



## Use of Materials Limitations

International Currency Technologies Corporation (ICT) all rights reserved.

All materials contained are the copyrighted property of ICT.

All trademarks, service marks, and trade names are proprietary to ICT.

ICT reserves the right at all times to disclose or to modify any information as ICT deems necessary to satisfy any applicable law, regulation, legal process or governmental request, or to edit, refuse to post or to remove any information or materials, in whole or in part, in ICT's sole discretion.

## Contents

|  |           |
|--|-----------|
| <b>1. Introduction</b>                   |           |
| 1-1. Overview .....                      | 2         |
| 1-2. Features .....                      | 2         |
| <b>2. Specifications .....</b>           | <b>3</b>  |
| <b>3. Packing List .....</b>             | <b>3</b>  |
| <b>4. Dimension .....</b>                | <b>4</b>  |
| <b>5. Installation</b>                   |           |
| 5-1. Harness Application .....           | 5         |
| 5-1-1. I/O Circuit .....                 | 12        |
| 5-2. DIP Switch Setting .....            | 15        |
| 5-3. Software Download and Upgrade ..... | 16        |
| <b>6. Maintenance .....</b>              | <b>17</b> |
| <b>7. Troubleshooting .....</b>          | <b>18</b> |
| <b>8. Standard of Coupon Bar Code</b>    |           |
| 8-1. Bar Code Ticket Diagram .....       | 21        |

## 1. Introduction

### 1-1. Overview

ICT superior security system-NBA bill acceptor, is designed for customers who require safer automatic bill handling transaction. In addition to high security, NBA bill acceptor also includes high acceptance rates, lockable cashbox, bar-code reading function, and quick software update, etc. It would certainly provide you with more than you expect.

### 1-2. Features

- Four-way bill insertion acceptance.
- High security optical bill detection function.
- Double locks bill box.
- Bar-code reading function for coupon verification.
- Smart bill box (optional).
- Auto-bill centralizing function.

## 2. Specifications

### General

**Acceptance Rate** 96% or greater

**Note:** *The acceptance rate excludes notes that are dirty, wet, broken or wrinkled.*

**Bill Insertion** Four way acceptable

**Transaction Speed** Approx. 5 seconds to stack

**Interface** Pulse, RS232 A0, ccTalk, GBA  
ICT Protocol

**Installation** Indoor

### Electrical

|                              |  |
|------------------------------|--|
| <b>Power Consumption</b>     | Standby: 0.3 A, 3.6W<br>Operation: 1.25A, 15W<br>Maximum: 3A, 36W  |
| <b>Power Source</b>          | 12V DC~24V DC (11.4~25.2V DC)  |
| <b>Operation Environment</b> | Operation Temperature: 0°C~50°C<br>Storage Temperature: -30°C~70°C<br>Humidity: 30%~95%RH<br>(no condensation) |

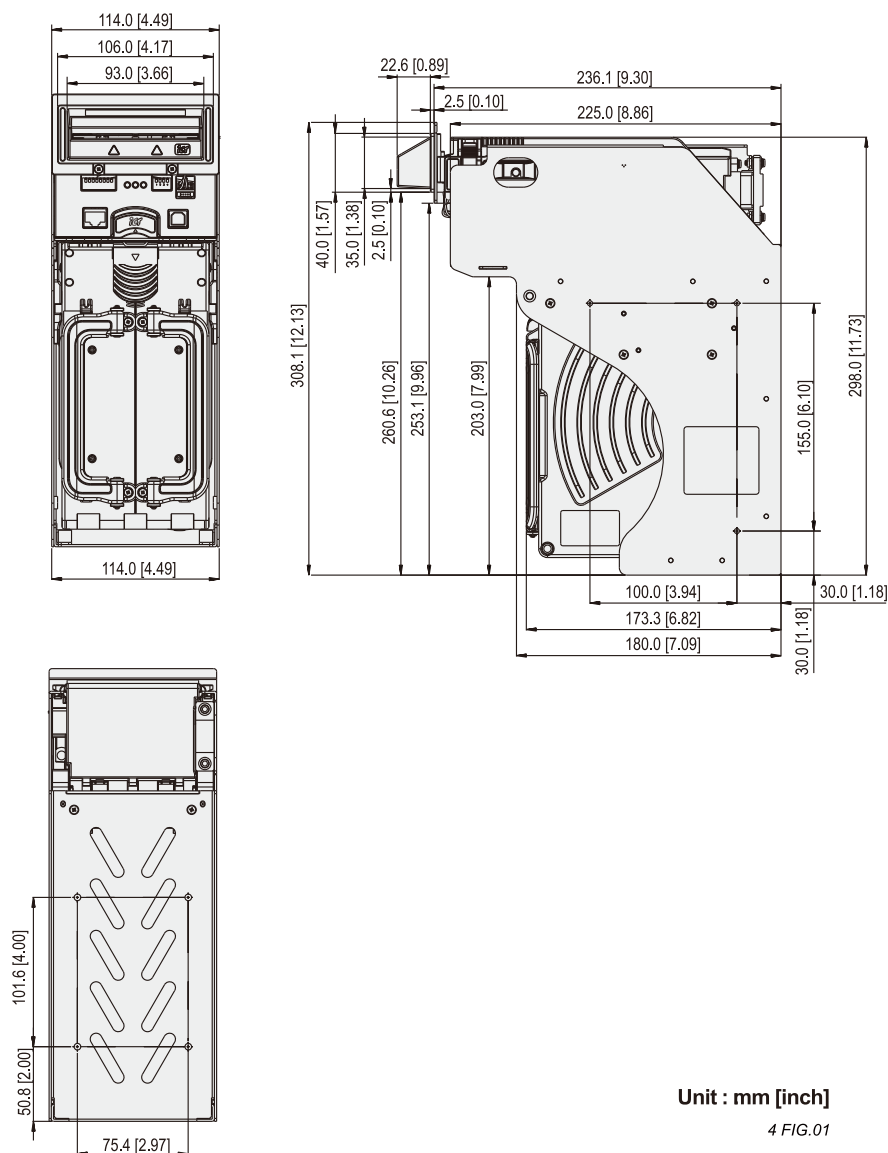
### Mechanical

|                            |                                  |
|----------------------------|----------------------------------|
| <b>Outline Dimension</b>   | Refer to page. 4                 |
| <b>Bill Capacity</b>       | Approx. 500 bills                |
| <b>Weight</b>              | Approx. 4kg (including bill box) |
| <b>Bill Accepted Width</b> | 62~83mm                          |

## 3. Packing List

|                  |  |
|------------------|--|
| <b>Main</b>      | Bill Acceptor  |
| <b>Accessory</b> | Harnesses: Refer to <b>5-1</b><br>ccTalk male to male connector<br>NBA Installation Guide<br>NBA DIP Switch Setting Guide<br>A Pair of Keys for Bill Box |

## 4. Dimension



## 5. Installation

### 5-1. Harness Application

5-1 TABLE 01

| Interface                  | Used Voltage    | Usage               | Harness                        | Page |
|----------------------------|-----------------|---------------------|--------------------------------|------|
| Pulse                      | 12V DC          | Power & *Data Comm. | **<br>3-BA-RNEWJ830-O          | 6    |
| RS232 A0                   | 12V DC / 24V DC | *Data Comm.         |                                |      |
| ICT Protocol               | -               | *Data Comm.         |                                |      |
| GBA                        | -               | *Data Comm.         |                                |      |
| ccTalk                     | 12V DC / 24V DC | Power & *Data Comm. | WEL-RNJ13(Optional)            | 7    |
| RS232 A0                   | 12V DC / 24V DC | Power & *Data Comm. |                                |      |
| RS232 A0<br>V2.2           | 12V DC / 24V DC | Power & *Data Comm. | ***<br>WEL-RNJ28-T<br>(Option) | 8    |
| GBA                        | 12V DC / 24V DC | Power & *Data Comm. | 3-BA-RNJ24-01<br>(Option)      | 9    |
| RS232 A0<br>(5V-TTL LEVEL) | 12V DC / 24V DC | Power & *Data Comm. | 3-BA-RNBA-T-01<br>(Option)     | 10   |

\*Data Comm. : Data Communication.

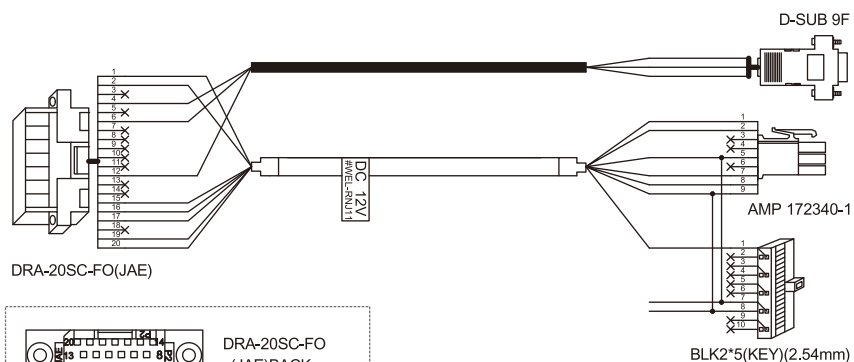
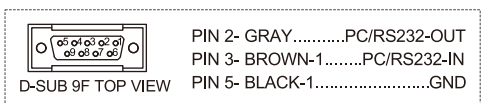
\*\*Please note that WEL-RNJ28-T is used to be connected to 3-BA-RNEWJ830-O to support the interface of RS232 A0 or V2.2, in case of your machine has no DB9 connector available for connecting with 3-BA-RNEWJ830-O.  
(Refer to page 11)

\*\*\*Please note these two connectors PRN-RG014 or PRN-RG020 is used to be connected with wire-pin of WEL-RNJ28-T. (Refer to page 11)

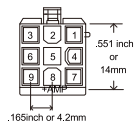
5-1 FIG.01

| Interface    | Used Voltage    | Usage               |
|--------------|-----------------|---------------------|
| Pulse        | 12V DC          | Power & *Data Comm. |
| RS232 A0     | 12V DC/24V DC   | *Data Comm.         |
| ICT Protocol | -               | *Data Comm.         |
| RS232 A1     | -               | *Data Comm.         |
| ccTalk       | 12V DC / 24V DC | Power & *Data Comm. |

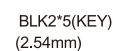
### 3-BA-RNEWJ830-O



PIN 1- RED.....+12V/24V-POWER  
PIN 2- BROWN.....GND-POWER  
PIN 4- GRAY.....PC/RS232-OUT  
PIN 6- BROWN-1.....PC/RS232-IN  
PIN 12- BLACK-1.....GND  
PIN 15- BLUE.....VEND+  
PIN 16- PURPLE.....VEND-  
PIN 17- YELLOW.....JNH+  
PIN 19- WHITE.....JNH-  
PIN 20- BLACK.....ccTalk



PIN 1- YELLOW.....JNH+  
PIN 2- WHITE.....JNH-  
PIN 5- RED.....+12V/24V-POWER  
PIN 8- PURPLE.....VEND-  
PIN 7- BLUE.....VEND+  
PIN 9- BROWN.....GND-POWER

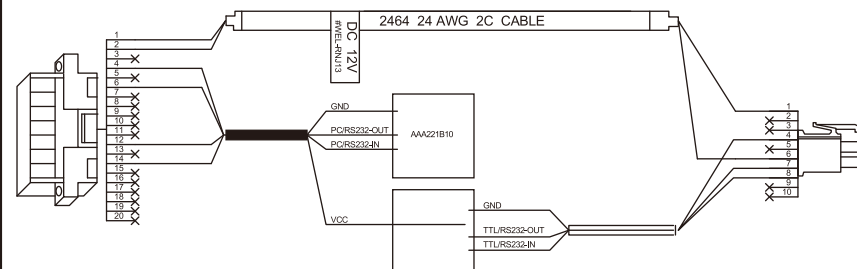


PIN 1- BLACK.....ccTalk  
PIN 7- RED.....+12V/24V-POWER  
PIN 8- BRO.....GND-POWER

5-1 FIG.02

| Interface | Used Voltage   | Usage               |
|-----------|----------------|---------------------|
| RS232 A0  | 12V DC/ 24V DC | Power & *Data Comm. |

### WEL-RNJ13

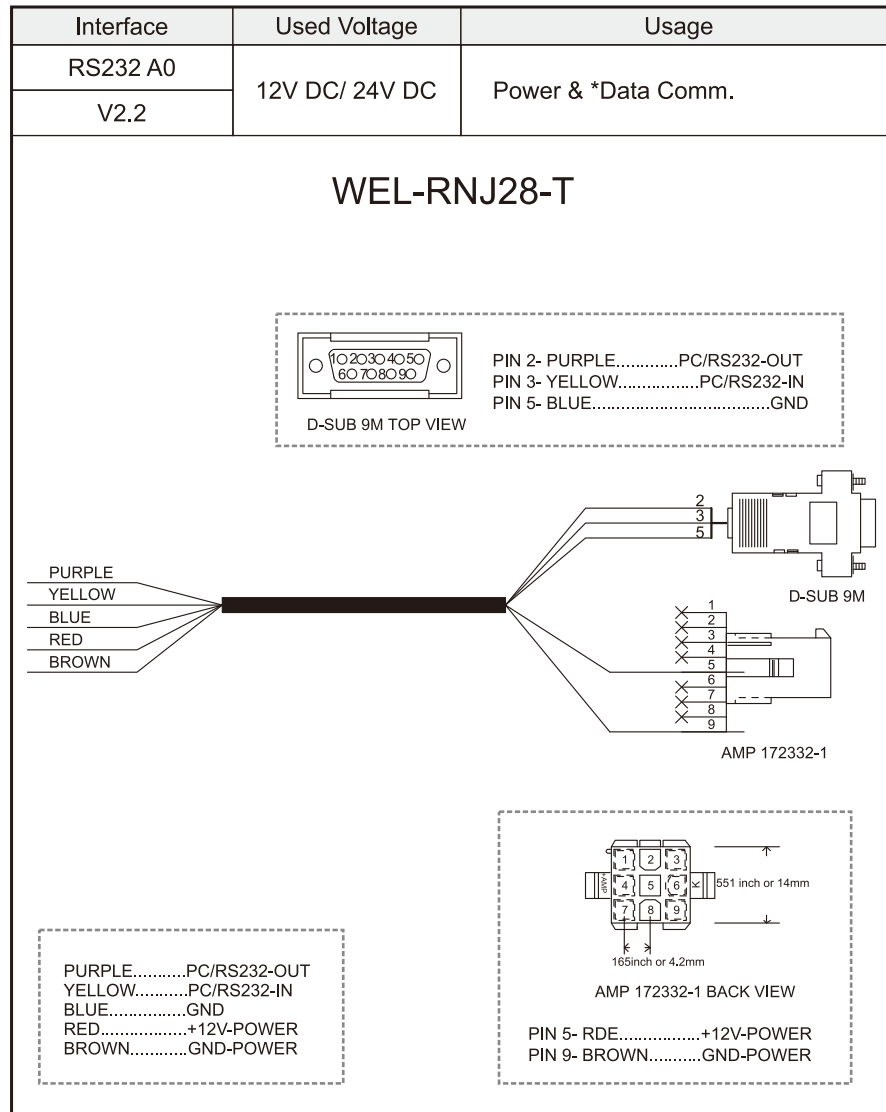


PIN 1- RED.....+12V/24V-POWER  
PIN 2- BLACK.....GND-POWER  
PIN 4- ORANGE.....PC/RS232-OUT  
PIN 6- YELLOW.....PC/RS232-IN  
PIN 12- BLACK-1.....GND  
PIN 14- WHITE.....VCC

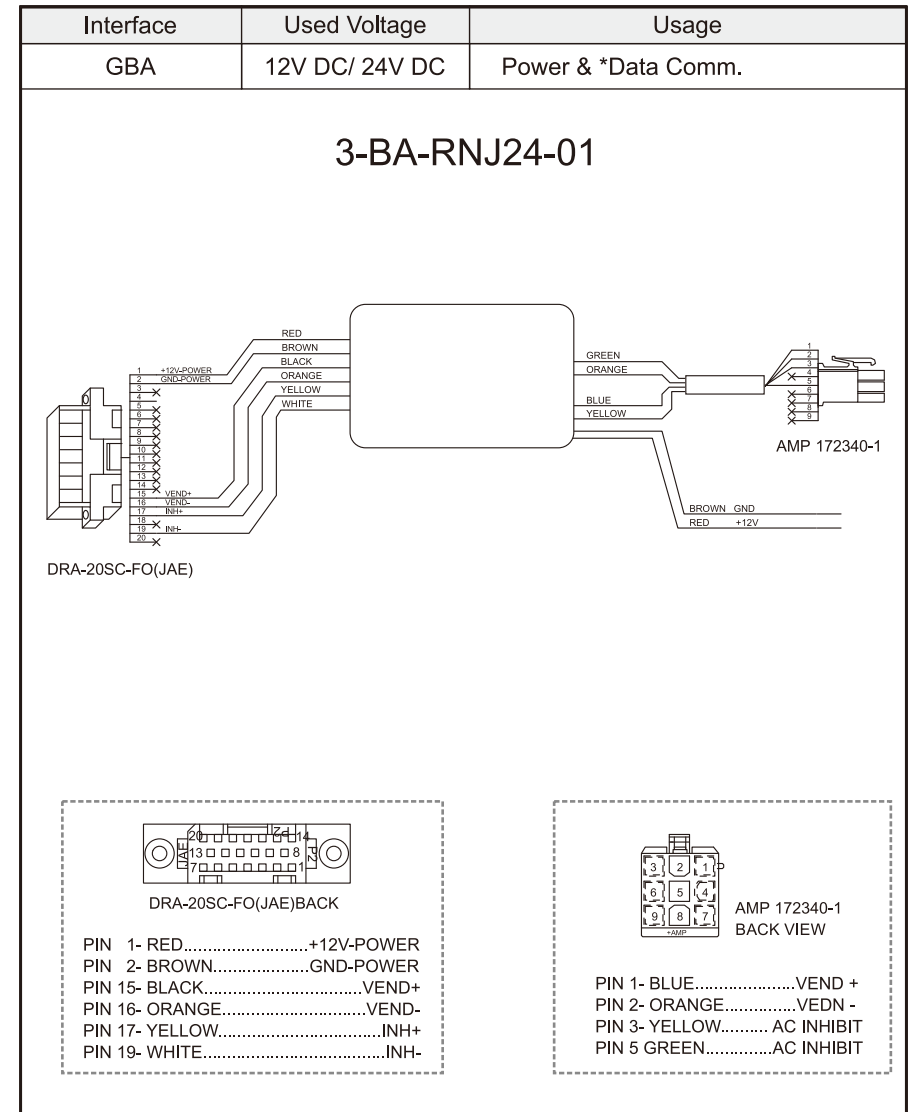


PIN 1- RED.....+12V/24V-POWER  
PIN 4- BLACK-1.....GND  
PIN 6- BLACK.....GND-POWER  
PIN 7- YELLOW.....TTL/RS232-IN  
PIN 8- ORANGE.....TTL/RS232-OUT

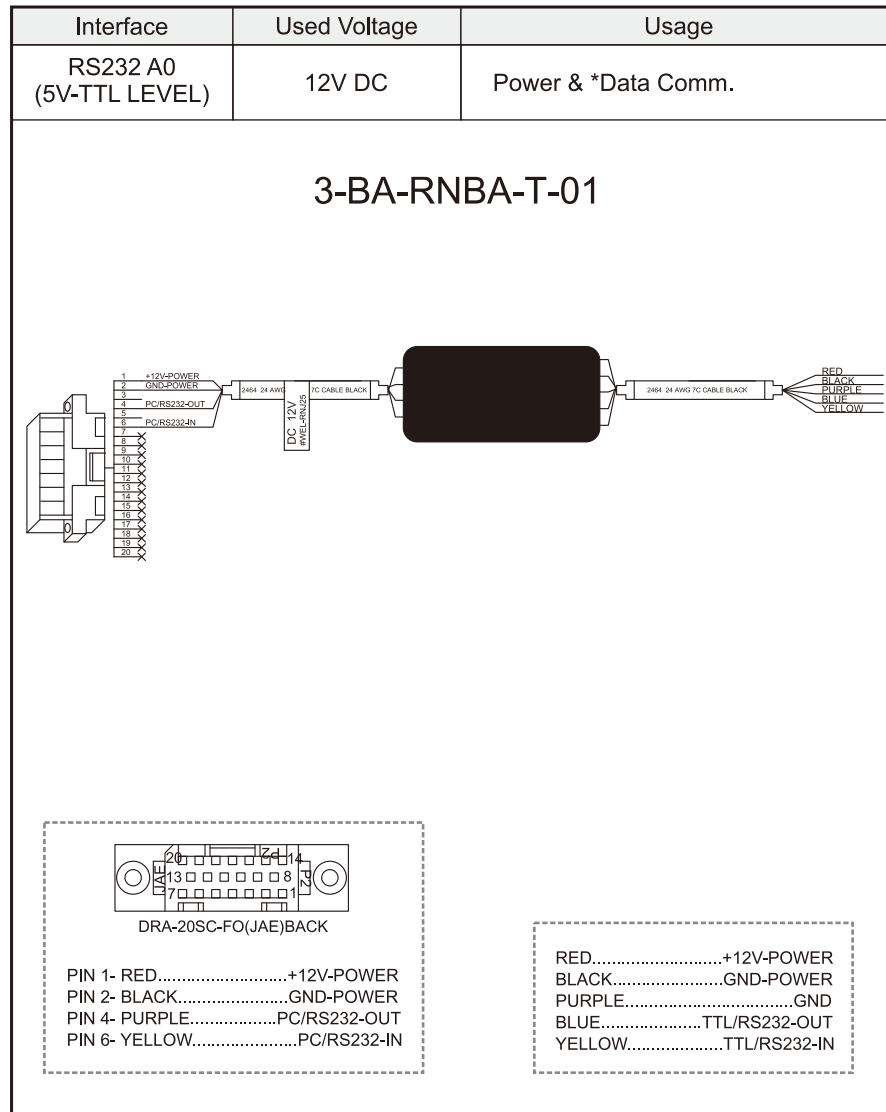
5-1 FIG.03



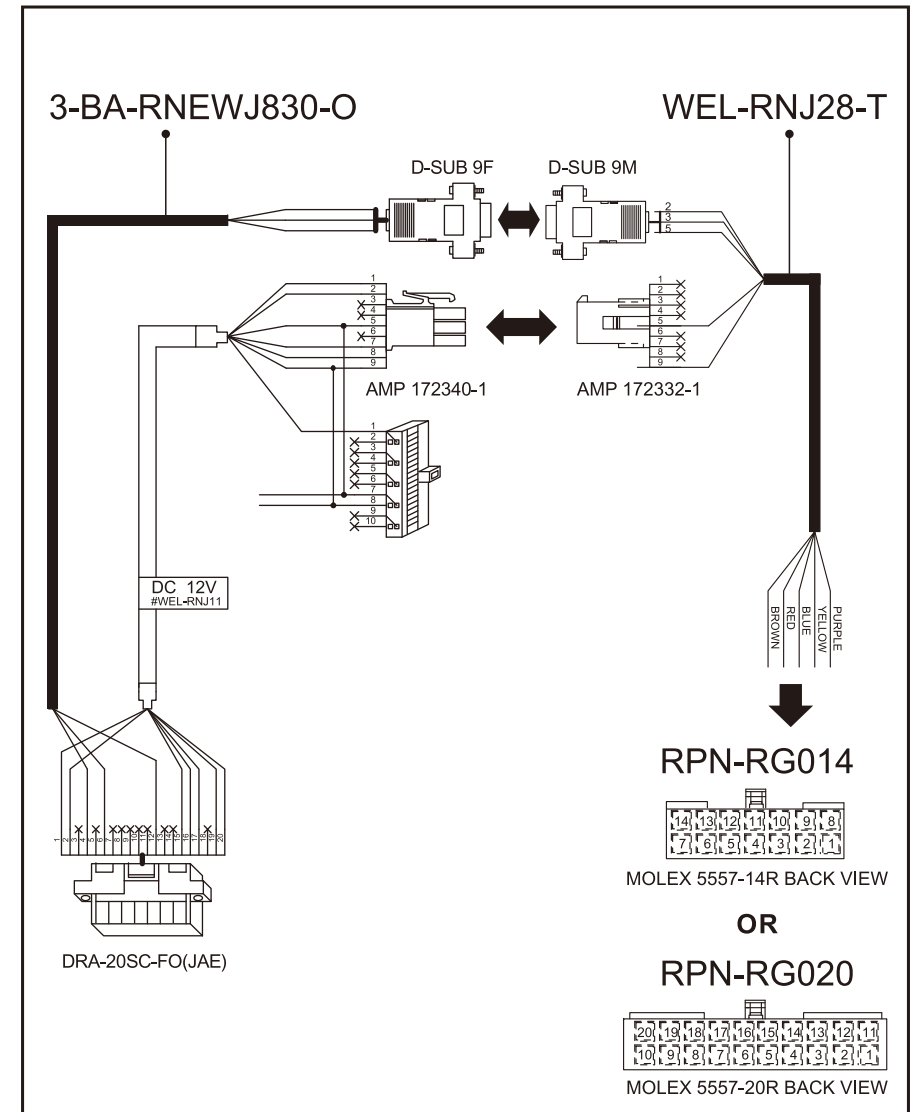
5-1 FIG.04



5-1 FIG.05



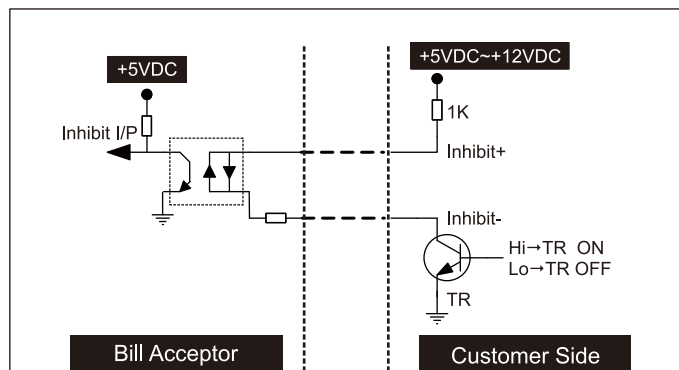
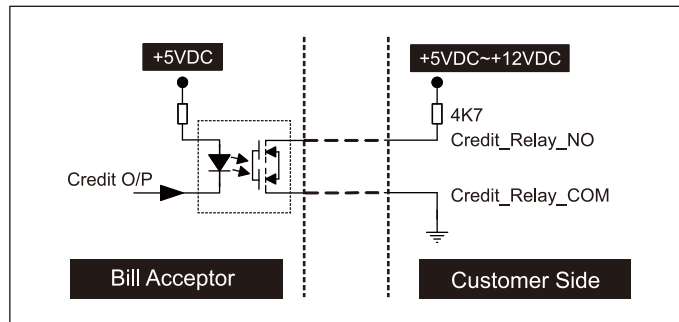
5-1 FIG.06



## 5-1-1. I/O Circuit

Pulse Interface.

5-1-1 FIG.01

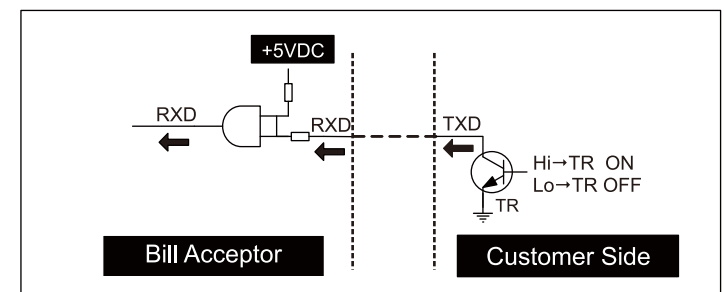
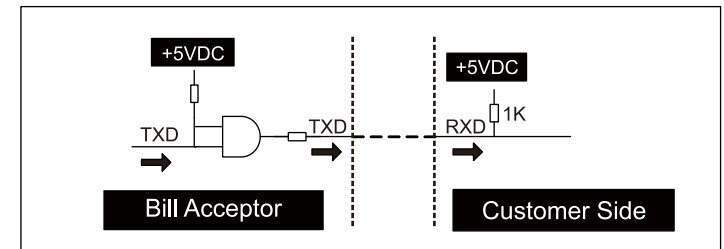


| BA Status | *DIP SW Setting | Control Signal |
|-----------|-----------------|----------------|
| Inhibit   | Inhibit Active  | Low            |
|           | Inhibit Active  | High           |
| Enable    | Inhibit Active  | Low            |
|           | Inhibit Active  | High           |

\*Note: Please refer to DIP Switch Setting Guide for detail.

ICT-Protocol, RS232 A0 &amp; GBA Interface.

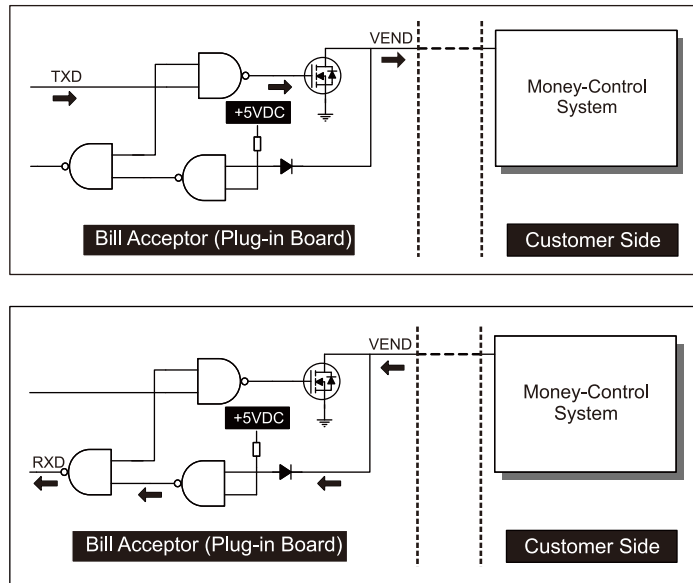
5-1-1 FIG.02





ccTalk Interface.

5-1-1 FIG.03

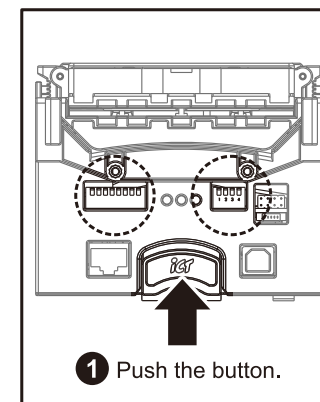


## 5-2. DIP Switch Setting

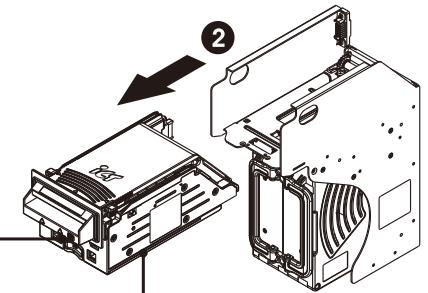
There are two serial DIP switches which are located in the front of NBA (as 5-2 FIG.01-1). According to different currencies which are used by users, DIP switch settings could be varied to fit users' needs. There's also a serial DIP switch on the base of unit for interface settings (as 5-2 FIG.01-2).

Please refer to "NBA DIP Switch Setting Guide" in the package for more details.

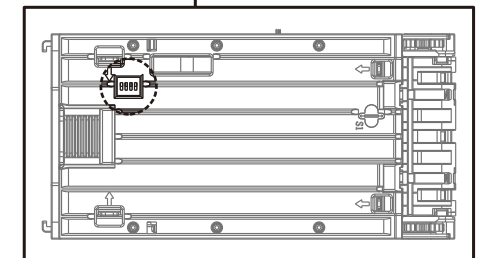
5-2 FIG.01-1



5-2 FIG.01

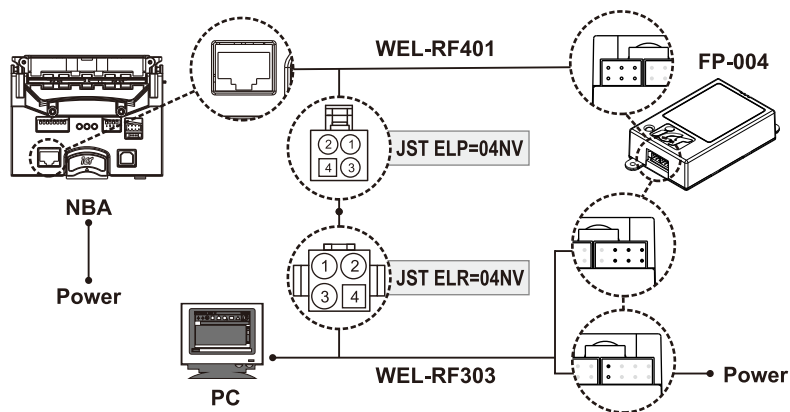


5-2 FIG.01-2



### 5-3. Software Download and Upgrade

To download and upgrade the software to NBA, the programmer (FP-004) is needed. Please contact ICT to purchase (FP-004) and refer to (FP-004) user guide for software download and upgrade information.



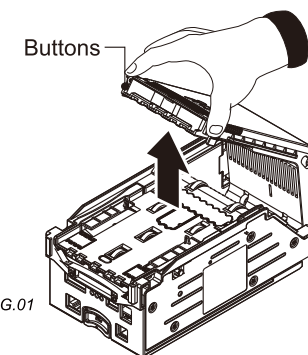
Power must be applied to Bill Acceptor after connecting.

## 6. Maintenance

To make sure the bill acceptor always works smoothly, please clean the internal parts regularly.

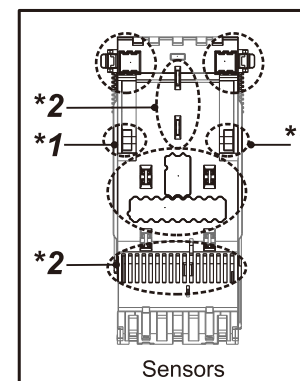
To clean the internal parts:

1. Press the buttons on the side of bill path and lift the unit.

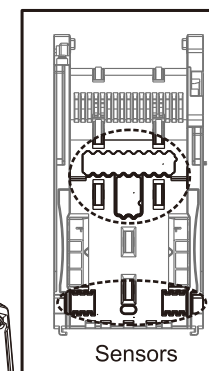


6 FIG.01

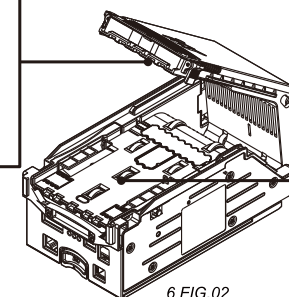
2. Use a soft, dry cloth, or towel to clean the bill path and sensors.



6 FIG.02-1



6 FIG.02-2



6 FIG.02



**Maintenance Notice**  
(Any improper maintenance will invalidate warranty.)

|             |   |
|-------------|---|
| Recommended | Mild, non-abrasive, soap water.             |
| DO NOT USE  | Organic solvent , Alcohol, Volatile liquid. |

## 7. Troubleshooting

7 TABLE 01

| LED Flashes | Status   | Corrective Actions  |
|-------------|--|---|
| Red         |  |   |
| 1           | Bill jammed.   | Remove the jammed bill.<br>(Refer to page 19, as 7 FIG.01)  |
| 2           | Disable.   | Inspect for right DIP switch setting, harness connections, and communication.   |
| 3           | Recognition module sensor error or bar-code optics module error. | 1. Inspect for foreign objects on sensors or bill path and clean.<br>2. Do the white card calibration with NBA white card.<br>3. Make sure upper base cover is correctly secured. |
| 4           | A stringing attempt has detected.                                | Inspect for foreign objects on sensors or bill path and clean.  |
| 5           | Bill box has been removed.                                       | Return bill box back to position.   |
| 6           | Stacker error or bill box full.                                  | Empty the bill box. (Refer to page 19, as 7 FIG.02)   |
| 7           | Bill transaction motor error.                                    | Inspect for foreign objects on bill path and clean.<br>Sent the product to service point to maintain.   |

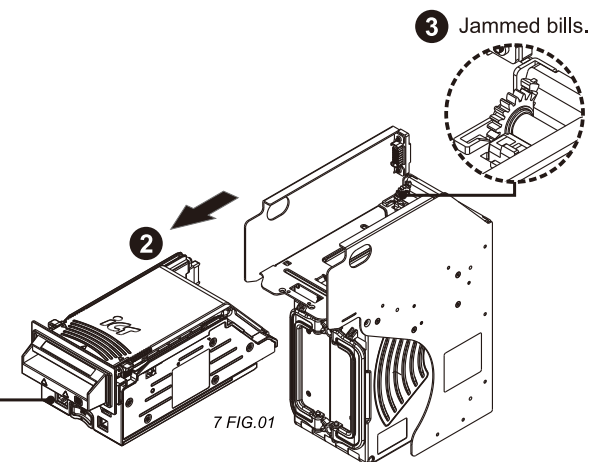
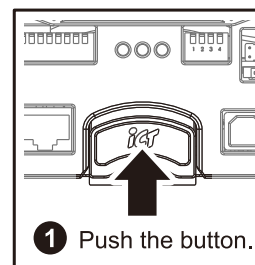
7 TABLE 02

| LED Flashes |       |      | Status   | Corrective Actions  |
|-------------|-------|------|--|---|
| Red         | Green | Blue |  |   |
| 7           | 2     |      | Note centralized module error.                   | Inspect for foreign objects on sensors *1 (Refer to page 17, as 6 FIG.02-1) or bill path and they are clean.                                    |
| 3           | 1     |      | Fish sensor error.                               | Inspect for foreign objects on bill path and they are clean.  |
| 3           | 2     |      | I/O sensor error.                                |   |
| 7           | 1     |      | Solenoid wheel error or anti-fishing hook error. | Inspect for foreign objects on wheels *2 (Refer to page 17, as 6 FIG.02-1) and clean. If solenoid is breakdown, please contact ICT for support. |
| 8           |       |      | RFID error.                                      | 1. Inspect for right DIP switch setting.<br>2. Make sure the bill box is in position.   |
| 2           | 1     |      | MCU and Barcode communication error.             | Re-download bar-code module firmware.   |
| 3           |       | 1    | Re-Calibarte Barcode Reader                      | Do the calibration with an empty coupon ticket.   |

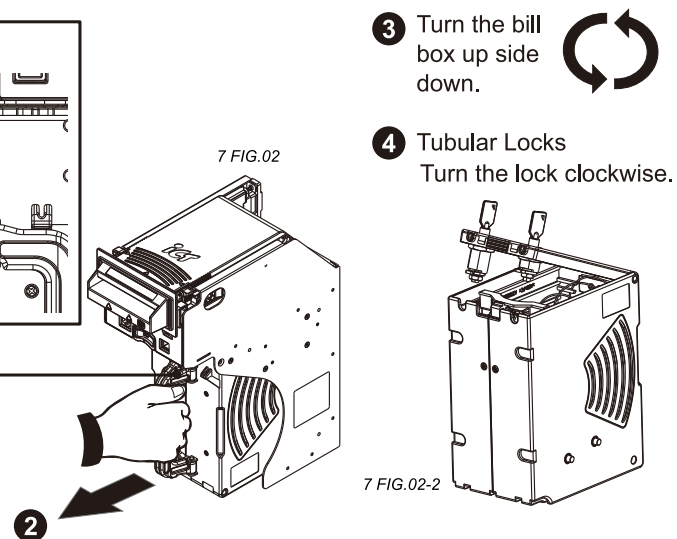
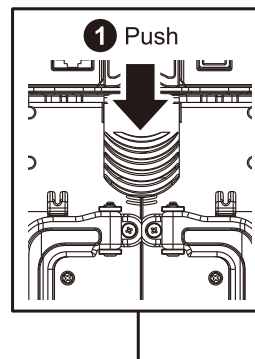


**If the error can not be solved after corrective actions or it recurs, please contact ICT for technical support.**

7 FIG.01-1

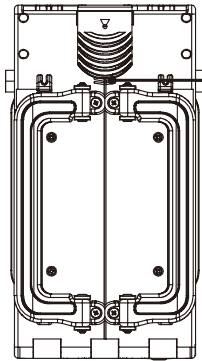


7 FIG.02-1

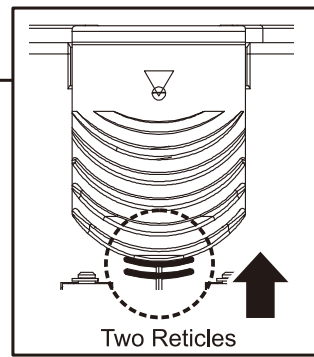




When put bill box back to the main unit, it has to ensure the **two reticles** are shown under slide, which means bill box is in the fixed position.



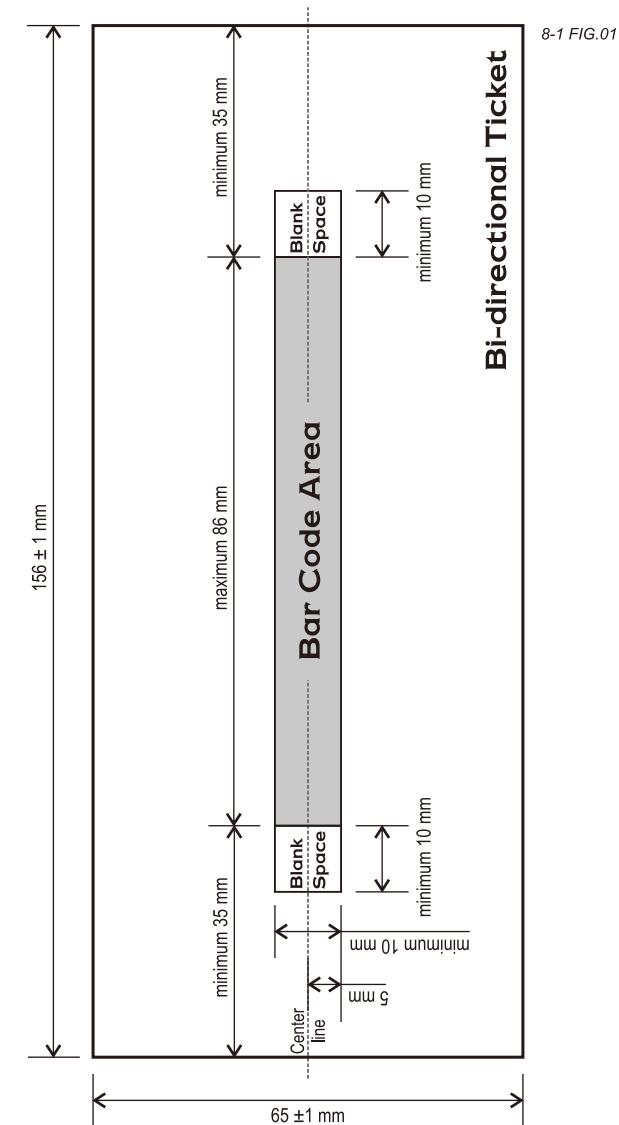
7 FIG.03



7 FIG.03-1

## 8. Standard of Coupon Bar Code

### 8-1. Bar Code Ticket Diagram (Format: Interleaved 2 of 5)





**International Currency Technologies Corporation**

No.28, Ln. 15, Sec. 6, Minquan E. Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

[sales@ictgroup.com.tw](mailto:sales@ictgroup.com.tw) (For Sales)

[rma@ictgroup.com.tw](mailto:rma@ictgroup.com.tw) (For Customer Service)

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