication			ON	
Sleep Mode (Outdoor)				OFF
Normal Mode (Indoor)				ON

Table 13.



Pulse Interface Define		
Pin No.	Pin Name/Function	Input/Output
1	+9V~+45VDC	Input
2	GND	Input
8	INHIBIT	Input
10	CREDIT(O.D.)	Output

Table 14.

## 11. Harness:

Figure 19.

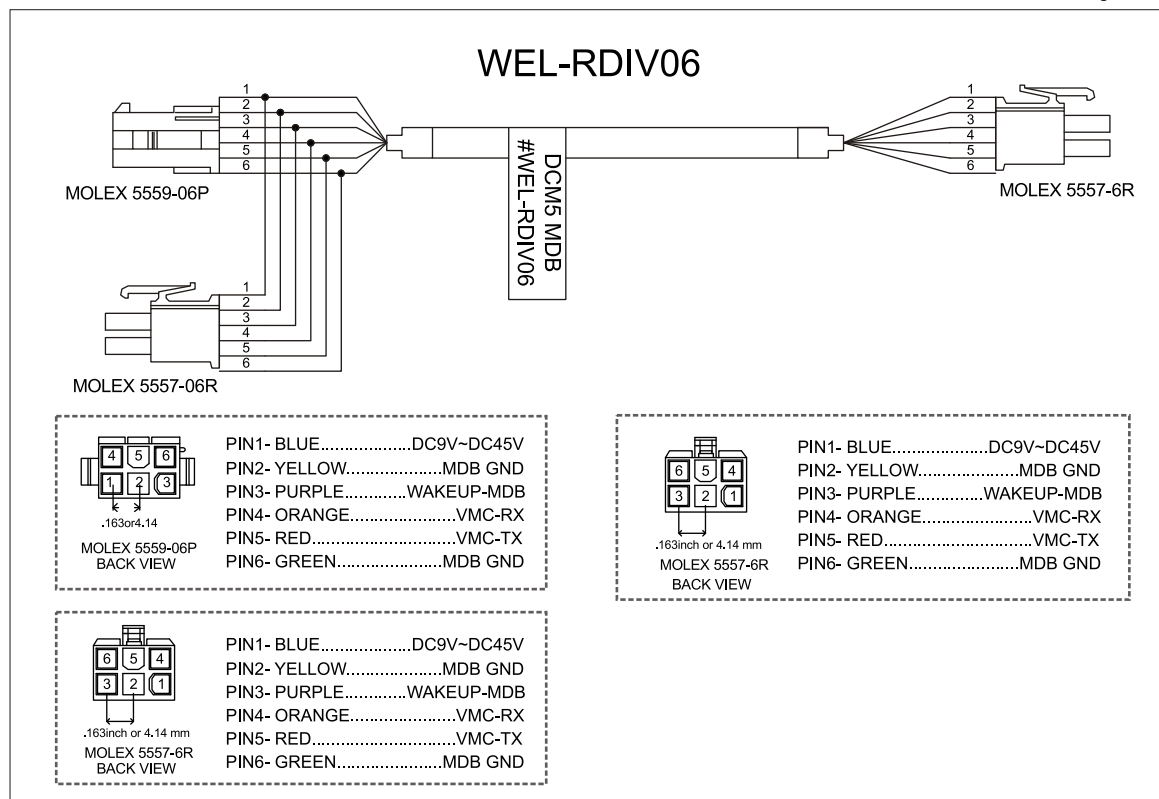


Figure 20.

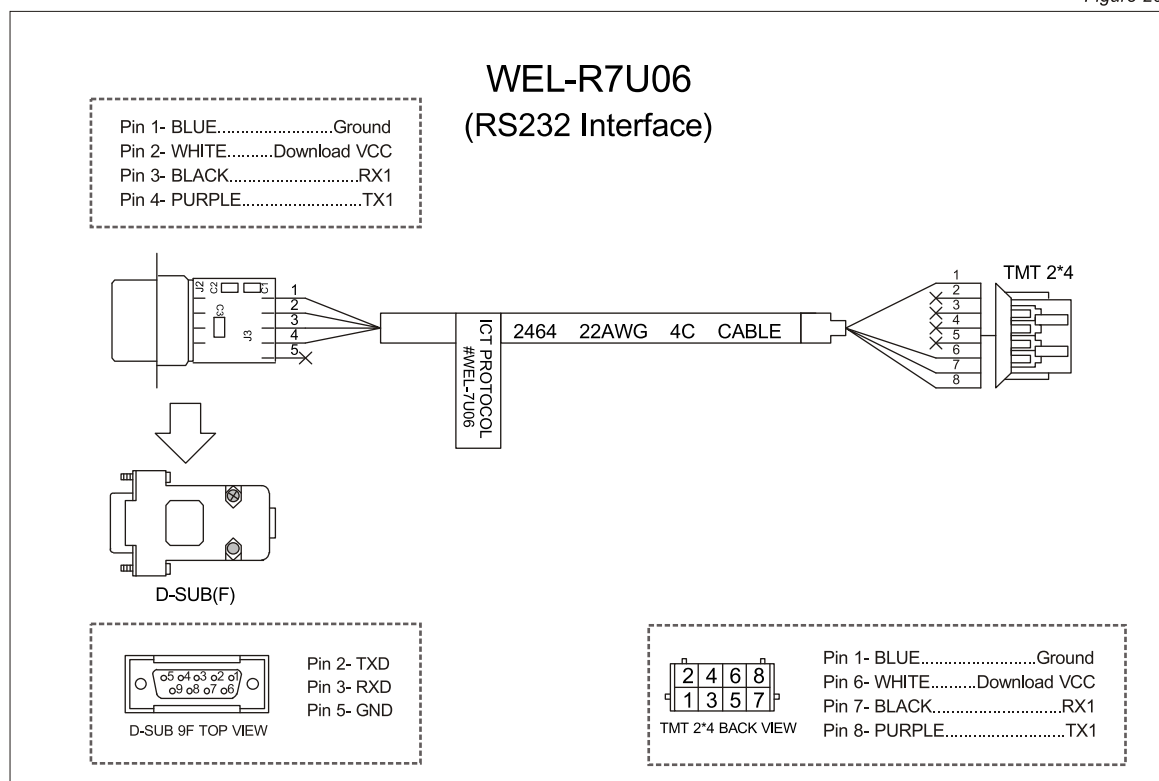
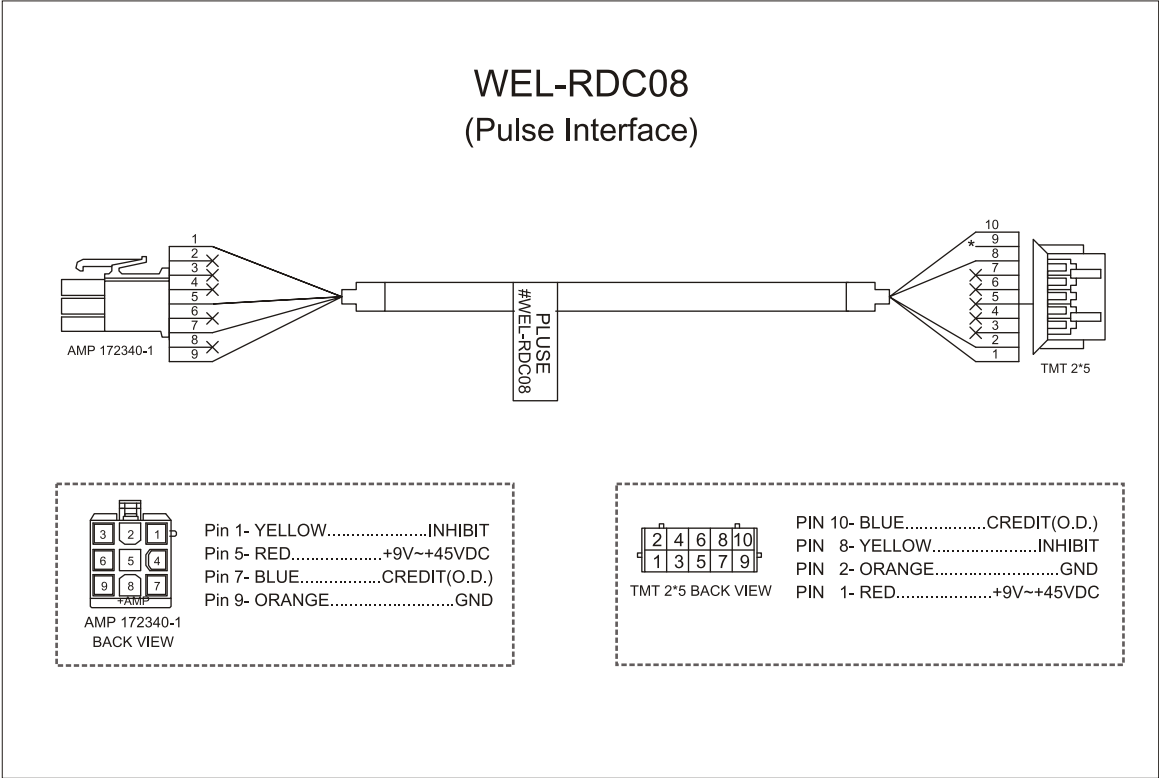


Figure 21.



## 12. How to use DCM5?

1. Hold driving license, old ID, or new ID (one of these three) and swipe it as following figure.

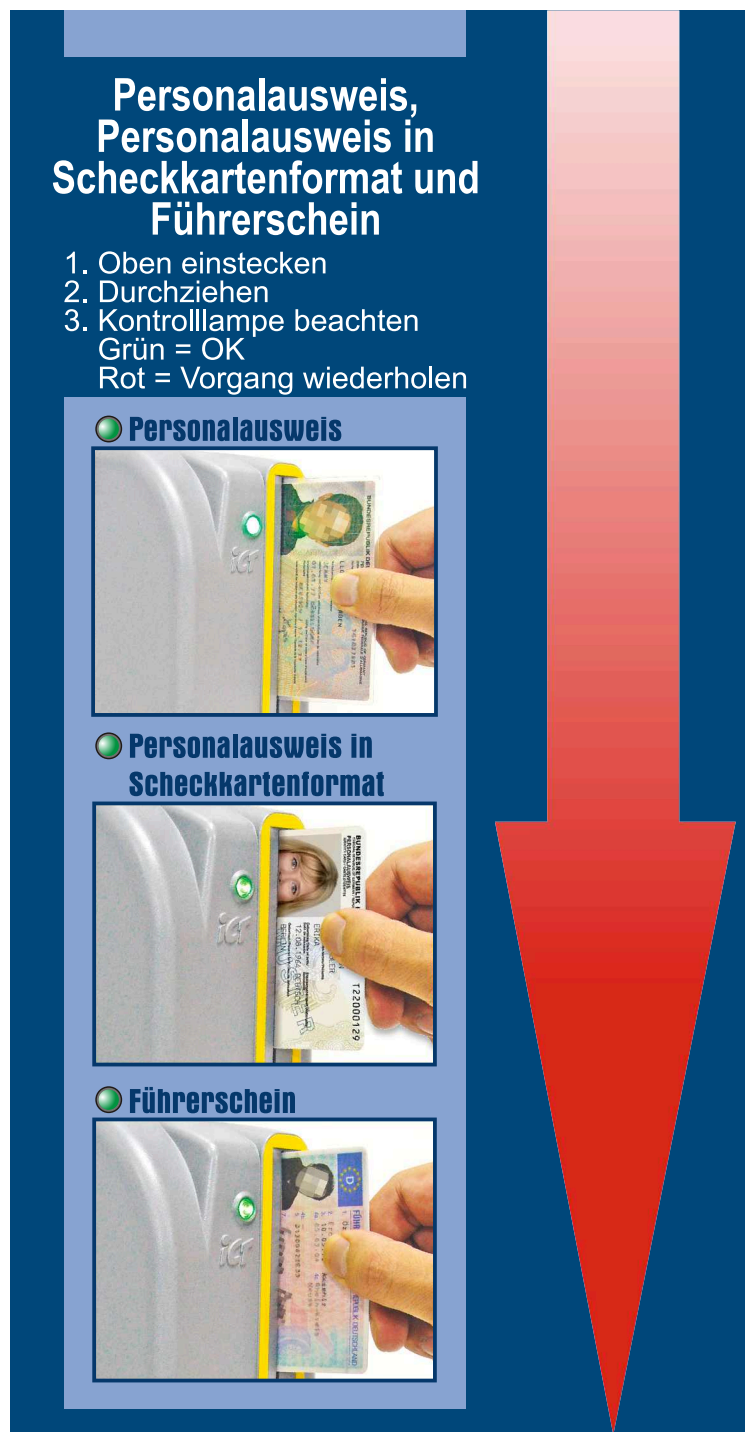


Figure 22.



2. One second after swiping it, for valid card, there will be a sound as “beep” for counterfeit card, there will be two sounds as “beep beep”; in the mean time, LED light will light up to indicate status of DCM5.

Please refer to Table 15-LED flashes to check status of the document.

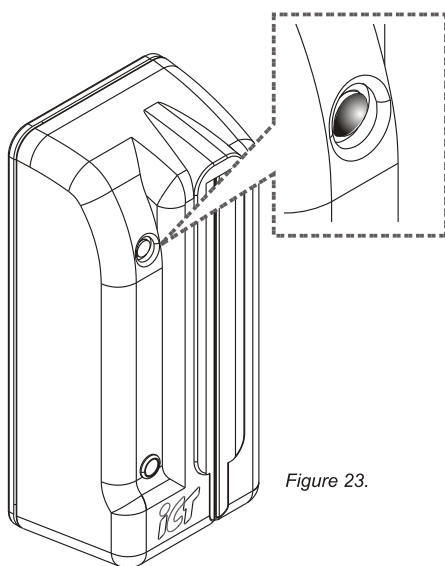


Figure 23.

LED Light		
Red	Green	Status
	*Flashes	Standby (Normal Mode ON)
*Flashes		Standby (Sleep Mode ON & Dip SW3 ON)
Blink By Turns		Card Inserted
	ON	Card PASS
ON		Card NG

Table 15.



If LED lights red costantly, please contact ICT-E for technical support.

## 13. Maintenance:

### 13-1. Cleaning:

If DCM5 shows error messages when the document is normal, please use the cleaning card to clean internal part without disassembling, and then test DCM5 by inserting the document again.

Please follow steps below to clean DCM5.

#### Step 1.

Put the card in cloth as shown in *Figure 24*.

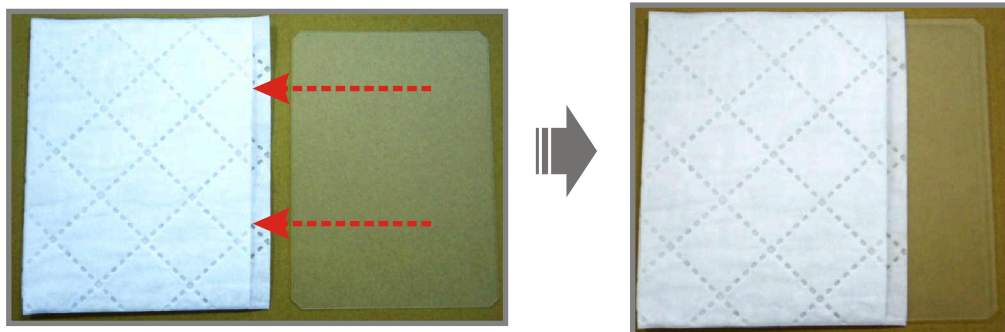


Figure 24.

#### Step 2.

Wet the cloth by water (as shown in *Figure 25*). Care should be taken that the liquid should not drop from the card.



Figure 25.

**Step 3.**

Hold the cleaning card, slightly insert into the top of DCM5, and swipe the card back, and forth for several times.

(Change the cloth and clean again if it necessary.)

Figure 26.



1. Do not pour any volatile liquid (such as Methanol, Ethanol, thinner, and Acetone...etc.) On the cloth.
2. After cleaning, please throw the cloth away and keep the card.
3. If the situation can not be solved after cleaning process, please try to disassemble and clean the internal part.

## 13-2. Battery Replacement:

Normally, battery replacement should be replaced yearly, to purchase new batteries, please contact ICT (Part Number: #BAT-R0017) or follow the battery specifications as followings to purchase appropriate batteries for preventing PCB damage.

### ❖ Battery Specification:

<b>Nominal Voltage</b>	3V
<b>Capacity</b>	220mAh
<b>Operating Temperature Limit</b>	-20°C~60°C
<b>Positive Side of Battery</b>	Red Wire
<b>Negative Side of Battery</b>	Black Wire
<b>Connector</b>	MH 2 PIN

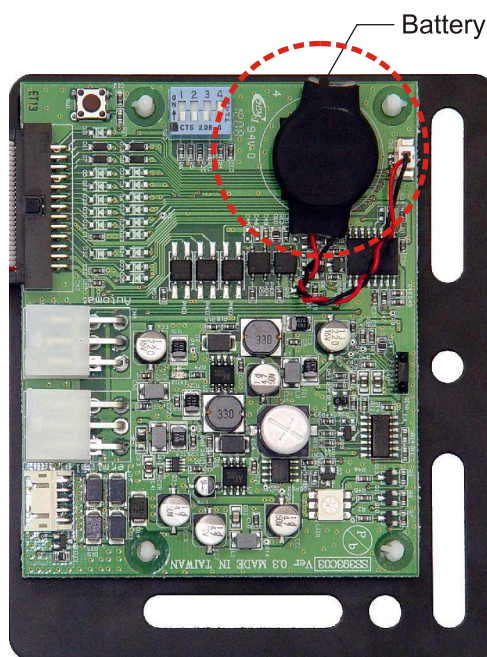


Figure 27.

## 14. Accessory List:

Figure 28.


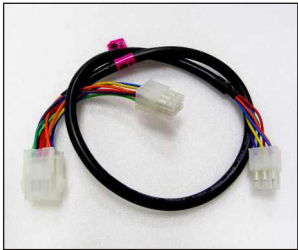

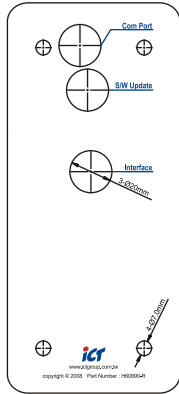

DCM5 Standard Package			
Part Name	Part Number	Quantity	Picture
Bezel Sticker(German)	H60840-R	1 pcs	
MDB Cable	WEL-RDIV06	1 pcs	
MDB Interface Cable	WEL-RDIV01	1 pcs	
Rear Drilling Sticker	H60890-R	1 pcs	
M6 Bush Screw Nut Kit	S6007000	1 set (4pcs)	

Figure 29.

DCM5 Optional Parts			
Part Name	Part Number	Quantity	Picture
FP-004 Kit	5RTM-53P00DC3-01	1 set	
Cleaning Card	Z6024000-R	1 set (5pcs)	

## **International Currency Technologies Corporation**

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