iCT

Multi-function ToolBox

MTB

Installation Guide

International Currency Technologies Corp.

Contents

Use of Materials Limitations

1. Introduction

1-1. Overview

MTB (Multi-function ToolBox) is a total solution for ICT product maintenance. The portable programmer- MTB, presents data in a large LCM makes product maintenance easily and fast. MTB is high convenience that could storage several firmwares at the same time.
Powerful multi functions include programmer, changer operation, IrDA download and sensor calibration. All-in-one design meets all requirements form market.

1-2. Feature

♦ Multi-function: Firmware download, Coin Changer(Recycler) operational setting and sensor calibration.

♦ Support Coin Changer(Recycler) operational settings, built-in 9 options of operation parameter, effective update function and read audit data

♦ High convenience: storage several firmwares at one time.

♦ Friendly user interface .

♦ Chargeable battery and power saving design.

♦ Large screen to show information.

♦ Built-in memory and Micro-SD Card slot for large data storage.

♦ One multi-purpose cable for different ICT products.

♦ Easy to carry.

2. Specification

Power Consumption

Standby	3.7V, 350 mA, 1.30W
Operation	3.7V, 370 mA, 1.40W
Maximum	3.7V, 2 A, 7.40W

Operation environment

Operation Temperature	-5~50°C
Storage Temperature	-20~70°C
Humidity	85% (no condensation)
Battery in charge Temperature	0~45°C
Weight	Approx. 288.5g

3. Dimension

151.2[5.95]

25[0.98] 30.1[1.18] 33[1.29]

100.2[3.94]

170[6.69]
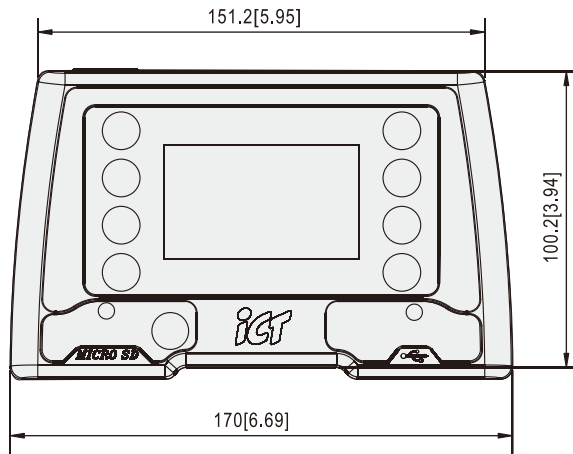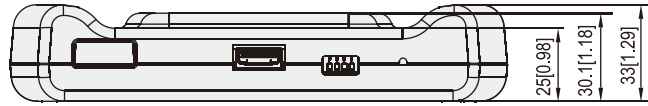
Unit:mm[inch]

3 FIG.01

3-1. Components

IrDA
Download Connector
Dip switches
Reset button

3-1 FIG.01

Power
Status LED
Control PAD
LCM
Charge/USB Indicator LED

Micro-SD card slot
USB Connector
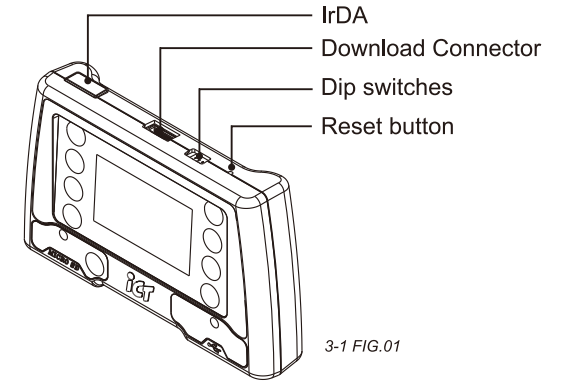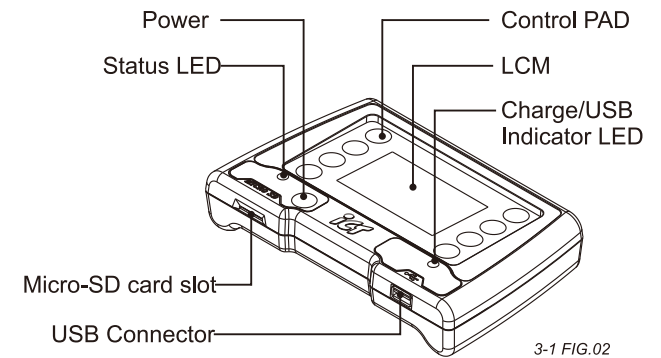
3-1 FIG.02

♦ **The reverse side**

Chargeable battery
(Li-ion battery)
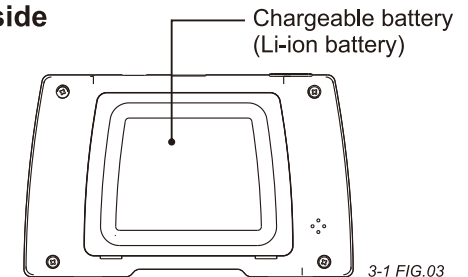
3-1 FIG.03

4. Installation

4-1. Harnesses Application

4-1 TABLE.01

Model	Usage	Harnesses	Page
Bill Acceptor A/ V Series, PA7, E77, Envy Series, L Series, PL77, LV77 Series, NBA, NK Series, P Series, S Series, TAO Light, Lockable Stacker Series (V7E, LX7, V77E, TAO-A/V, S7ER)	WEL-RSB09	Download FW & Data Comm.	7
Coin Changer(Recycler) CC6000, CC6100 **Others** GP58 CR/CA, Mini hopper, CVD	WEL-RHP57	Charge Battery	8
XBA	WEL-RHP57	Download FW & Data Comm. & Charge Battery	8

4-1 FIG.01

Interface	Used Voltage	Usage
UART	3.3V/5V	Download FW & Data Comm.

WEL-RSB09

```
2 4 6 8
1 3 5 7
TMT 2*4
BACK VIEW
```

PIN 1- BLACK.................GND
PIN 2- YELLOW................TX2
PIN 3- BLUE.....................RX2
PIN 4- BROWN.....PROGRAM

PIN 5- GREEN.......RESET
PIN 6- RED..............Ex-5V
PIN 7- ORANGE.........RX1
PIN 8- GRAY.................Tx1

Pin1   SR Molding
Pin12
TOP VIEW

```
P12  P11
P10  P9
P8   P7
P6   P5
P4   P3
P2   P1
```
BOT VIEW

WEL-RSB09-B   2464 26AWG 12C CABLE

molding
TMT 2*4

SR_molding
PCB JACK VIEW

molding
MH-B5

PIN 1- WHITE...............TX2
PIN 2- GRAY.................RX2
PIN 3- BLUE.................TX3
PIN 4- YELLOW............RX3
PIN 5- BLACK..............GND
PIN 6- NC.....................GND

PIN 7- PURPLE...............RESET
PIN 8- BROWN.........PROGRAM
PIN 9- ORANGE...................PGC
PIN 10- GREEN....................PGD
PIN 11- RED.....................Ex-3V3
PIN 12- PINK.......................Ex-5V

PCB JACK

PIN 8- GRAY.......................TX1
PIN 7- ORANGE.................RX1
PIN 6- RED.......................Ex-5V
PIN 5- GREEN..............RESET
PIN 4- BROWN........PROGRAM
PIN 3- BLUE.......................RX2
PIN 2- YELLOW...................TX2
PIN 1- BLACK.....................GND

MH-B5

PIN 5- GREEN............RESET
PIN 4- RED.................Ex-3V3
PIN 3- BLACK.................GND
PIN 2- YELLOW..............PGD
PIN 1- ORANGE.............PGC

4-1 FIG.02

Interface	Used Voltage	Usage
USB	3.3V/5V	Charge Battery

WEL-RHP57

USB-A-TYPE   USB-A-TYPE

PIN 4- GND
PIN 3- D+
PIN 2- D-
PIN 1- VBUS

PIN 4- GND
PIN 3- D+
PIN 2- D-
PIN 1- VBUS

4-2. How to charge battery

4-2-1. Battery Capacity

Li-ion battery: 2100 mAh

Changer Operate
Download FW
BA Calibration
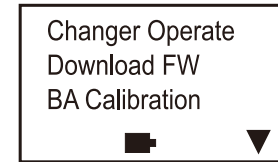
For checking battery capacity, LCM displays battery capacity on the main menu.

Battery icon	▬	flash ▭
Capacity	100%	0~1%

When battery low, Status LED displays blink red as well LCM displays low battery. Please charge MTB immediately.

Status LED

Charge/ USB Indicator LED
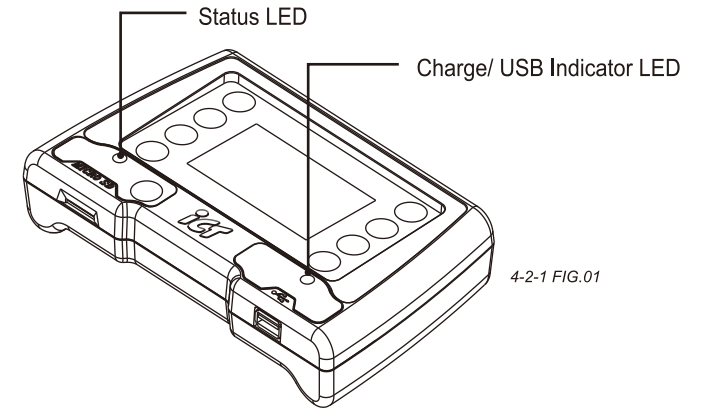
4-2-1 FIG.01

4-2-2. Charge LED indicator

4-2-2 TABLE.01

Charge LED indicator	Description
Red	Charging in process
Turns back to off	Fully charged

4-2-3. Charging procedure

1. Charged by PC

Use WEL-RHP57 to connect MTB and PC.

WEL-RHP57

MTB   PC
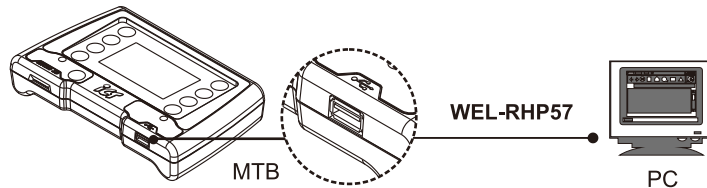
2. Charged by Adapter

It could be charged by an external adapter as well. The specification of adapter should be DC 5V, 500mA or above.

4-2-4. Battery Notice

MTB's battery should be charged at least once every six months in order to extend battery life.

Working temperature while battery is charging: 0~45°C

Do not use MTB while battery is charging 5V DC charging voltage.

Continues working time: up to 6 hours

Charging time: 4 hours (capacity 0%~100%)

4-3. Getting started (SW1 OFF)

Changer Operate
Download FW
BA Calibration
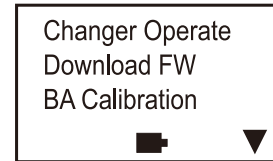
Step 1.
Press ON/ OFF ◎ button to wake up MTB and then Status LED turns on.

Auto-sleep ▲
Battery & RTC
Delete File

Step 2.
Press "▲" "▼" to switch pages of Main menu.

Language ▲
Device info
Device Setting

Step 3.
Choose one function that you need. Please refer Chapter 3~7 for more function detail.

Changer Operate: Set up Coin Changer(Recycler) operation contents.

Download FW: Download ICT products' firmware as well IrDA Download.

BA Calibration: Calibration devices' sensor.

Auto-sleep: Set MTB interval time to turn sleep mode. (5 or 10 minutes)

Battery & RTC: Check the remaining battery capacity as well set RTC (date & time).

Delete File: Deleted program files SD Card
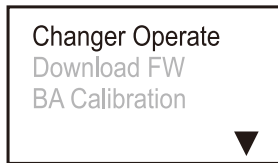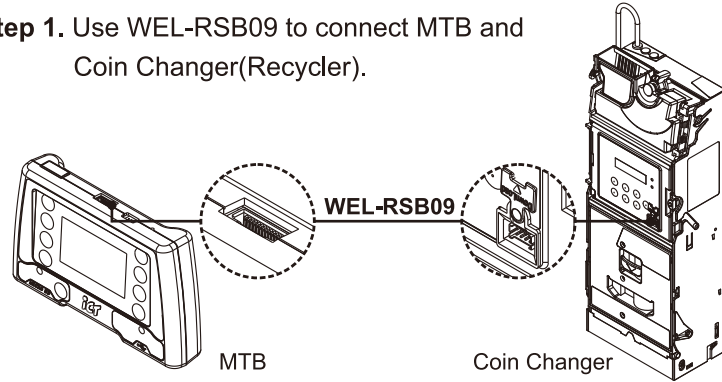
Language: Select Country Language

Device Info: Read machine program version

Device Setting Passive mode
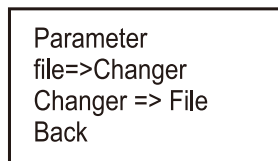
5. Coin Changer(Recycler) operation setting

5-1. Connection

Step 1. Use WEL-RSB09 to connect MTB and
Coin Changer(Recycler).

WEL-RSB09

MTB   Coin Changer

Step 2. Press **"Changer operate"** on the page of Main menu.

```
Changer Operate
Download FW
BA Calibration
        ▼
```

5-2. Parameter into Coin changer Select Parameter

```
Parameter
Read Audit Data

Back
```

```
Parameter
file=>Changer
Changer => File
Back
```
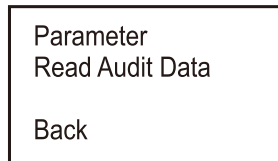
File => changer:
The parameters set Changer

Changer =>File:
The parameters stored Changer

5-3. Read coin changer's audit data(EVA DTS)

```
Read AuditData
By IrDA
By Cable
Back
```
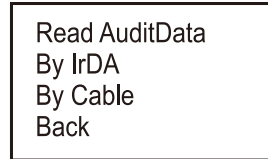
Step 1.
Select **"Read Audit Data"**.

Step 2.
Select transmission.

```
By
Clean After Read
Read Only
Back
```
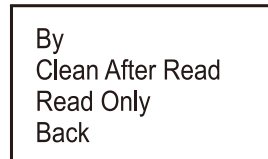
Step 3.
Choose read-only or read Clear.

6. Download firmware for ICT products

6-1. Connection

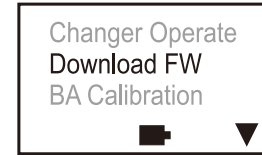6-1-1. Use **WEL-RSB09** to connect MTB and
ICT products(BA/CA etc..)

WEL-RSB09

MTB   ICT Products
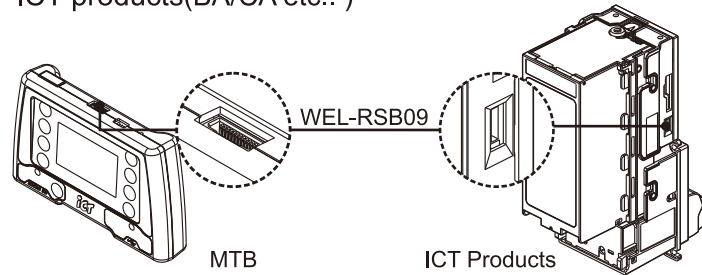
6-1-2. Use **WEL-RHP57** to connect MTB and XBA.

Please refer to 6-3 Steps for XBA download.

WEL-RHP57

XBA   MTB

6-2. Instruction
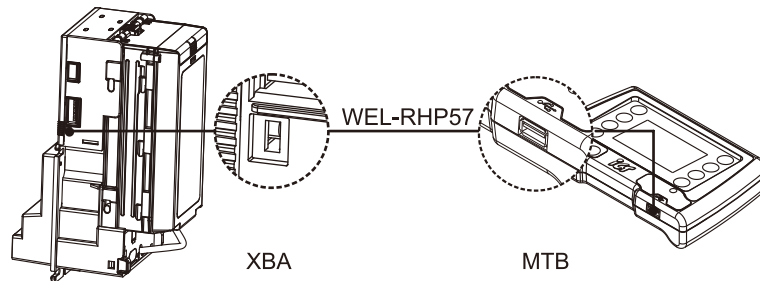
Changer Operate
Download FW
BA Calibration

Step 1.
Press **"Download FW"** on pages
of Main menu.

BA
CVD
Coin Changer
Back
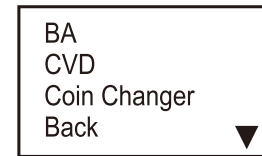
Step 2.
Select one Model Name to start
download.

6-3. Steps for XBA download and DIP switches setting

Changer Operate
Download FW
BA Calibration

Step 1.
Use WEL-RHP57 to connect MTB and
XBA. Press **"Download FW"** on pages
of Main menu.

BA
CVD
Coin Changer
Back
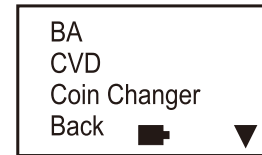
Step 2.
Select **"BA"** and then press **"XBA"**.

V7T
XBA

Back

```
        Update?
   (…….....…firmware
    information….......)
Back                Enter
```

Step 3.
Press **"Enter"** to start downloading.
Press **"Back"** to return the prior page.

```
==   Dip  Group  ==
Outside Dips
Inside Dip
Back              Enter
```

Step 4.
Press **"Outside Dips"** to set up XBA
outside dips. Press **"Inside Dips"** to
set up XBA inside dips. If no necessary
to set up XBA dip switches, please press
"Enter" to download firmware directly.

```
 Outside Dips
 1. OFF       2.ON
 3. OFF       4.OFF
 Back           ▼
```

Step 5.
After entering **"Outside Dips"** or **"Inside
Dips"**,   please press any dips that you
want to revise.(ON or OFF)
Press **"▼"** to set up NO. 5~NO.8 dips.
Press **"Back"** to return the prior page**.**

```
        Update?
   (…..….……firmware
    information…......)
Back                Enter
```

Step 6.
Press **"Enter"** to start download.

```
   Check Set Dip?

NO              YES
```

Step 7.
Press **"YES"** to save dip setting into
XBA.
Press **"NO"** not to save dip setting
nto XBA.

```
(…Firmware information…)
Write FW      ………OK
Verify FW     ………OK
                  Confirm
```

Step 8.
Download successfully and press
"Confirm" back to prior page.
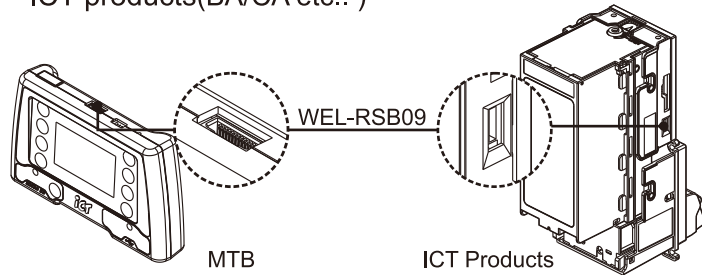
Download fail shown as below:

```
(…Firmware information…)
Write FW
Download Fail
                  Confirm
```
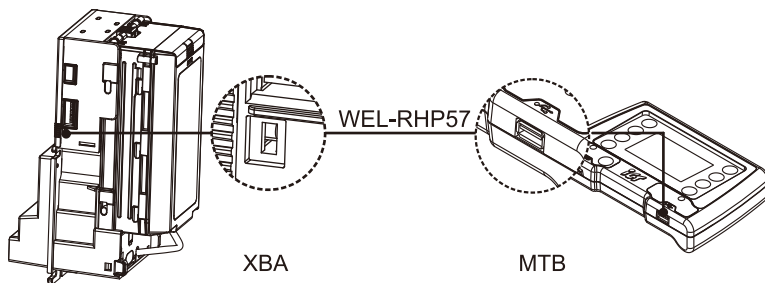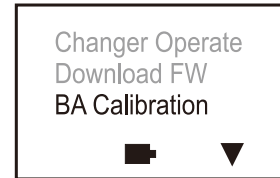
7. Sensor Calibration

7-1. Connection

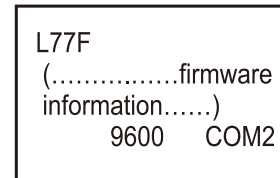### 7-1-1. Use **WEL-RSB09** to connect MTB and ICT products(BA/CA etc..)

WEL-RSB09

MTB   ICT Products

7-1-2. Use **WEL-RHP57** to connect MTB and XBA.

WEL-RHP57

XBA   MTB

7-2. Instruction

```
Changer Operate
Download FW
BA Calibration

■▶        ▼
```

Step 1.
Press **"BA Calibration"** on pages of Main menu.

```
L77F
  (……….……firmware
 information……)
        9600    COM2
```
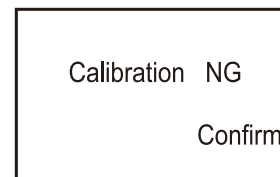
Step 2.
MTB detect device's model name and firmware information.

MTB couldn't support sensor calibration for some products that might show as below:

```
    Cannot get
     Version
              Confirm
```

```
Calibration   OK

              Confirm
```
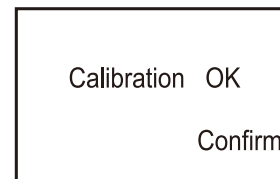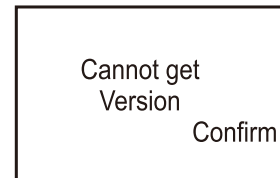
Step 3.
Please insert calibration card into device. Sensor calibration is successful as well resets device auto matically.

```
Calibration   NG

              Confirm
```
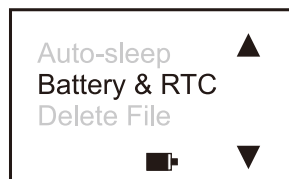
Sensor calibration is fail.

MTB couldn't support sensor calibration for some products that might show as below:

```
Doesn't support
calibration card

        Confirm
```
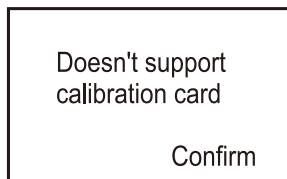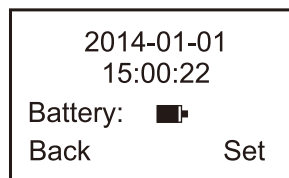
Step4. Press **"Confirm"** to return the prior page.

8. Battery Capacity & RTC (Battery & RTC)

```
Auto-sleep        ▲
Battery & RTC
Delete File
        ■▪      ▼
```

Step 1.
Press **"Battery & RTC"** on Main menu.

```
   2014-01-01
    15:00:22

Battery:    ■▪
Back            Set
```

Step 2.
Press **"Set"** to set RTC date and time.

```
   2014-01-01
 -   17:23:22     +
 ←                →
 Cancel        Save
```
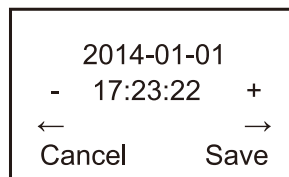
Step 3.
Press **"←" "→"** to shift configured digit.
Press**"＋","－"** to plus/minus number.
Press **"Save"** to save setting.

9. Connect to Device's PC tool
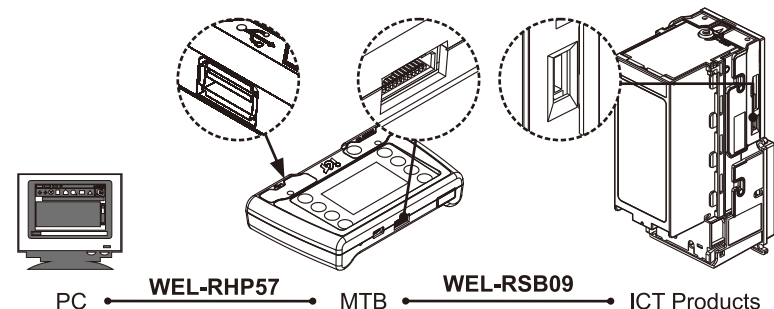

Dip switches
Reset
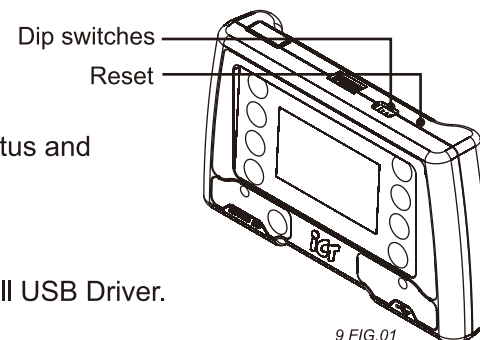
Step 1.
Turn SW1 to ON status and press **"Reset"**.

Step 2. Please install USB Driver.

9 FIG.01

Step 3. Connect device, MTB and PC.
(Use WEL-RHP57 cable to connect MTB and PC)

PC ●—**WEL-RHP57**—● MTB ●—**WEL-RSB09**—● ICT Products

Step 4. Open device's tool and select visual comport.

Step 5. Download device's firmware.
Press **"＊COM1"** and **"PROGRAM＊"** to download device's firmware.   If PC tool shows download fail massage, please press**"＊COM2"** & **"PROGRAM＊"** and try it again.

Step 6. Reset device

Press **"＊COM1"** and **"RESET"** . If device doesn't reset, please press **"COM2"** & **"RESET"** and try it again.

```
        Test mode
PROGRAM       COM1
RESET         COM2
```
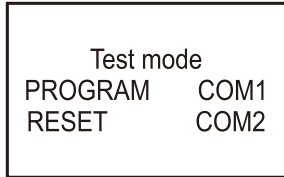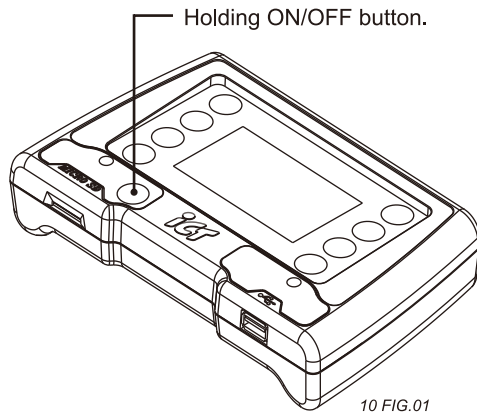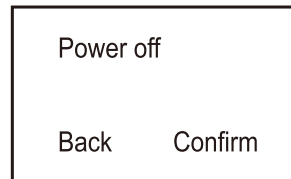
Step 7. Turn SW1 to OFF status and press "Reset" to back the Main Menu.

10. Download MTB's firmware by pen driver
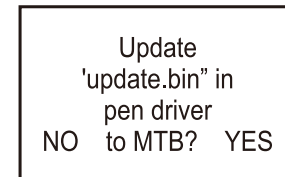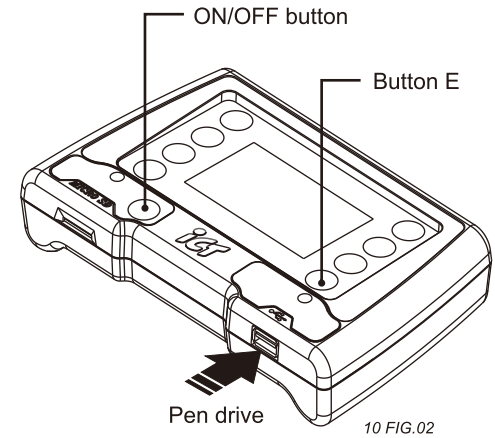
Step 1.

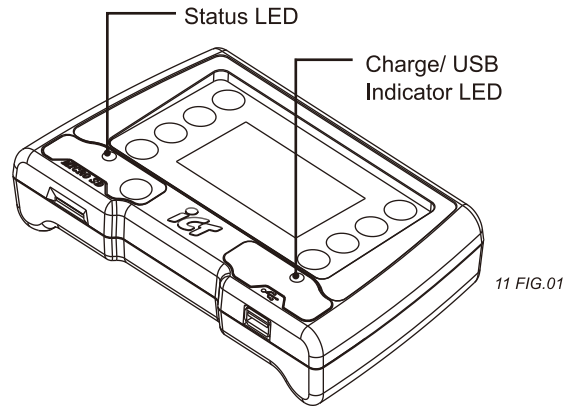Please turn off MTB first.

Press **"Confirm"**.

```
Power off


Back      Confirm
```

Holding ON/OFF button.

10 FIG.01

Step 2.
Plug in Pen drive.

MTB's firmware in pen driver. Keep pressing button **"E"**, then press **"ON/OFF"** button in the same time.

ON/OFF button

Button E

Pen drive   *10 FIG.02*

```
       Update
   'update.bin" in
     pen driver
NO    to MTB?    YES
```

Press **"YES"** to download MTB's firmware.

11. Troubleshooting

Status LED

Charge/ USB
Indicator LED

11 FIG.01

11 TABLE.01

Status LED indicator	Description
Green	Power on
Blink red	Battery low
Orange	Download in process
Turns back to Green	Download OK
Red	Download NG

11 TABLE.02

Charge LED indicator	Description
Red	Charging in process
Turns back to off	Fully charged