



Coin Hopper

# UCH Series

— Installation Guide —

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## **1. Introduction**

### **1-1. Overview**

ICT launches new UCH hopper with enhanced reliability and robust design. UCH is equipped with advanced micro processor which is fully compatible with ccTalk AES interface to fulfill market requirement. Single hardware design of UCH hopper can accept wide range of different coin sizes, and also help reduce inventory.

### **1-2. Features**

- Wide range of coin size acceptance single hardware: 5¢ to 2€
- High payout speed
- Payout to last coin
- Convenient upgrade through USB flash drive
- Twin connection coin path
- Anti-jamming design
- Power supply for both 12V and 24V
- Easy installation base
- Easy maintenance

## **2. Specifications**

<b>Dispensing Speed</b>	Max. 6 coins/second
<b>Interface</b>	ccTalk ccTalk AES Pulse Hopper Red flag ICT protocol
<b>Applicable Coin Size</b>	Diameter: 20mm~28mm Thickness: 1.6mm~2.4mm
<b>Coin Capacity</b>	ca. 400 coins(1€)
<b>Power Source</b>	12V DC±10% 24V DC±10%
<b>Power Consumption</b>	12V DC Standby : 50mA, 0.6W Operation: 0.55A, 6.6W Maximum : 3A, 36W  24V DC Standby : 30mA, 0.72W Operation: 0.4A, 9.6W Maximum: 1.5A, 36W
<b>Weight</b>	Approx. 800g

<b>Operation Environment</b>	Operation Temperature: 5°C~50°C Storage Temperature: -30°C~70°C Humidity: 30%~85%RH (no condensation)
<b>Outline Dimension</b>	Refer to page.5
<b>Installation</b>	Indoor

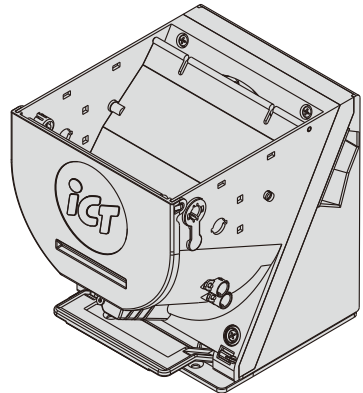
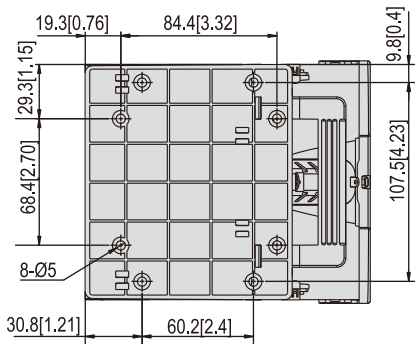
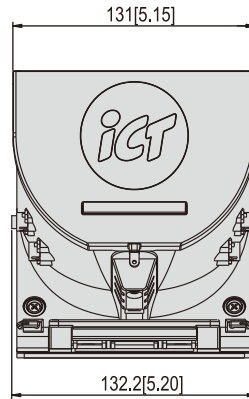
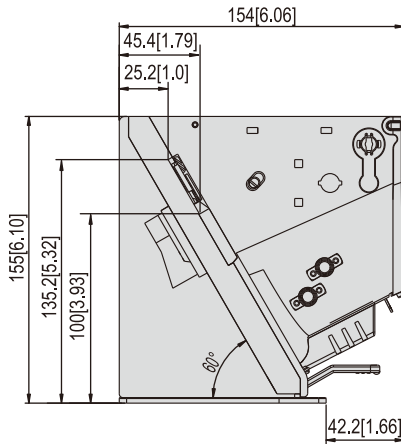
### **3. Packing List**

<b>Main</b>	UCH Hopper with standard coin bowl
<b>Accessory</b>	Harness: Refer to 7-2 UCH Installation Guide

### **4. Accessories(option)**

Extensions: 200 coins,  
 Extensions: 400 coins, Max. 3 extensions.  
 Extensions: 800 coins, Max. 3 extensions.

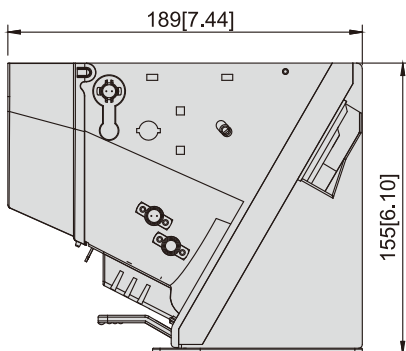
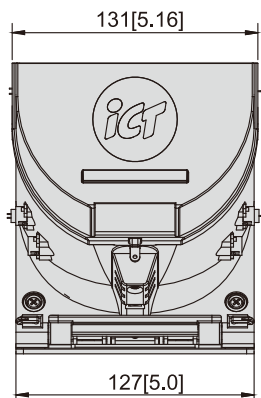
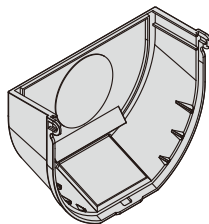
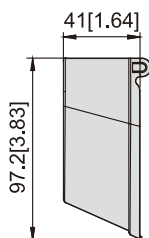
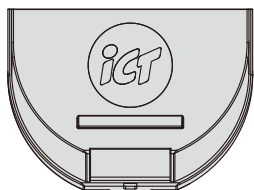
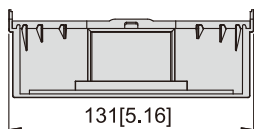
## 5. Dimension



Unit : mm [inch]

5 FIG.01

Extensions: 200 coins (Option)

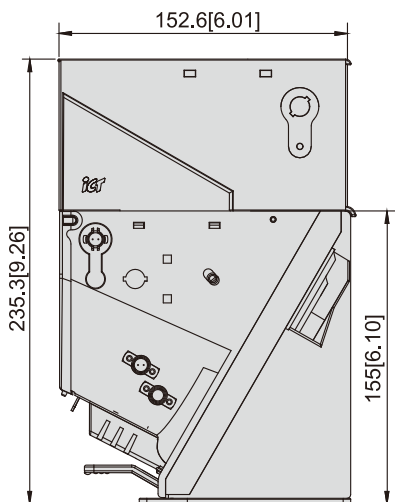
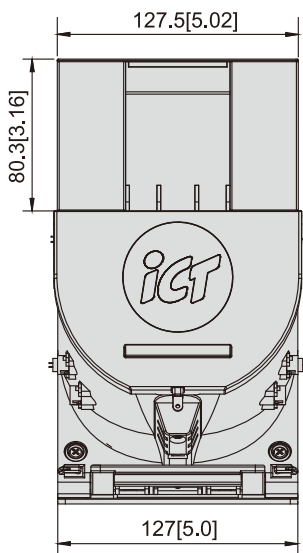
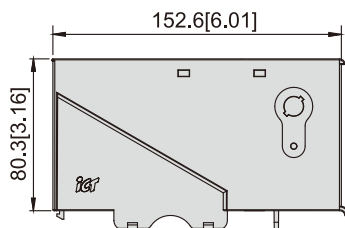
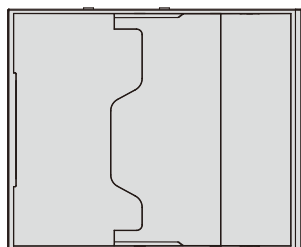
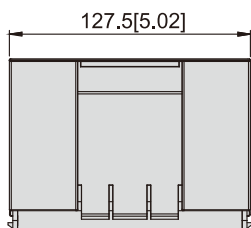
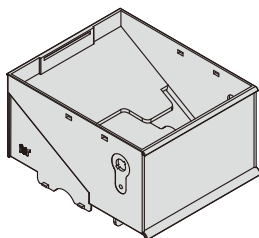


Unit : mm [inch]

5 FIG.02

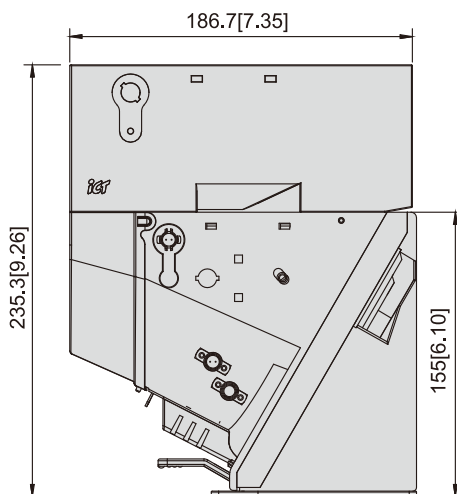
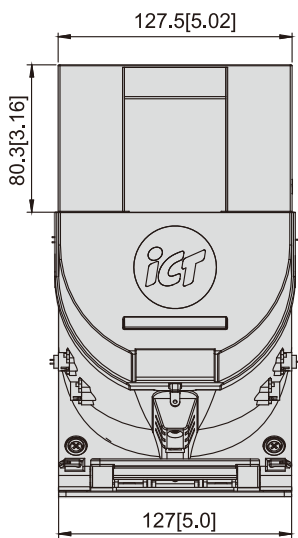
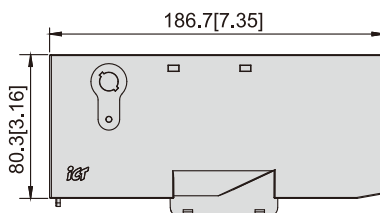
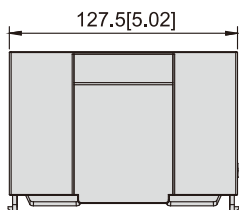
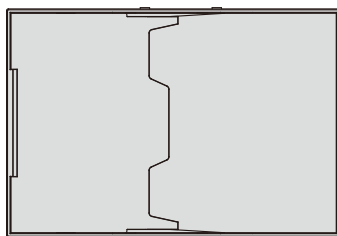
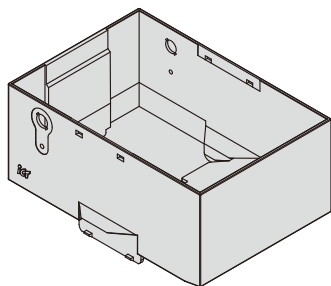


Extensions: 400 coins (Option)



Unit : mm [inch]  
5 FIG.03

## Extensions: 800 coins (Option)



Unit : mm [inch]

5 FIG.04

## 6. Installation

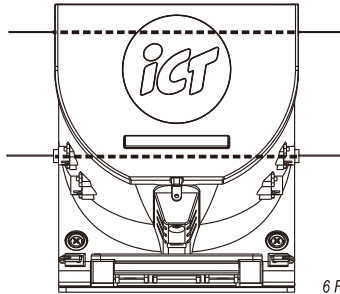


**Turn off the vendor's power supply before installation !!**

Installation process as following:

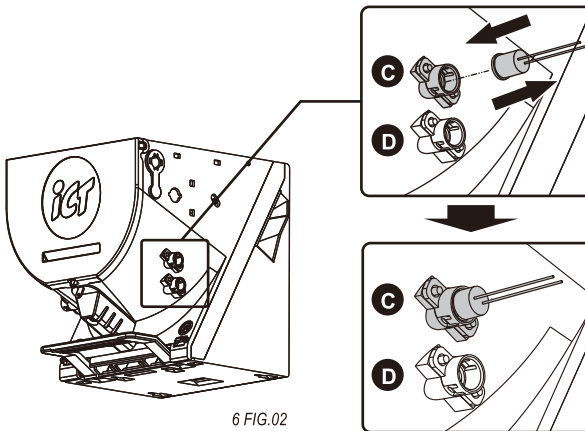
1. Install mounting base, fixture position as *FIG.01*.
2. Adjustment High, Low level sensor to chosen level.

**Notice! Right and left sensor must be in the same level position.**



6 FIG.01

(A). Low level sensor adjustment by simply plug or unplug.

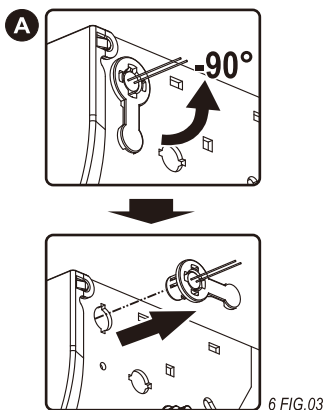


6 FIG.02

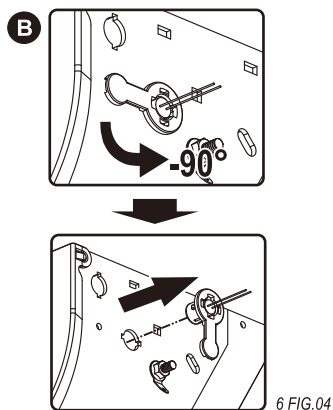
## (B). High level sensor adjustment by remove fixed part.

Step 1. Pull out fixed bar slightly then turn the part 90° to release position.

Step 2. Remove sensor part by push it out from inside of coin box.

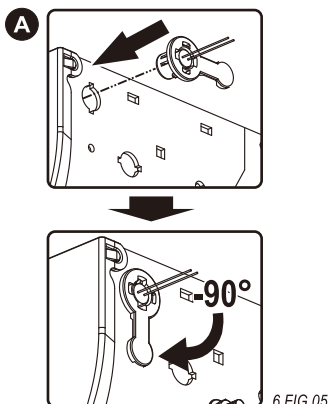


6 FIG.03

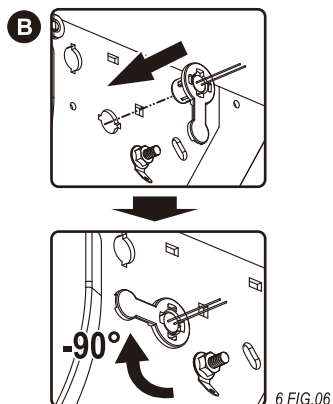


6 FIG.04

Step 3. Re-install high level sensor to chosen position by reversing step1 & 2.



6 FIG.05



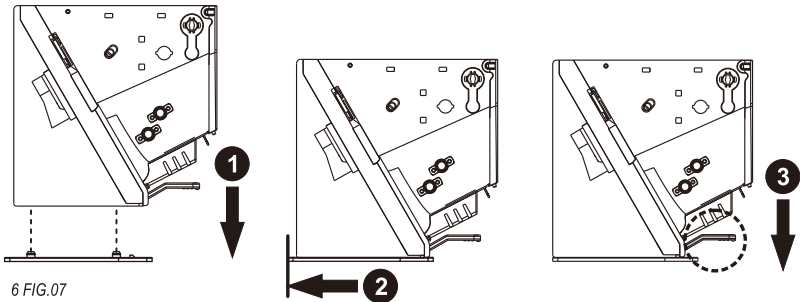
6 FIG.06

### 3. Install hopper on mounting base

#### Install hopper on base:

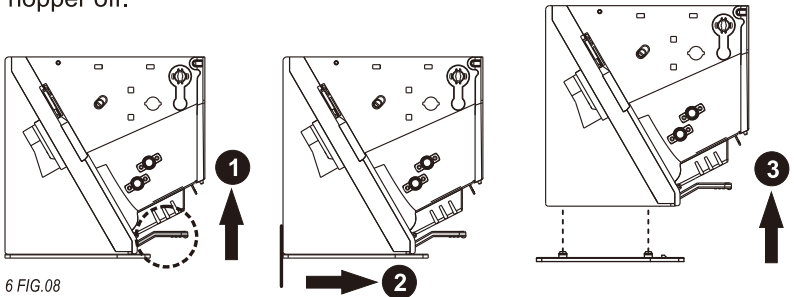
Step 1. Put hopper on mounting base.

Step 2. Slide the hopper into fixed position.



#### Remove hopper from base:

To remove the hopper, lift up remove clip as figure below, and slide the hopper off.

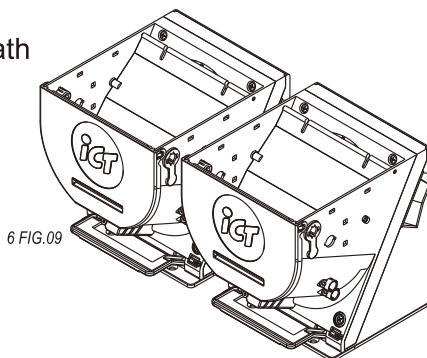


### 4. Plug ccTalk connector

**Notice!** When the power supply to hopper is changed, ex. from 12V to 24V, please restart hopper to apply setting. (Refer to Chapter 7-1. I/O Connector position.)

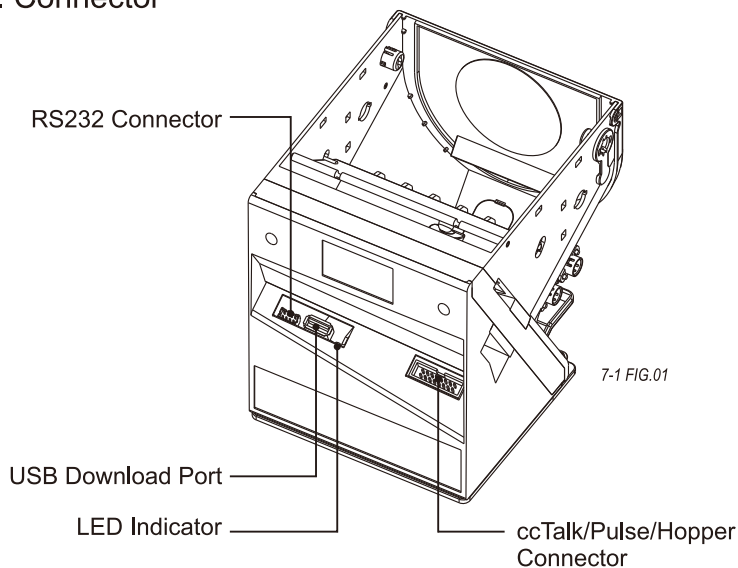
## 5. Twin connection coin path

Please install base plate as above position to use twin coin path tunnel.



## 7. Operation Setting

### 7-1. Connector



## 7-2. Harness Application

7-2 TABLE 01

Interface	Used Voltage	Usage	Harness	Page
Pulse/ Hopper	12V/24V DC	Power & *Data Comm.	WEL-RUCH05	13
ccTalk (8 Pin)	12V DC	Power & *Data Comm.	WEL-RUCH06	14
ccTalk (6 Pin)(Optional)	12V DC	Power & *Data Comm.	WEL-RUCH09	15
**RS232	12V DC	*Data Comm.	WEL-R7U06-2 or 2-BA-R7U06	16

\*Data Comm. : Data Communication.

\*\*RS232: Red Flag, ICT mode.



**Following 2 cables(WEL-RUCH06, WEL-RUCH09), please don't use non-UCH cable or connector to connect, it would be damaged your tools or facilities.**

7-2 FIG.01

Interface	Used Voltage	Usage
Pulse/Hopper	12V/ 24V DC	Power & *Data Comm.

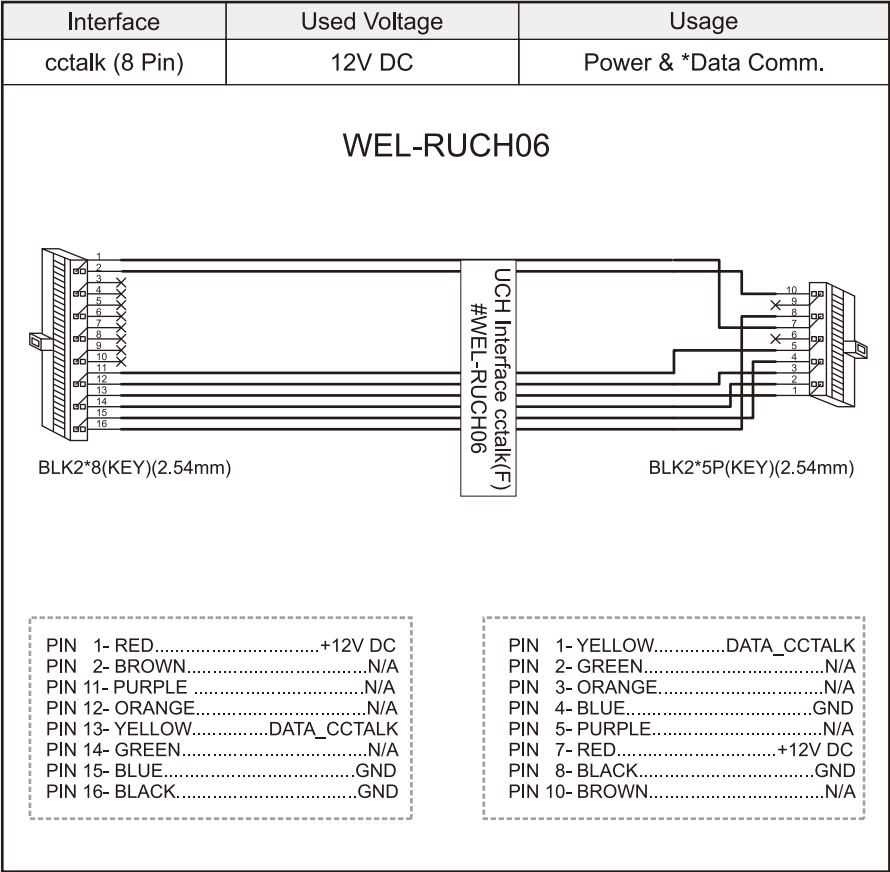
  

### WEL-RUCH05

BLK2\*8(KEY)(2.54mm)

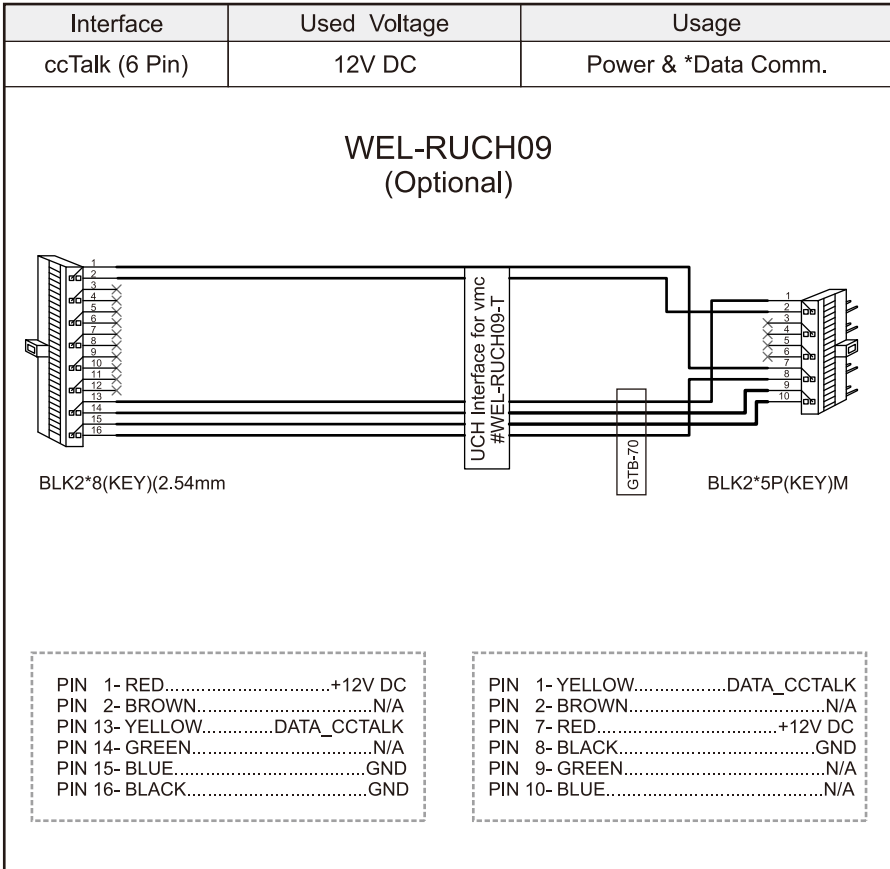
PIN 1- RED.....+12V/+24V DC	PIN 7- WHITE.....CREDIT_COM
PIN 2- RED.....+12V/+24V DC	PIN 8- GREEN.....CREDIT_N.O
PIN 3- WHITE.....INHIBIT_COM	PIN 9- BLUE.....PAYOUT_IN
PIN 4- ORANGE.....INHIBIT_N.O	PIN 10- PURPLE.....COIN_EMPTY_O
PIN 5- WHITE.....METER_COM	PIN 15- BLACK.....GND
PIN 6- YELLOW.....METER_N.O	PIN 16- BLACK.....GND

7-2 FIG.02

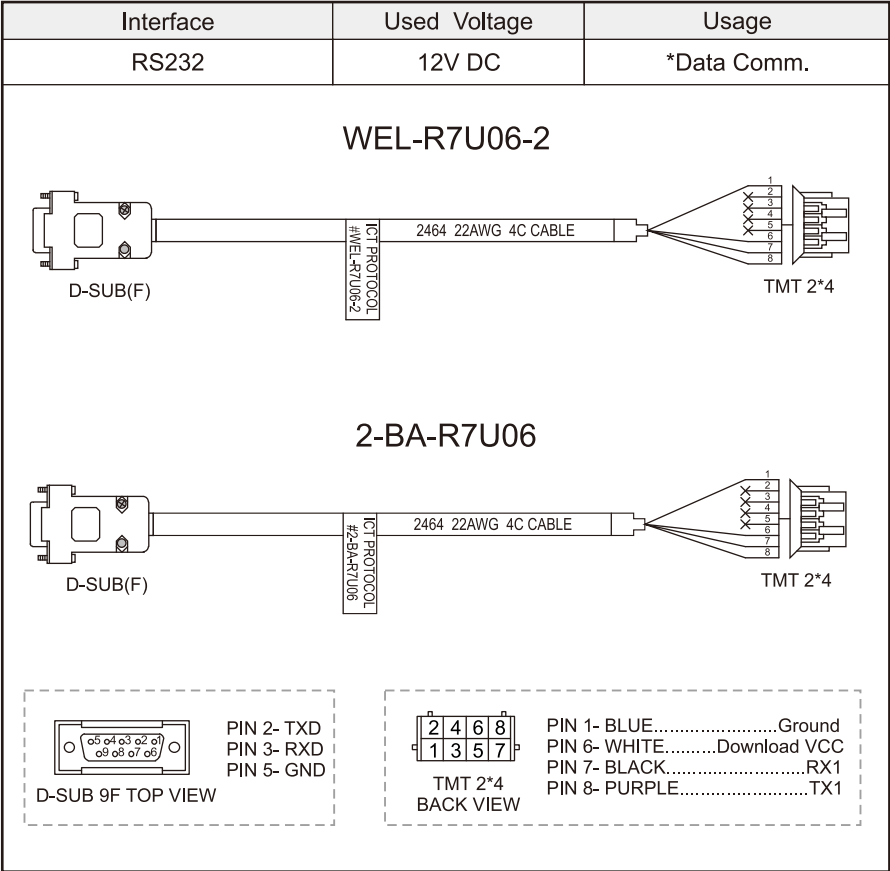




7-2 FIG.03



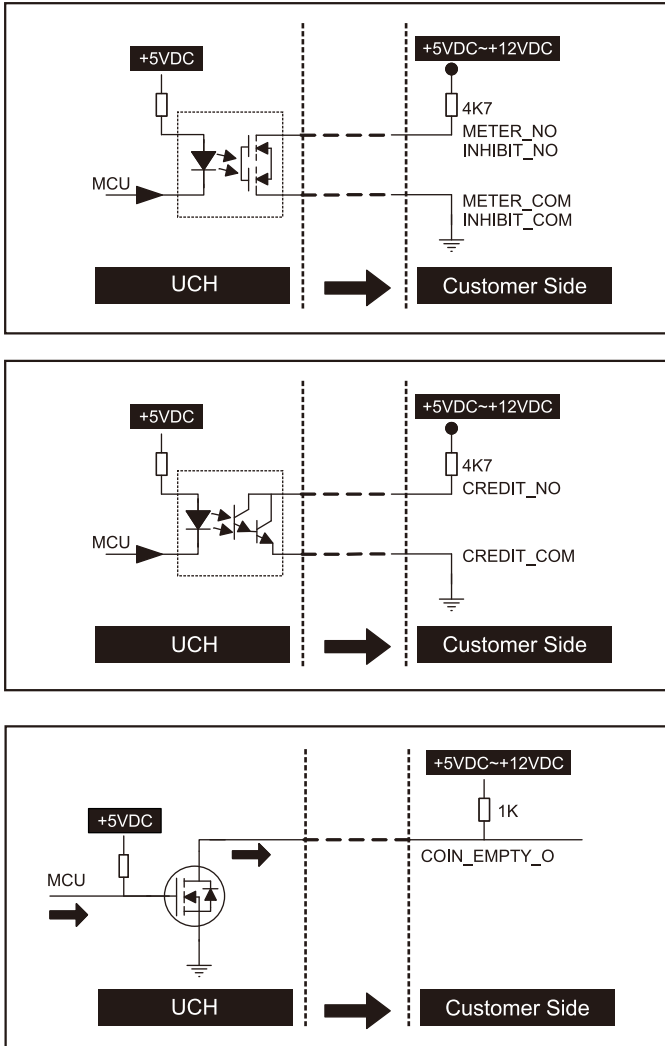
7-2 FIG.04



### 7-3. I/O Circuit

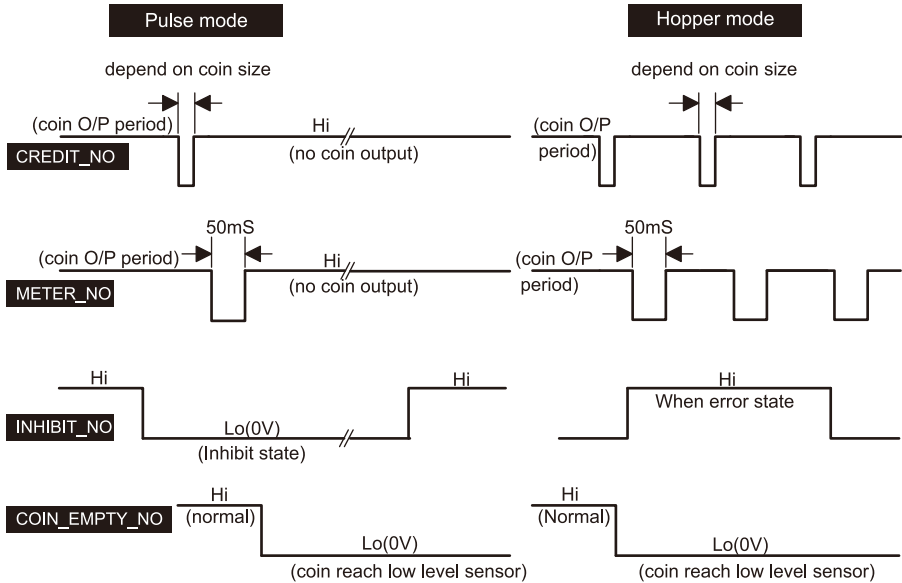
#### Hopper & Pulse Interface.

7-3 FIG.01



## Hopper & Pulse Interface.

7-3 FIG.02



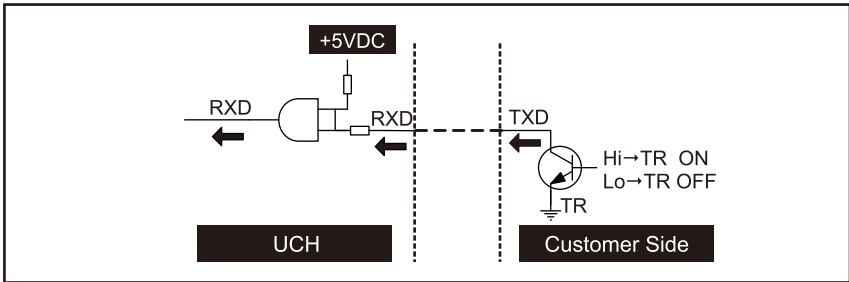
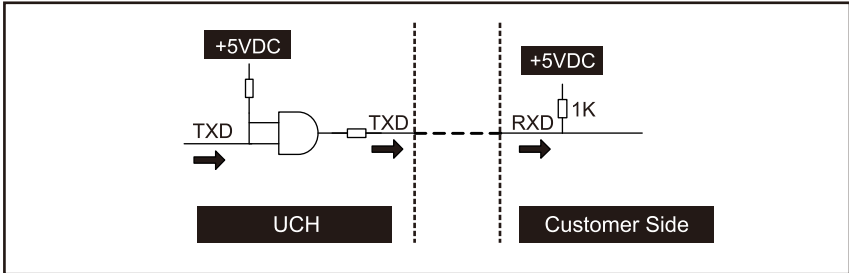
**CREDIT\_NO:** normal and active level can be reversed by DIP SW6.

**INHIBIT\_NO:** normal and active level can be reversed by UCH kit.

**COIN\_EMPTY\_NO:** normal and active level can be reversed by UCH kit.

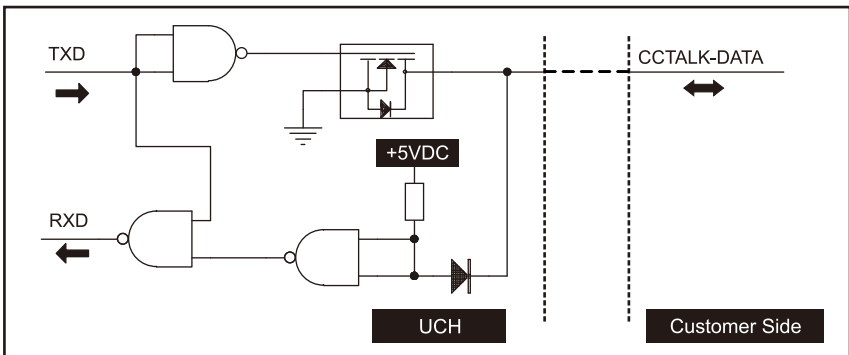
# RS232 Interface(Red Flag protocol, ICT protocol).

7-3 FIG.03



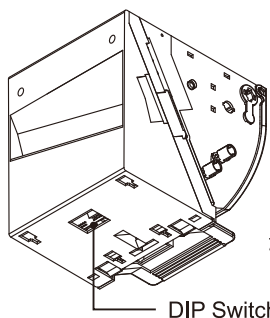
## ccTalk Interface.

7-3 FIG.04



## 7-4. DIP Switch Setting

DIP SWITCH is located in the bottom of hopper, mounting base need to be removed.



7-4 FIG.01

7-4 TABLE 01

Interface	State	1	2	3	4	5	6	7	8
		State			Interface		credit	USB	
USB Mode	MSD <sup>(1)</sup>	X	X	X	X	X	X	ON	OFF
USB Mode	HID <sup>(2)</sup>	X	X	X	X	X	X	ON	ON
Any Interface	Credit Normal Low	X	X	X	X	X	ON	OFF	OFF
Any Interface	Credit Normal High	X	X	X	X	X	OFF	OFF	OFF
ccTalk	addr=0x03	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	addr=0x04	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	addr=0x05	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
	addr=0x06	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
Hopper	-	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
Pulse	Rate : 1	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
	Rate : 2	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
	Rate : 4	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
	Rate : 5	ON	ON	OFF	ON	ON	OFF	OFF	OFF
	Rate : 10	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
	Rate : 20	ON	OFF	ON	ON	ON	OFF	OFF	OFF
	Rate : 50	OFF	ON	ON	ON	ON	OFF	OFF	OFF

7-4 TABLE 02

Interface	State	1	2	3	4	5	6	7	8
		State			Interface		credit	USB	
Red Flag(9600)	addr=0x00	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
	addr=0x01	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
	addr=0x02	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
	addr=0x03	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
Red Flag(19200)	addr=0x00	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
	addr=0x01	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
	addr=0x02	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
	addr=0x03	ON	ON	ON	ON	OFF	OFF	OFF	OFF
ICT mode	ICT002	ON	ON	ON	ON	ON	OFF	OFF	OFF

Note: (1) MSD: Upgrade firmware by mess storage (Pen drive).

(2) HID: Upgrade firmware by HID mode. It connects with Hopper and PC via USB A to A cable directly.



**When the DIP Switch is changed, please restart hopper to apply setting.**

## 8. Download and Upgrade by USB

### 8-1. Tool

UCH

USB 2.0 flash drive

PC

### 8-2. Start Download Process

1. Connect USB Flash Drive to PC at first. Copy software files into flash drive. There are 2 files, **MCT##.txt** and **firmware.bin**.

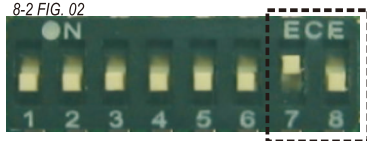


2. Confirm the filename in **MCT##.txt** is the same as the firmware bin file name. Remove Flash Drive after confirmation.



8-2 FIG. 01

8-2 FIG. 02



3. Adjust DIP Switch 7 to ON , Switch 8 to OFF, insert USB pen drive to UCH, then restart UCH hopper.

4. Hopper starts upgrade automatically and indicator flashes red.  
After upgrade finished Indicator flashes red twice.



8-2 FIG. 03

5. Remove Flash Drive and restart hopper to apply setting.



## 9. Maintenance

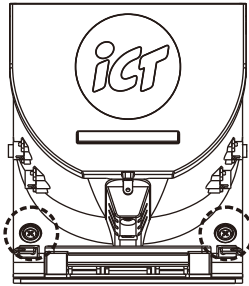
To make sure the UCH hopper always works smoothly, we suggest you clean the internal parts of UCH regularly.



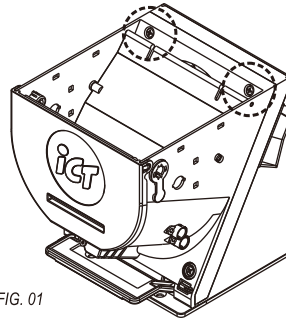
**Please make sure UCH turns OFF before cleaning.**

To clean the internal parts:

1. Remove the coin box by unscrew 4 screws as following figure.



9 FIG. 01



2. Use a dry, soft cloth, or brush to clean internal parts and coin path.
3. Use a dry, soft cloth, or towel to clean the coin box.



**Maintenance Notice**  
(Any improper maintenance will result invalid warranty.)

**Recommended**

Mild, non-abrasive, soap water.

**DO NOT USE**

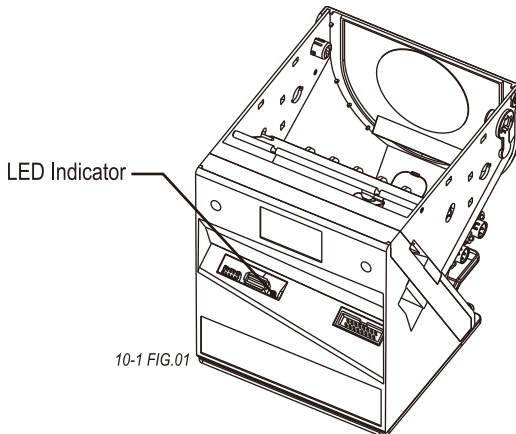
Organic solvent , Alcohol, Volatile liquid.

## 10. Troubleshooting

### 10-1. Error Message List

10-1 TABLE 01

Flashes	Status	Corrective actions
Red	ROM malfunction	Update firmware
1	Motor failure	Remove the jammed coin and reset Hopper
2	Insufficient coins	Refill coins
3	Hopper disable	Check communication with host
4	Non-volatile memory error	Replace PCB
5	coin out sensor malfunction or payout insufficient	1. Remove the jammed coin 2. Clean the coin out sensor
6	Input voltage out of range	Check the power



**If the errors can not be solved after corrective actions or happen again, please contact ICT for technical support.**



**International Currency Technologies Corporation**

No.28, Ln. 15, Sec. 6, Minquan E. Rd., Neihu Dist., Taipei City 114, Taiwan

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

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

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

