

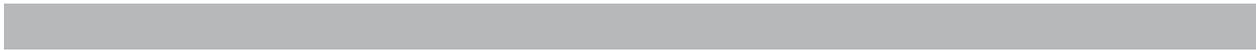


# P2100

# User Manual

Version 1.0





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The information published herein has been checked for accuracy as of publishing time. No representation or warranties regarding the fitness of this document for any use are made or implied by the publisher. We reserve the right to revise this document or make changes in the specifications of the product described therein at any time without notice and without obligation to notify any person of such revision or change.

## SAFETY INSTRUCTIONS

1. Read these instructions carefully. Keep these instructions for future reference.
2. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or cloth for cleaning.
3. Please keep this equipment from humidity.
4. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
5. Make sure power cord such a way that people can not step on it. Do not place anything over the power cord.
6. All cautions and warnings on the equipment should be noted.
7. If the equipment is not used for long time, disconnect the equipment from main to avoid being damaged by transient over voltage.
8. Never pour any liquid into opening, this could cause fire or electrical shock.
9. If one of the following situations arises, get the equipment checked by a service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well or you can not get it work according to user manual.
  - e. The equipment has dropped and damaged.
10. Do not leave this equipment in an environment unconditioned, storage temperature below -20°C or above 60°C, it may damage the equipment.
11. Unplug the power cord when doing any service or adding optional kits.

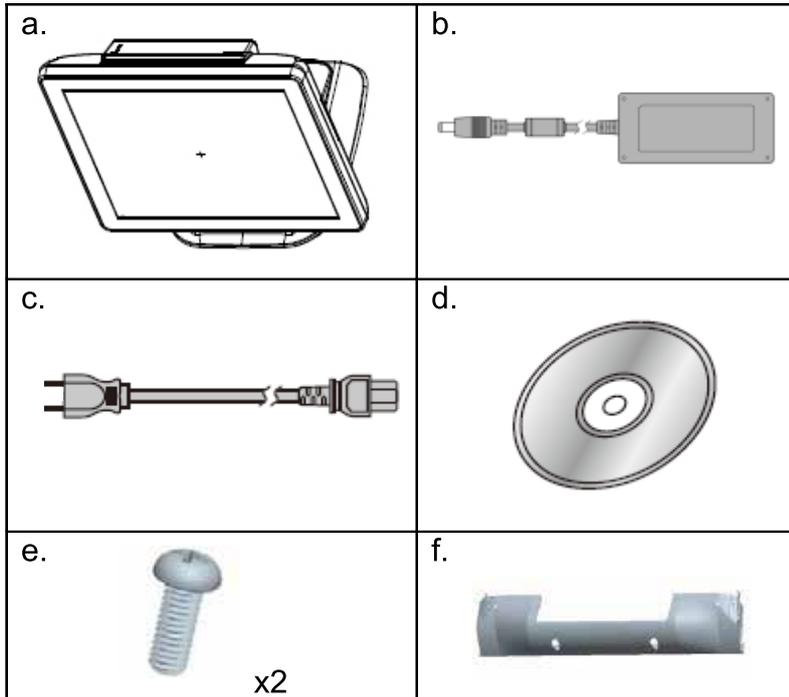
### **Lithium Battery Caution:**

Danger of explosion can happen if the battery is incorrectly replaced, Replace only the original or equivalent type recommended by the manufacture. Dispose used batteries according to the manufacture's instructions.

Do not remove the cover, and ensure no user serviceable components are inside. Take the unit to the service center for service and repair.

## PACKING LIST

### 1-1. Standard Accessories



a. System (with stand)

b. Power Adapter

c. Power Cord

d. Driver Bank

e. Screw

f. Cable Cover

### 1-2. Optional Accessories

#### Modules\*:

MSR

1D/2D barcode scanner

RFID (13,56 MHz)

iButton

Smart card reader

Fingerprint reader

#### Accessories:

Build-in VFD

Pole VFD

8" pole customer display

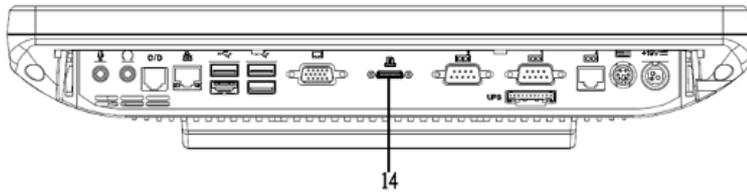
15" pole customer display

UPS battery

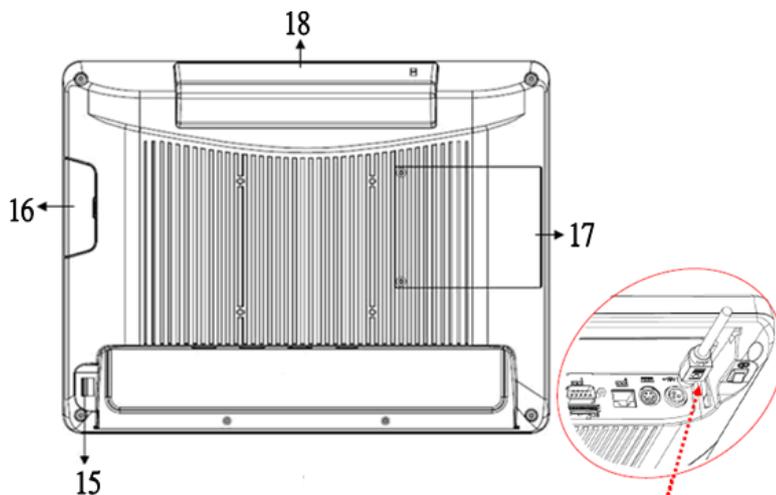
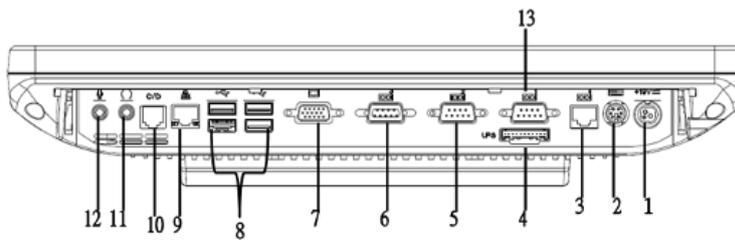
\*Note: Nearly all modules are also available as 2-in-1 or 3-in-1 solution.

## 2 SYSTEM VIEW

### 2-1. Rear View with Optional LPT Port



#### Rear View Standard



\* Please make sure 19V DC plug in the right direction before plugging in DC jack.

<b>Item</b>	8. USB 2.0/1.1 X4	16. MSR/Smart Card/i-Button /Fingerprint /RFID (Option)
1. 19V DC Input	9. RJ45(LAN)	17. HDD/CFast CARD
2. PS2(K/B)	10. RJ11(Cash Drawer)	18. VFD(Optional)
3. RJ45(COM 4 for External VFD)	11. Line-Out	
4. UPS Battery(Optional)	12. Mic	
5. COM2	13. COM1	
6. COM3	14. Parallel port (Option :Alternative to COM 3)	
7. VGA	15. Power Button	

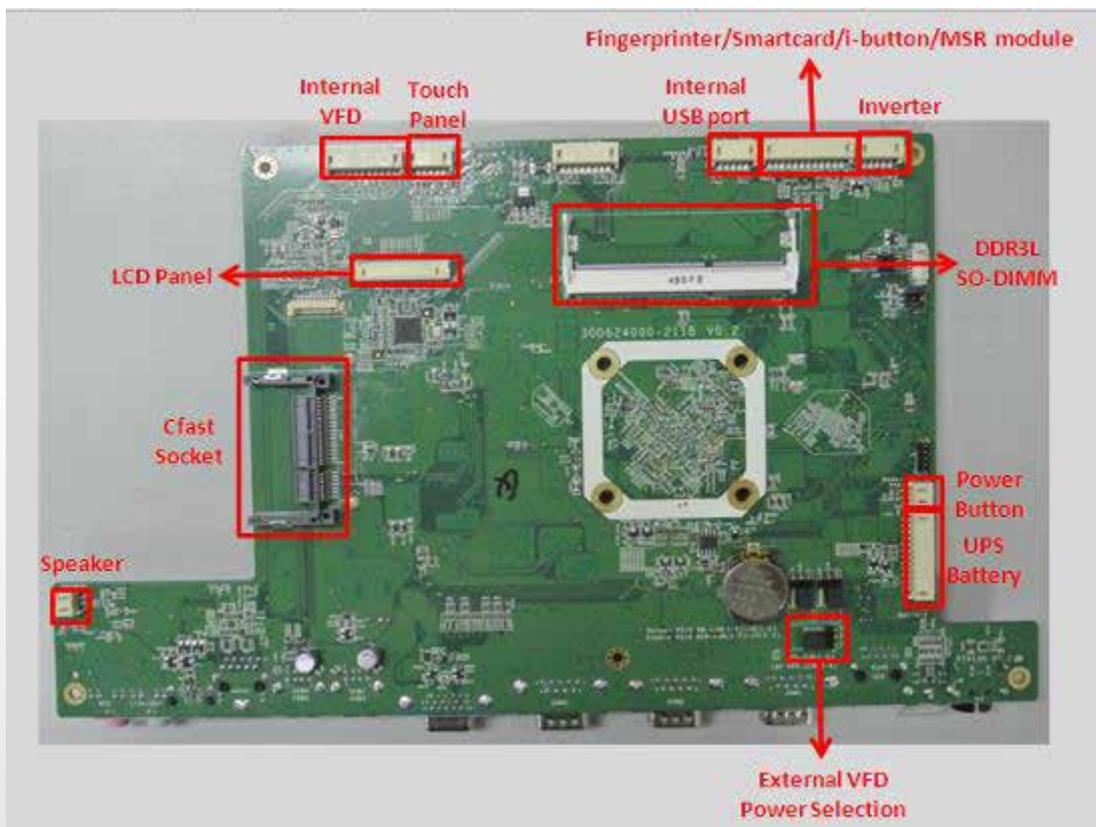
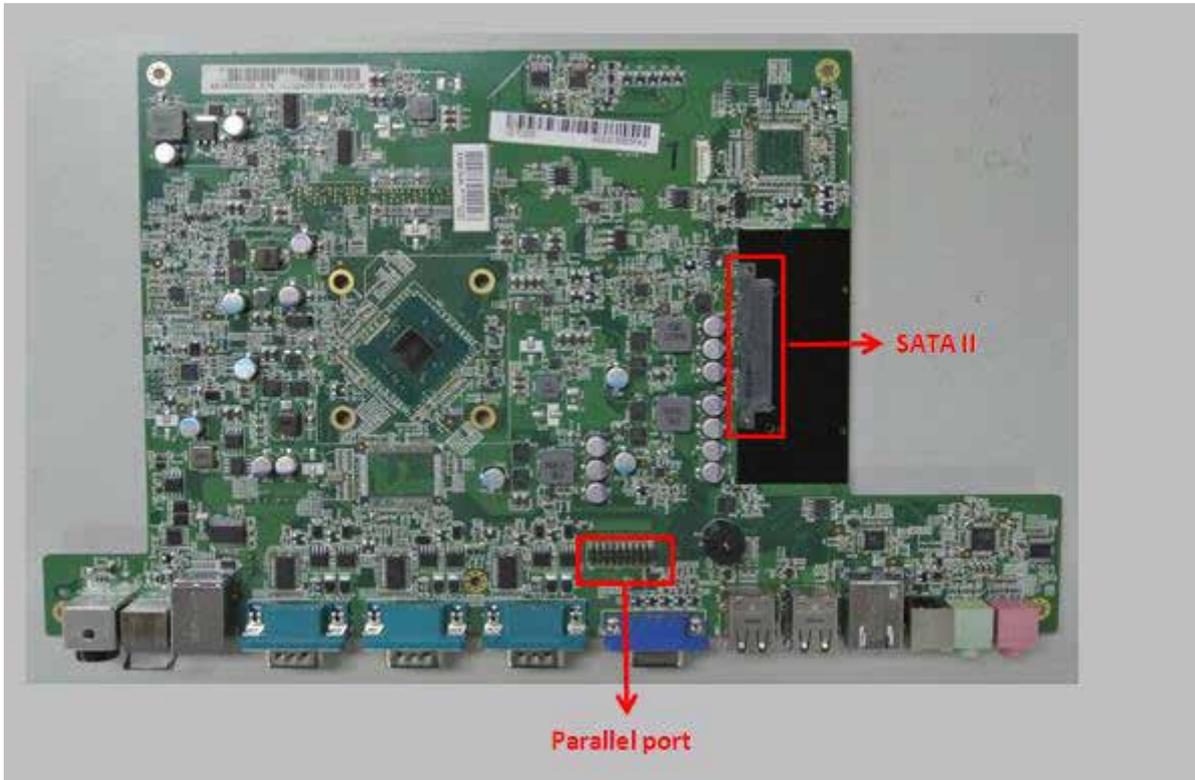
## 2-2. Specification

Processor	Intel® Celeron J1900 Quad Core 2.0Ghz
Memory	One SO-DIMM socket supports DDR3L up to 8GB
Audio	Line-out/Mic-in
Network	RJ45 10/100/1000 Base-T
USB	4*USB 2.0
Storage	CFast card / 2.5" SATAII HDD / SSD
BIOS	Insyde BIOS
Power	AC 19V 90W Adaptor
Thermal Solution	Fan-less
Dimension	368 (W) x 264.2 (H) x 285 (D) mm
Operating Temperature	0°C ~ 35°C
Storage Temperature	-20°C ~ 60°C
Storage Humidity	20% ~ 80%, non-condensing
<b>Display</b>	
LCD Panel Size	15-inch TFT LED LCD
Resolution	1024*768 Pixels
Brightness	350 cd/m2
Touch Panel	5-wire Resistive Type / Projected Capacitive Type optional

### Note:

Intel® Celeron J1900 CPU does not support POSReady 2009

## 2-3. Internal Layout



### 3 PIN DEFINITION

#### 1. COM 5 for Touch Panel (CN 7)

Pin	Function	Pin	Function	Pin	Function
1	T_UR	3	T_SG	5	T_LR
2	T_UL	4	T_LL		

#### 2. Parallel J1

Pin NO.	Pin Name	Description
1	STB#	Printer Strobe
2	PD0	Parallel Port DATA0
3	PD1	Parallel Port DATA1
4	PD2	Parallel Port DATA2
5	PD3	Parallel Port DATA3
6	PD4	Parallel Port DATA4
7	PD5	Parallel Port DATA5
8	PD6	Parallel Port DATA6
9	PD7	Parallel Port DATA7
10	ACK#	Printer Acknowledge
11	BUSY	Printer Busy
12	PE	Printer Paper End
13	SLCT	Printer Select

Pin NO.	Pin Name	Description
14	AFD#	Printer Auto Line Feed
15	ERR#	Printer Error
16	INIT#	Printer Initialize
17	SLIN#	Printer Select Input
18	GND	Ground
19	GND	Ground
20	GND	Ground

#### 3. Line-out J2

Pin NO.	Pin Name	Description
1	GND	Ground
2	GND	Ground
3	Line OUT R	Line out
4	Line OUT L	Line out
5	Detect	Detect

#### 4. VFD Connector CN12

Pin NO.	Pin Name	Description
1	5V	+5V
2	NDSR	DSR
3	GND	Ground
4	NRTS	DTR
5	NRTS	RTS
6	NCTS	CTS
7	NTXD	TXD
8	NRXD	RXD
9	GND	Ground
10	12C	+12V

### 5. Mic J3

Pin NO.	Pin Name	Description
1	GND	Ground
2	GND	Ground
3	Mic R	Mic
4	Mic L	Mic
5	Detect	Detect

### 8. Inverter CN9

Pin NO.	Pin Name	Description
1	VCC	+12V
2	GND	Ground
3	NC	NC
4	BKL_CTL	Back Light Brightness
5	BKL_EN	Back Light Enable

### 6. Speaker SP1

Pin NO.	Pin Name	Description
1	+	Speaker +
2	-	Speaker -

### 9. Extra USB CN8

Pin NO.	Pin Name	Description
1	VCC	+5V
2	- DATA	D-
3	+ DATA	D+
4	GND	Ground
5	GND	Ground

### 7. LVDS CN 13

Pin NO.	Pin Name	Description
1	GND	Ground
2	GND	Ground
3	DATA 3+	LVDS Output DATA3+
4	DATA 3-	LVDS Output DATA3-
5	GND	Ground
6	CLK+	LVDS CLK+
7	CLK-	LVDS CLK-
8	GND	Ground
9	DATA 2+	LVDS Output DATA2+
10	DATA 2-	LVDS Output DATA2-
11	GND	Ground
12	DATA 1+	LVDS Output DATA1+
13	DATA 1-	LVDS Output DATA1-
14	GND	Ground
15	DATA 0+	LVDS Output DATA0+
16	DATA 0-	LVDS Output DATA0-
17	GND	Ground
18	GND	Ground
19	LVDVCC	+3.3V
20	LVDVCC	+3.3V

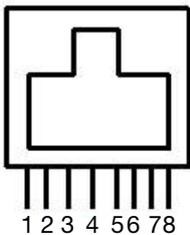
## 4 REAR I/O INTERFACE

### 1. COM1' COM2' COM3 port

Pin	Signal	Function
1	CD	Carrier Detect (IN)
2	RD	Receive Data (IN)
3	TD	Transmit Data(OUT)
4	DTR	Data Terminal Ready(OUT)
5	GND	Ground
6	DSR	Data Set Ready (In)
7	RTS	Request To Send (OUT)
8	CTS	Clear To Send (IN)
9	Ring/5V/12V	Setting by BIOS

COM4 port. Warning!! COM4 (RJ45 Connector) for external VFD use only. Never use on network device. If you are using on the network device will cause the device damaged.

COM 4 port will be inactive if POS has internal VFD. (Alternative of COM 4 or internal VFD)

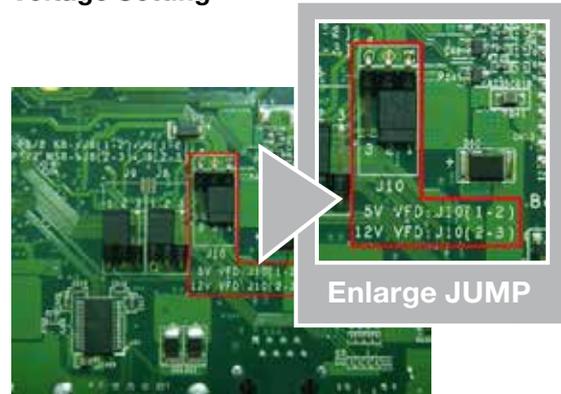


Pin 1: +5V / +12V  
 Pin 2: DSR#  
 Pin 3: GND  
 Pin 4: DTR#  
 Pin 5: RTS#  
 Pin 6: CTS#  
 Pin 7: TxD  
 Pin 8: RxD

### 2. VGA port

Pin	I/O	Function
1	Out	Red Video
2	Out	Green Video
3	Out	Blue Video
4	In	Monitor ID 2
5	-	TTL Ground (Monitor Self Test)
6	-	Red Analogue Ground
7	-	Green Analogue Ground
8	-	Blue Analogue Ground
9	-	Key (Plugged Hole)
10	-	Sync Ground
11	In	Monitor ID 0
12	In	Monitor ID 1
13	Out	Horizontal Sync
14	Out	Vertical Sync
15	In	Monitor ID 3

### Jumper for COM4 Voltage Setting



### 3. USB port

Pin	Signal Name	Wire Colour	Comment
1	Vcc	Red	Cable Power
2	- Data	White	Data Transfer
3	+ Data	Green	Data Transfer
4	Ground	Black	Cable Ground
Shell	Shield	-	Drain Wire

### 4. PS/2 K/B port

Pin	Signal Name
1	Data from Device
2	Not Connected
3	Ground
4	+5V DC
5	Clock
6	Not Connected

### 5. LAN port

Pin	Wire Colour	Description
1	White/Orange	Transmit
2	Orange	Transmit
3	White/Green	Receive
4	Blue	Not Used
5	White/Blue	Not Used
6	Green	Receive
7	White/Brown	Not Used
8	Brown	Not Used

### 6. RJ11 port (for Cash drawer)

Pin	Signal Name	Direction
1	Frame GND	-
2	Drawer Kick-out drive signal 1	Output
3	Cash Drawer Status	Input
4	+12V	-
5	N/C	-
6	Signal GND	-

### 7. DC Jack

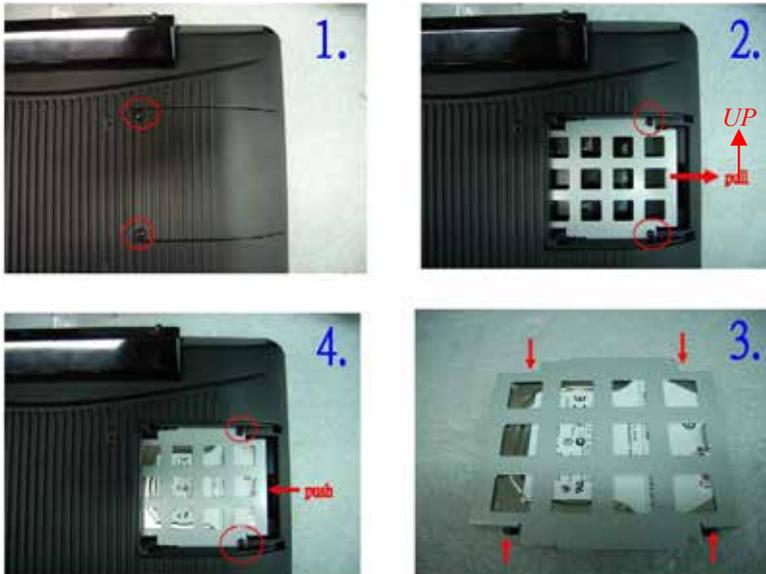
Pin	Signal Name
1	DC IN 19V
2	Ground
3	DC IN 19V

Example DOS COMMAND for **Cash Drawer**:

1. Create **the file**: TEST.TXT
2. Input below **contents** in TEST.TXT  
**CONTEXT-"000.0"**  
**MODE COM6:300**
3. Run COMMAND under DOS mode  
**COPY TEST.TXT COM6**

## 5 SYSTEM ASSEMBLY & DISASSEMBLY

### 5-1. HDD



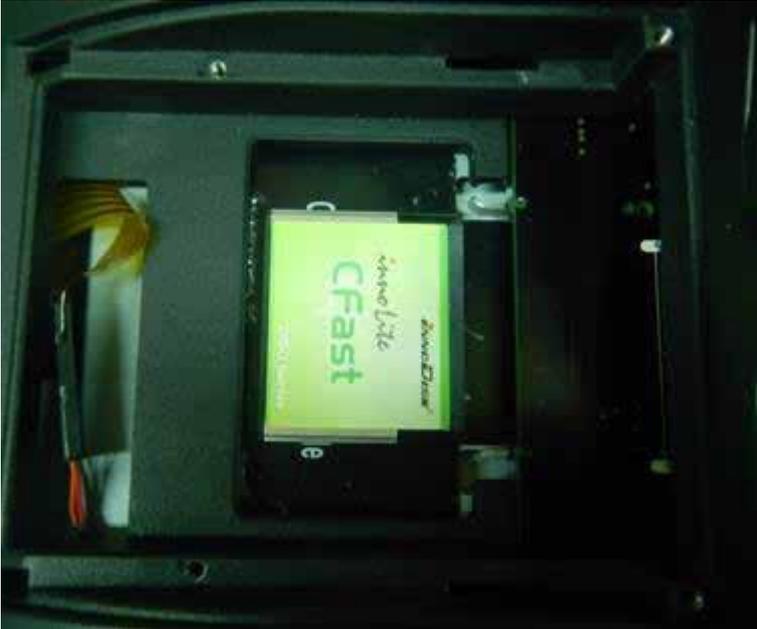
1. Unfasten the HDD cover screw\*2
2. Pull out the HDD bracket
3. Fasten the screw\*4
4. Place the HDD bracket back to the module

### 5-2. CF-Card

1. Please notice the unnotched CFast Card . This side up.



2. Before Installing CF Card.



3. After Installing CF Card.



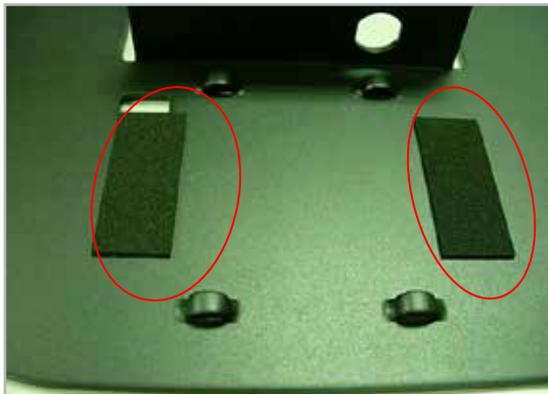
### 5-3. MSR



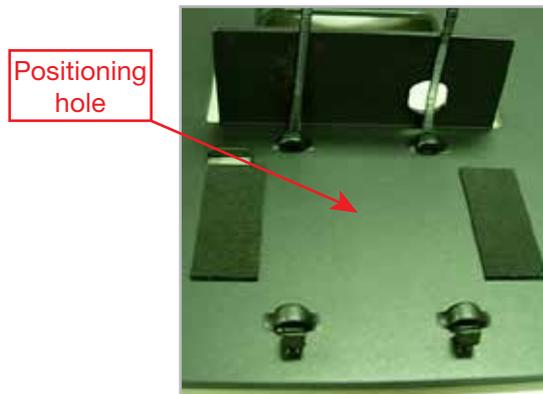
1. Open the MSR cover
2. Single MSR or 3-in-1 MSR
3. Screw\*2 M3x10L
4. Fasten the screw



### 5-4. UPS Battery



- (1) Paste two rubbers on the located position of the Stand Bracket.



- (2) Reeve two cable ties through the stand bracket. Place the battery pack in position and bind the cable ties tightly. Then cut the extra tail from cable ties.



- (3) Reeve the cable from the battery pack through the stand bracket.

## 5-5. cable cover



Assemble the cable cover from bottom and make sure the two latches are on the right position. Then fasten 2 screws (M3\*5L).

## 5-6. 8"/15" 2nd Display

\* Power supply must be replaced to 120W above power adapter.



(1) Remove the plastic pole cover from the stand.



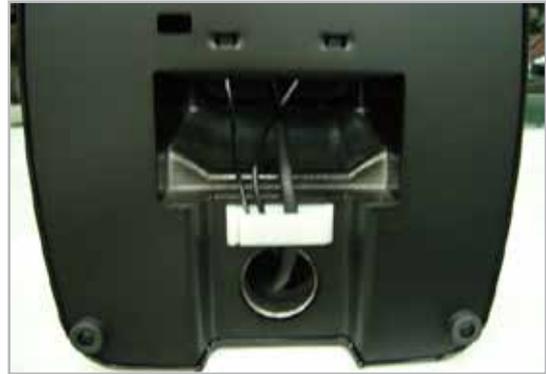
(2) Install the pole into the socket in clockwise direction.



(3) Fasten the four screws (M4\*8L) to joint the VESA bracket and the rear cover.



- (4) Connect the COM port, DC cable as shown in figure (1). (Please refer to page 12 to set the COM port pin9 with 12V DC output.)
- (5) Connect the VGA cable as shown in figure (2).
- (6) Connect the audio cable as shown in figure(3).
- (7) Assemble the cable cover from bottom and make sure the two latches are on the right position, and fasten the two screws (M3\*5L).



- (8) Route the cables through the opening of stand front cover and cable clip at the bottom and route the cables into the tube of pole.



- (9) Reeve the cables out of the tube.



- (10) Mount the VESA bracket on the pole and route cables out of the tube of VESA bracket. Fasten the thumb screw to fix the VESA bracket.

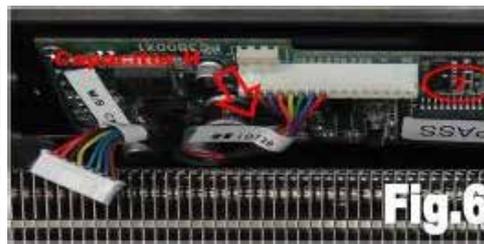
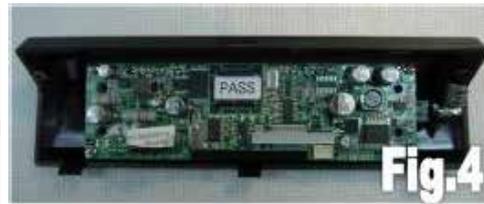
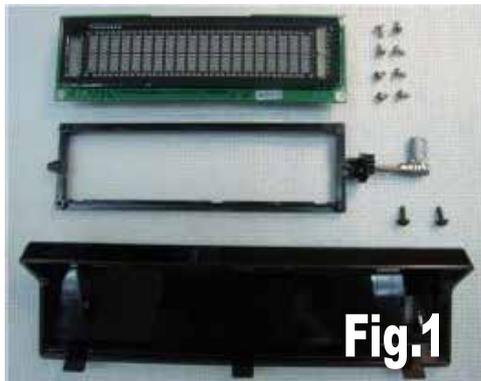


- (11) Connect the DC power cable as shown in figure (1).
- (12) Connect the VGA cable as shown in figure (2).
- (13) Connect the Audio cable as shown in figure (3).



- (14) Put the cable cover on the hinge of VESA bracket.

## 5-7. Internal VFD



Item	Operation procedure	Remark
1	Prepare all components as Fig 1	
2	Assemble holder & hinge assy by TAPPING SCREW P/H 2.6 *5 x2 pcs(As Fig 2)	Torque 2Kgf
3	Fix VFD module on holder assy by TAPPING SCREW P/H 2.6 *5 x4 pcs as Fig 3	Torque 2Kgf
4	Screw VFD module on VFD cover by TAPPING SCREW P/H 2.6 *5 x 2pcs AS fig 4)	Torque 2Kgf
5	Fix VFD module on rear cover by TAPPING SCREW R/H M3*8L x 2pcs (As Fig 5)	Torque 2Kgf
6	The VFD cable must be around to capacitor H below, so as not to interfere hinge action (As Fig 6)	

Item	P/N and Component
1	20D990002-000B DISPLAY MODULE VFD *1
2	68D350235-000B COVER FOR VFD *1
3	78D300021-000B HOLDER FOR VFD *1
4	26D100005-000B HINGE ASSY FOR VFD *1
5	64D426051-000T SCREW TAPPING P/H 2.6 *5 *8
6	64D430088-000T SCREW TAPPING R/H M3*8L *2
7	35D510480-000B CABLE 16P femail TO 8P female*1

Item	Action item
1	Wear cotton gloves, wrist strap and may not wear watches, rings, etc.
2	Screws to lock in place and can not lost
3	Electric screwdriver Torque to be regularly calibrated,

**Alternative of external COM4 (RJ45 Connector) or Internal VFD.**

## 5-8 Wi-Fi

1. Connect the antenna to Wi-Fi module, fastening the Wi-Fi Module to the Rubber, then fasten WI-Fi Module and antenna on VFD cover.



2. Assemble VFD cover and Back panel with 2 screws. Then connect Wi-Fi /MSR cable to Wi-Fi module.



2. Connect Wi-Fi /MSR cable to M/B.



Alternative of WiFi or Internal VFD.

## 5-9 8" 2nd Display

1. Remove the plastic pole cover from the stand.



2. Install the pole into the socket in clockwise direction.

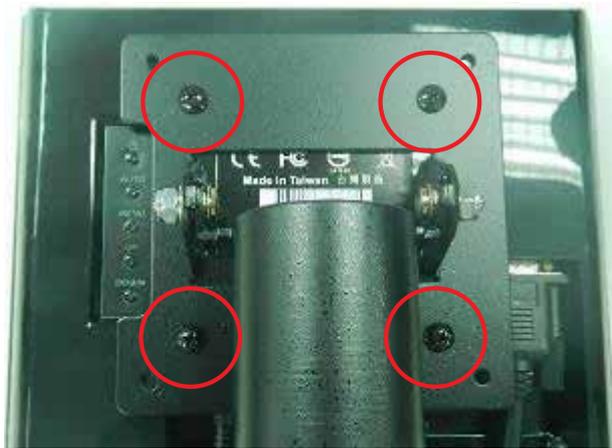


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3. Connect VGA cable and DC power cable



4. Fasten the four screws (M4\*8L) to joint the VESA bracket and the rear cover.



5. Reeve the cables out of the tube.



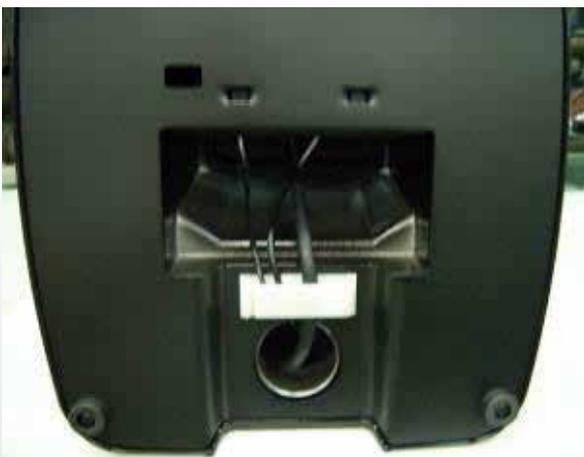
- 
6. Mount the VESA bracket on the pole and route cables out of the tube of VESA bracket. Fasten the thumb screw to fix the VESA bracket.



7. Reeve the cables out from the bottom of pole.



8. Route the cables through the opening of stand front cover and cable clip at the bottom and route the cables into the tube of pole.



9. Connect the DC power cable as shown in figure.

To setup COM port PIN9 with 12V DC output from BIOS setup, please refer to page 12, Advanced Chipset Features / COM port PIN9 setting.

---

10. Connect the VGA cable as shown.



11. Put the cable cover on the hinge of VESA bracket.



## 5-10. 1D / 2D / iButton with RFID Module



- (1) Cable installation.  
For iButton with RFID module; For 2D barcode scanner with RFID module:  
Connect the cable as shown.



- (3) Fix the screws as shown.



- (2) For 1D barcode scanner with RFID module: Connect the cable as shown.

\* Before COM port cable connection, please setup COM port PIN9 with 5V DC output from BIOS setup.

Please refer to page 12, **Advanced Chipset Features** / COM port PIN9 setting.

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## 5-11 Pole type VFD VD1220

- 1 Take VFD panel and two VFD poles out from the package box and Install two tubes into one pole and reeve the cable from the VFD panel through the socket of stand.



VFD Panel

VFD Pole



- 2 For the foot ring assembly, please install the foot ring into the socket in clockwise direction.



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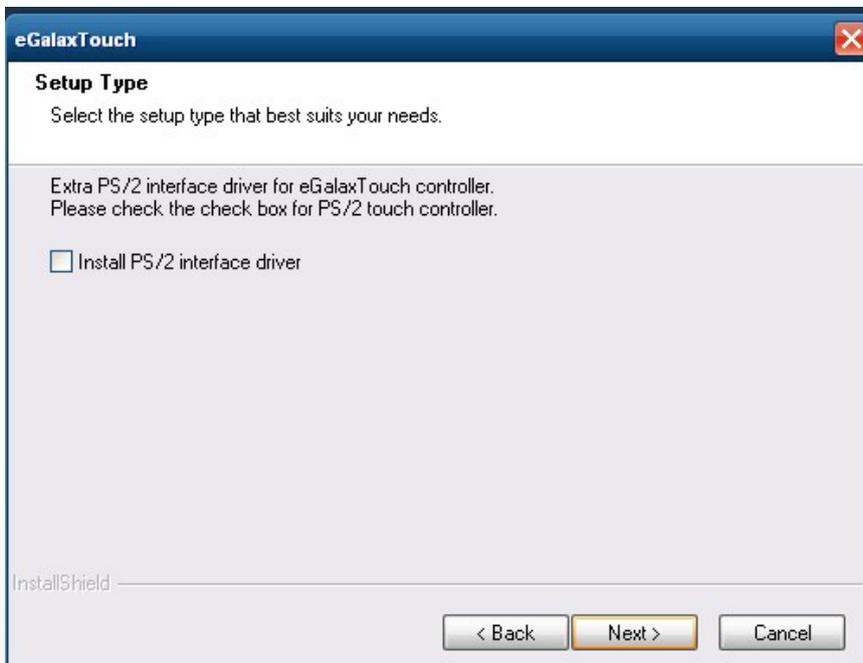
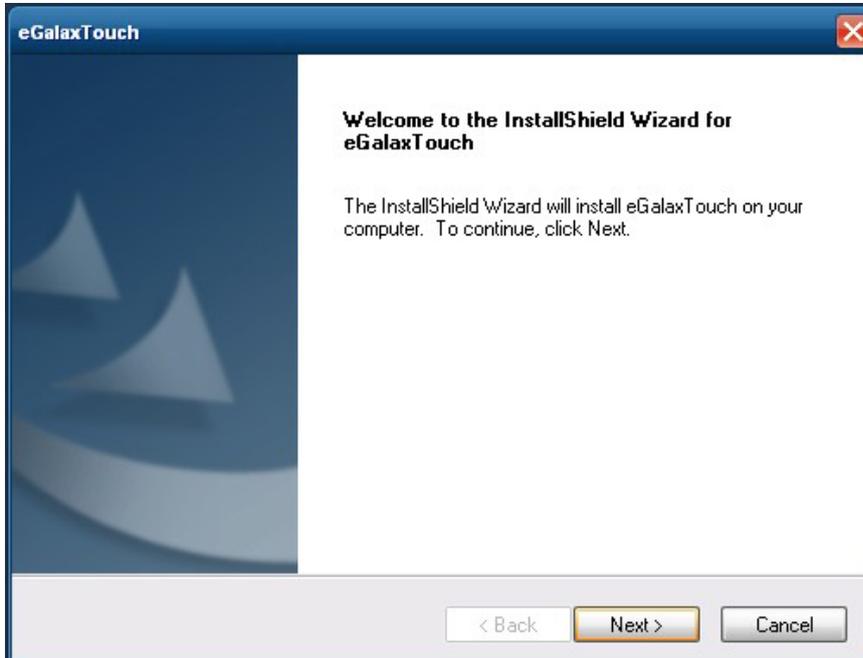
3 Then install the pole into the foot ring.



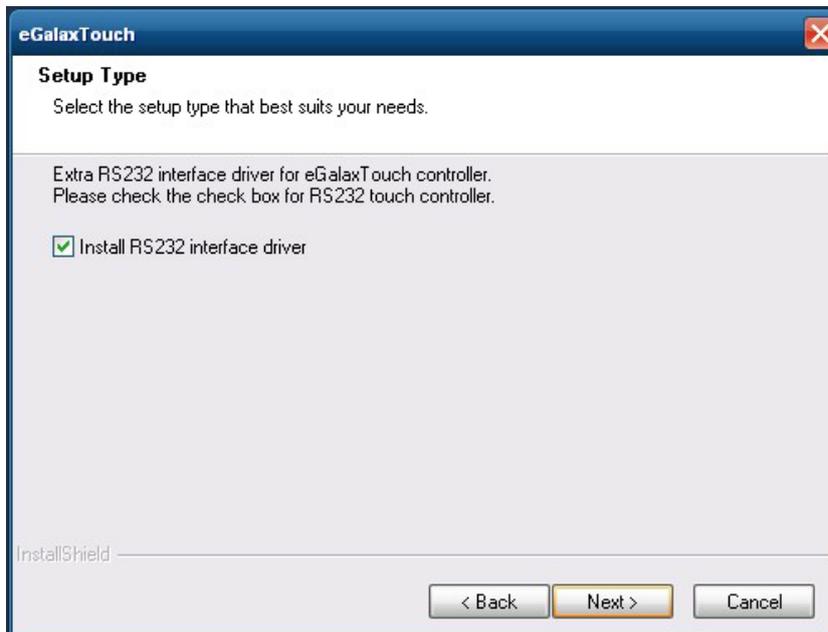
4 Then connect RJ45 cable to POS terminal's RJ45 port

### 6-1. Resistive Type Touch Panel and P-CAP

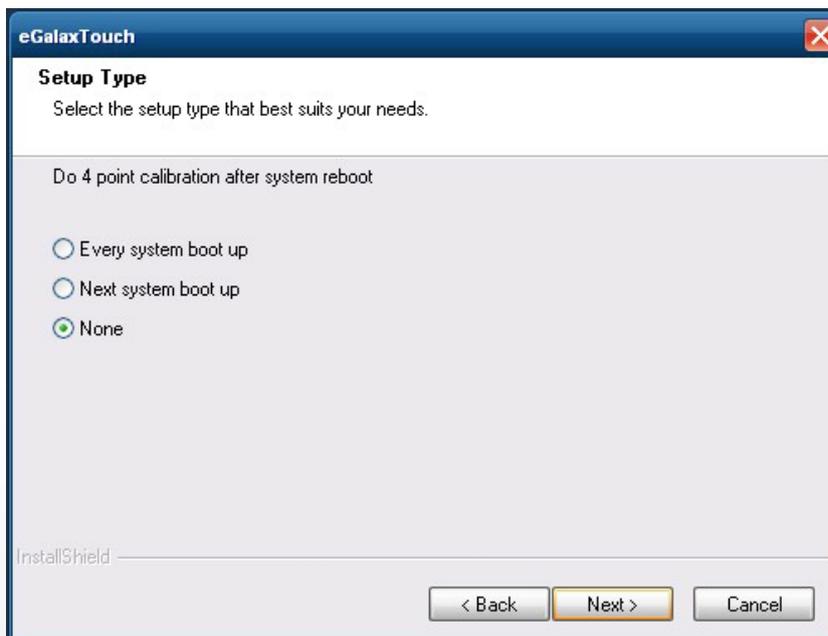
1. Click "Next"



3. Click "Next"



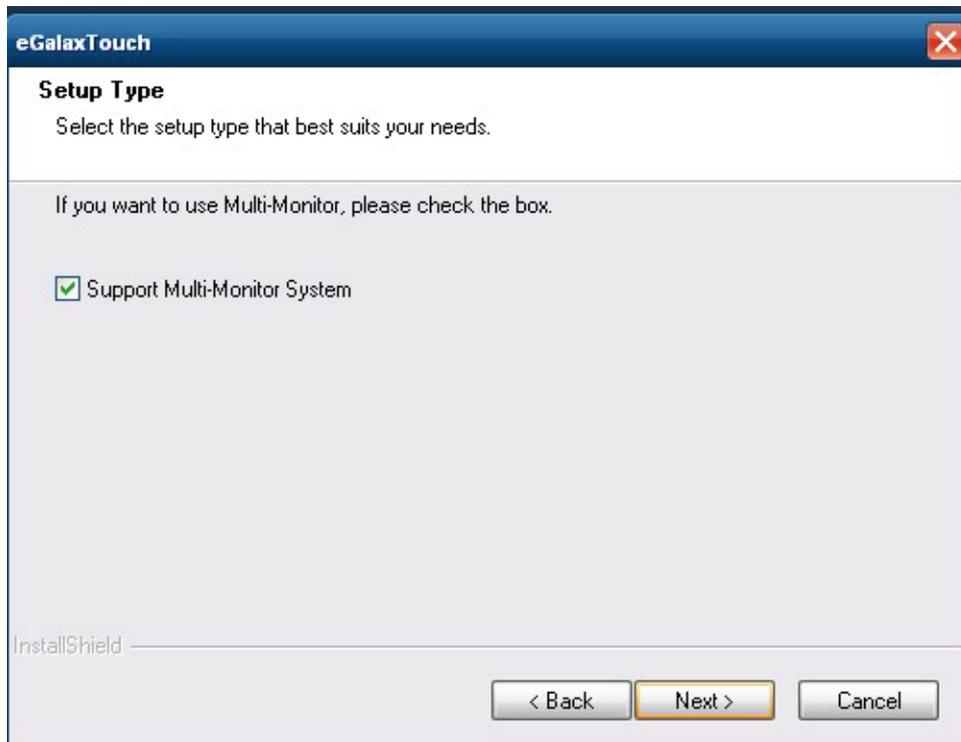
4. Select "None", Click "Next".



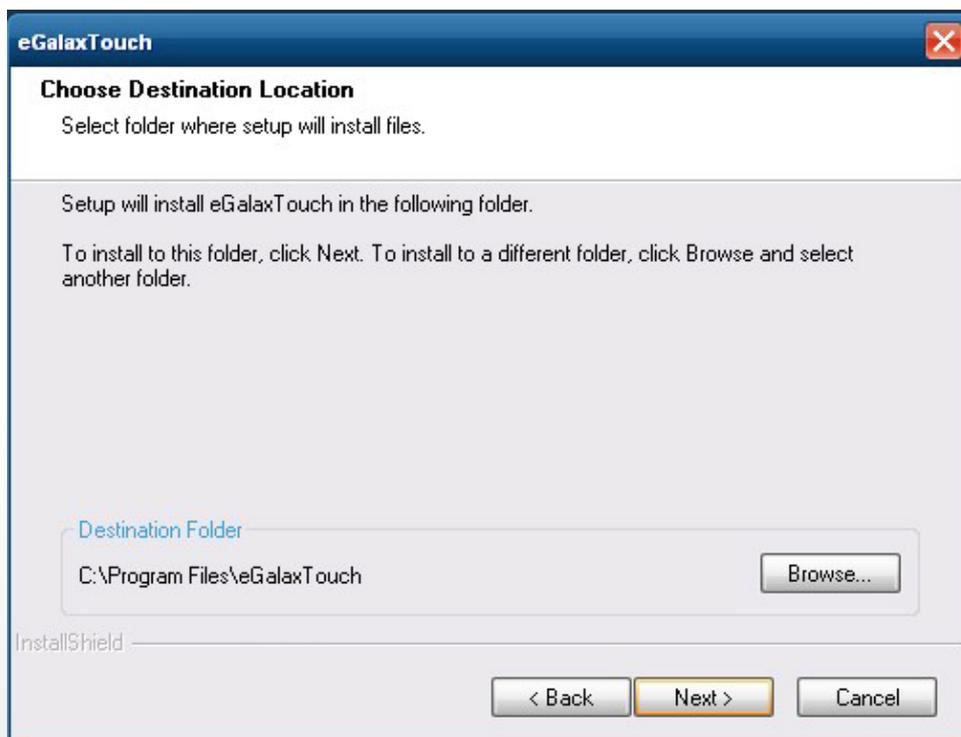
5. Click "OK"



6. Select “Support Multi-Monitor System”, Click “Next”.



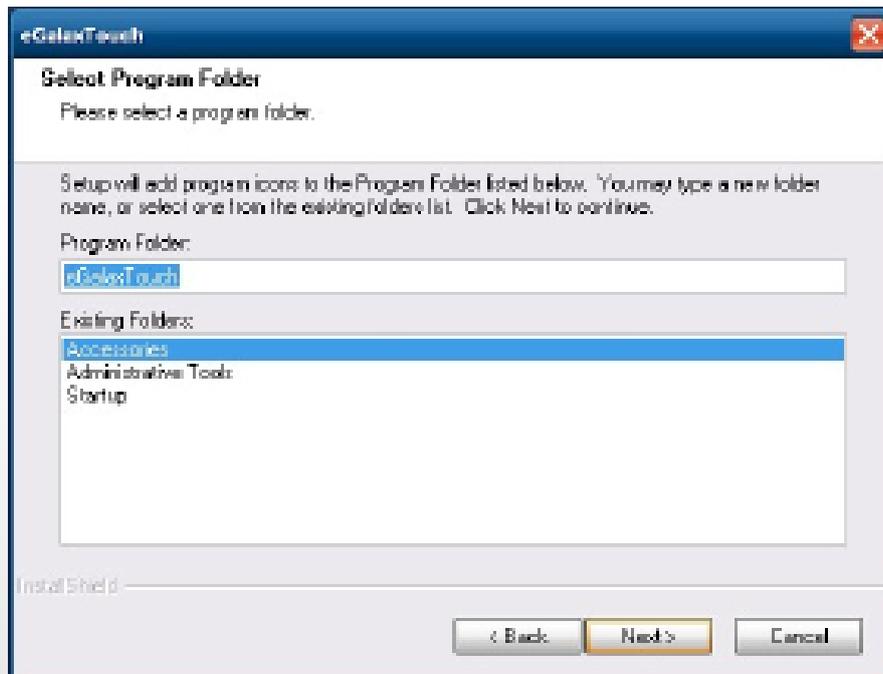
7. Click “Next”.



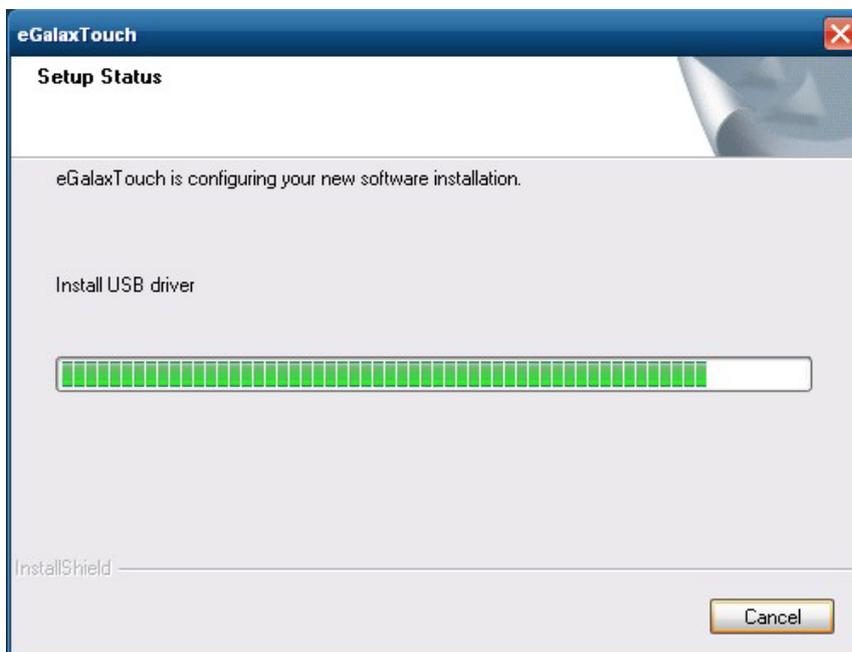
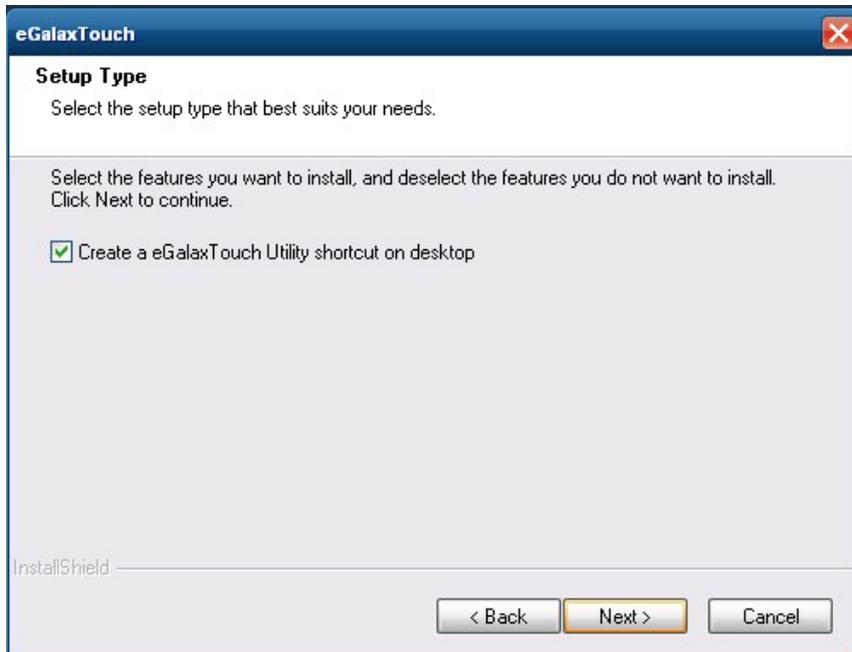
8. Click “Next”.



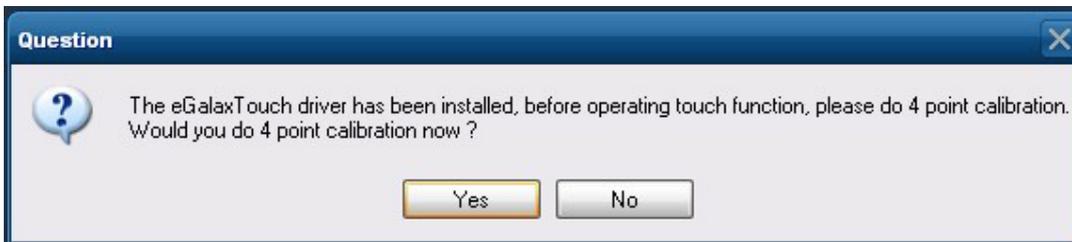
9 Click “Next”



10. Select “Create a eGalaxTouch Utility shortcut on desktop”, Click “Next”.



11. Would you do 4 point calibration now? Click “Yes”.



12. Do 4 points alignment to match display



13. Calibration utility



## 6-2. MagStripe Card Reader Configuration Utility

### 1 Combo USB HID MSR

The MagStripe Card Reader Configuration Utility is used to set up the output format of HIDMSR-20

#### Installation

Below steps guide you how to install the Utility program.

- 1 Insert the setup CD
- 2 Run the HIDMSR-20 Utility.exe setup file that is located in the Software folder of CD.
- 3 Follow the wizard to complete the installation.

#### Launching Program

Below steps guide you how to load the Utility program.

- 1 From Start/Programs, click HIDMSR20 folder
- 2 Click MagStripe Card Reader Configuration Utility to launch the program.



- 1 The utility program will detect the connected reader. If detected, all the input text boxes will be enabled.
- 2 If the reader has not been connected to PC yet, please connect the reader and then click Refresh to get connected.

## Configuration

Below is the main window of Utility program.



### For the settings, there are:

- 1 Language: The language defines the code positions of the keyboard. Each language should use its own settings. Wrong language selected will cause the wrong character displayed.
- 2 Prefix/Suffix: Defines the data string which you would like to append in front or end of the MSR data string.
- 3 Error Message: Indicates which track number cause the error.
- 4 Delimiter: Indicates the swipe result.
- 5 ISO: Define start and end sentinel character.
- 6 Decode Mode: Determines the way of outputting the three tracks data.

---

Shown below is the data structure of the output string for MSR.

PP PR1 SS1 TK1 ES1 SU1 PR2 SS2 TK2 ES2 SU2 PR3 SS3 TK3 TK3 SU3 SU DM

- |   |  |
|---|--|
| 1 PP: Prefix for package.   | 1 <b>SU2</b> : Suffix for track 2.                                       |
| 2 PR1: Prefix for track 1.  | 2 PR3: Prefix for track 3.   |
| 3 SS1: Start sentinel for track 1.                                      | 3 SS3: Start sentinel for track 3.                                       |
| 4 TK1: Data for track 1, if error happens, using Error Message instead. | 4 TK3: Data for track 3, if error happens, using Error Message instead.. |
| 5 ES1: End sentinel for track 1.  | 5 ES3: End sentinel for track 3.   |
| 6 SU1: Suffix for track 1.  | 6 SU3: Suffix for track 3.   |
| 7 PR2: Prefix for track 2.  | 7 SU: Suffix for package.  |
| 8 SS2: Start sentinel for track 2.                                      | 8 DM: Delimiter for the swipe result.                                    |
| 9 TK2: Data for track 2, if error happens, using Error Message instead. |  |
| 10 ES2: End sentinel for track 2.                                       |  |

### Prefix/Suffix

In default, the prefix and suffix settings are all keep blank. There are 4 kinds of prefix and suffix to be defined, which are:

- 1 Package: For the prefix string, it is appended in the front of the whole MSR data. For the suffix, it is appended in the end of the whole MSR data. In most case, the suffix for package is always to be the "Enter" or "Tab" character. The max data length of the prefix and suffix for the package can be up to 127.
- 2 TK1: For the prefix string, it is appended in the front of the start sentinel of track 2. For the suffix, it is appended in the end of the end sentinel of track 2. The max data length of the prefix and suffix for the TK1 can be up to 127.
- 3 TK2: For the prefix string, it is appended in the front of the start sentinel of track 2. For the suffix, it is appended in the end of the end sentinel of track 2. The max data length of the prefix and suffix for the TK1 can be up to 127.
- 4 TK3: For the prefix string, it is appended in the front of the start sentinel of track 3. For the suffix, it is appended in the end of the end sentinel of track 3. The max data length of the prefix and suffix for the TK1 can be up to 127.

## ISO

This group defines the start and end sentinel for each track. The sentinel is always used to extract the track data from the whole MSR data string. The data length for each sentinel is fixed to one character. Because there is ISO standard that defining the start and end sentinel for the three tracks. For the compatible reason, please do not modify the default value if possible.

### Decode Mode

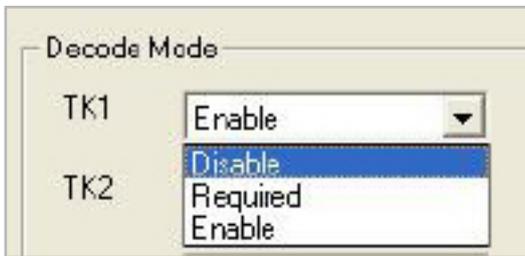
For this group, it contains two kinds of settings, which are:

I Track Data Filtering: Determine which track to be, not to be output or needed to be output.

I Switch Output Order: Change the output order of track 1 ~ 3.

### Track Data Filtering

Shown below is the filter setting for track 1. This provides a fool-proofing method in case of receiving unwanted or uncompleted track data.



These three filter settings are:

- 1 Enable: If selected, the data of specified track will be packaged in the MSR data string. If the specified track data is not decoded, it will leave blank in the MSR data string.
- 2 Required: If selected, which means the output MSR data string must contain the specified track data. If the specified track data is not decoded, even MSR data string contains other track data, it will still not be output.
- 3 Disable: If selected, the data of specified track will not be packaged in the MSR data string. No matter it is decoded or not.

---

### Switch Output Order

Show below is the selection of the three track data output order (sequence). The default order is Track 1–Track 2–Track 3.



There 6 orders allow to be selected. Please select one to fit your application needs.

### Update Settings

Once complete the settings, click Update to update the settings to connected HID MSR reader.

### Save Settings

To save the settings to a file, click Save; specify the file name and location to be saved.

### Open Settings

To load pre-saved settings, click Open, specify the settings file, and then click OK to load into program.

### Restore MSR Reader Settings

To load restore settings of connected MSR reader, click Restore ES2: End sentinel for track.

## 2. SINGLE MSR

The MagSwipe Configuration Utility is used to set up the output format of MagSwipe

### Installation

- 1 Insert the setup CD
- 2 Run the 80066804-006\_Magswipe\_Configuration\_Software\_V2\_1\_A setup file that is located in the Software folder of CD.
- 3 Follow the wizard to complete the installation.

### Launching Program

Below steps guide you how to load the Utility program.

- 1 From Start/Programs, click MagSwipe folder
- 2 Click MagSwipe Configuration Utility to launch the program.

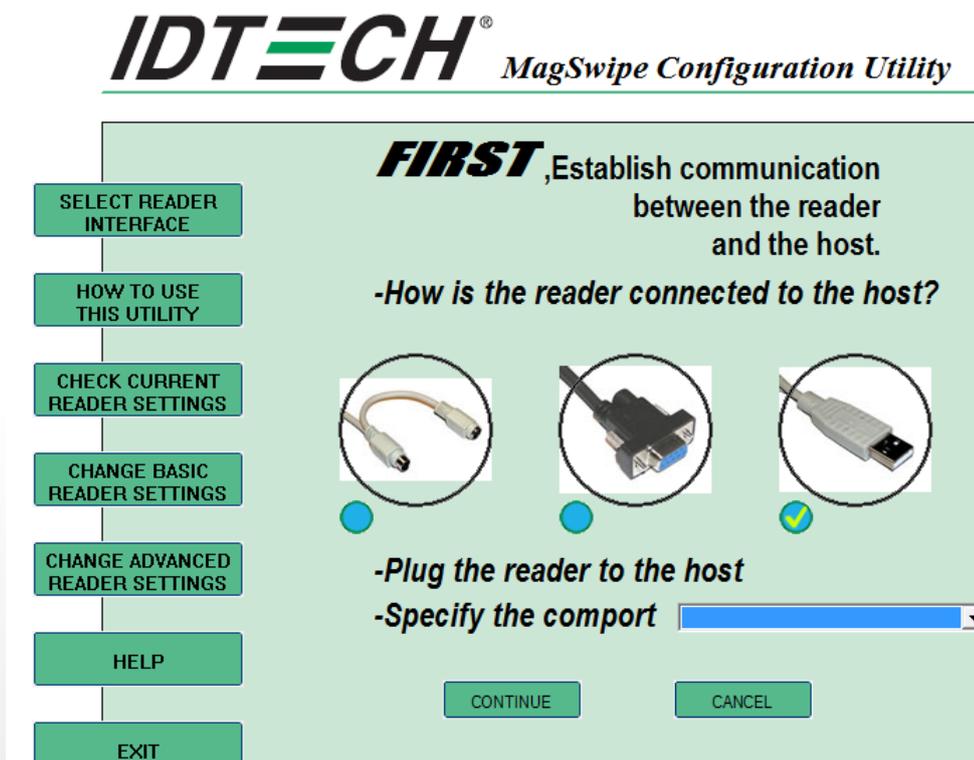


## Configuration



### Select Reader Interface

The reader to be configured should be connected. Select the corresponding connected reader interface and click the Continue button

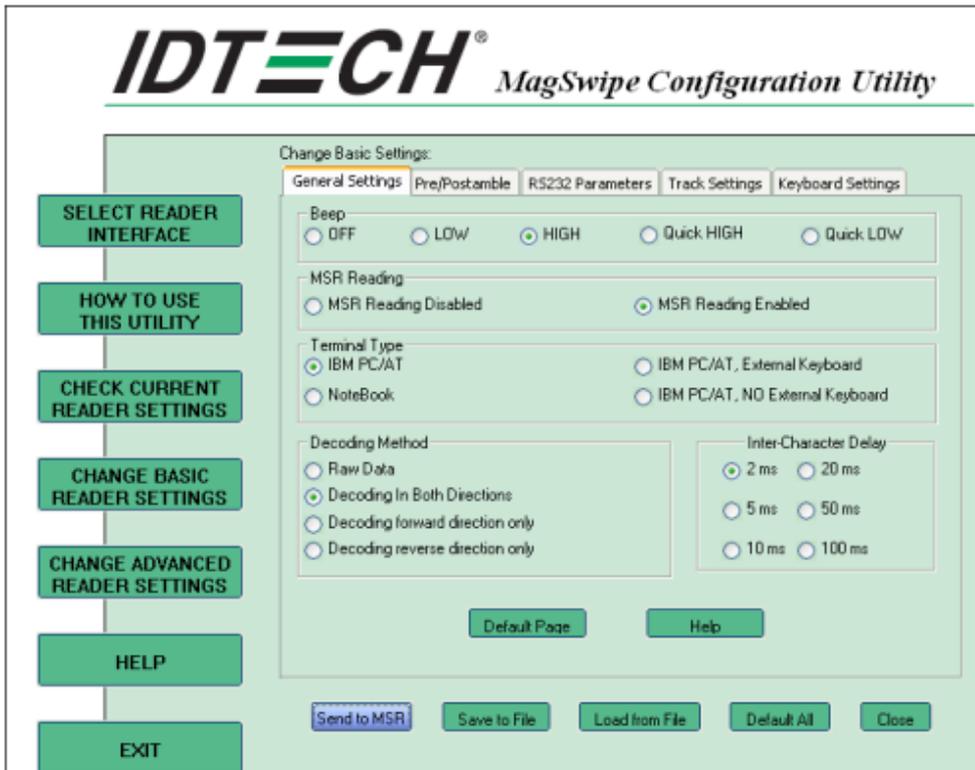


After the interface selection is made, click the Continue button. The utility attempts to communicate with the connected reader. If successful, the Home Menu Page is displayed. The Home Menu Page is shown below



## Change Basic Reader Setting

After selecting the appropriate interface for the reader, select one of the Home Menu Page buttons to proceed with the Magnetic Stripe Reader (MSR) configuration process. The „Basic Reader Settings“ group defines the basic operating parameters and data output format of the reader.



## Button Definitions

### Send To MSR

When all the setting parameters are selected, use the „Send To MSR...“ button to send configuration data to the reader device. When the reader has received the data correctly, the settings take effect immediately.

### Load From File

The configuration data can be loaded into the configuration utility from a file that has been previously saved. Select this command, start a „File Open“ dialog, which allows selection of the file.



## Save To File

The configuration data can be saved as a file and being used later to configure other readers. When saving a configuration the „File Save“ dialog is opened as shown below. Input a filename and file location.



## Default All

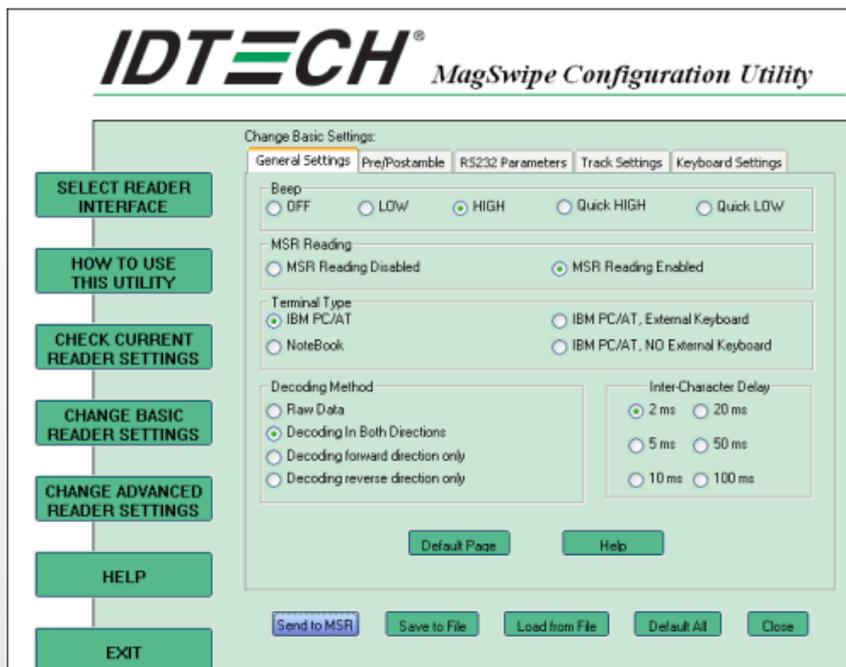
This button sets the reader with the default configuration parameters (the default factory settings). The settings take effect immediately. The default parameters affect all reader configurations settings.

## Close

Close this dialog and return to the Home Menu Page.

## General Settings

This group of configuration settings defines the basic operating parameters of the reader.



---

## MSR Reading

This option will turn on or off the MSR. If MSR is disabled no data is sent out to host in any case. The default is MSR Reading Enabled.

## Decoding Method Settings

This option gives four kinds of decoding methods.

Raw Data (output in both forward and reverse directions)

Decoding in Both Directions (forward and reverse reading)

Decoding in Forward Direction only (card entering slot from LED end) Decoding in Reverse Direction only (card entering slot from end opposite LED)

With the bi-directional operation, the user can swipe the card in both swipe directions and the data encoded on the magnetic stripe will be output. In the single swipe direction selections, the card can only be swiped in one specified direction to read the card. The default setting will decoding card data with the card swiped in either the forward or the reverse direction.

„Raw Data“ is an output of the decoded magnetic stripe data in hexadecimal format (no ASCII character conversion is performed). In the Raw Data setting, the reader outputs all

track-decoded data. The MSR will represent the raw data with two ASCII characters: the first ASCII character is for high bits of the raw data byte and the second is for the low bits. For example, the two ASCII characters „4“and „1“represent raw data byte 41h(01000001).

## Beep Volume

The Beep volume can be adjusted to four loudness levels or off. Four loudness levels are: Quick High  
Quick Low

High

Low

The default is High beep.

## Terminal Type

NoteBook

IBM-PC/AT

IBM-PC/AT, External keyboard IBM-PC/AT, No External keyboard

The firmware can be programmed to interface as a keyboard wedge to 4 different types of terminals. The default is IBM-PC/AT.

## Inter-Charater Delay :

2ms, 5ms, 10ms, 20ms, 50ms, 100ms;

This is the time period the reader will delay between sending successive characters. Some terminals or computers (host) require an inter-character delay to simulate the effects of keystroke delays. Choosing a longer inter-character delay causes the characters to be sent at a slower rate. If the host system is not capable of receiving characters as fast as the reader

---

can transmit, setting an appropriate inter-character delay will keep the reader from overrunning the host input buffer. The default is 2ms.

### **Default Page Button**

After you click the Default Button, the general settings page will change back to the default value. Settings are not sent to MSR until the „Send to MSR“ button is clicked.

### **Help Button**

Click the help button to open the help index for this section.

Pre/Postamble

### **Preamble**

Characters can be added to the beginning of the reader's output string of data. These can be special characters for identifying a specific reading station, to format a message header expected by the receiving host, or any other character string. Up to nine ASCII characters can be defined for the Preamble.

### **Postamble**

The Postamble serves the same purpose as the Preamble, except the extra characters are added to the end of a data string. The Postamble can be added only after a terminator character, if specified.

### **Track Prefix and Suffix**

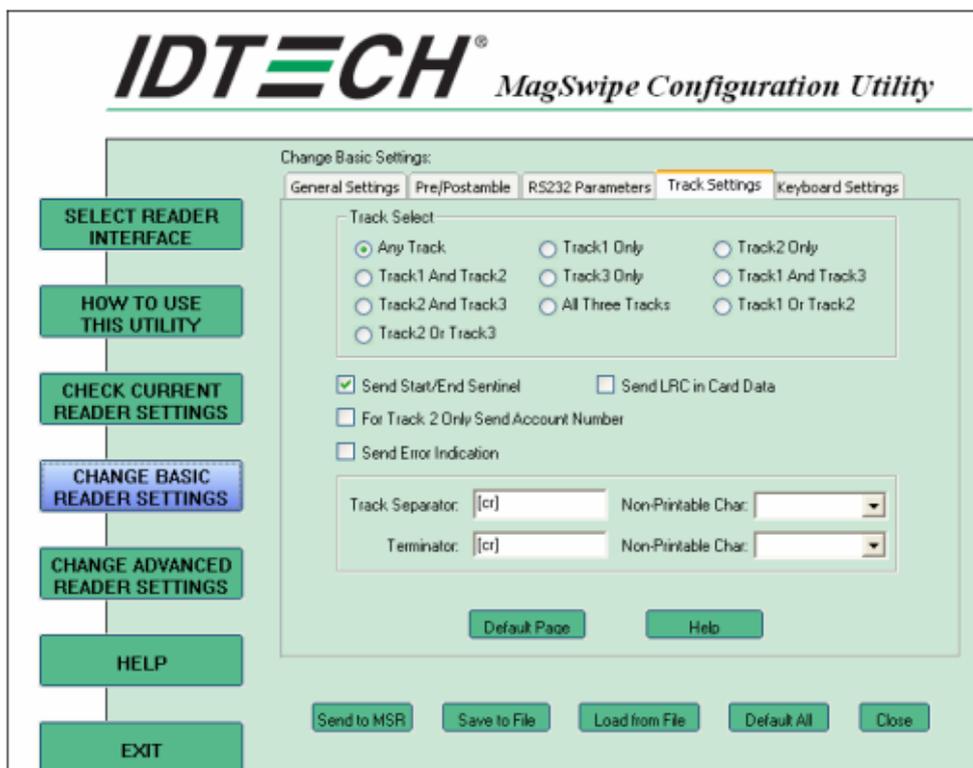
For some Host applications, it may be convenient to start or end a string of reader data with a Sentinel or terminator character. The maximum Prefix/Suffix string is six characters and its default is NULL (no prefix or suffix).

### **Track Start Sentinels**

Characters can be added to the beginning of each track data string to simulate the start of the track data. These can be special characters for identifying a specific track.

### **End Sentinel**

The magnetic stripe End Sentinel character can be added to the end of a magnetic stripe data string. This character simulates the end of character for track1, track2 or track3. This default is ,?'



### Track Selection

There are three tracks of info

rmation possible on a magnetic stripe. This option selects the tracks that will be decoded (read). Note that the magnetic stripe reader must have the hardware configuration (read head and circuits) for reading the specified tracks. If a single or dual track reader is used, the heads must be positioned to read the tracks selected by this option. The default is Any Track.(All tracks written on the card will be read).

### Track Separator Selection

This option allows the user to select the character to be used to separate data decoded by a multiple-track reader. The default value is CR

### Send Start/End Sentinel

The reader can send the Start/End sentinel for a track, decoded without error.

### Send LRC in Card Data

The reader can send the track LRC for a properly decoded track.

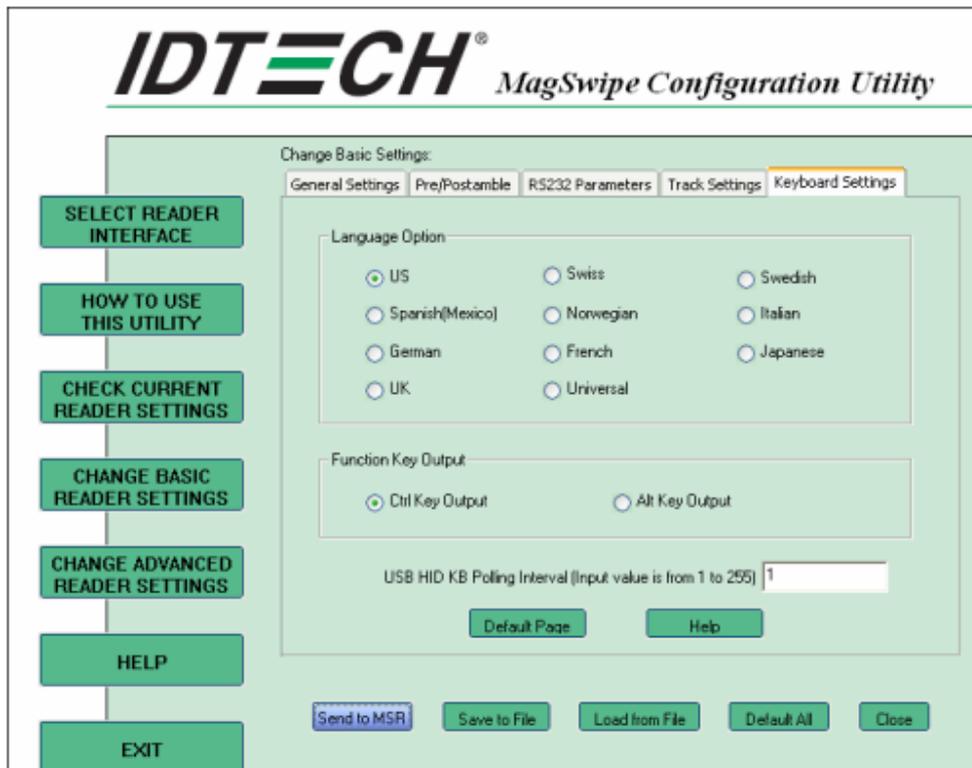
### For Track 2 only Send Account Number

The reader can only send account Number if it is true. And if it is false, the reader sends all Track 2 data.

### Send Error Indication

This option let reader to send out [SS]E[ES] if failed to read or missing data on a selected track.The default is off.

The error output for track 1 is „%E?“.  
 The error output for track 2 is „;E?“.  
 The error output for track 3 is „+E?“.



### Keyboard Settings

There are keyboard settings information on a magnetic stripe. MiniMag II will support following foreign language keyboard and function key output for PS/2 and USB HID Keyboard Interface.

### Language Option

This option allows the user to select the keyboard language of US, Swiss, Swedish, Norwegian, Italian, Spanish(Mexico), German, French, Japanese, UK and Universal. Universal language sends out all the data as a series of ALT keyed sequence.

### Function Key Output

The function key output be used to support the special key to delay card data output.

### USB HID KB Polling Interview

The user can input the number between 1 to 255 for the delay of output.

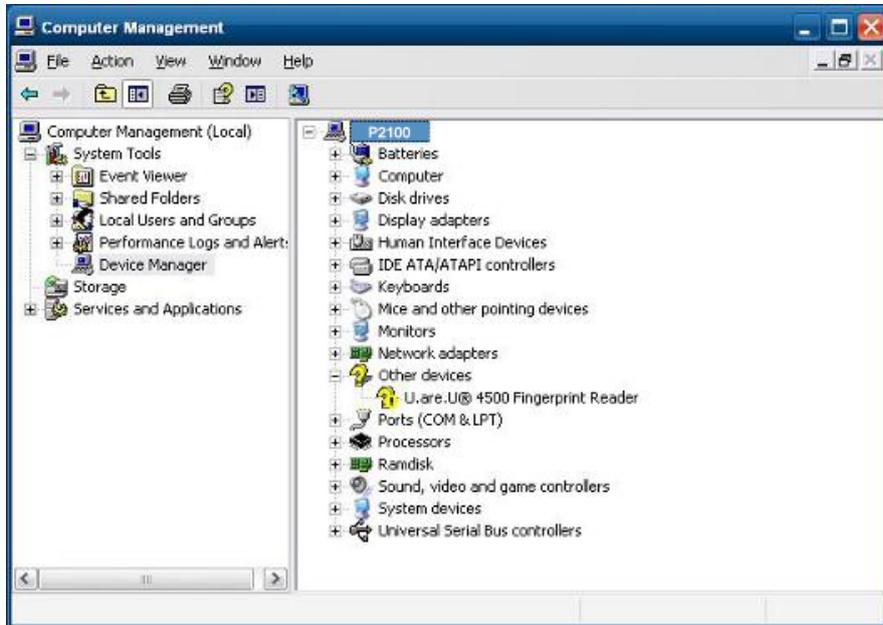
### Check Current Reader Setting

After you connect the device, the current reader configuration can be displayed by selecting this button. The configuration data of the connected reader will be displayed like in the example:

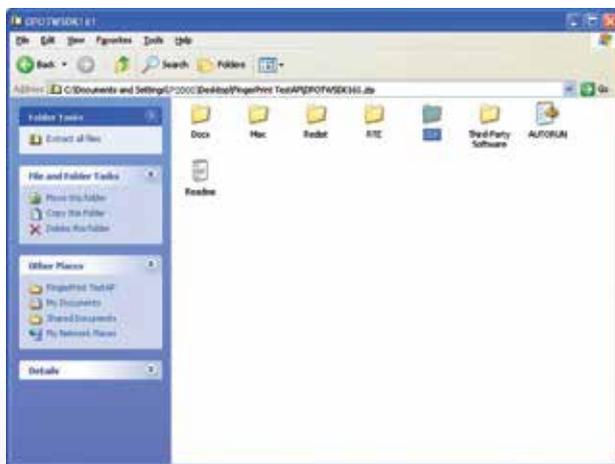


### 6-3. Fingerprint Reader

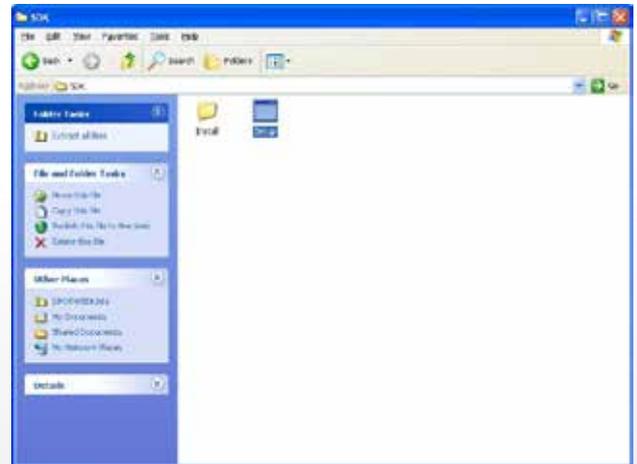
Step 1 Check Fingerprint reader be detected by “Device manager”



Step 2 Select SDK folder.



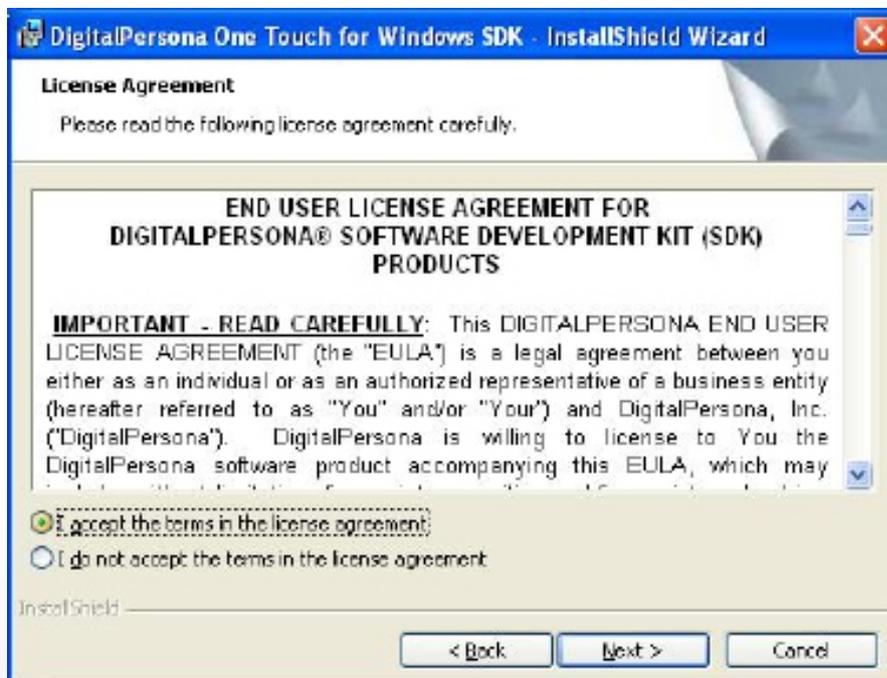
Step 3 Run Setup.exe.



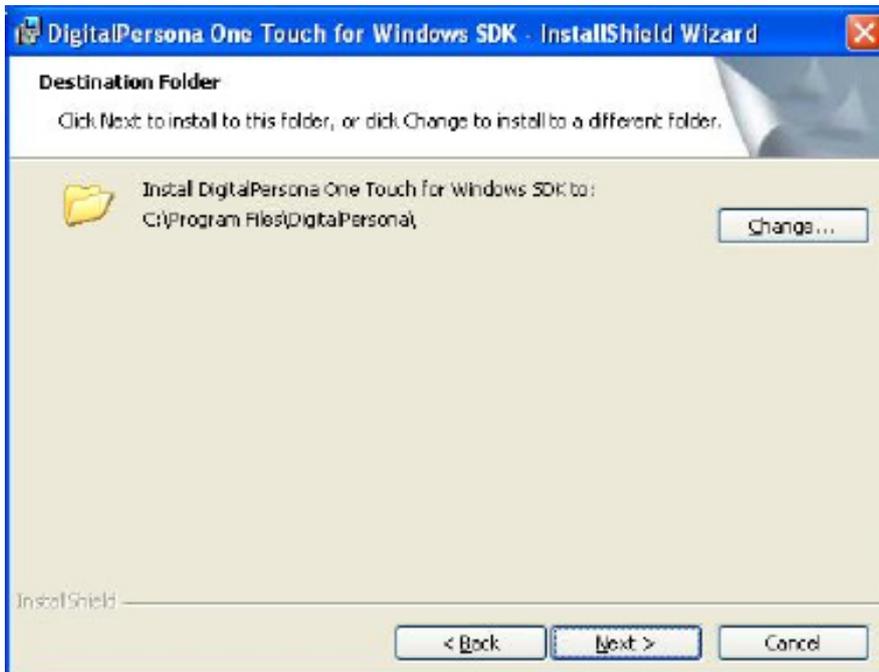
Step 4 Click "Next".



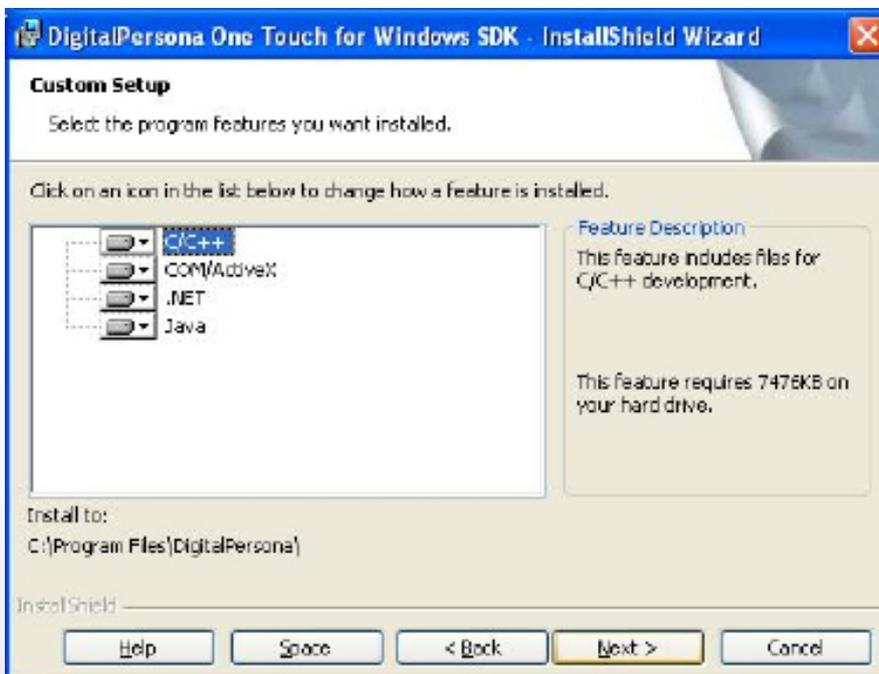
Step 5 Select "I accept the terms in the license agreement" and click "Next".



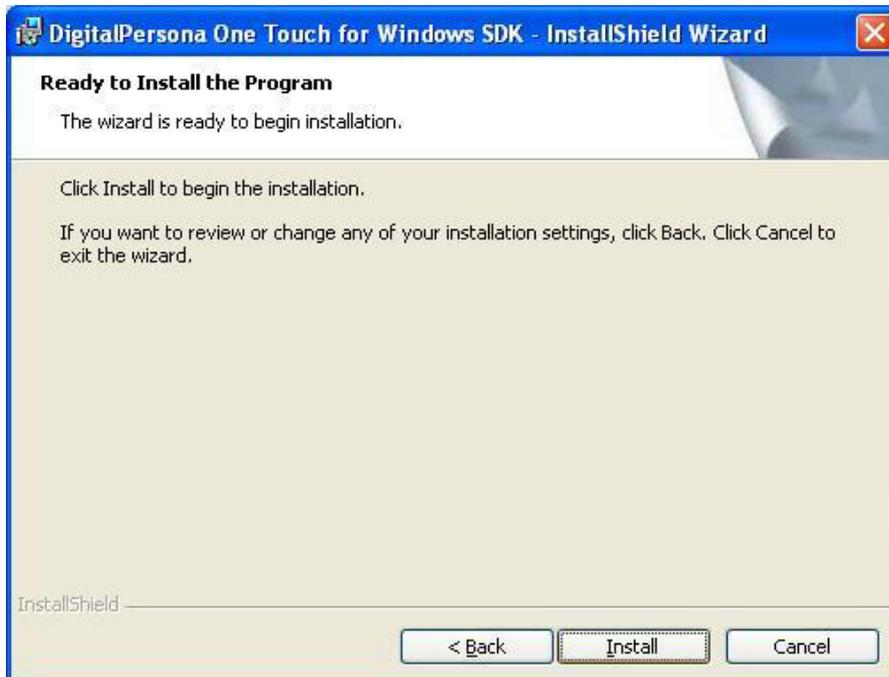
Step 6 Click "Next".



Step 7 Click "Next".



Step 8 Click "Install".



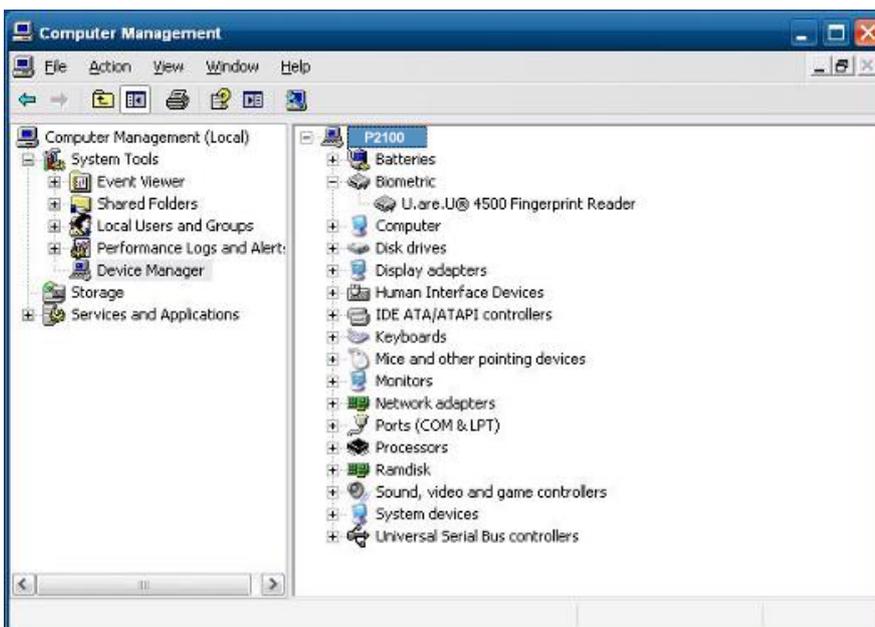
Step 9 Click "Finish".



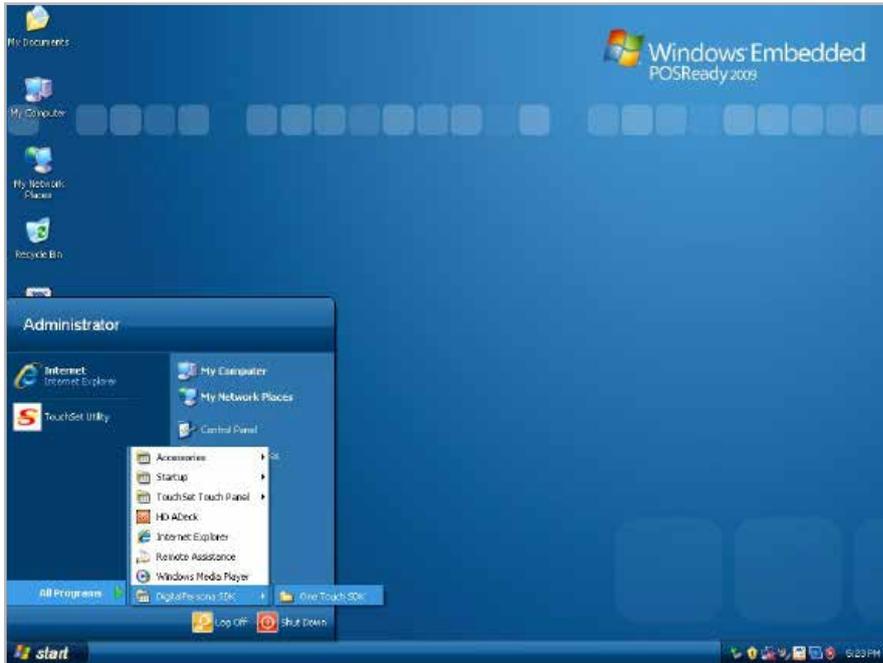
Step 10 Restart system



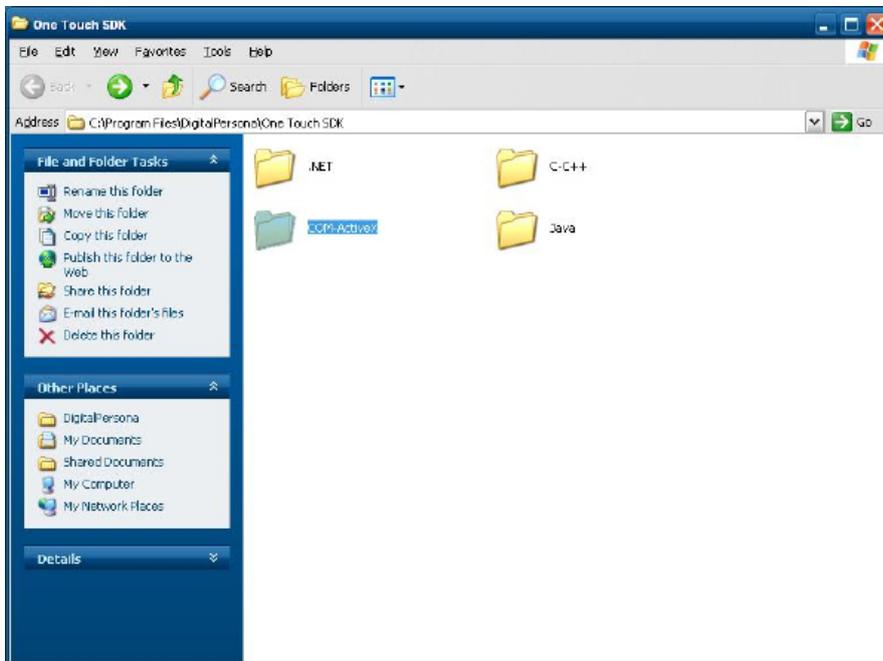
Step 11 Check Fingerprint reader in Device Manager.



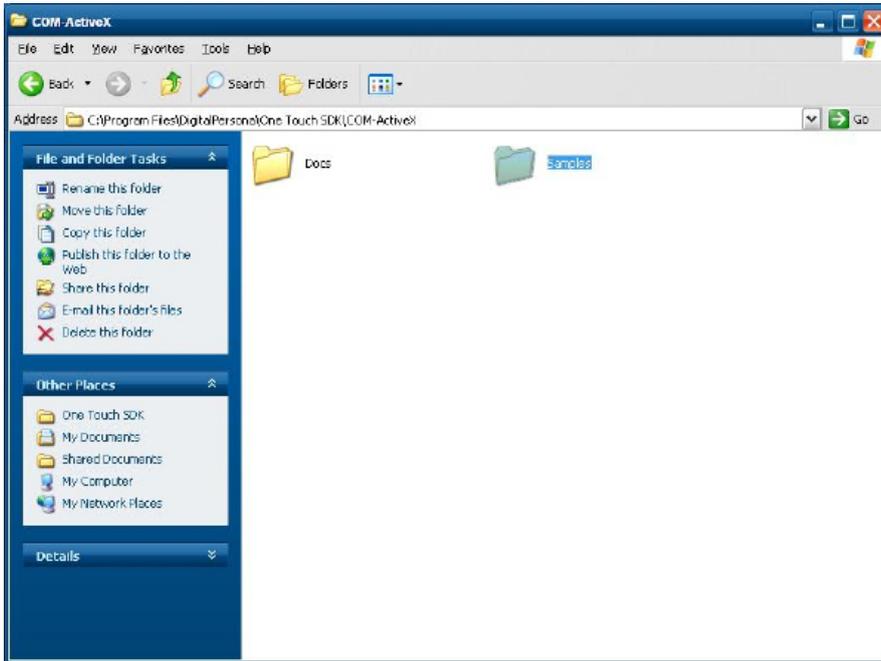
Step 12 Launch Fingerprint reader from start menu



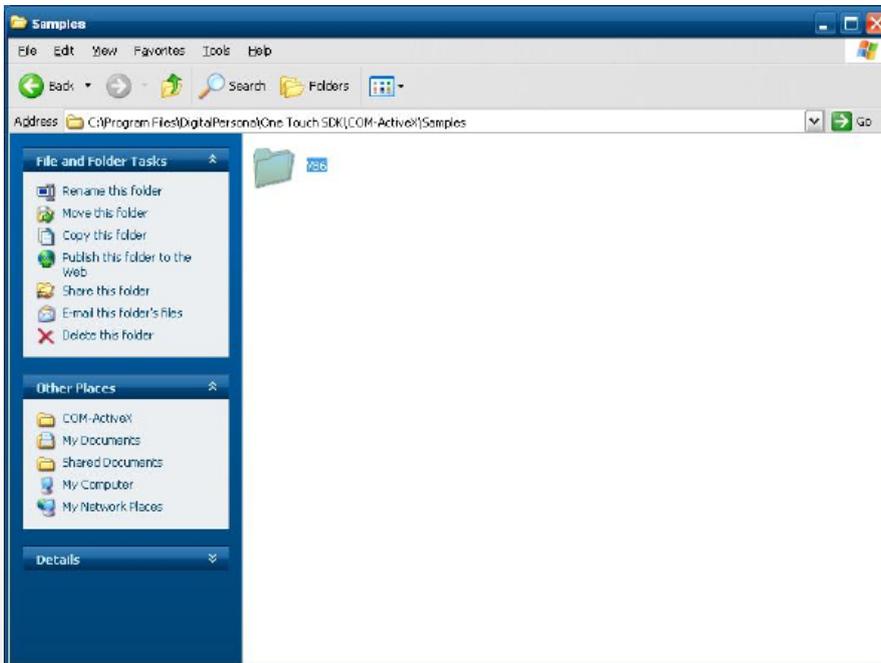
Step 13 Select "COM-ActiveX"



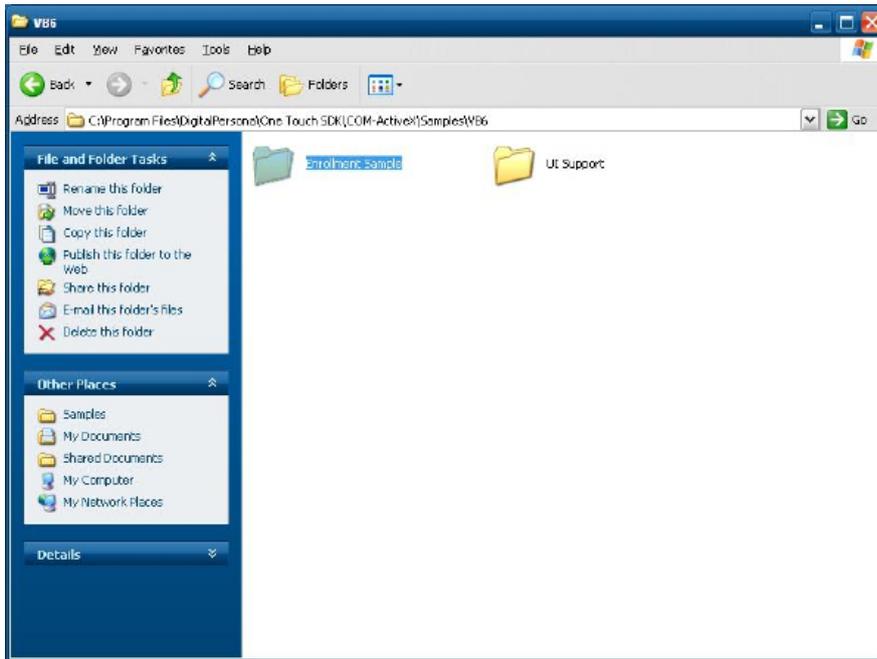
Step 14 Select "Sample"



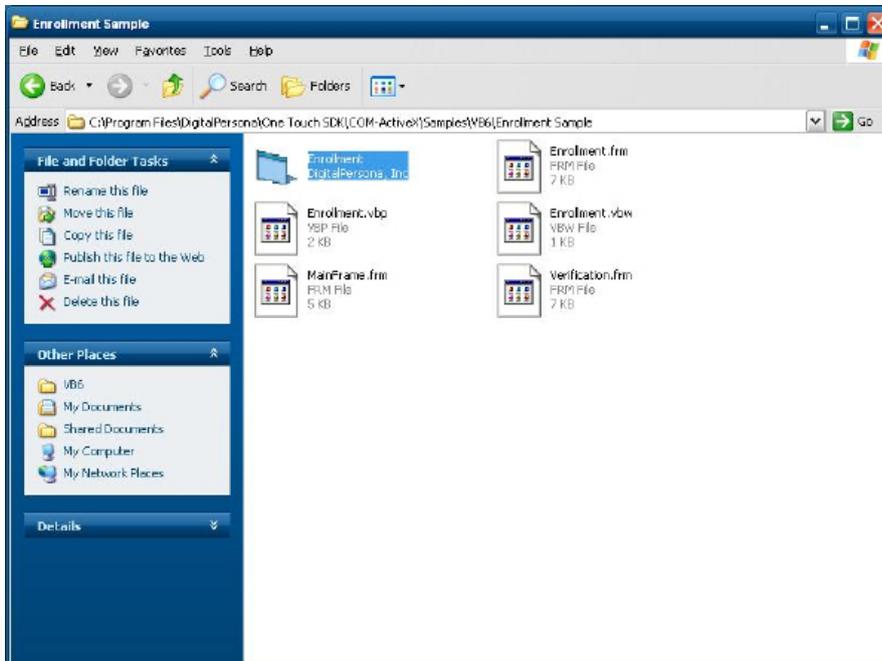
Step 15 Select "VB6"



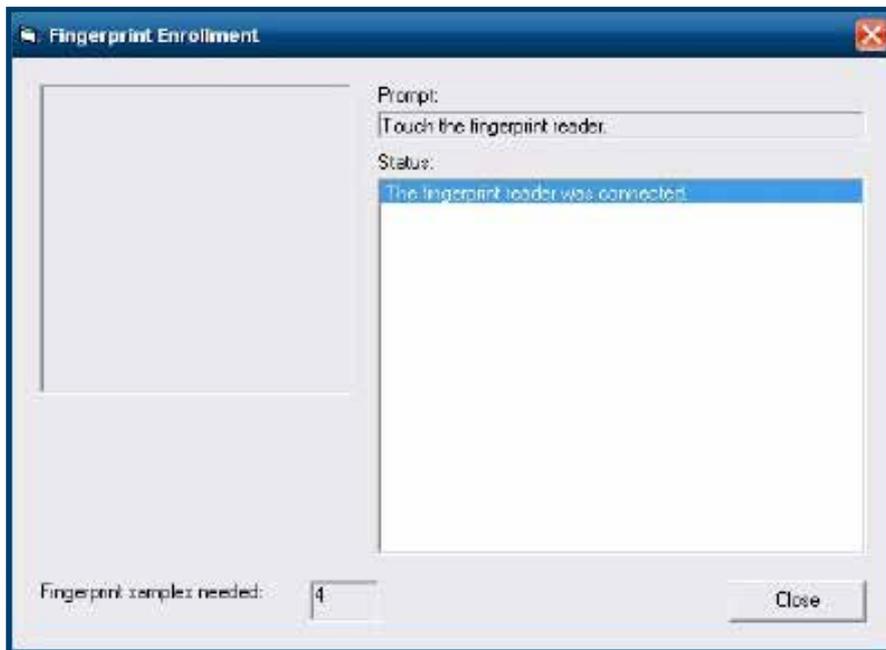
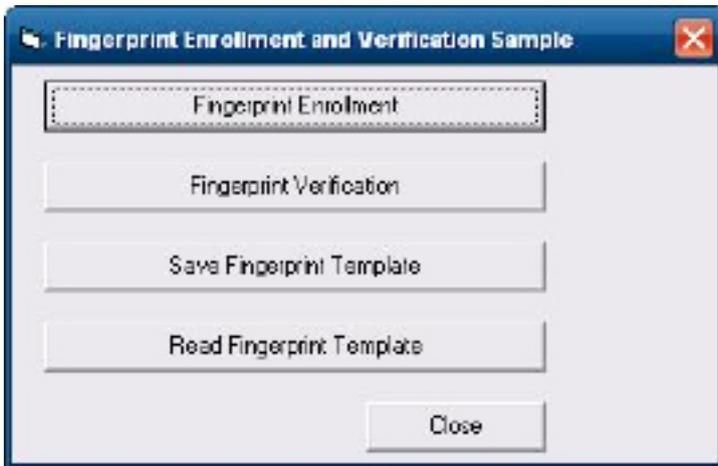
Step 16 Select “Enrollment Sample”.



Step 17 Enroll the fingerprint by the “Enrollment”



Step 18 Select "Fingerprint Enrollment"





## 6-4. RFID

### 1. Install

1.1 Check the Device Manager to verify the status of RFID reader.

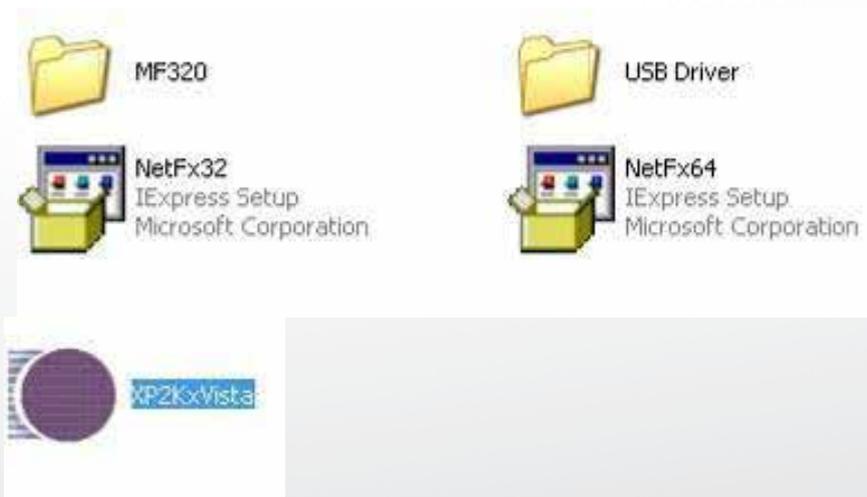
Computer Management -> Device Manager -> Other devices

(The device will show a question mark if the installation is not done properly.)

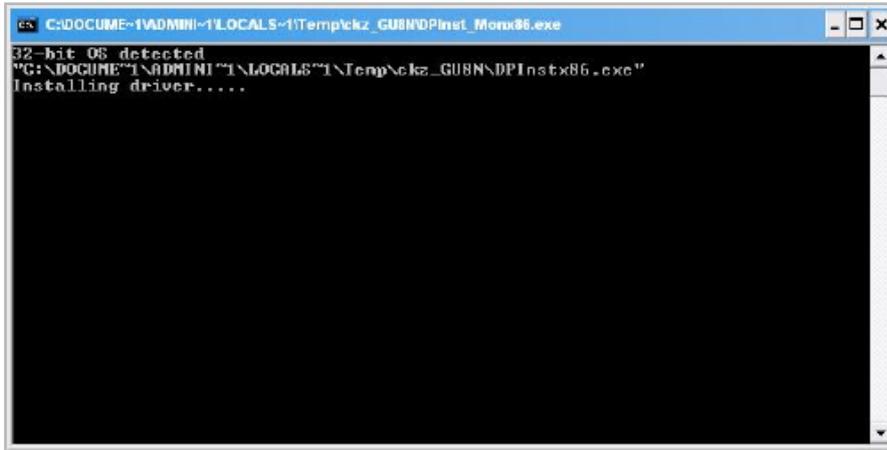


1.2 Install RFID driver file name: XP2KxVista.exe

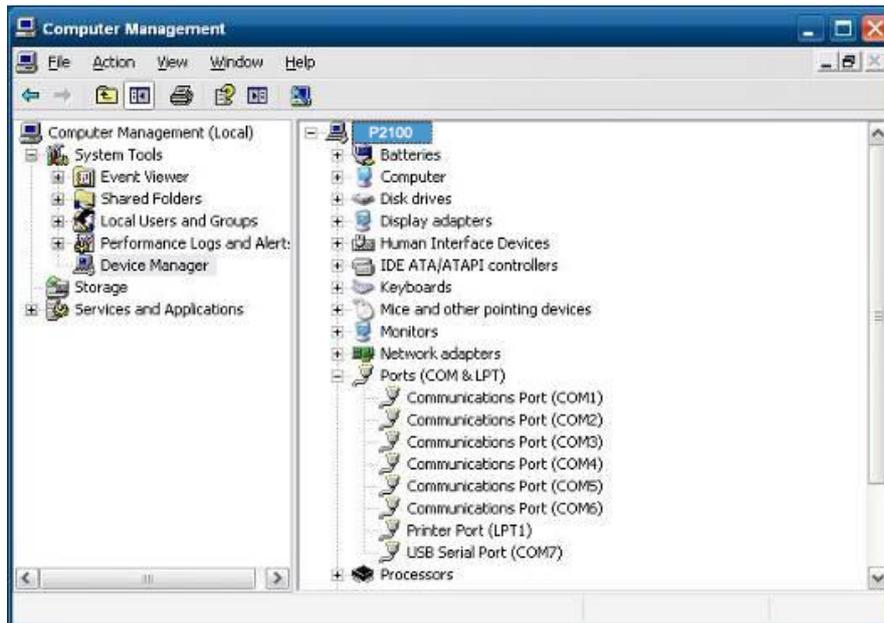
2-1 Path:\USB Driver\ XP2KxVista.exe



1.2.1 After clicking Next, A pop up console window appears as below.



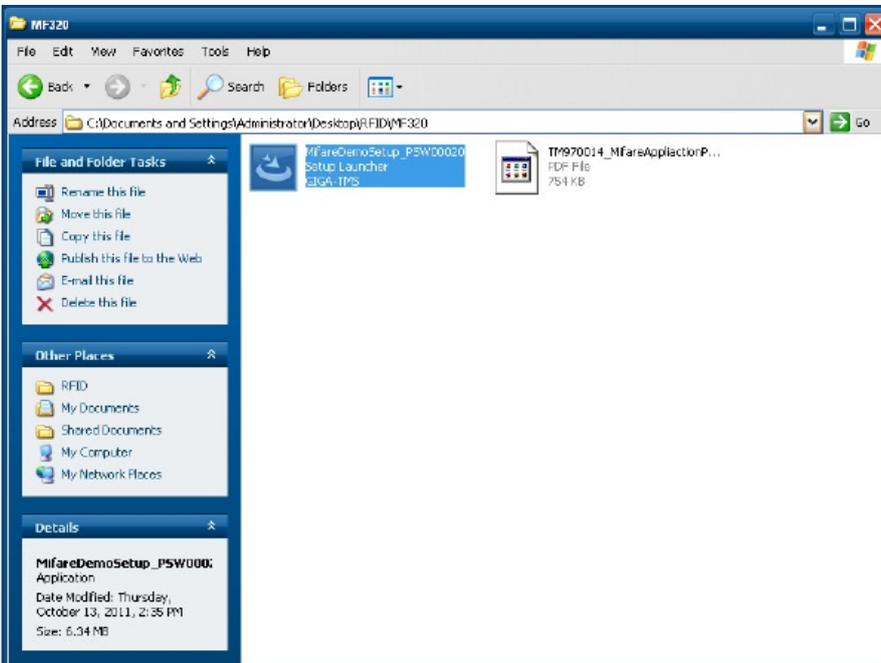
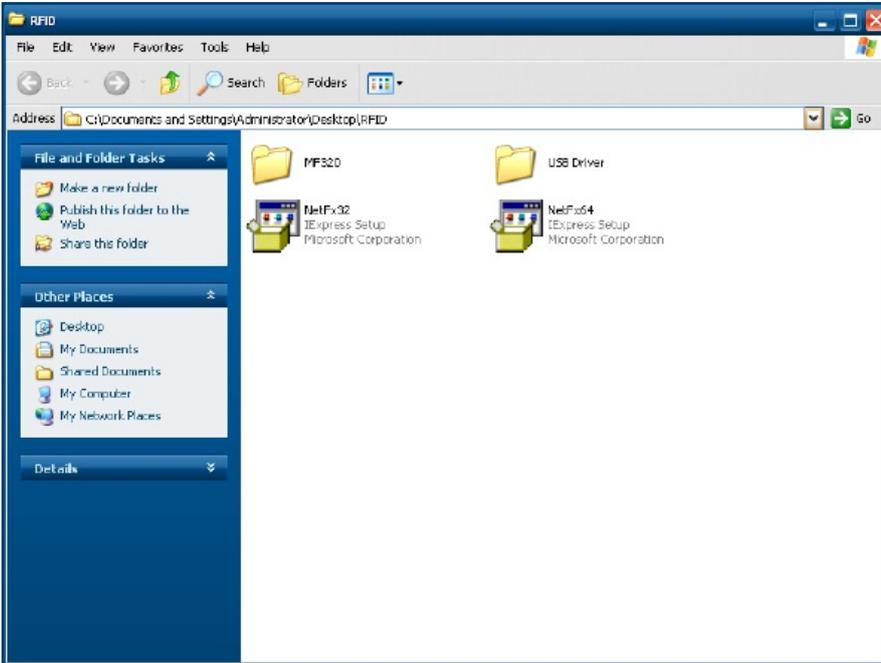
1.2.2 Check the Device Manager to verify the status of RFID reader.  
Computer Management -> Device Manager -> Ports (COM & LPT)



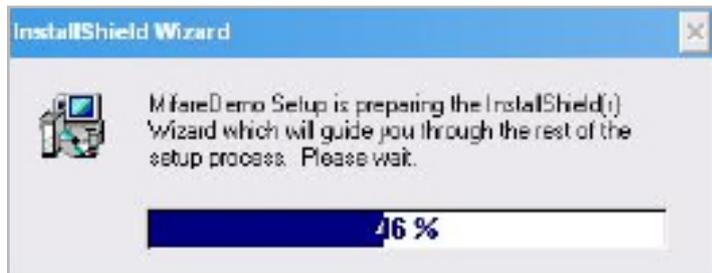
### 1.3 install RFID utility

MifareDemoSetup\_PSW00020.exe

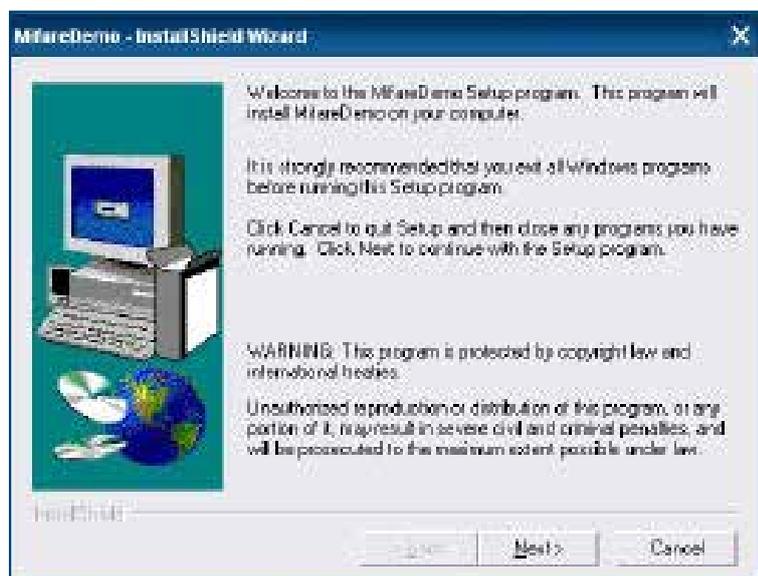
3-1 Path:\MF320\MifareDemoSetup\_PSW00020.exe



### 1.3.1 InstallShield Wizard will be activated.



### 1.3.2 Click “Next”



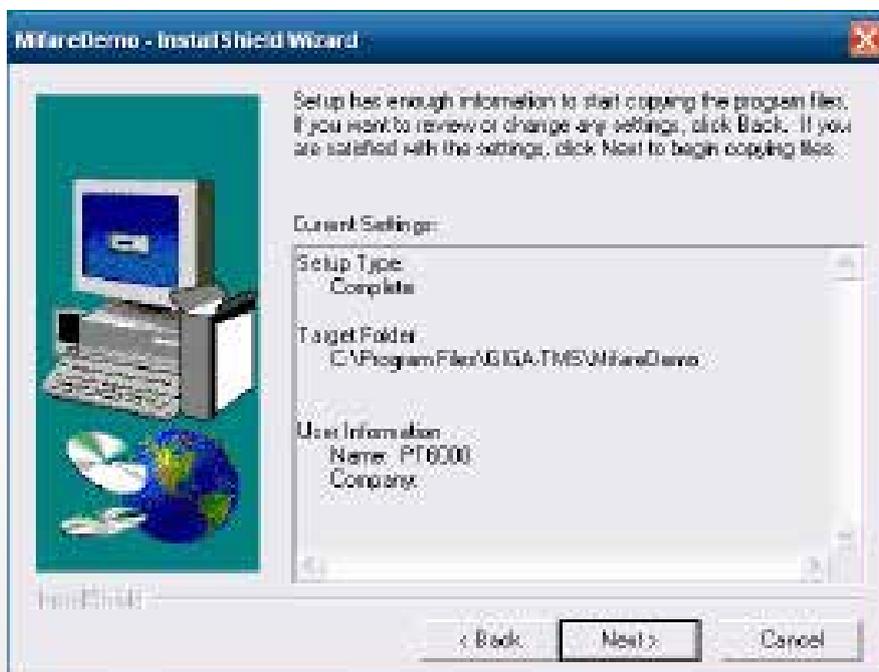
### 1.3.3 Click “Next”



### 1.3.4 Click “Giga-TMS” & “Next”



### 1.3.5 Click “Next”



### 1.3.6 Click “Next”



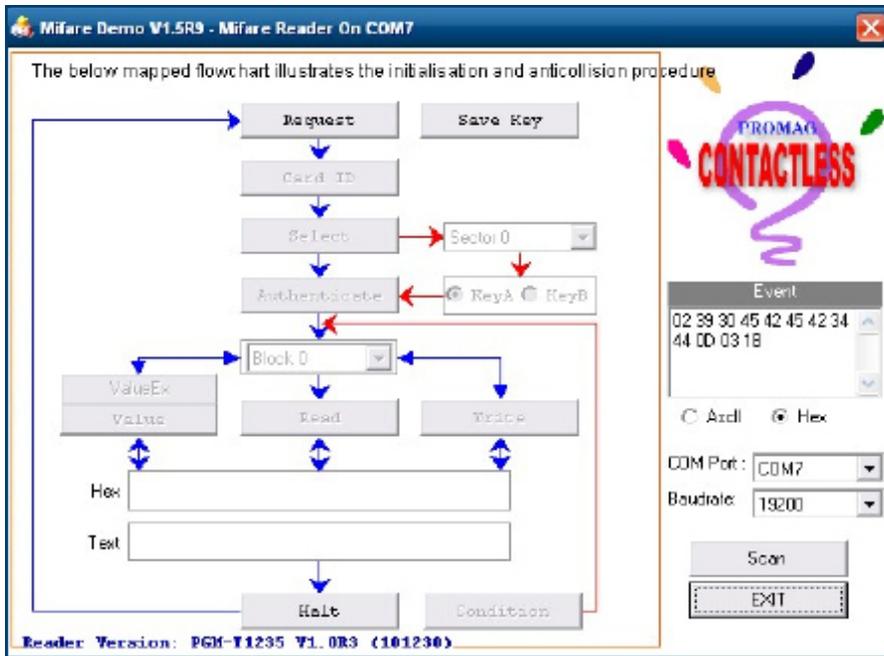
2 Run RFID demo program. Start -> All Programs -> GIGA-TMS -> Mifare Demo



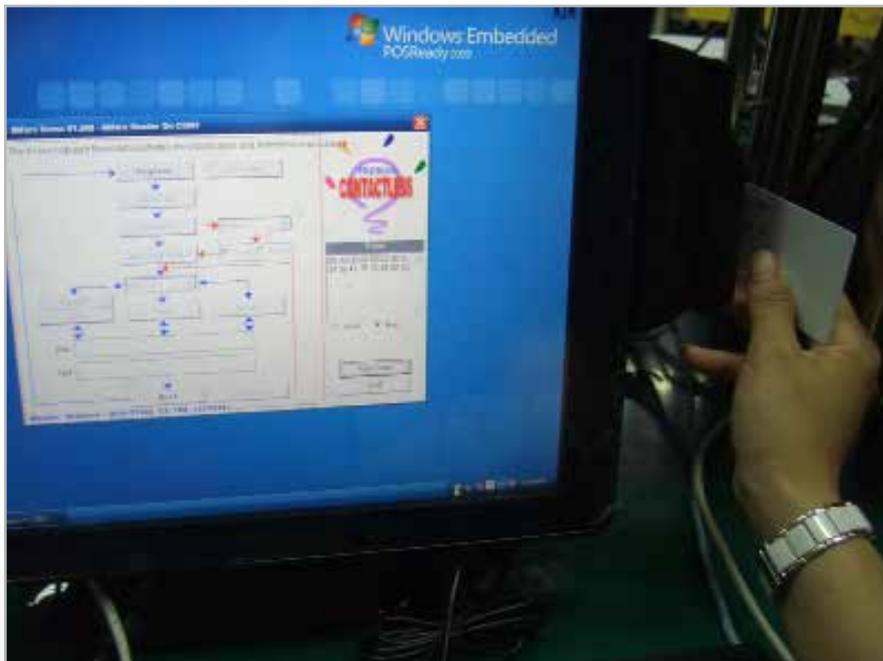
2-1 Run "Auto Scan" Demo AP will detect the RFID reader automatically.  
Or select the RFID COM port

The screenshot displays the 'MiFare Demo V1.5R9' software window. The main area contains a flowchart titled 'The below mapped flowchart illustrates the initialisation and anticollision procedure'. The flowchart starts with a 'Request' box, leading to 'Card ID', 'Select', and 'Authenticate'. The 'Authenticate' step has radio buttons for 'KeyA' and 'KeyB'. Below this is a 'Block 0' dropdown menu, which branches into 'Value', 'Dead', and 'Write' options. The 'Value' option has sub-fields for 'Value' and 'Hex'. The 'Write' option has a 'Text' field. The flowchart concludes with 'Halt' and 'Condition' boxes. To the right of the flowchart is a control panel with a 'Scan' button and an 'EXIT' button. Above the control panel is a logo for 'PROMAG CONTACTLESS' and an 'Event' display area. The control panel also includes radio buttons for 'Ascl' and 'Hex', and dropdown menus for 'COM Port' (set to 'Auto') and 'Baudrate' (set to '19200').

2-2 After finishing the AutoScan, Request box will be ready for the click and Reader Version will show on the position as marked. (Reader Version: PGM-T1235 V1.0R3 (101230) Place Mifare Card to the RFID reader area. Event Dialog window gets the data from the Mifare Card



Place the RFID card on the RFID reader.



2-3 Card type will be recognized when you click “Request”.  
 (Your Mifare card should be placed on the RFID reader area.)

2-4 Card ID will be recognized when you click “Card ID”.

2-5 SAK will be read when you click “Select”.

The below mapped flowchart illustrates the initialisation and anticollision procedure

Request → Card ID → Select → Authenticate → Block 0 → ValueEx/Value → Hex/Text → Halt/Condition

Save Key

ATQA: 0x0400  
902BEB4D  
MIFARE 1K  
SAK: 0x09

Sector 0

KeyA KeyB

Pass

ValueEx  
Value

Hex  
Text

Halt Condition

Reader Version: DGM-T1235 V1.0E3 (101230)

PROMAG CONTACTLESS

Event  
02 39 30 45 42 45 42 34  
44 0D 03 1B 02 39 30 45  
42 45 42 34 44 0D 03

COM Port: COM7  
Baudrate: 19200

Scan  
EXIT

2-6 The result will show when you click “Authenticate”

The below mapped flowchart illustrates the initialisation and anticollision procedure

Request → Card ID → Select → Authenticate → Block 0 → ValueEx/Value → Hex/Text → Halt/Condition

Save Key

ATQA: 0x0400  
902BEB4D  
MIFARE 1K  
SAK: 0x09

Sector 0

KeyA KeyB

Pass

ValueEx  
Value

Hex  
Text

Halt Condition

Reader Version: DGM-T1235 V1.0E3 (101230)

PROMAG CONTACTLESS

Event  
02 39 30 45 42 45 42 34  
44 0D 03 1B 02 39 30 45  
42 45 42 34 44 0D 03

COM Port: COM7  
Baudrate: 19200

Scan  
EXIT

## INTERNAL VFD (OPTIONAL)

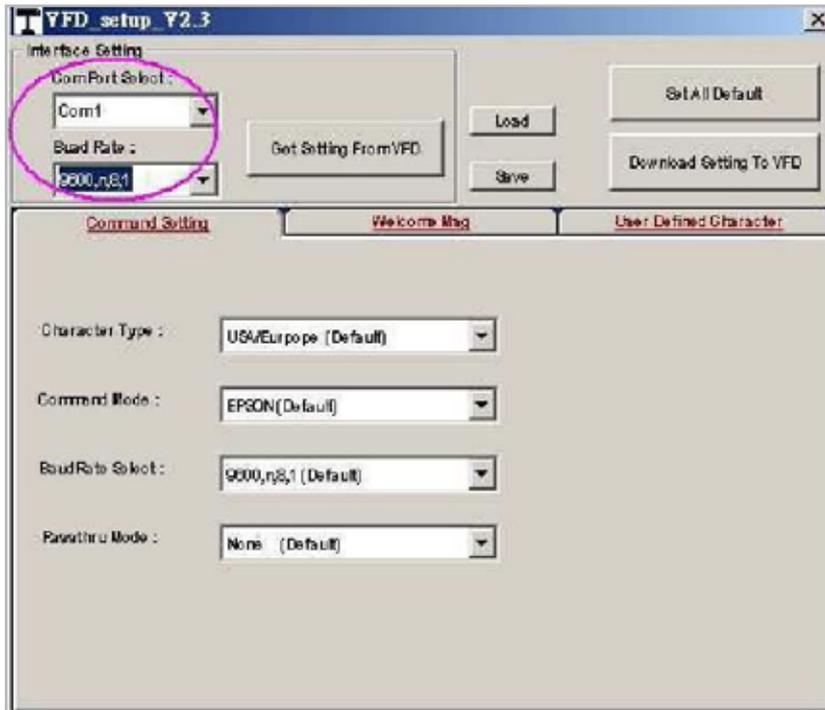
### 6-5. VFD Specification



<b>General</b>	Display Method	Vacuum Fluorescent Display (Blue-green)	
	Number of characters	40 (20 columns x 2 lines)	
	Brightness	500~1000 cd/m <sup>2</sup>	
	Character front	5x7 dot matrix	
	Character type	95 Alphanumeric, 32 International Characters	
	Character size	6.75(H) x 3.75(W) mm	
	Dot size (X xY)	0.55x0.75 mm	
	Download characters	9 characters	
	Height	4.70" (120mm) with stand-alone base	
		9.80" (250mm) with base and 1 extension	
	Panel Dimension	75(H)x170(W)x50(D) mm	
	Pole Dimension	Per support length: 130 mm	
	Base Dimension	33(H)x159.8(W)x100(D) mm	
	Viewing Angle	Max. 90°	
Horizontal Rotation	Max. 355°		
Weight	Approx. 980 grams		
<b>Commands Mode</b>	LD220, EPSON, AEDEX, UTC/S, UTC/P, ADM788, DSP800, CD5220, EMAX, LOGIC CONTROL, Ultimate		
<b>Language Support</b>	US English, Int1 English, Bosnia, Croatian, Czech, Danish, Dutch, Estonian, Faroese, Finnish, Flemish, French, Fr Canadian, German, Greek, Hebrew, Hungarian, Icelandic, Indonesian, Irish, Italian, Katakana, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Slovene, Slovak, Spanish, Swedish		
<b>Interface</b>	RS-232 (serial)		
<b>Reliability</b>	<b>Baud rate</b>	Direct connection 9600 or 19,200 bps	
<b>Connection</b>	<b>MTBF</b>	30,000 hours	
<b>Power</b>	<b>Consumption</b>	5 VDC	
<b>Safety</b>	<b>EMC standards Safety standards</b>	FCC, CE	

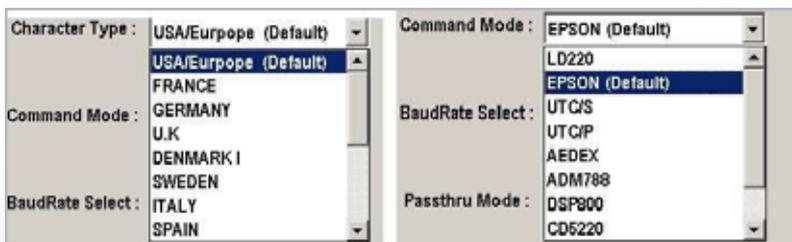
## SETUP SOFTWARE GUIDE

- 1 Power on, and waiting test page of EEPROM test, Baud rate, and Command page.  
And you may set up the customer display by “VFD\_Setup.exe” Utility.
2. To execute “VFD\_Setup.exe” for setup communication between display and Utility



The Baud Rate will show on states page of the Utility (Note: You may check it when power on the display)

3. “Get Setting From VFD” button  
To get all setting from the display and It'll refresh the “VFD\_Setup.exe” utility
4. “Character Type” / “Comand Mode” / “BaudRate Selcet” / “Passthru Mode”  
Please refer to Chapter 4-5 user manual



BaudRate Select : 9600,n,8,1 (Default)   
 9600,n,8,1 (Default)   
 19200,n,8,1   
 Passthru Mode : None (Default)

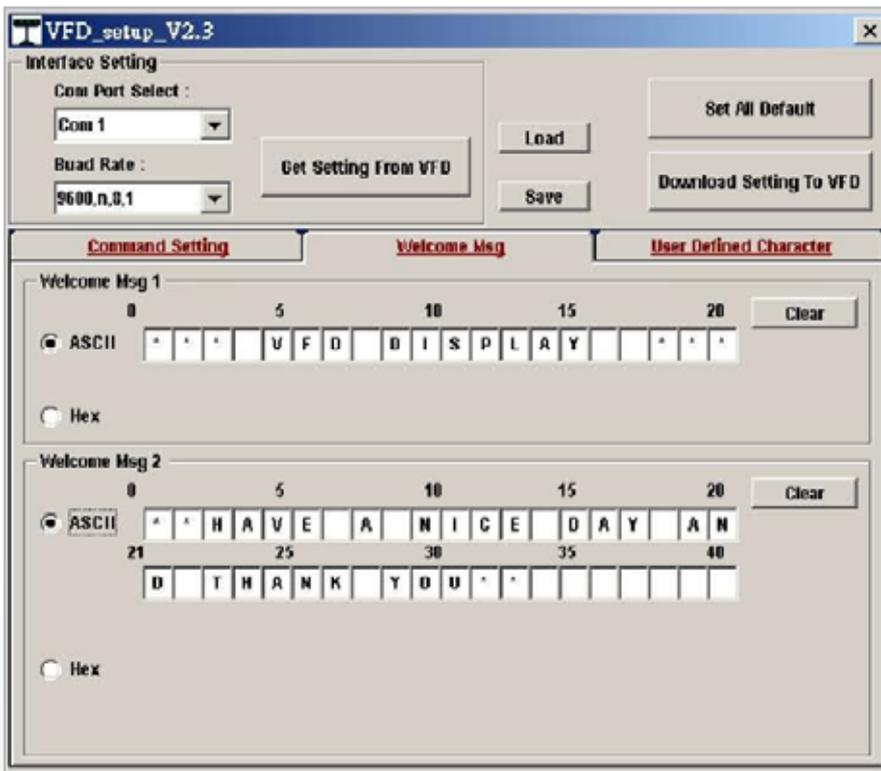
5. "Set All Default" button To show default setting, the Default table is,

Character Type: USA  
 Command Type: EPSON  
 BaudRate Setting: 9600/n/8/1  
 Passthru Mode: None  
 Welcome msg line1: \*\*\*VFD DISPLAY\*\*\*  
 Welcome msg line2: \*\*\*HAVE A NICE DAY AND THANK YOU\*\*\*

6. Welcome Msg

Welcome Msg line1 maximum 20 characters, line 2 maximum 20 characters, total of 40 characters.

a. ASCII mode

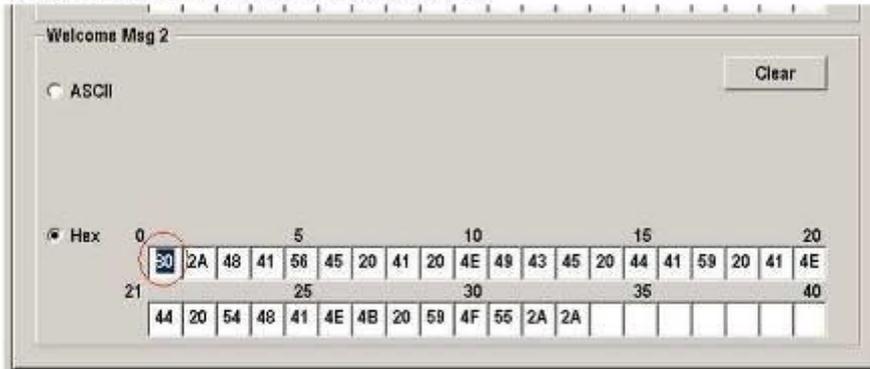


You can type the character by keyboard (0x20h~0x7Fh), if you press clear icon, it will clear the all Msg charaters on AP.

b. Hex mode

Hex mode can define the character from 0x20h to 0xFFh, the range 0x80~0xFF

which depends on the code page table.

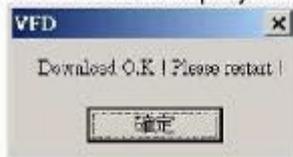


Like the first character (0x80) , in default code page will show C on display .

7. "Download setting to VFD" button

This button is to download the setting from VFD\_Setup.exe to display.

\*After success dialog "Download O.K ! Please restart !" message popped up, you must restart display for enable new setting.



8. "Save" button

To save user's setting in file, example: below picture to save file name as "Rename-GOODLUCK" file set for Welcome Msg.

P.S : The default setting named "VFD.vfd" which can't be made any setting change.

9. "Load" button

For saving your time, you could load any setting file which you made before to the display. You must restart the display for enable the new settings.

---

## 6-6. Configuration Utility of i-Button Reader

Notice: For the i-Button Reader device, there are two installation positions with two different i-Button readers from different vendor.

Please select correct configuration utility for installation



3 in 1 MSR



Bottom Case

### 1. i-Button Reader positioned at side MSR

The i-Button Reader Configuration Utility is used to set up the output format of HID MSR

#### Installation

Below steps guide you how to install the Utility program.

- Insert the setup CD
- Run the HIDMSR-20 Utility.exe setup file that is located in the Software folder of CD.
- Follow the wizard to complete the installation.

#### Launching Program

Below steps guide you how to load the Utility program.

- From Start/Programs, click HIDMSR-20 Utility folder
- Click MagStripe Card Reader Configuration Utility to launch the program.



- The utility program will detect the connected reader. If detected, all the input text boxes
- If the reader has not been connected to PC yet, please connect the reader and then click Refresh to get connected.

## Configuration

Below is the main window of i-Button Utility program.



For the settings, there are:

- Prefix/Suffix: Defines the data string which you would like to append in front or end of the i-Button key string.
- Error Message: Indicates error message when i-Button key read fail.
- Message: Indicates message when i-Button key read correctly.
- SS/ES : Define Start and End sentinel byte for the i-Button ID string.
- Length : i-Button ID length request from 0~16.
- Output order / : 5 formats could be select at Attach /Remove i-Button ID

- 0- 0-All
- 1- CRC.ID
- 2- ID, FC
- 3- ID
- 4-Disabled

## Update Settings

Once complete the settings, click Update to update the settings to connected HID MSR reader.

---

### **Save Settings**

To save the settings to a file, click Save; specify the file name and location to be saved.

### **Open Settings**

To load pre-saved settings, click Open, specify the settings file, and then click OK to load into program.

### **Restore MSR Reader Settings**

To load restore settings of connected MSR reader, click Restore ES2: End sentinel for track.

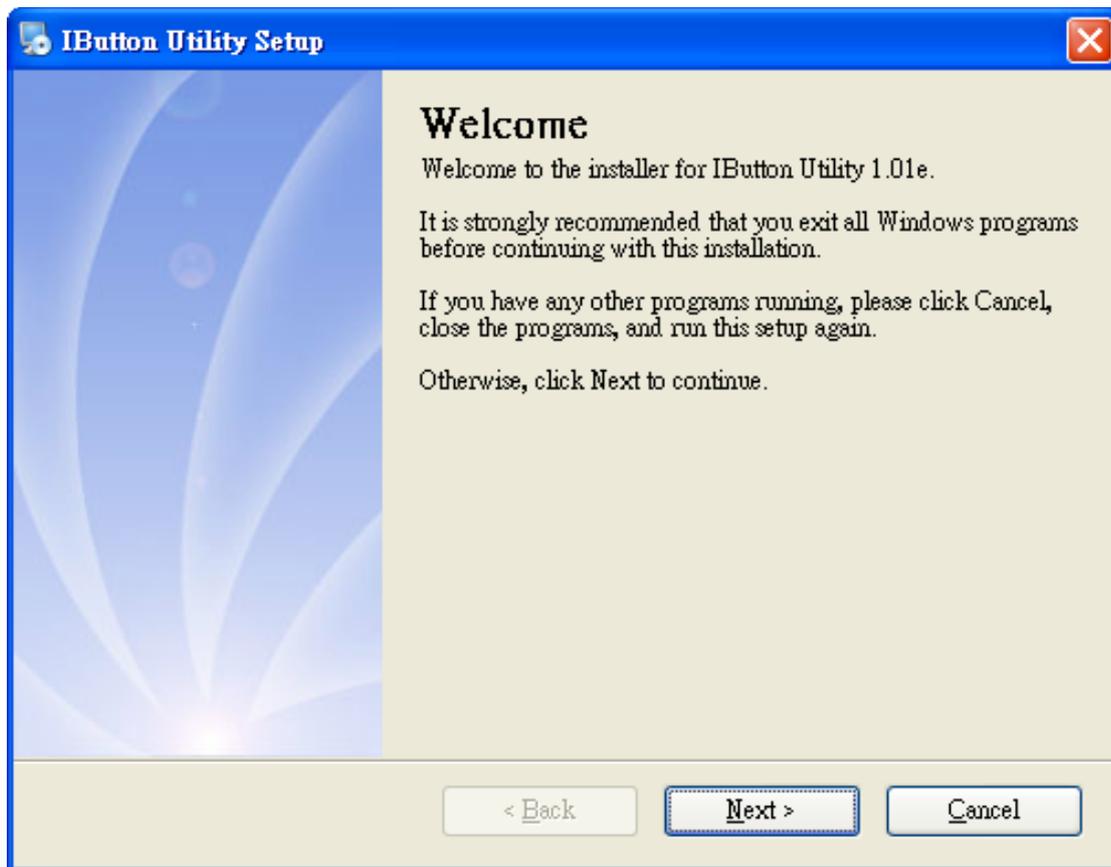
## 2 I-Button Reader positioned at bottom case

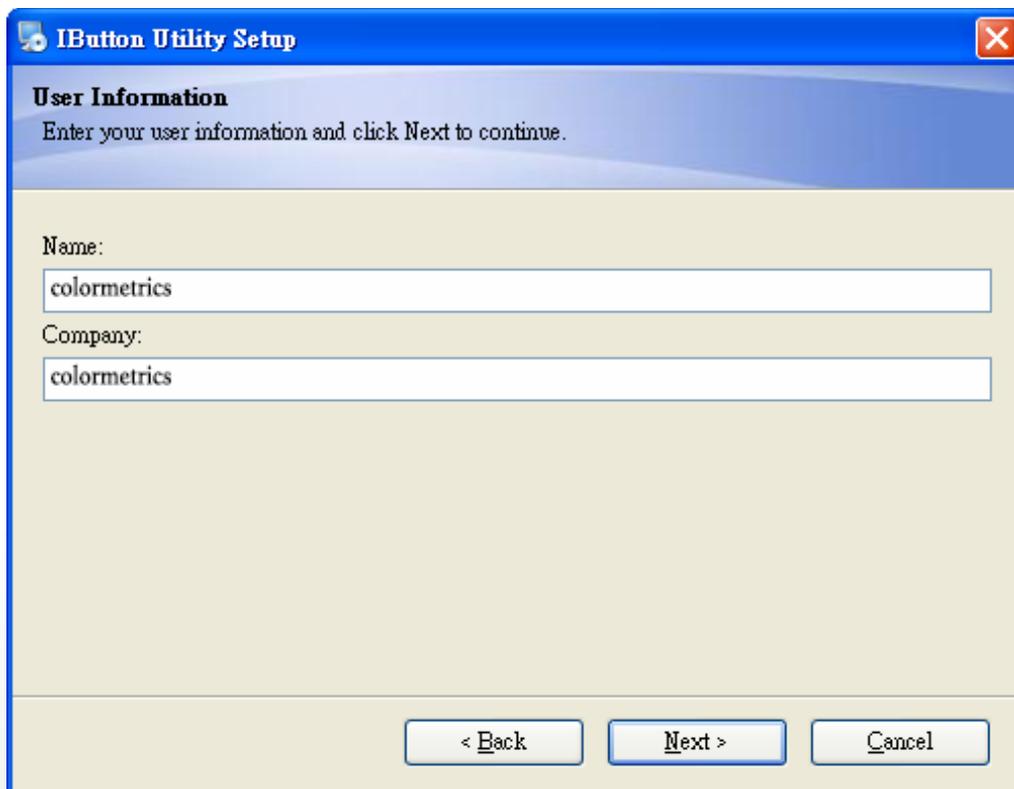
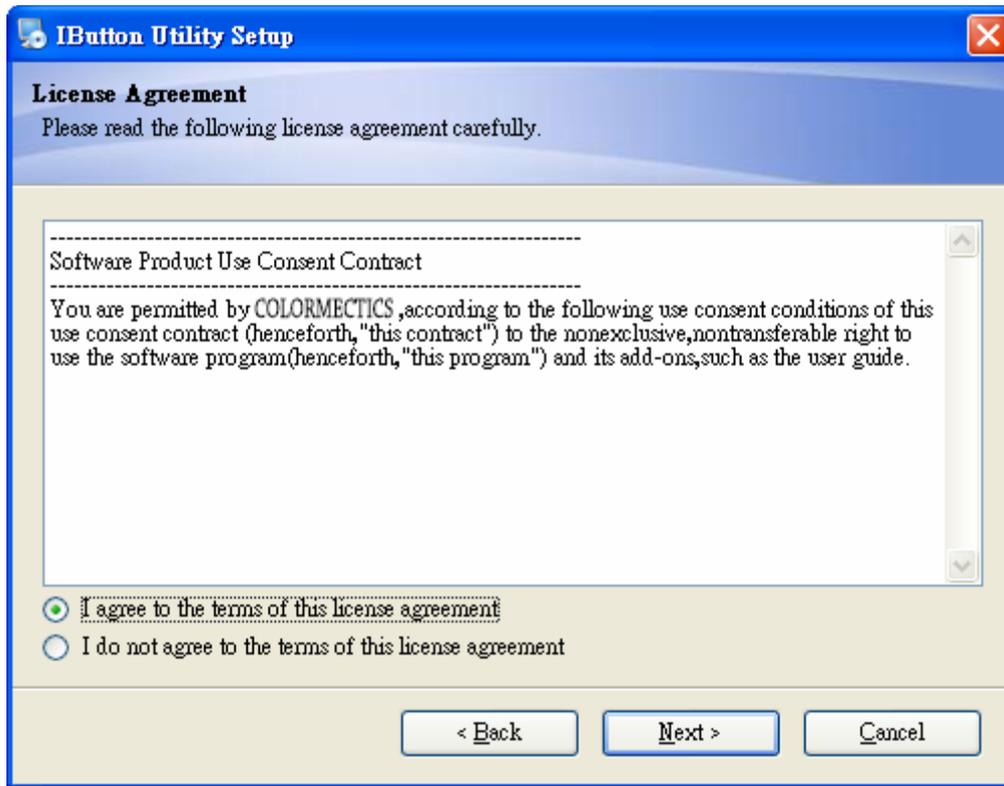
### Installation

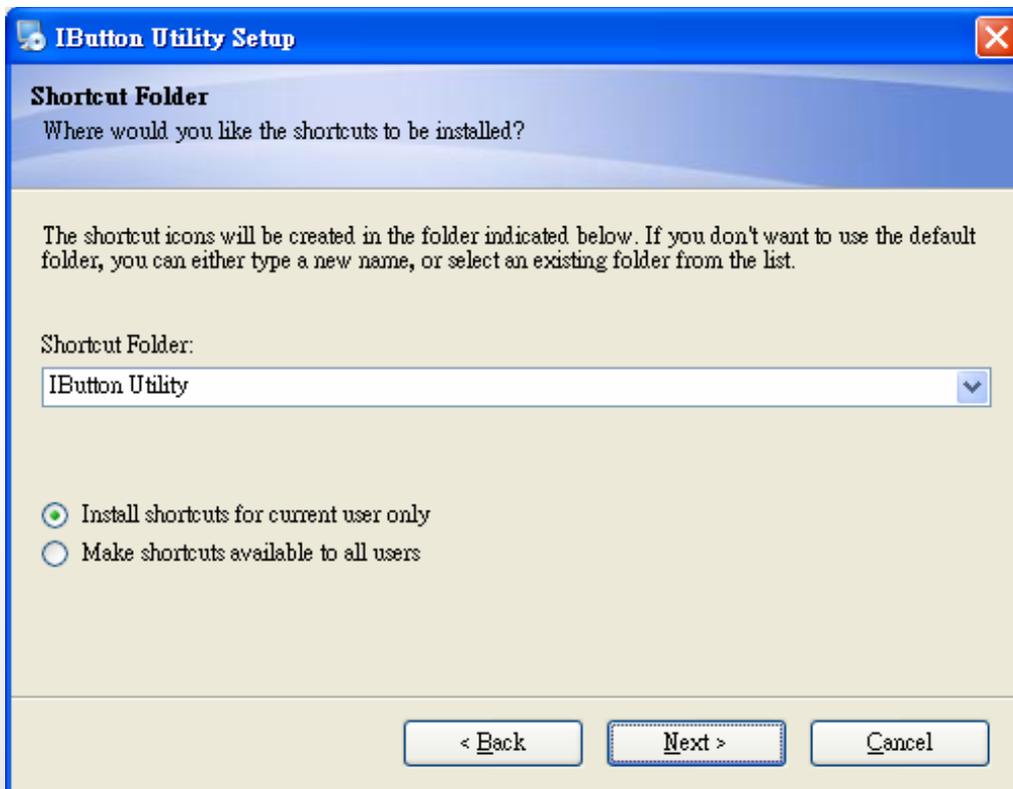
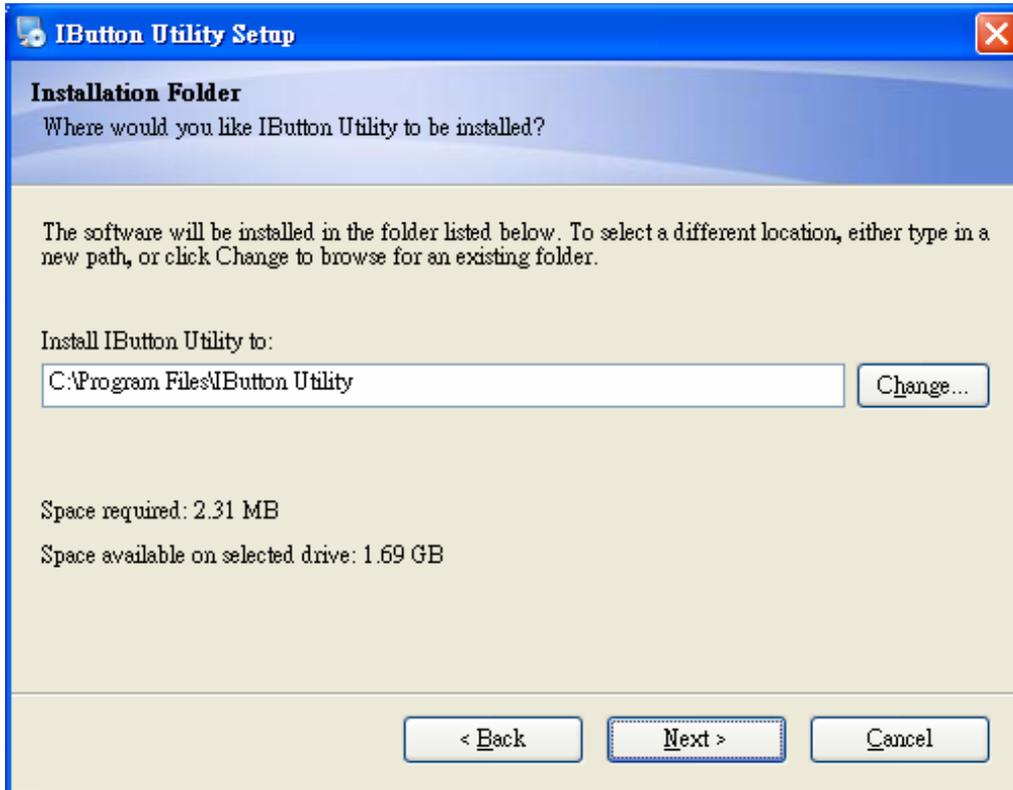
Below steps guide you how to install the Utility program.

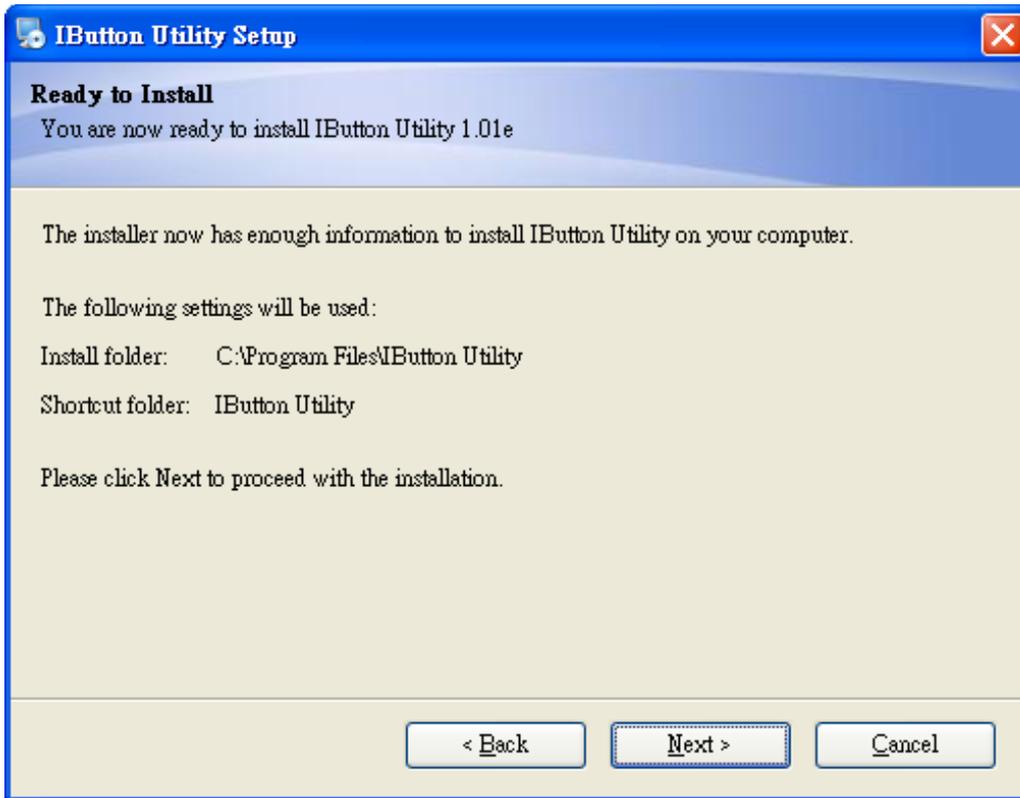
- Insert the setup CD.
- Run the Colormetrics i-Button Utility.exe setup file that is located in the Software folder of CD.
- Follow the wizard to complete the installation.

#### 1. Setup IButton\_V1.0.exe software



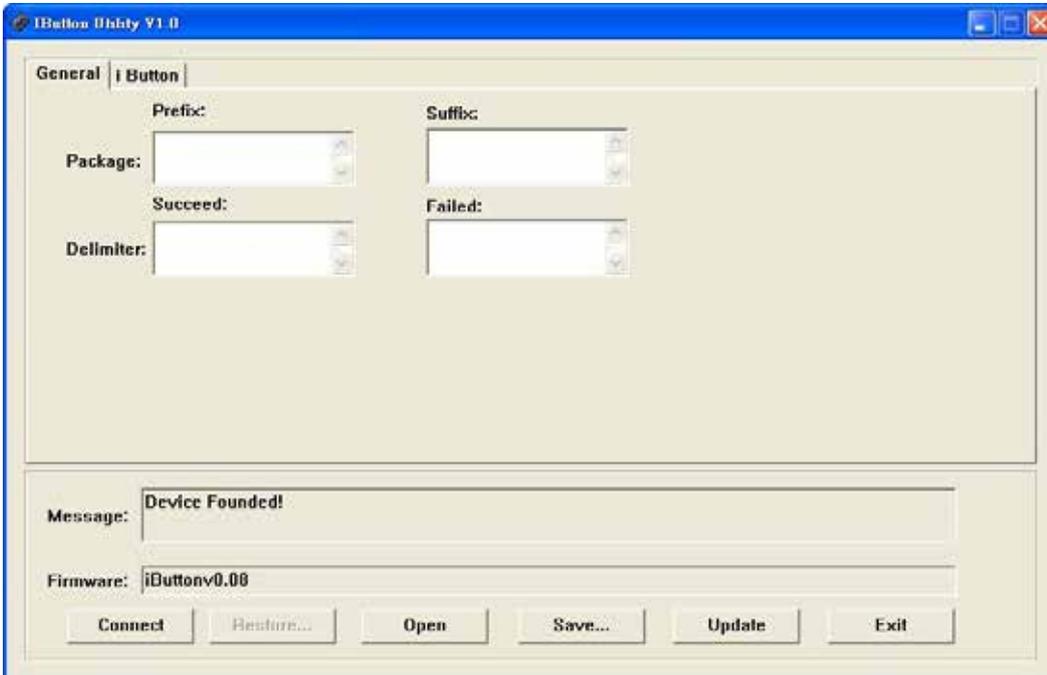






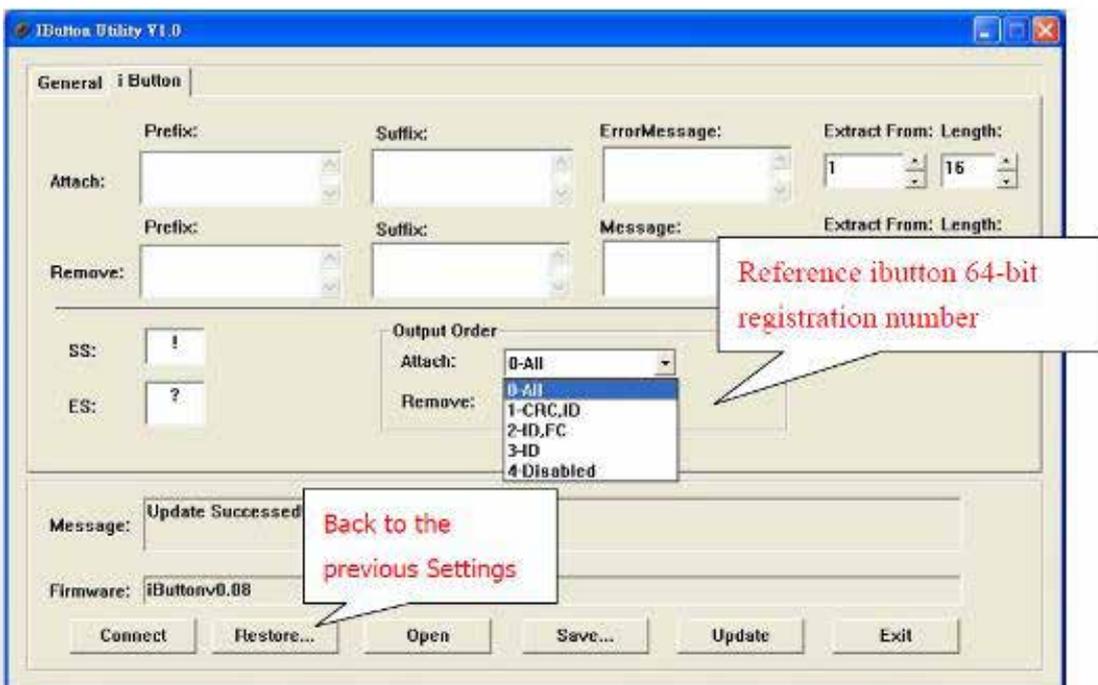
2. To execute "IButton\_V1.0.exe" for setup communication between software and iButton module.

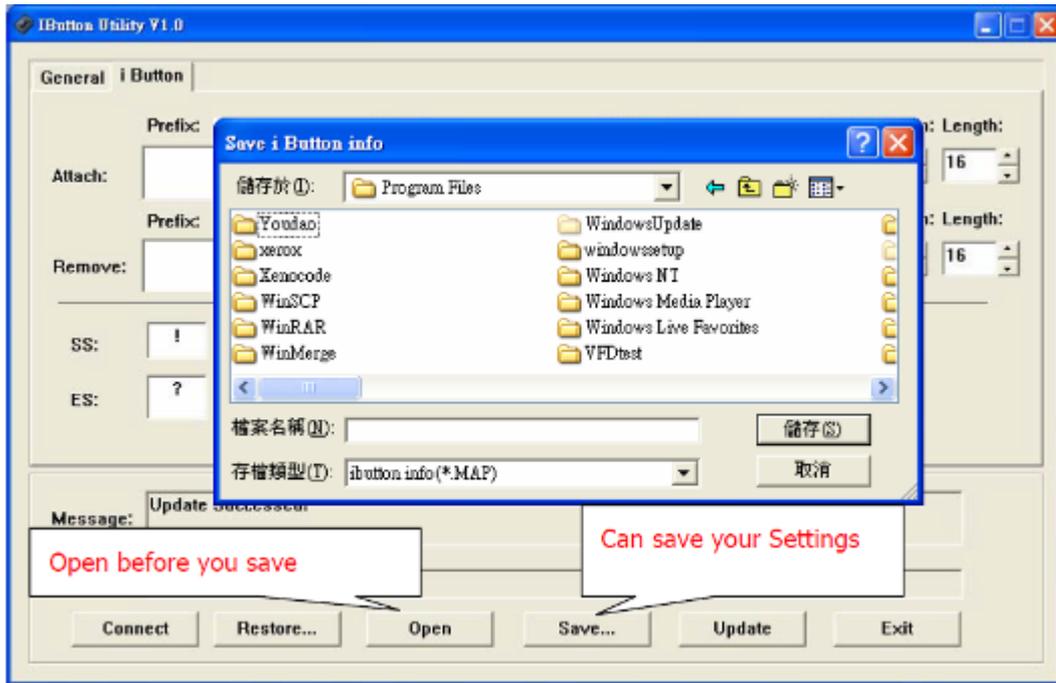
- The utility program will detect the connected reader. If detected, all the input text boxes will be enabled.
- If the reader has not been connected to PC yet, please connect the reader and then click Refresh to get connected.



## Configuration

Below is the main window of i-Button Utility program.





### For the settings, there are:

- Prefix/Suffix: Defines the data string which you would like to append in front or end of the i-Button key string.

iButton Data Package :



- Error Message: Indicates error message when i-Button key read fail..
- Message: Indicates message when i-Button key read correctly.
- SS/ES : Define Start and End sentinel byte for the i-Button ID string.

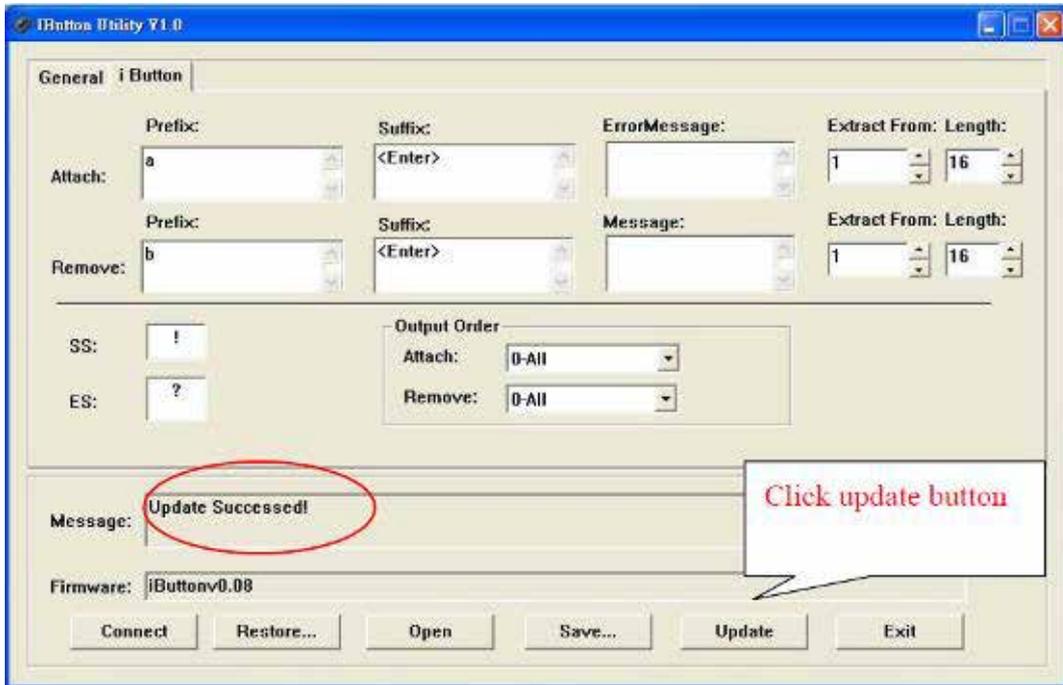
### iButton data format:

#### SS + iButton 64- Bit Registration Number + ES

- Length : i-Button ID length request from 0~16
- Output order : 4 formats could be select at Attach /Remove i-Button ID.

#### iButton 64- Bit Registration Number: 8-Bit CRC + 48-Bit ID + 8-Bit FC

## DEMO SETUP&OUTPUT



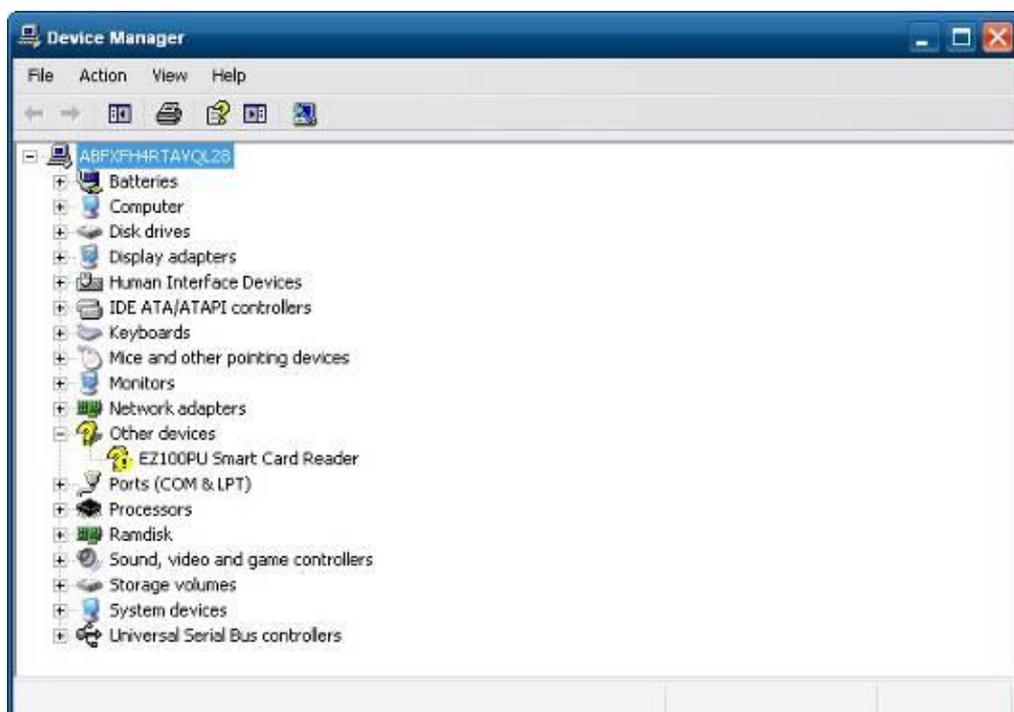
## OUTPUT DATA :

a!ab00000003bdfa01?

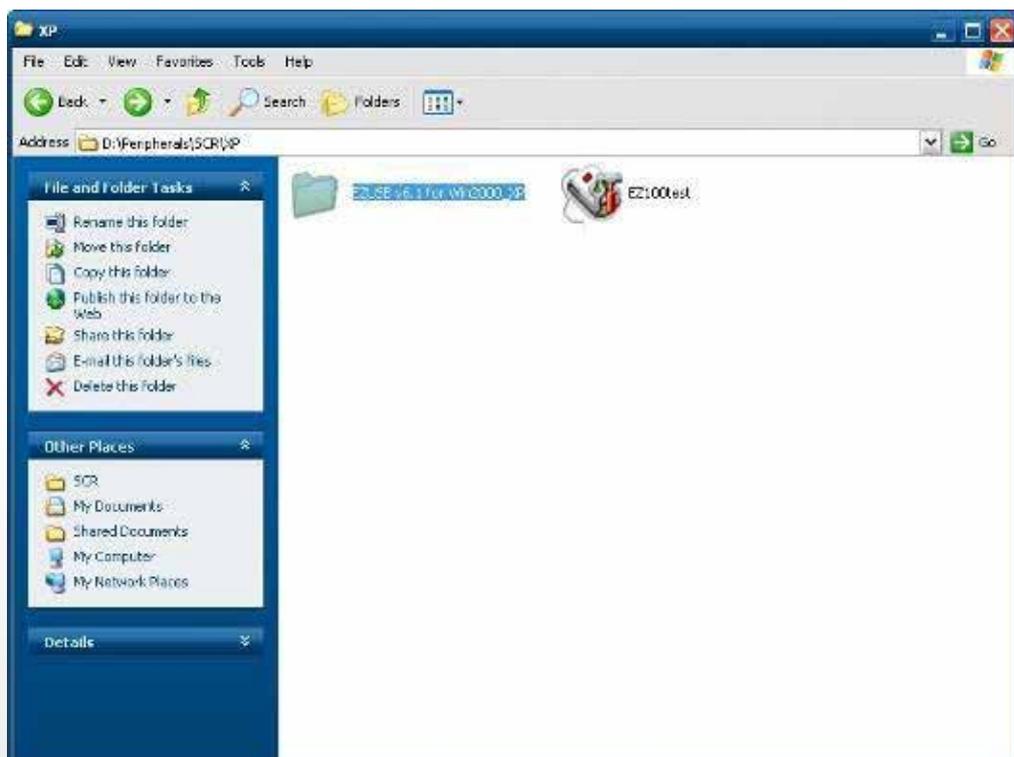
b!ab00000003bdfa01?

## 6-7 Installation and Testing of Smart Card Reader

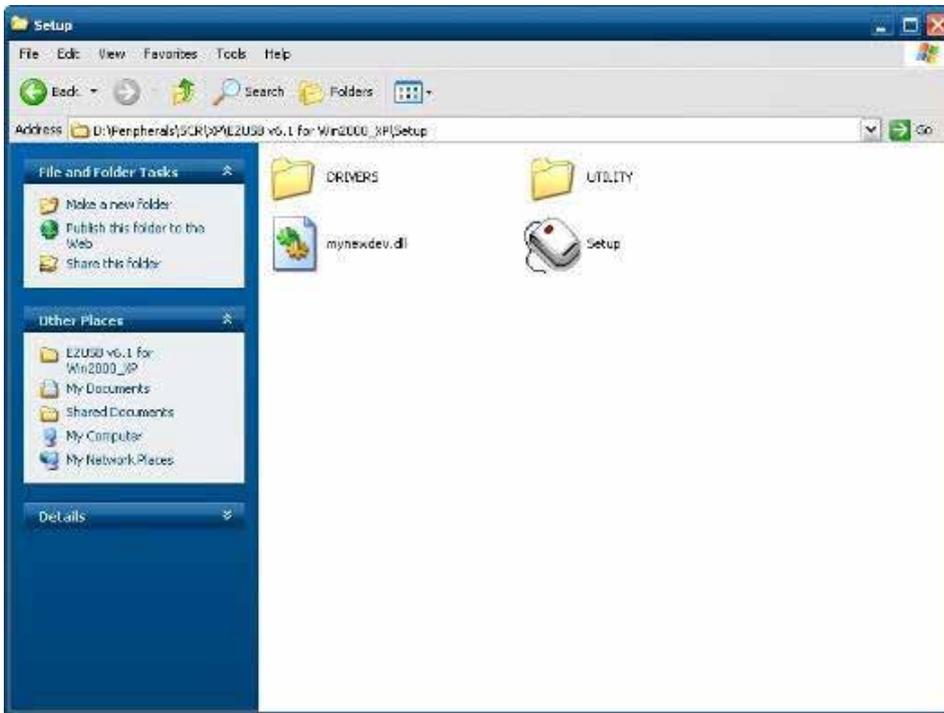
1. Check smart card reader be detected by “Device manager”.



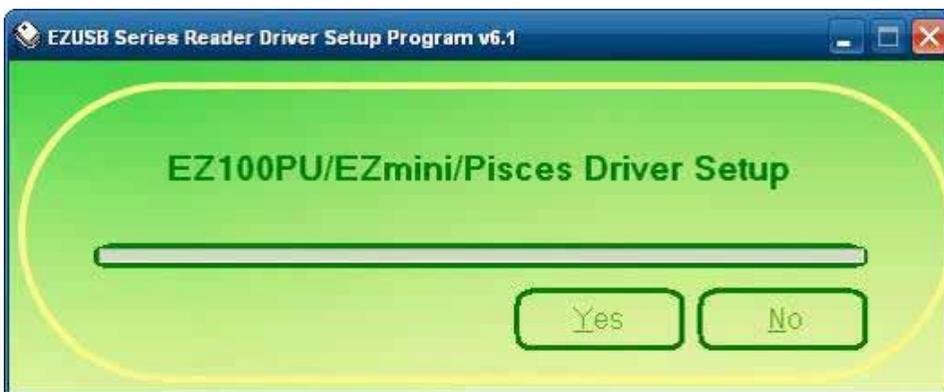
2. Install the SCR driver.

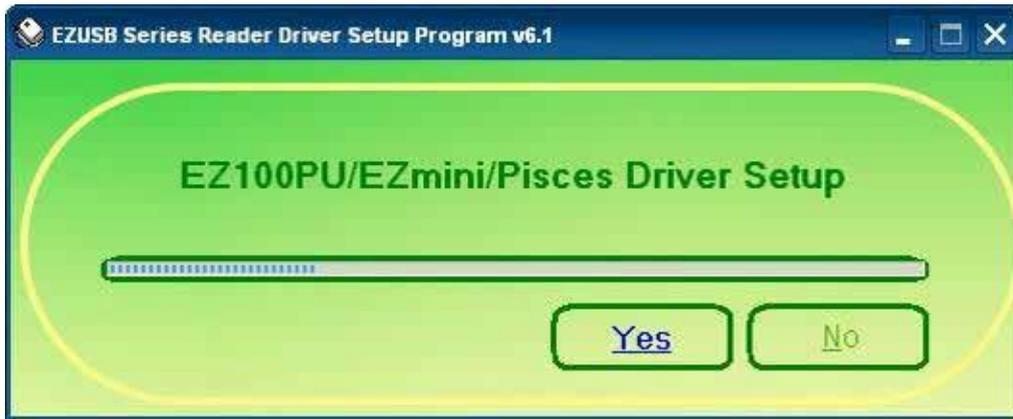


3. Run Setup.exe.



4. Click "Yes".

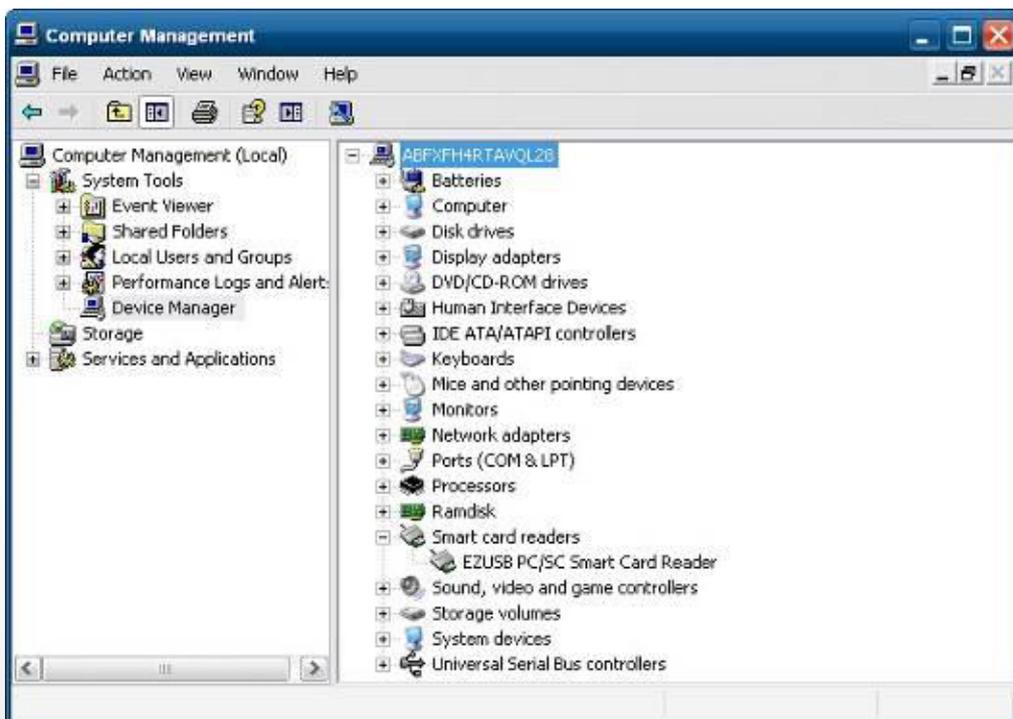




5. Restart systems.

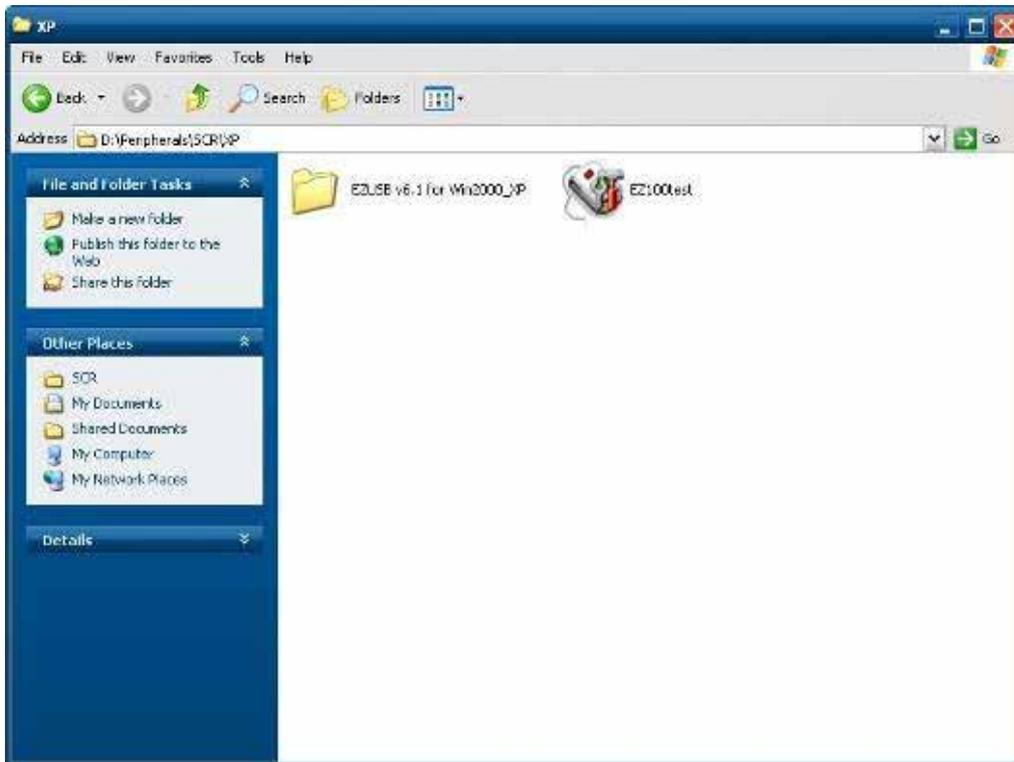


6. Check SCR reader in Device Manager.

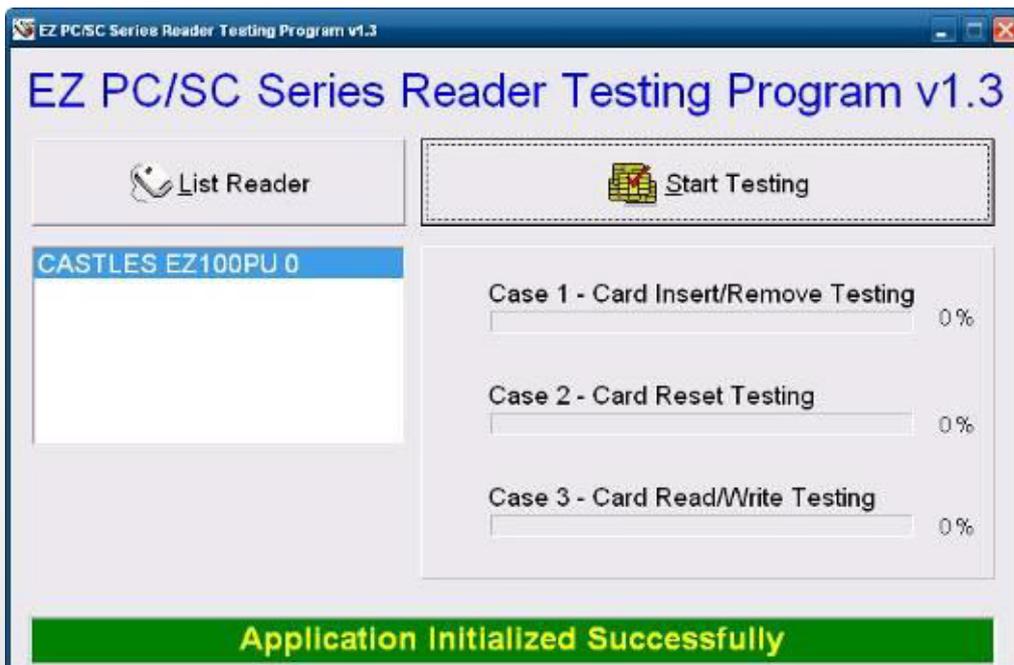


## BIOS/UTILITY SETUP

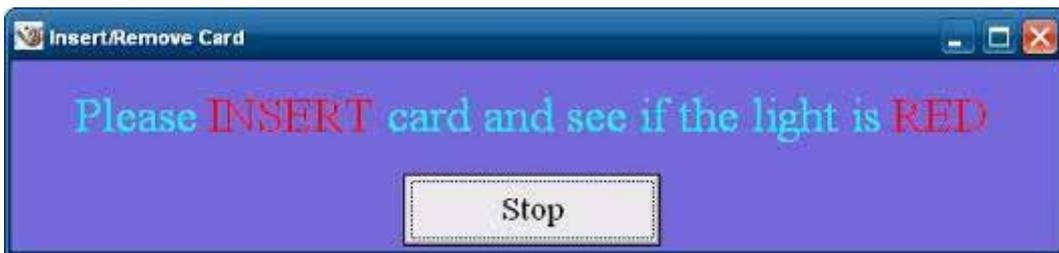
7. Run the testing program – EZ100test.



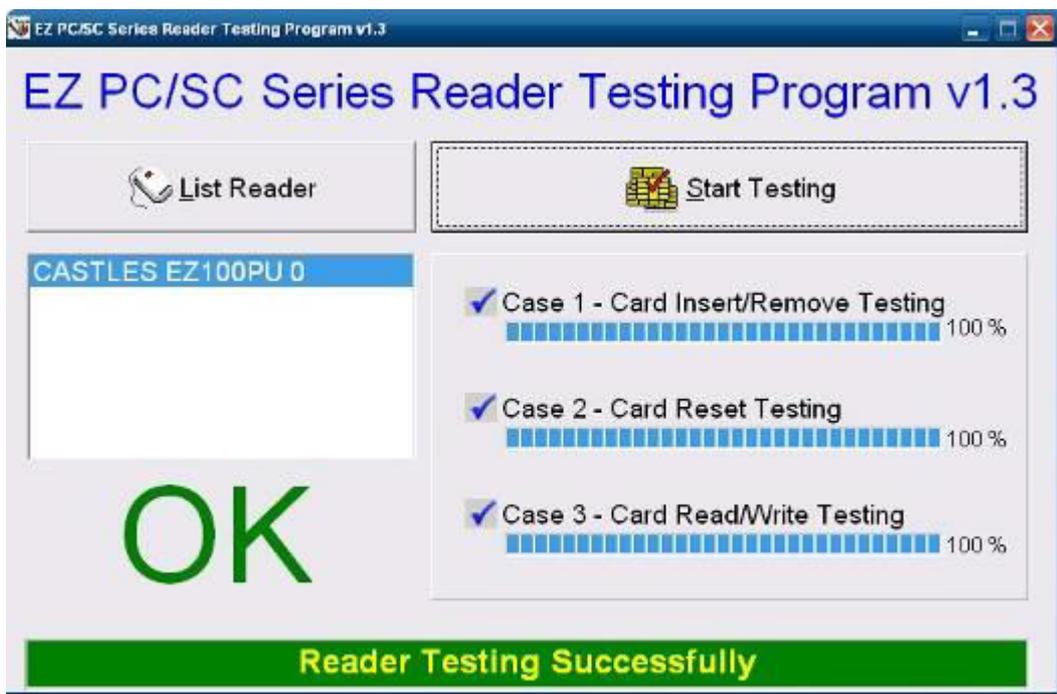
8. Confirm that SCR can be detected by the testing program, the Start Testing



9. Follow dialog boxes displayed to remove and insert card.

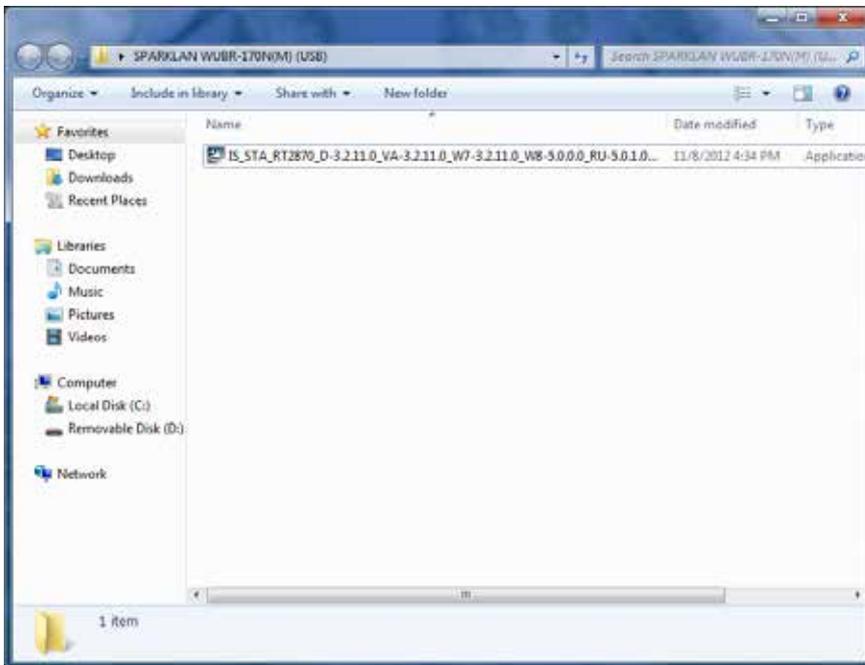


10. After finishing the testing, the dialog box will show "oK".

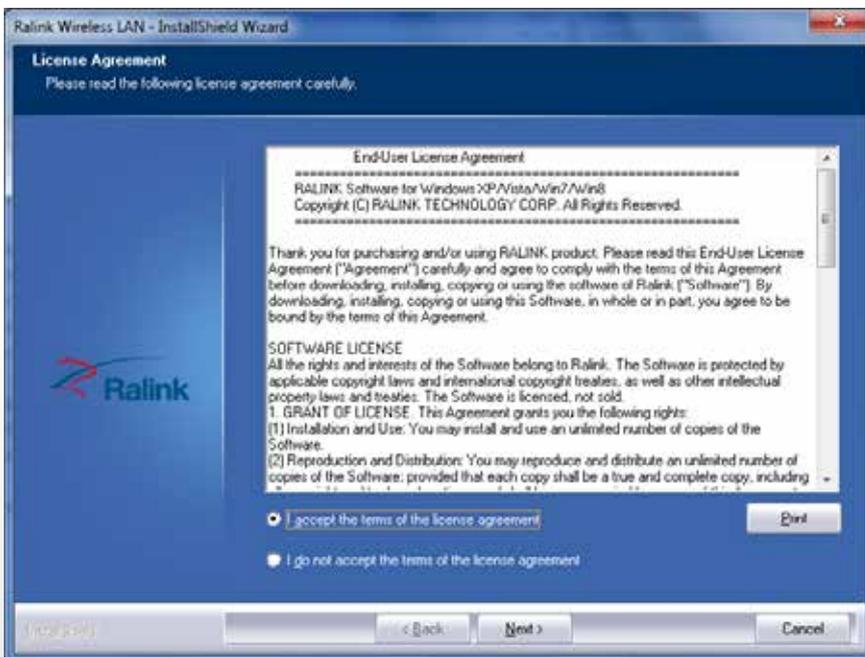


## 6-8 WiFi

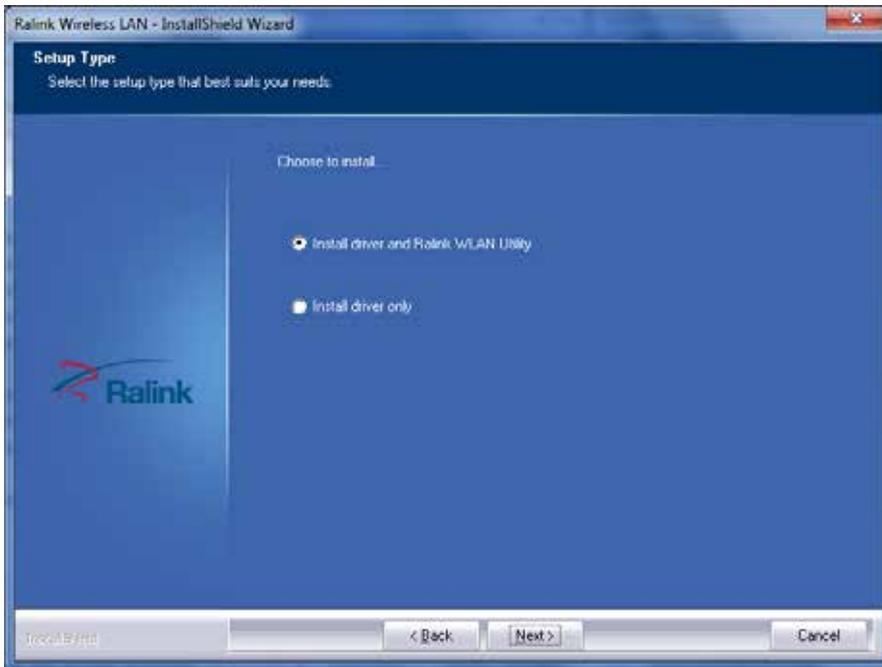
1. Install the WiFi driver.



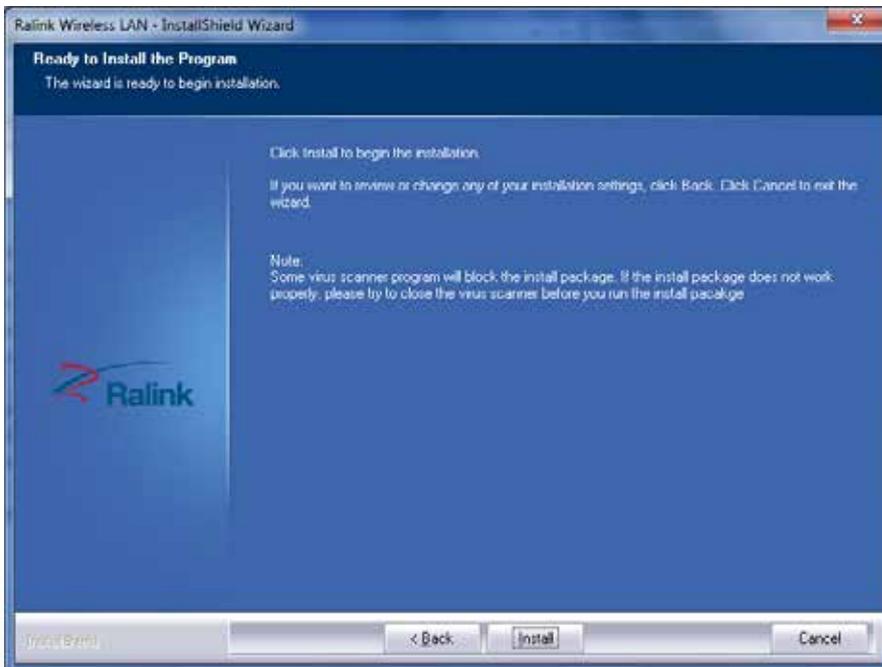
2. Select “I accept the terms of the license agreement” and click “Next”



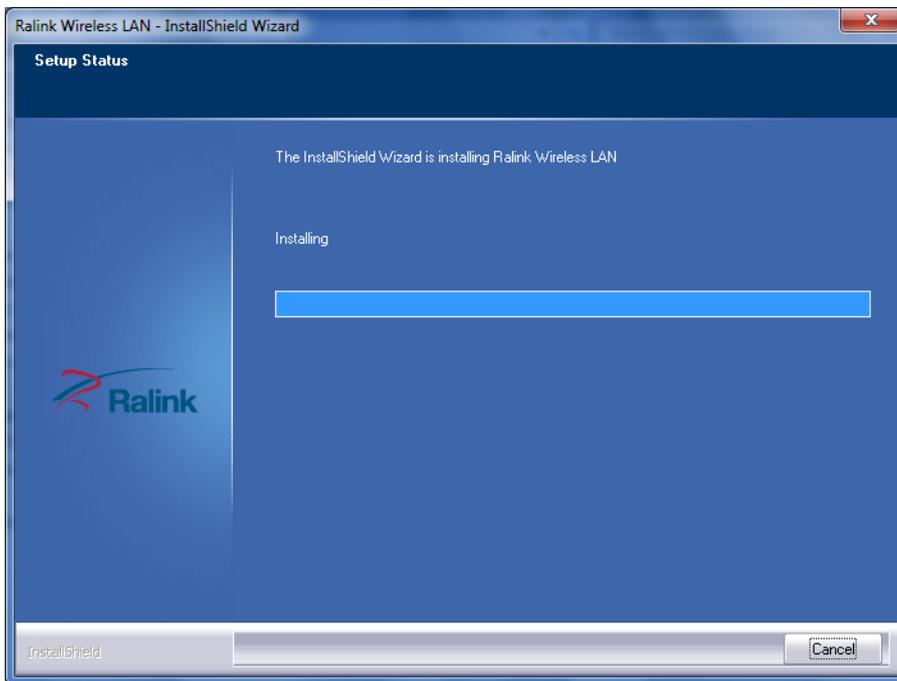
3. Select “Install driver and Ralink WLAN Utility” and click “Next”



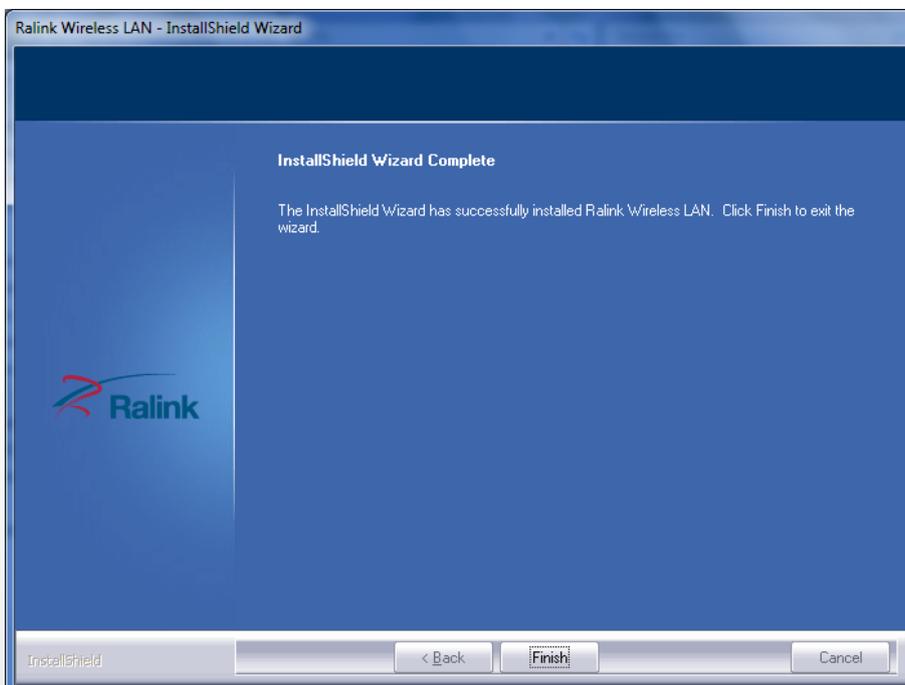
4. Click “Install”



## 5. Starting install



## 6. Click "Finish"

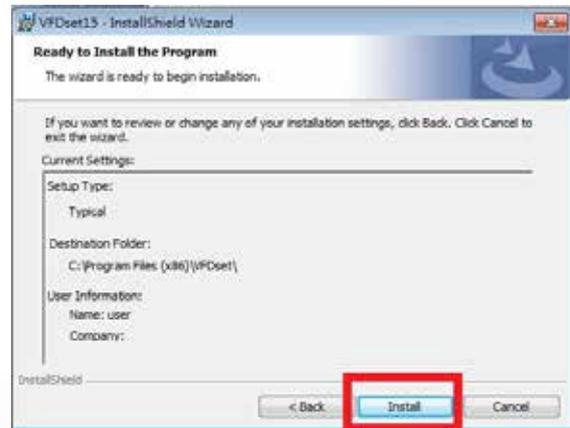
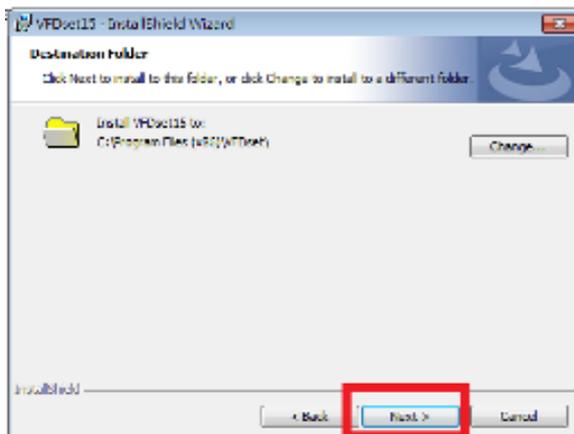
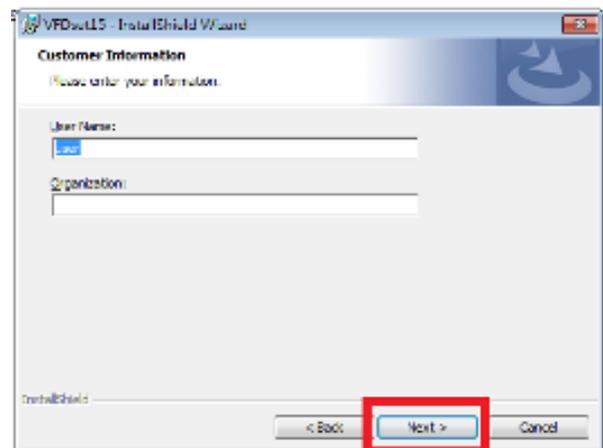


## 6-9 Pole type VFD VD1220

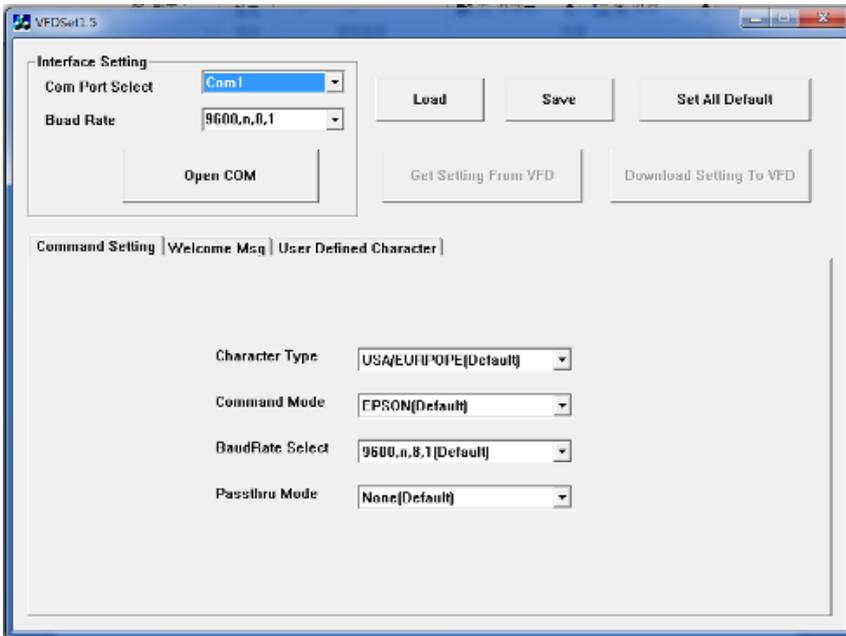
1. Power on VFD and waiting test page of EEPROM test, Baud rate and Command page.

Set up the customer display by „ VFDset.exe”

2. Setup VFDset.exe software.



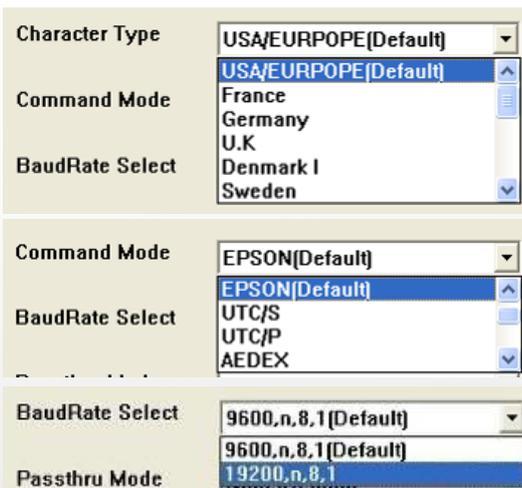
3. To execute “VFDset.exe” for setting up communication between software and VFD module.



Please then follow the steps as shown in the above figure, the baud rate will show on states page of VFD module (Note: You may check it when power on VFD module), then click “Open COM” button.

4. “Get Setting from VFD” button to get all the settings from Colormetrics and it’ll refresh the “VFDset.exe” software.

5. Select “Character Type”/ “Command Mode”/ “Baud Rate Select”/ “passthru Mode”.



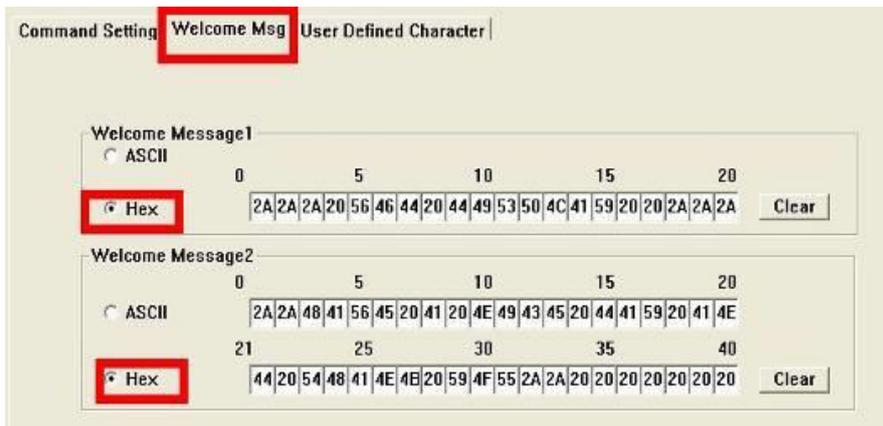
6. Click “Set All Default” button To show default setting, the Default table is

Character Type USA  
Command Type EPSON/EUROPE  
Baud Rate Setting 9600/n/8/1  
Pass-through Mode None  
Welcome msg line1 \*\*\* VFD DISPLAY \*\*\*  
Welcome msg line2 \*\*HAVE A NICE DAY AND THANK YOU

### 7. Welcome Message

Welcome Message line1 maximum 20 characters, line 2 maximum 20 characters, total of 40 characters.

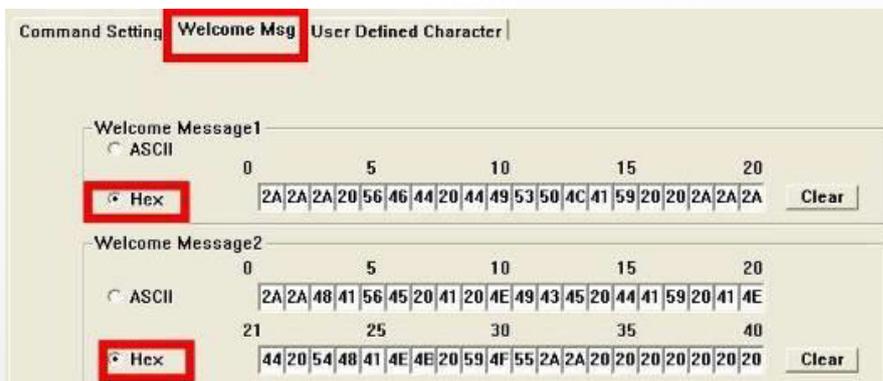
#### a) ASCII mode



You can type the character by keyboard (0x20h ~ 0x7Fh), if you press clear icon, it will clear the all Message characters on AP.

#### b) Hex mode

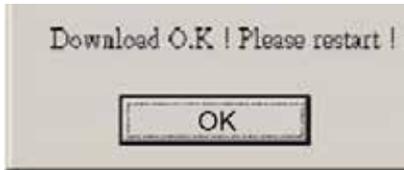
Hex mode can define the character from 0x20h to 0xFFh the range 0x80~0xFF which depends on the code page table.



Like the first character (0x80) in default code page will show on VFD module.

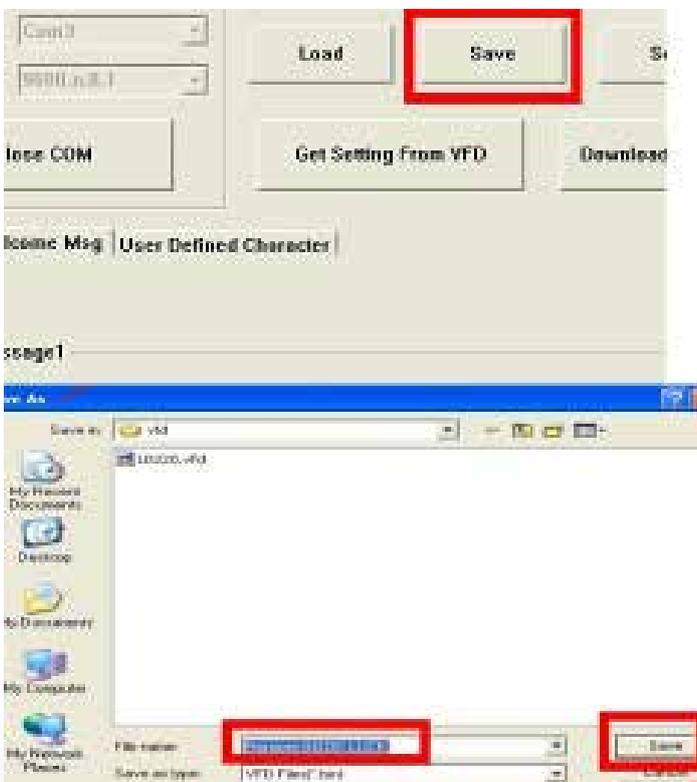
8. Click “Download setting to VFD” button

This button is to download the setting from VFDset.exe to VFD module. After success dialog “Download O.K! Please restart!” message popped up. Please restart display for enable new setting.



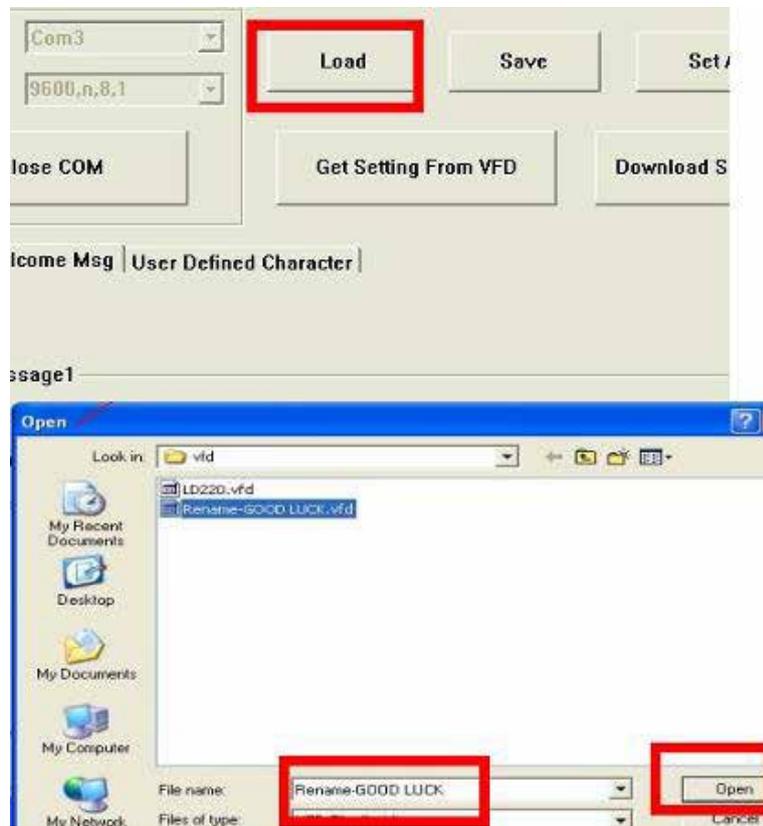
9. Click “Download setting to VFD” button

To save user’s setting in file; for example, below picture to save file name as “GOODLUCK” file set for Welcome Message.



10. Click "Load" button

After saving, you must restart the utility here. Then load your setting rename-GOODLUCK.vfd.

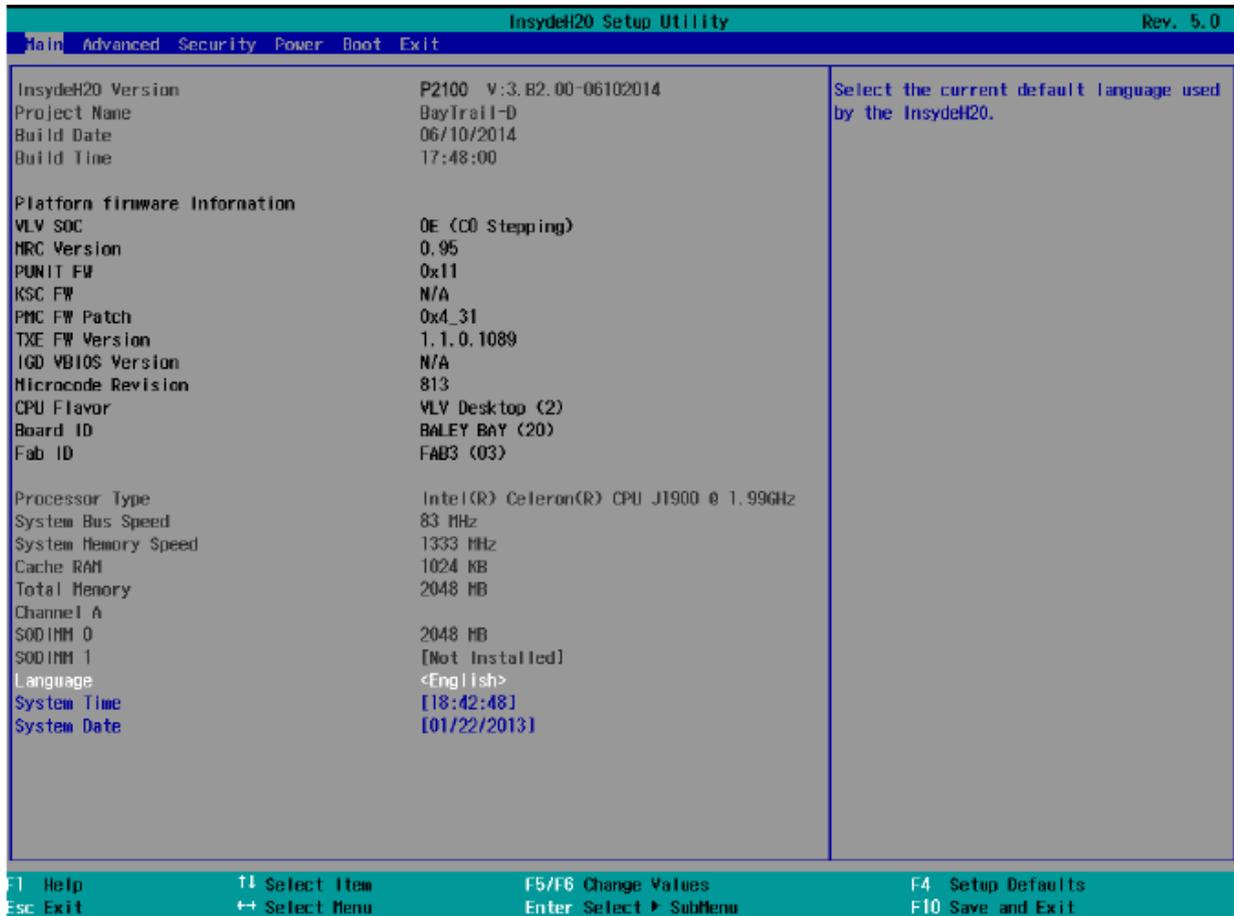


## BIOS/UTILITY SETUP

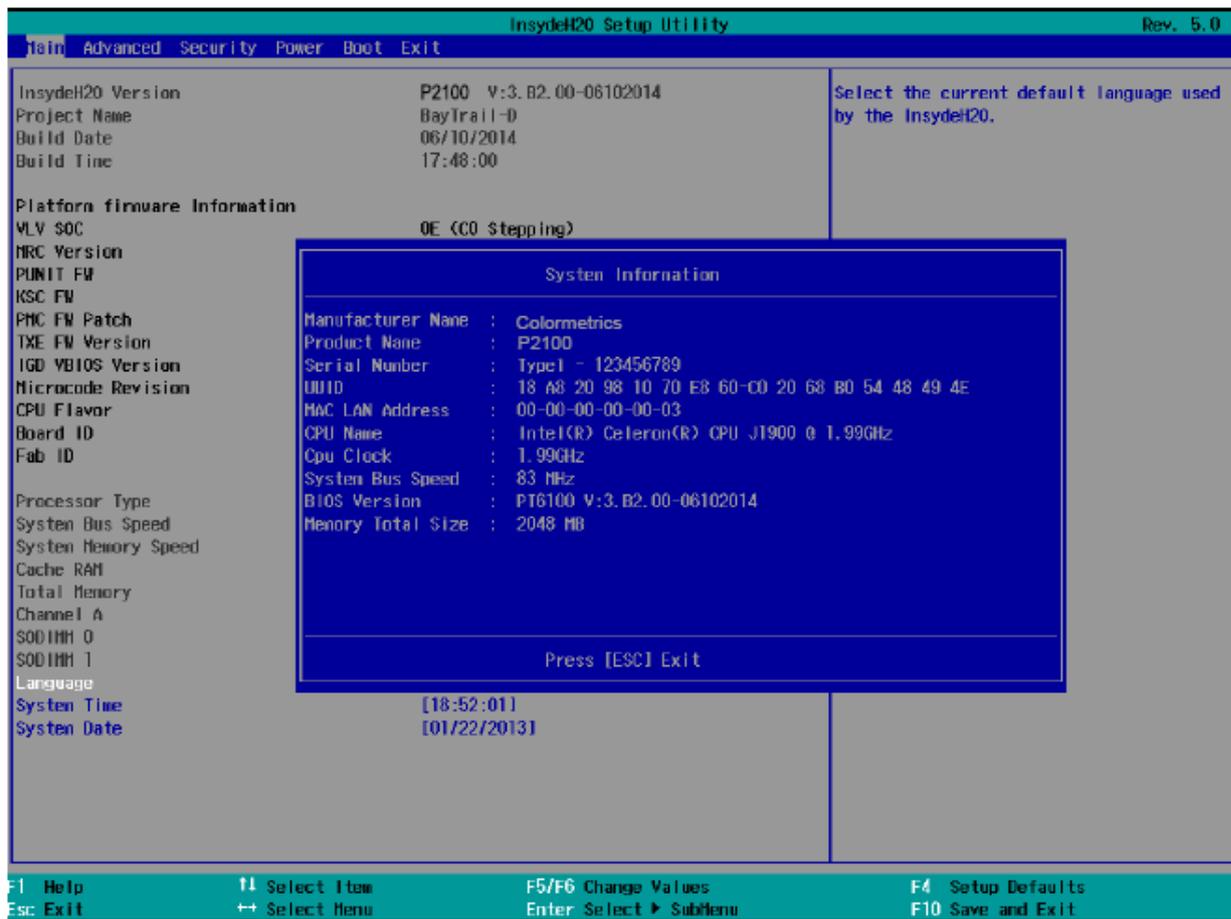
### 7 BIOS/Utility setup BIOS/Utility setup

Press <DEL > / <F2> key to enter BIOS SETUP UTILITY when system boot up.

Please press <DEL > / <F2> key tenderly and slowly.



Press <F9> to view the system information



## Date and Time

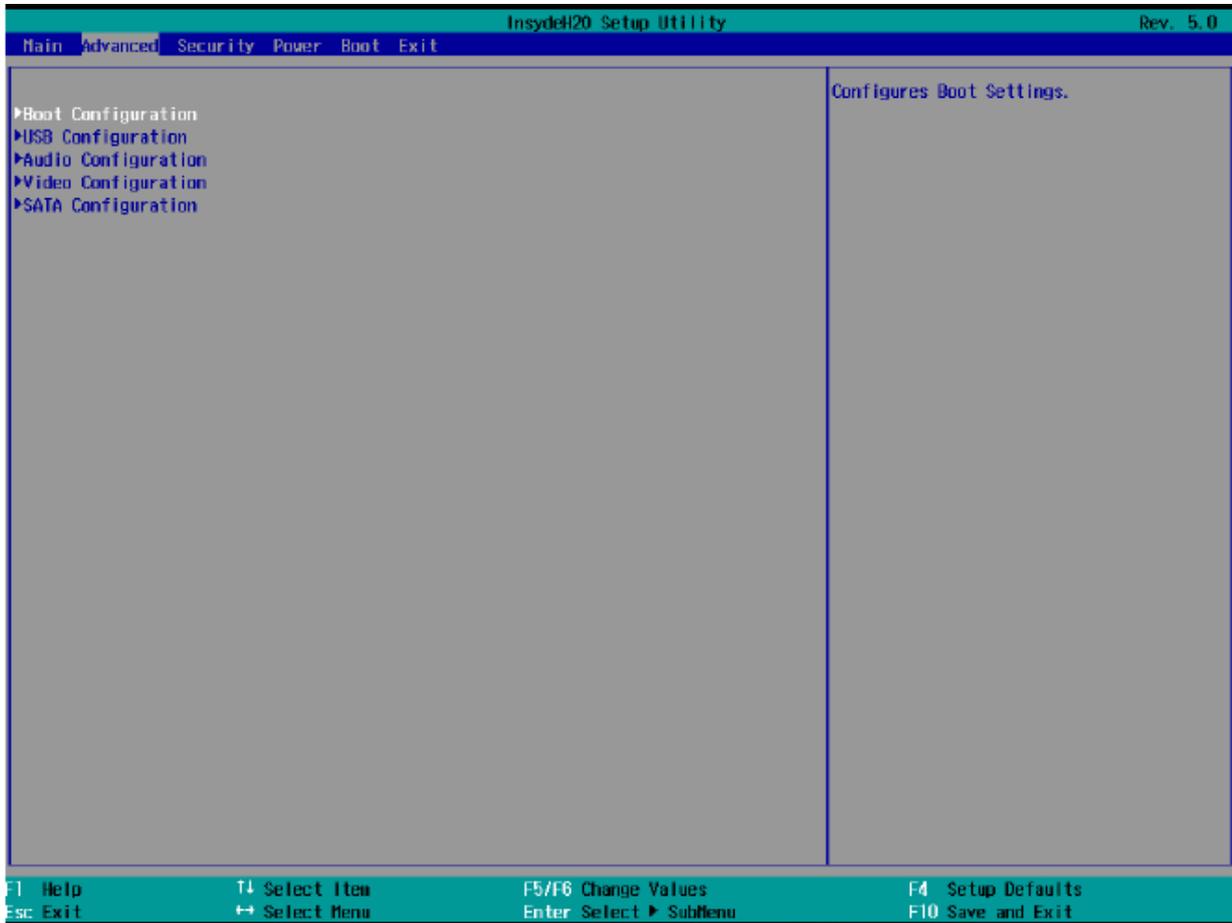
The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

## WARNING!

**Setting the wrong values in the sections below may cause the system to malfunction. Make sure that the settings made are compatible with the hardware.**

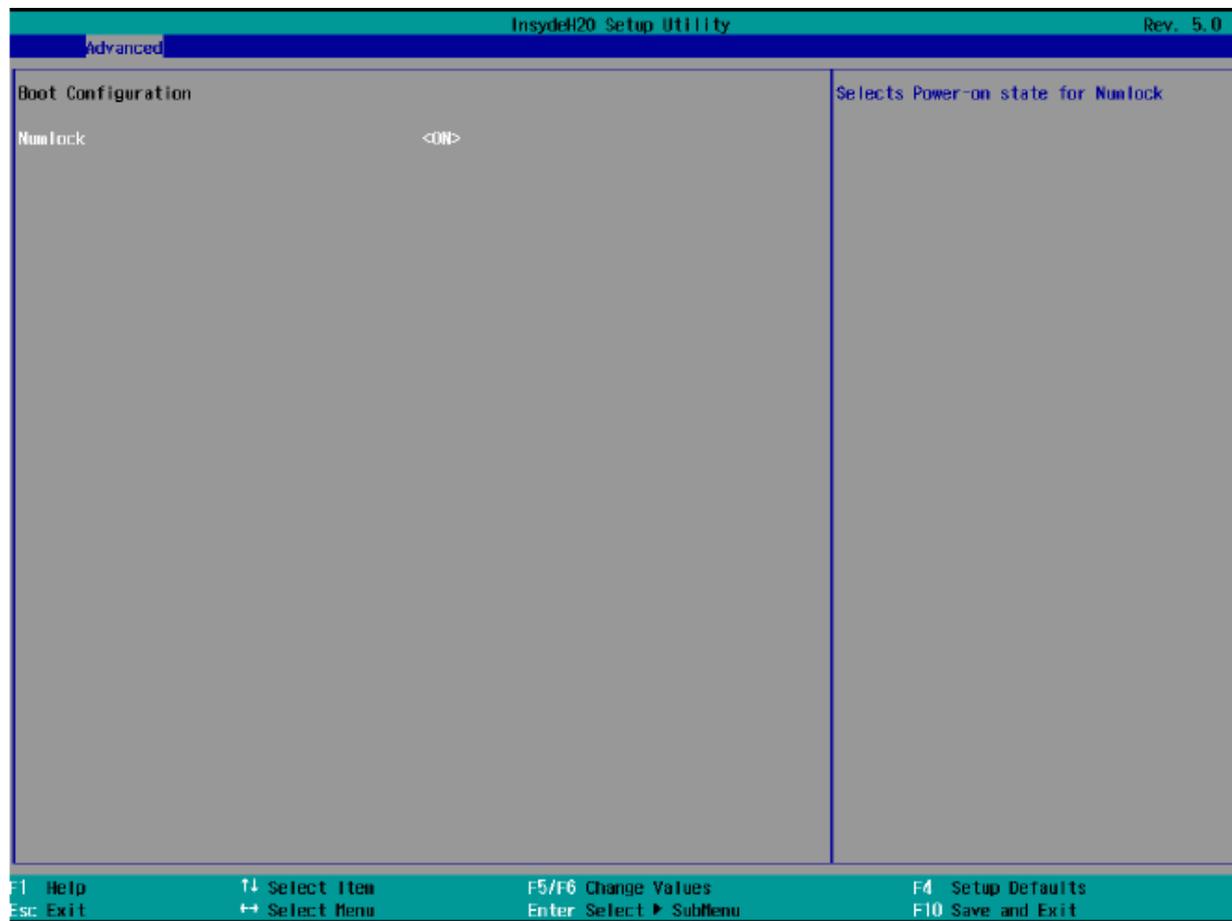
## 7-1 Advanced

Use the Advanced menu to configure the system for basic operation through the following sub-menus:



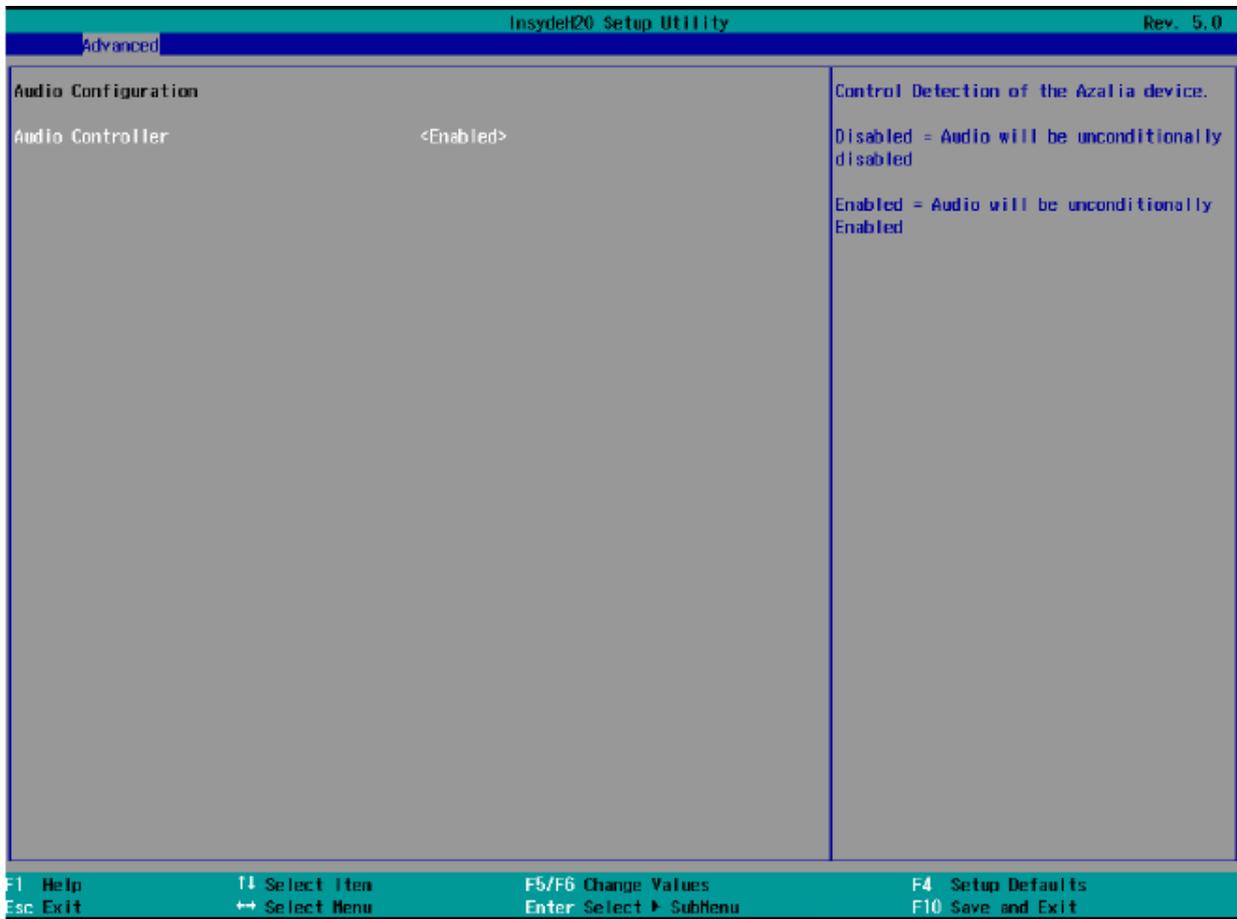
## 7-1-1 Boot Configuration

Use the Boot Configuration menu to select power-on state for Numlock.



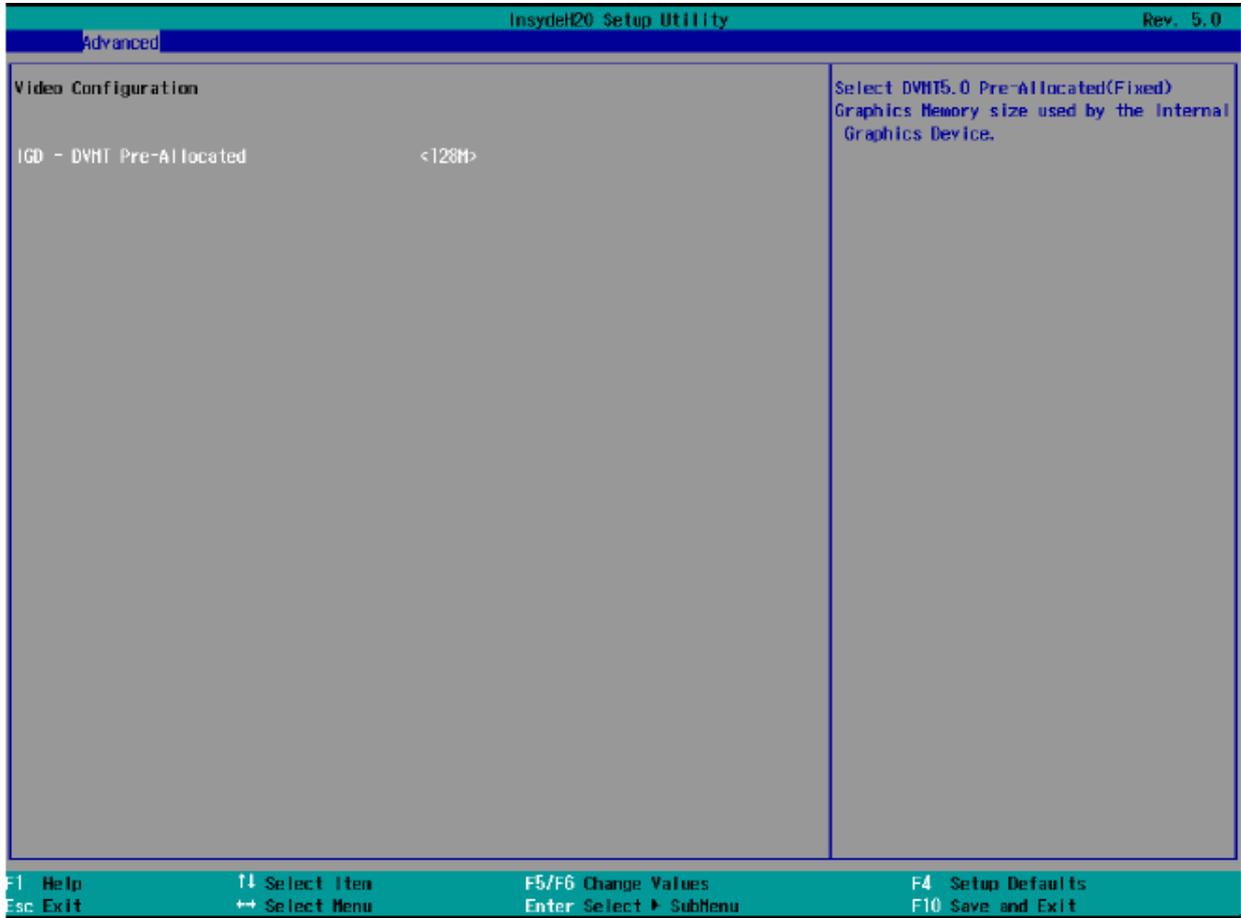
## 7-1-2 Audio Configuration

Use the Audio Configuration menu to read Audio configuration information and configure the Audio settings



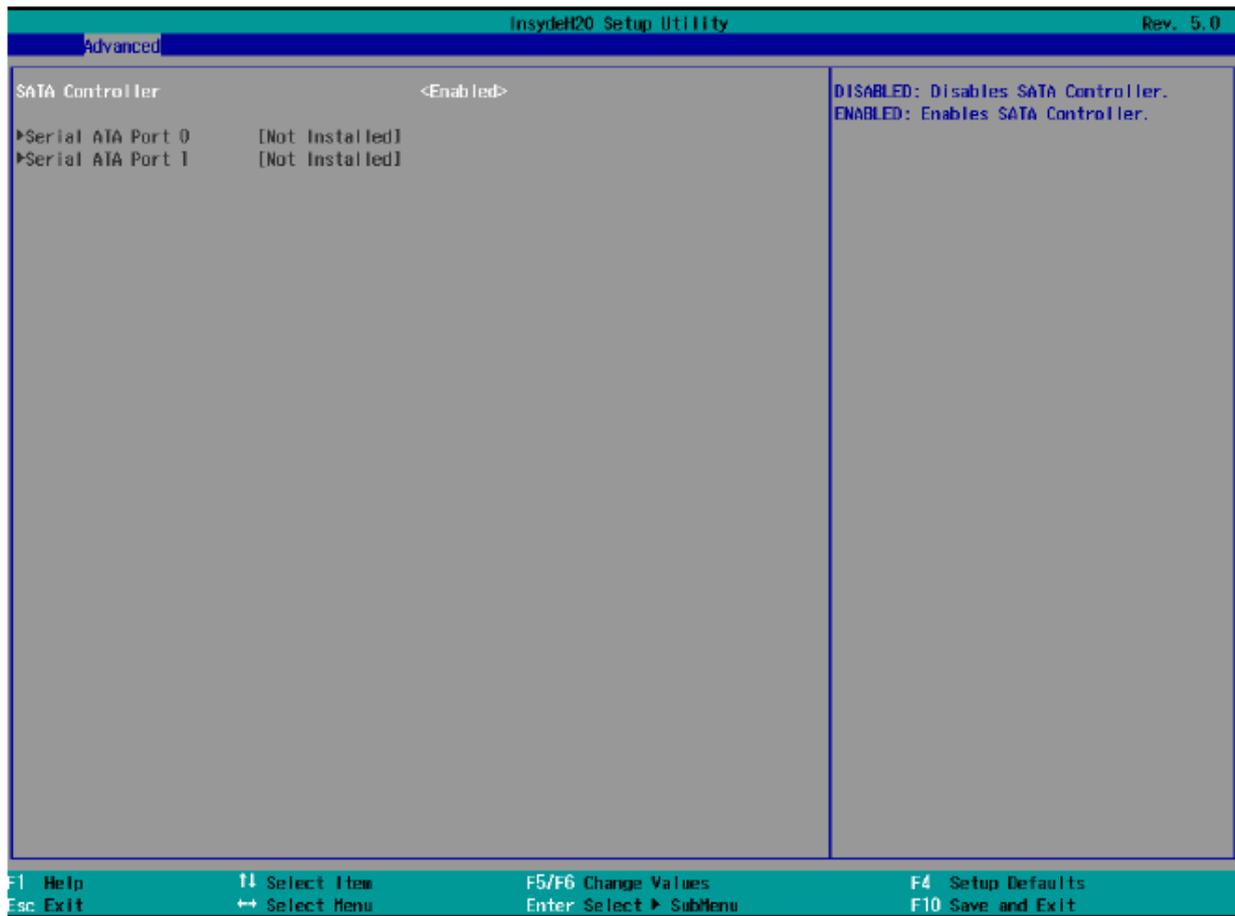
### 7-1-3 Video Configuration

Use the Video Configuration menu to read Video configuration information and configure the Video settings



## 7-1-4 SATA Configuration

Use the SATA Configuration menu to read SATA configuration information and configure the SATA settings



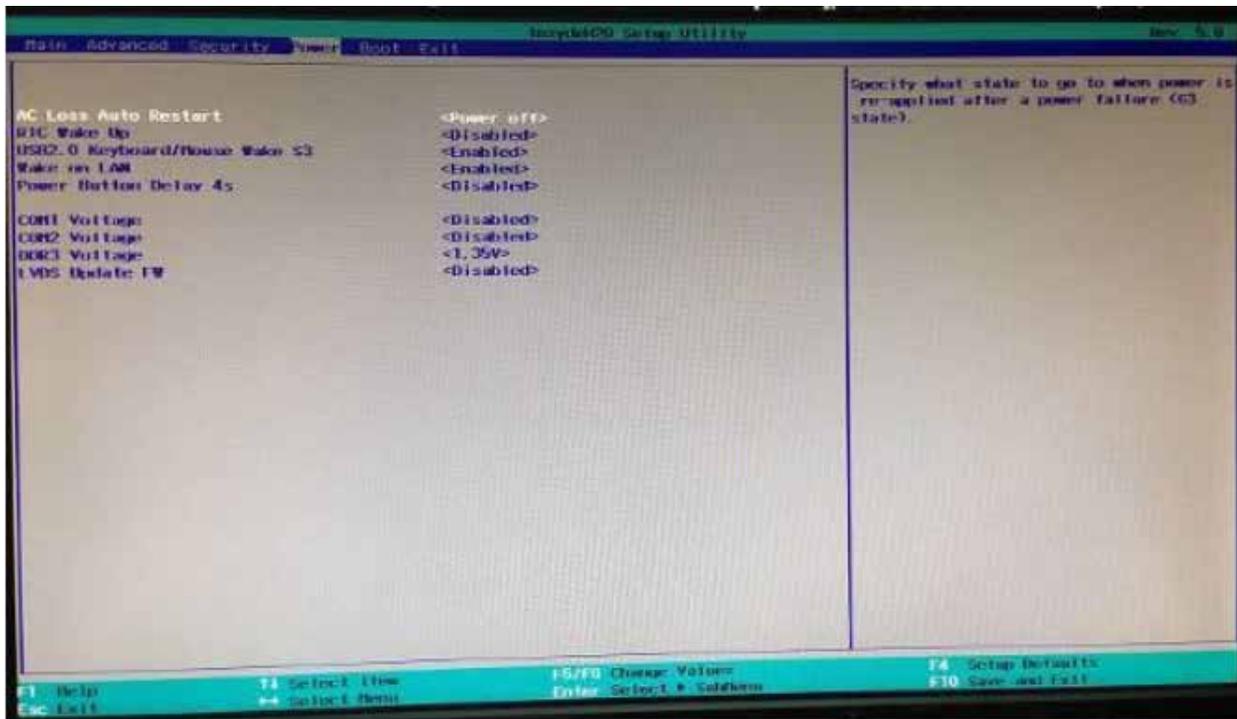
## 7-2 Security

Use the Security menu to install or change the password



## 7-3 Power

Use the Power menu to install or change the password



### AC Loss Auto Restart

Enable or disable system power on automatically after AC power restored

### RTC Wake Up

When enabled, System will wake on the hr;;min;;sec specified

### Wake on LAN

Enable or disable system wake by onboard LAN chip

### Power button delay 4s

This item allows you to enable or disable power button delay 4s

### COM Voltage

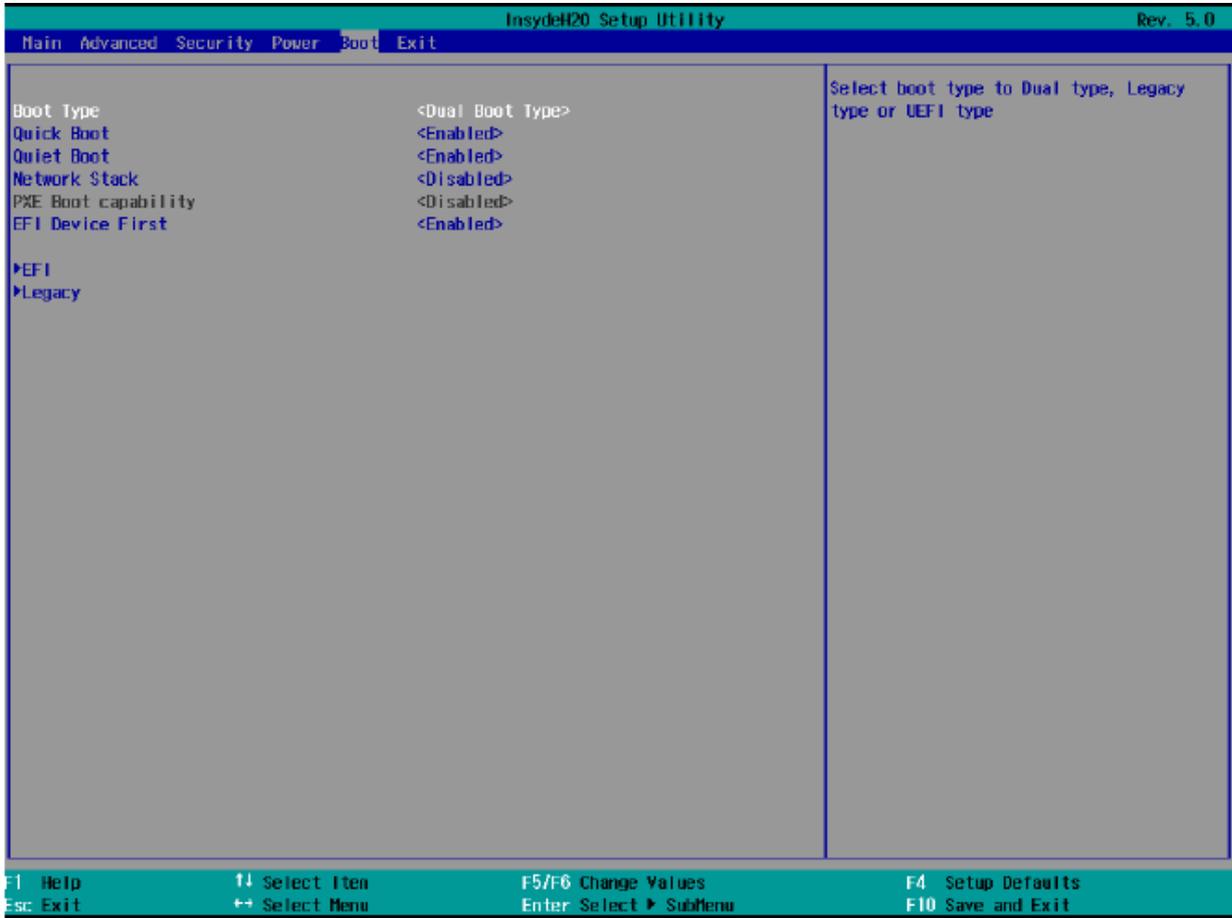
This item allows you to select off, 5V or 12V powered COM

### LVDS Firmware update

This item allows you to enable or disable LVDS Firmware update

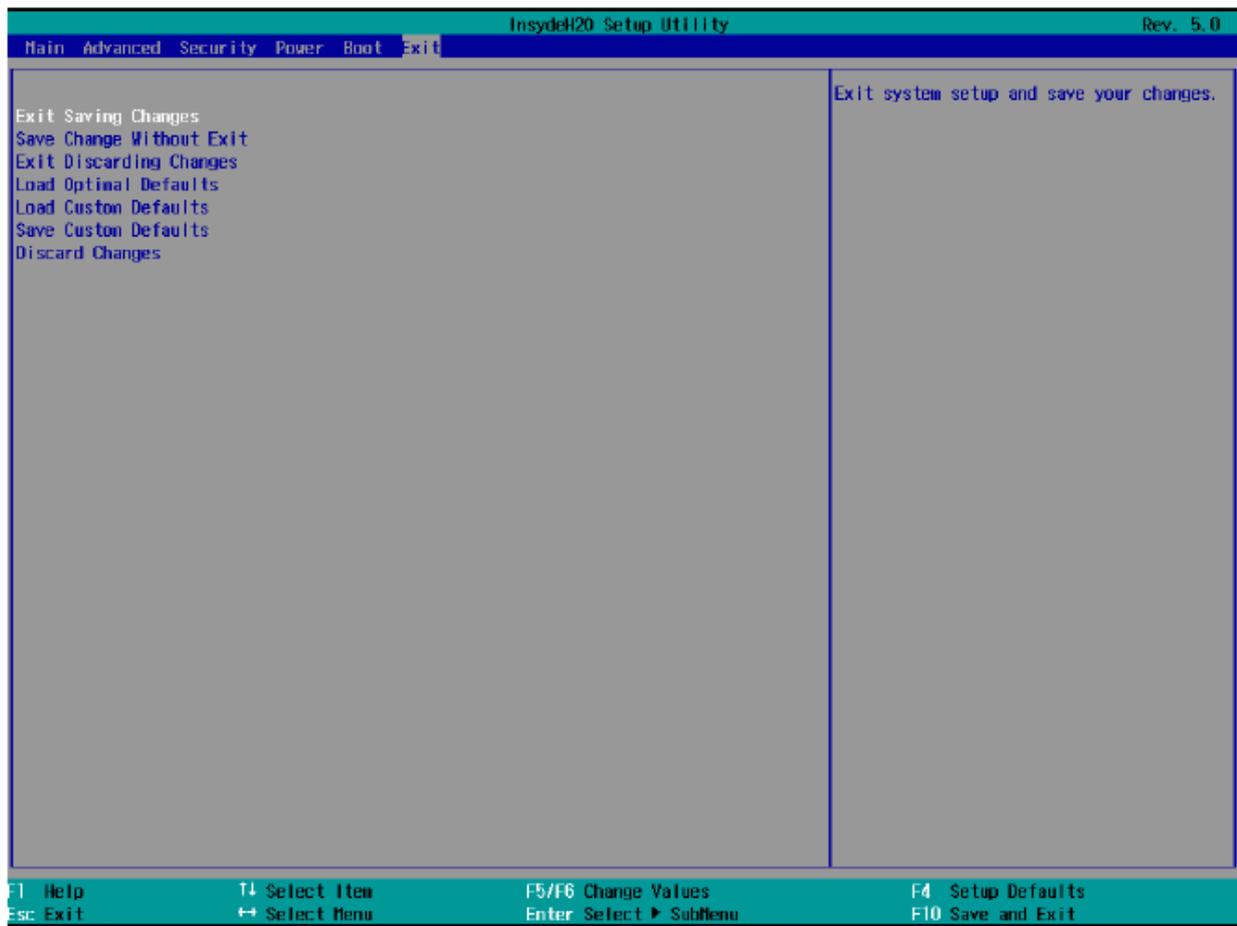
## 7-4 Boot

Use the Boot menu to select type to Dual type, Legacy type or UEFI type.



## 7-5 Exit

Use the Save & Exit menu to load default BIOS values, optimal failsafe values and to save configuration changes.



### LCD Surface Cleaning

#### 1. How to clean the LCD surface properly?

Do not spray any liquids on the LCD screen directly, and do not use paper towels, this can cause the LCD screen to become scratched.

Always apply the solution to your cloth first, not directly to the parts you are cleaning. You want to avoid dripping the solution directly into your computer or laptop.

Stroke the cloth across the display in one direction, moving from the top of the display to the bottom.

#### 2. What are some of the basic supplies needed to clean an LCD screen?

A soft cotton cloth. When cleaning the LCD screen it is important to use a soft cotton cloth, rather than an old rag. Some materials, such as paper towels, could cause scratches and damage the LCD screen.

Solution of water and isopropyl alcohol. This solution can be used along with the soft cotton cloth.

Computer wipes. Only use these if they specifically state on the package they are designed for LCD laptop screens. Computer wipes can come in handy for fast clean-ups or when you want to avoid mixing up a cleaning solution yourself.

#### 3. What types of cleaners are acceptable?

- Water
- Vinegar (mixed with water)
- Isopropyl Alcohol

#### **NOTICE: The following cleaners are unacceptable:**

- Acetone
- Ethyl alcohol
- Ethyl acid
- Ammonia
- Methyl chloride

---

### **CE Notice**

This device complies with the requirements of the CE directive.

### **FCC Notice**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### **WEEE Notice**

This appliance is labelled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.