USER MANUAL

ZK95 Series

Version 1.0   Date: April, 2017

Important Claim

Firstly, thank you for purchasing this hybrid-bio terminal. Before using, please read this manual carefully to avoid the unnecessary damage! The company reminds you that the proper use will improve the use affect and authentication speed.

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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 cannot 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:
10. The power cord or plug is damaged.
11. Liquid has penetrated into the equipment.
12. The equipment has been exposed to moisture.
13. The equipment does not work well or you cannot get it work according to user manual.
14. The equipment has dropped and damaged.
15. Do not leave this equipment in an environment unconditioned, storage temperature below -20℃ or above 60℃, it may damage the equipment.
16. Unplug the power cord when doing any service or adding optional kits.

Lithium Battery Caution:

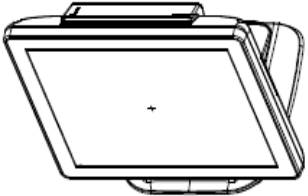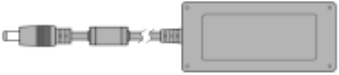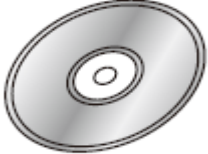1. Danger of explosion can happen if the battery is incorrectly replaced. Replace only the original or equivalent type recommended by the manufacture. Dispose used batteries according to the manufacturer's instructions.
2. Do not remove the cover, and ensure no user serviceable components are inside. Take the unit to the service center for service and repair.

Table of Contents

1. Packing List

1.1. Standard Accessories

a.	b.	a. System (with stand)
		b. Power Adapter
		c. Power Cord
		d. Driver Bank
		e. Screw x2
		f. Cable Cover
c.	d.	
e.	f.	

1.2. Optional Accessories

a.	b.	a. Single MSR
		b. 3 IN 1 MSR
		c. Screw x2
c.		

2. System View

2.1. Rear View

Item
1. Mic
2. Line-Out
3. RJ11 (Cash Drawer)
4. RJ45(LAN)
5. USB 2.0 X4
6. COM2
7. VGA
8. COM1
9. RJ45(COM 3 external)
10. PS2(K/B)
11. 19V DC Input
12. Parallel Port (Option)
13. Power Button
14. MSR/Smart Card/i-Button/ Fingerprint/ RFID (Option)
15. VFD(Option)
16. HDD/CFast CARD
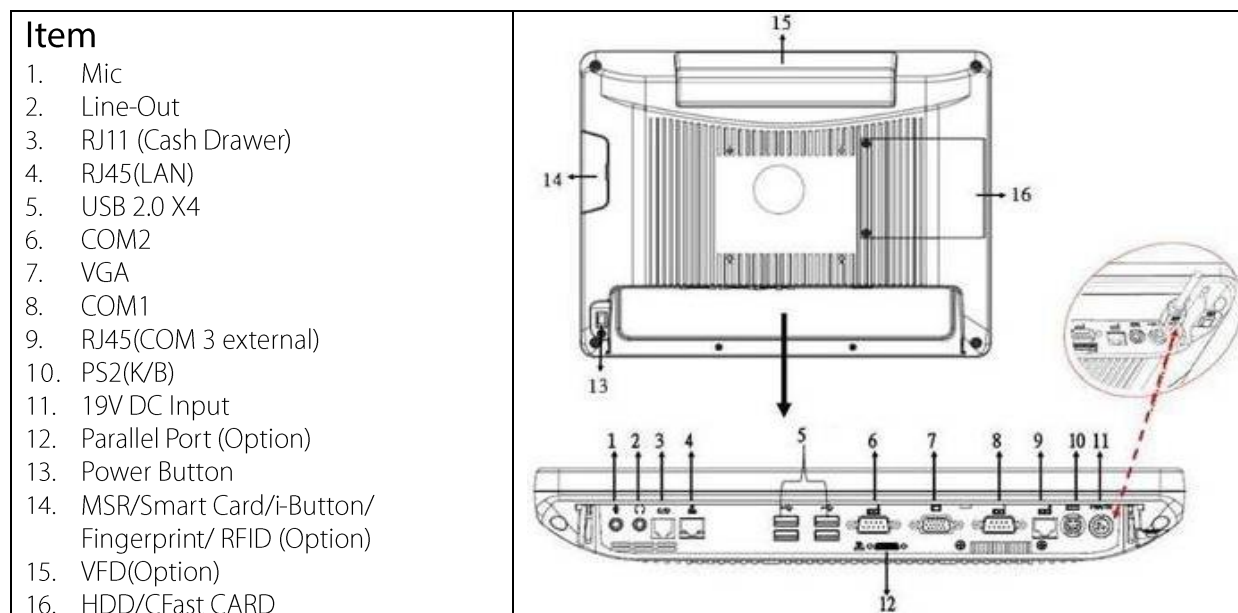
2.2. Specification

Display	
LCD Panel Size	15-inch TFT LED LCD
Resolution	1024*768 Pixels
Brightness	350 cd/m^2
Touch Panel	5-wire Resistive Type / Projected Capacitive Type
Processor	Intel® Celeron J1900 QC 2.0GHz Intel® Core™ i5-4570TE 2.7GHz Intel® Core™ i3-2120 3.3GHz
Chipsets: North Bridge	H81
Memory	One SO-DIMM socket supports DDR3 1600MHZ 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" SATA III HDD / SSD
BIOS	Insyde BIOS
Power	DC 19V 180W Adaptor
Thermal Solution	Heat sink + Fan x 2
Dimension	368 (W) x 264.2 (H) x 285 (D) mm
Operating Temperature	0℃ ~ 35℃
Storage Temperature	-20℃ ~ 60℃
Storage Humidity	20% ~ 80%, non-condensing

2.3. Internal Layout
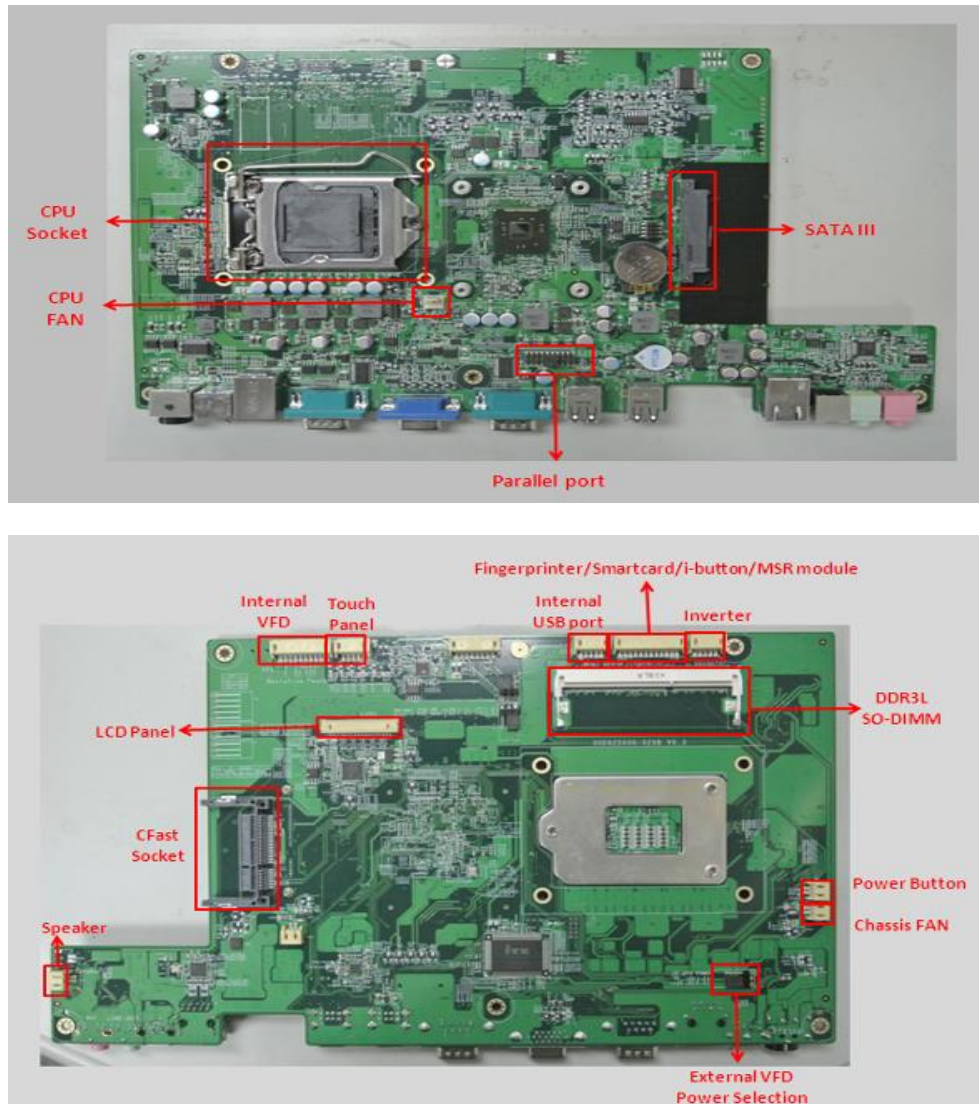
2.4. Touch Panel Life Test Condition

2.4.1. Pointing life test

Hit it thirty five million times with a silicon rubber of R 0.8, Hs 60 and measure it. The measurement must satisfy the under-metioned items. Hitting force shall be 250g and hitting speed 3 times per second.
- Resistance state should the same 5.1
- Linearity should the same 5.2
- Insulation resistance should the same 5.3

## 2.4.2. Hand Writing test

Write one hundred thousand times of 40mm straight line to and fro (counts as twice) with and engineering plastic stylus in AA area. The measurement items must satisfy the under-mentioned items. Writing force shall be 250g and writing speed 3,000 times per hour.
- Resistance state should the same 5.1

- Linearity should the same 5.2
- Insulation resistance should the same 5.3
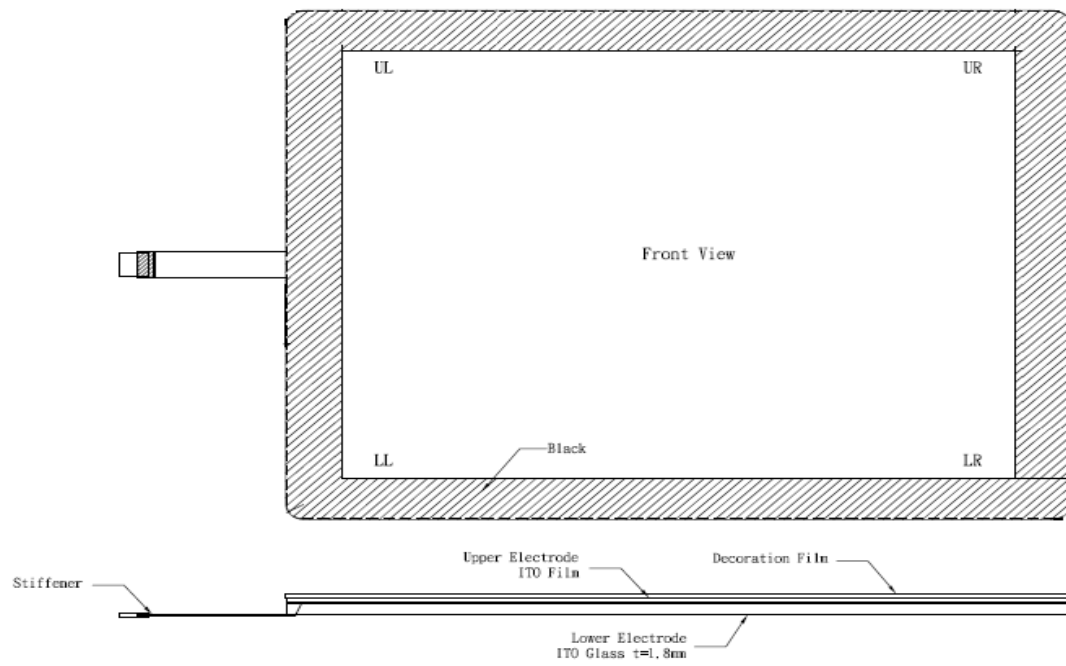
3. Pin Definition

3.1. COM 4 for Touch Panel (CN 8)

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

3.2. Parallel J8

	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
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

3.3. Lin-out J4

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

3.4. VFD Connector COM4

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

3.5. Mic J3

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

3.6.Speaker SPK1

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

3.7.LVDS

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

3.8.Inverter CN1

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

3.9.Extra USB CN6

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

4. Rear I/O Interface

4.1. COM1' COM2' port

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

NOTICE:
☆ Warning!! COM 3 (RJ45 Connector) is for external VFD use only.
Do not use on network device. If you use on the network device, it would cause the device damaged.
☆☆COM 3 port can not be connected if POS has built-in internal VFD. (Alternative of COM 3 or internal VFD.)
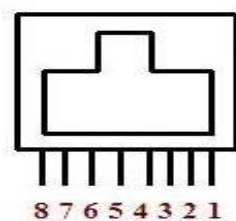
Pin 1: +5V / +12V
Pin 2: DSR#
Pin 3: GND
Pin 4: DTR#
Pin 5: RTS#
Pin 6: CTS#
Pin 7: TxD
Pin 8: RxD

8 7 6 5 4 3 2 1
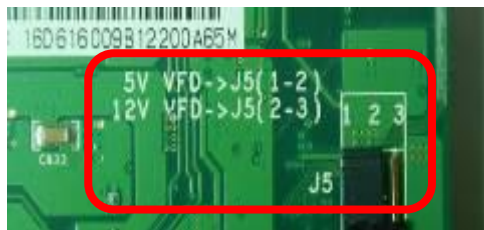
Jumper for COM 3 Voltage Setting

4.2. VGA port

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

4.3. SB 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

4.4. 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

4.5. 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

4.6. 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	-

Example DOS COMMAND for Cash Drawer:
1. Create the file: TEST.TXT
2. Input below contents in TEST.TXT
3. CONTEXT-"000.0"
4. MODE COM5:300
5. Run COMMAND under DOS mode
6. COPY TEST.TXT COM 5
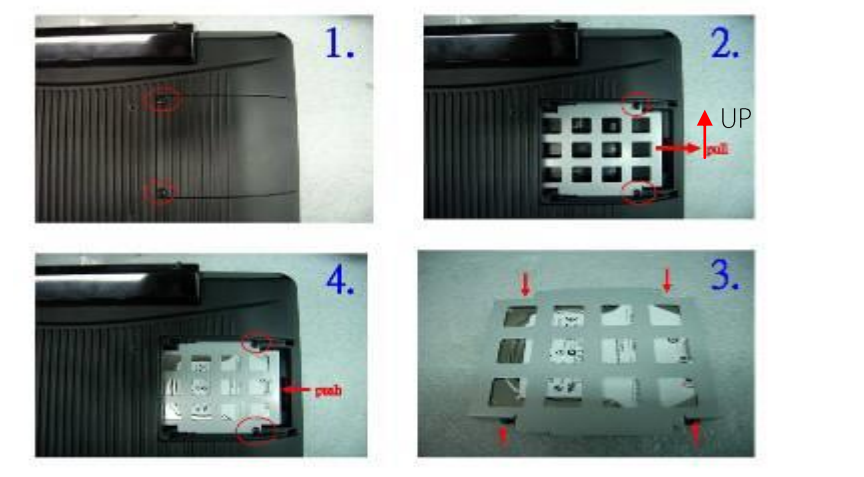
4.7. DC Jack

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

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
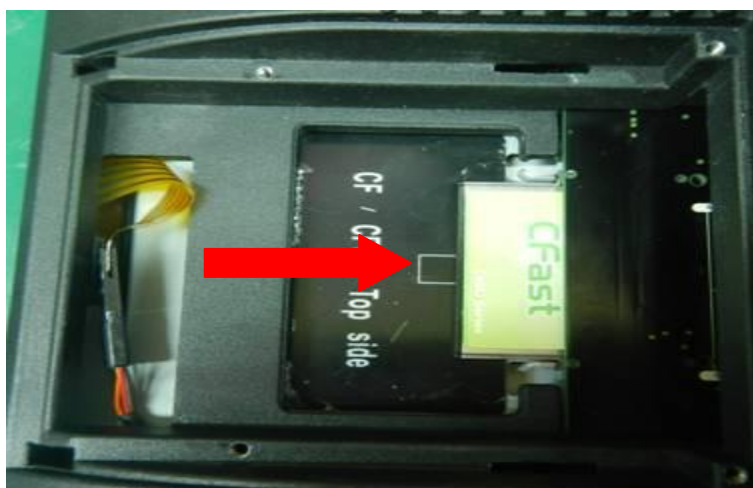4. Place the HDD bracket back to the module

5.2. CFast Card

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

2. Before Installing CFast Card.

3. After Installing CFast 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. 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).

5.5. 15" 2nd Display

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 figure①. (Please refer to page 110 to set the COM port pin9 with 12V DC output.)

5. Connect the VGA cable as shown in figure②.

6. Connect the audio cable as shown in figure③.

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 figure①.
12. Connect the VGA cable as shown in figure②.
13. Connect the Audio cable as shown in figure③.
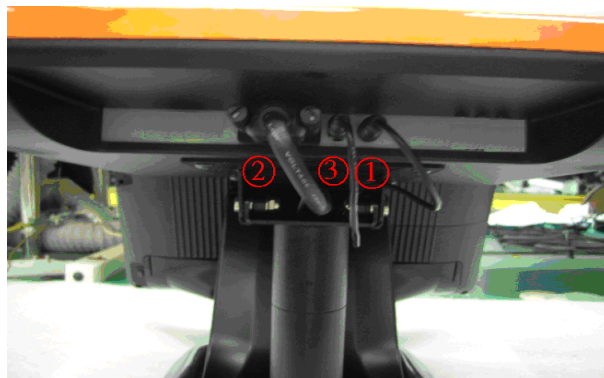
14.   Put the cable cover on the hinge of VESA bracket.

5.6. Internal VFD

ZKTECO	ZKTeco Co., Ltd.	Model	ZK95 Series Assembling Figure

Operation	VFD MODULE assemblely
Item	Operation procedure
1	Prepare all components as Fig 1
2	Assemble holder & hinge assy by TAPPING SCREW P/H 2.6φ*5 x2 pcs(As Fig 2)
3	Fix VFD module on holder assy by TAPPING SCREW P/H 2.6φ*5 x4 pcs as Fig 3
4	Screw VFD module on VFD cover by TAPPING SCREW P/H 2.6φ*5 x 2pcs AS fig 4)
5	Fix VFD module on rear cover by TAPPING SCREW R/H M3*8L x 2pcs (As Fig 5)
6	The VFD cable must be around to capacitor H below, so as not to interfere hinge action
7	(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 2.6φ*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 cannot lost
3	Electric screwdriver Torque to be regularly calibrated,

> ● **Alternative of external COM 3 (RJ45 Connector) or Internal VFD.**

5.7. 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
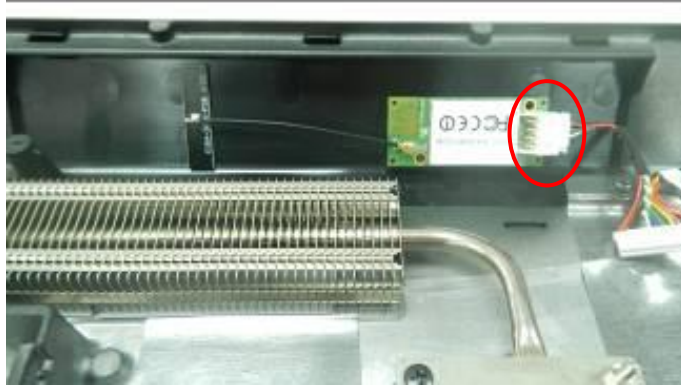
3. Connect Wi-Fi /MSR cable to M/B

☆ **Alternative of WiFi or Internal VFD.**

5.8. 8" 2nd Display
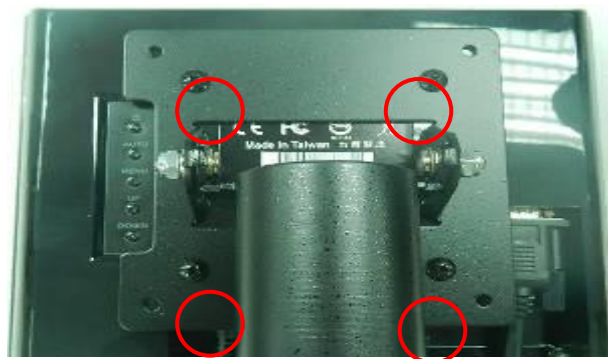
1. Remove the plastic pole cover from the stand.

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

3. Connect VGA cable and DC power cable

4. Fasten the four screws (M4*8L) to join 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 figure①.

- To setup COM port PIN9 with 12V DC output from BIOS setup, please refer to **Power setting.**

10. Connect the VGA cable as shown in figure②.

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

5.9. 1D / 2D / i-Button with RFID module

1. Cable installation.

a. For i-Button with RFID module; For 2D barcode scanner with RFID module:
Connect the cable as shown in figure①.

b. For 1D barcode scanner with RFID module:

2. Connect the cable as shown in figure②.

- Before COM port cable connection, please setup COM port PIN9 with 5V DC output from BIOS setup. Please refer to **Power setting.**

- Fix the screws as shown in below figure.
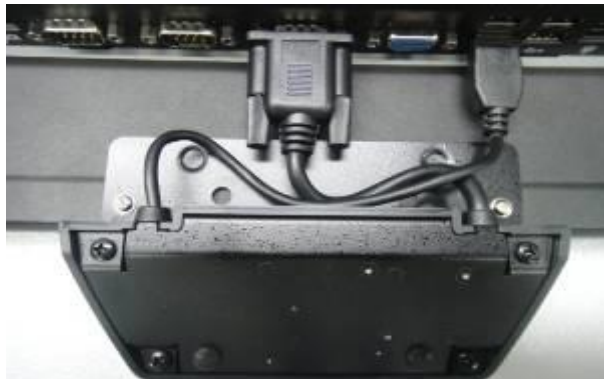
5.10. Pole type VFD VD1220

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.

3   Then install the pole into the foot ring.

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

6. Device Driver Installation

6.1. Resistive Type Touch Panel and P-CAP

1. Click "**Next**".
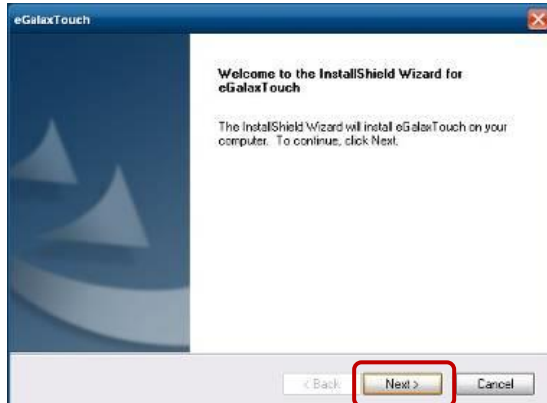
2. Click "**Next**".
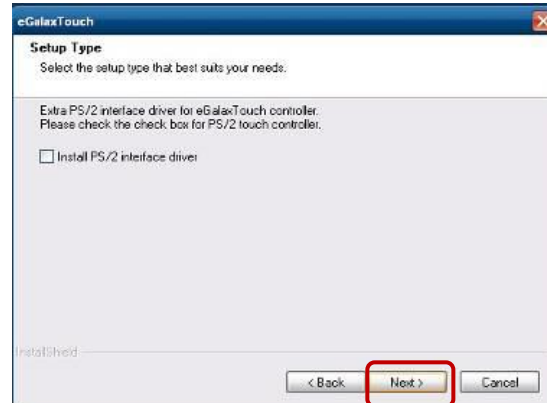
3. Click "**Next**".

4. Select "**None**", Click "**Next**".
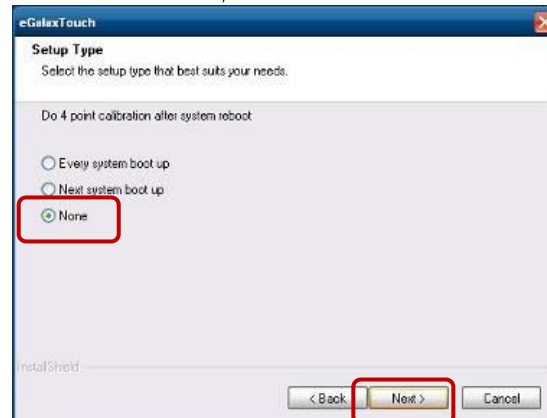
5. Click "**OK**".

6. Select "**Support Multi-Monitor System**", Click "**Next**".
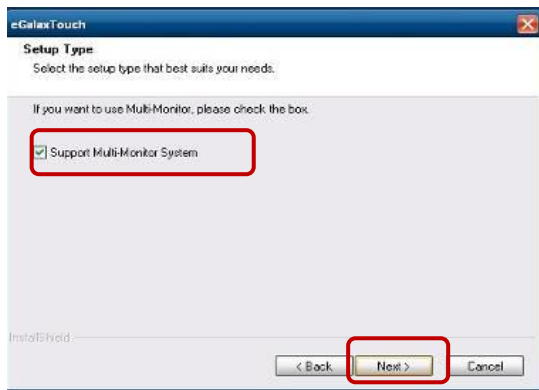
7. Click "**Next**".
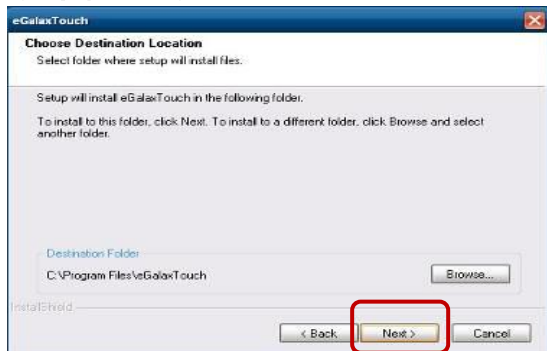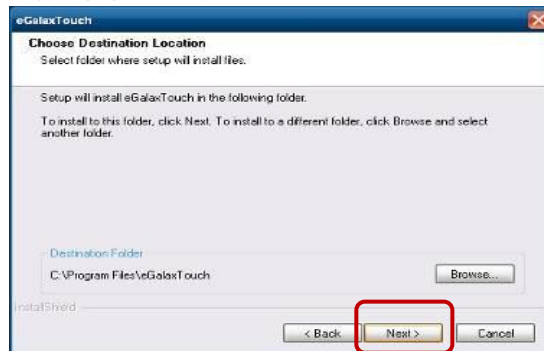
8. Click "**Next**".

9. Click "**Next**".

10. Select "Create a eGalaxTouch Utility shortcut on desktop", Click "Next".
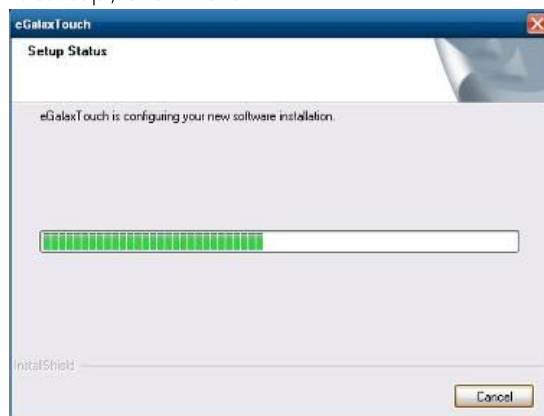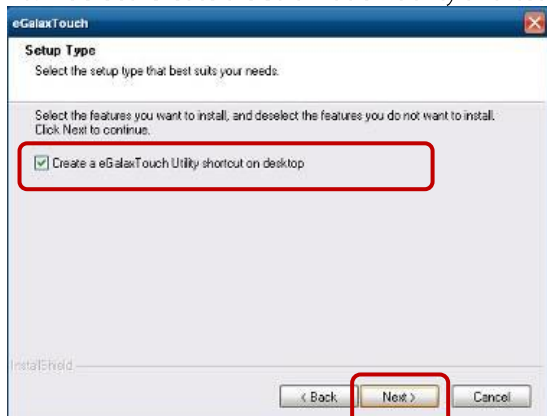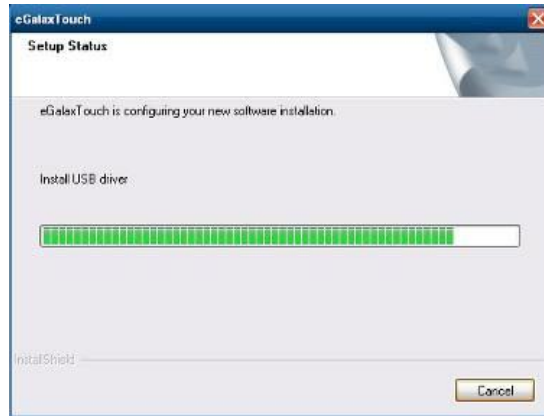
11. Would you do 4 point calibration now? Click "**Yes**".
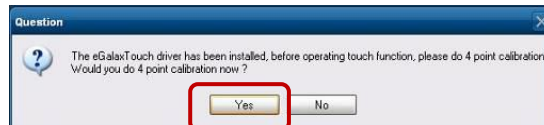
12. Do 4 points aligrment to match display.   13. Calibration utility.

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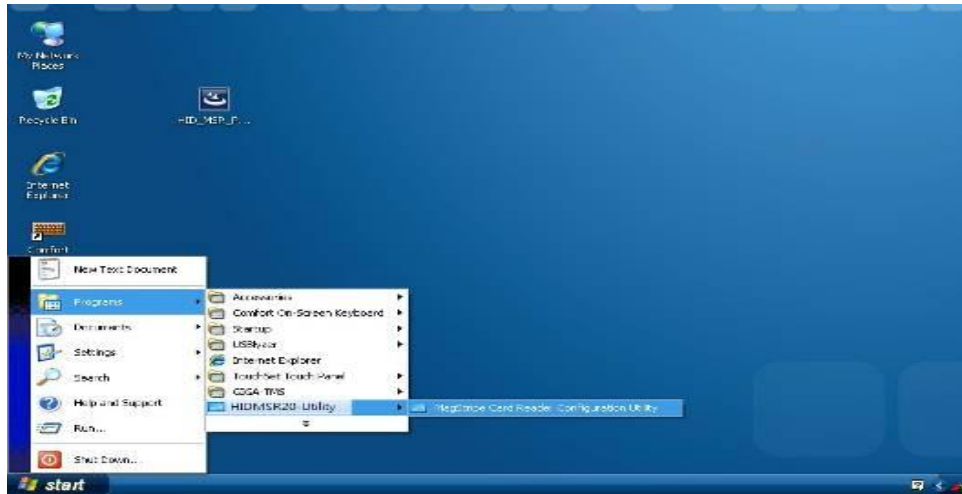Run the HIDMSR-20 Utility.exe setup file that is located in the Software folder of CD.
Follow the wizard to complete the installation.

● **Launching Program**

Below steps guide you how to load the Utility program.
1.   From Start/Programs, click HIDMSR20 folder
2.   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 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 **Utility** program.

For the settings, there are:

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.

Prefix/Suffix: Defines the data string which you would like to append in front or end of the MSR data string. **Error Message:** Indicates which track number cause the error.

Delimiter: Indicates the swipe result.

ISO: Define start and end sentinel character.

Decode Mode: Determines the way of outputting the three tracks data.

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

PP: Prefix for package.

PR1: Prefix for track 1.
SS1: Start sentinel for track 1.
TK1: Data for track 1, if error happens, using Error Message instead.
ES1: End sentinel for track 1.
SU1: Suffix for track 1.
PR2: Prefix for track 2.
SS2: Start sentinel for track 2.
TK2: Data for track 2, if error happens, using Error Message instead.
ES2: End sentinel for track 2.
SU2: Suffix for track 2.
PR3: Prefix for track 3.
SS3: Start sentinel for track 3.
TK3: Data for track 3, if error happens, using Error Message instead..
ES3: End sentinel for track 3.
SU3: Suffix for track 3.
SU: Suffix for package.
DM: Delimiter for the swipe result

- **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:

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.

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.

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.

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.
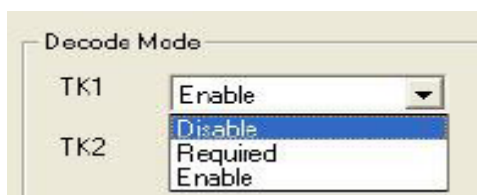
- **Decode Mode**

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

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

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

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:

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.

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 to be output.

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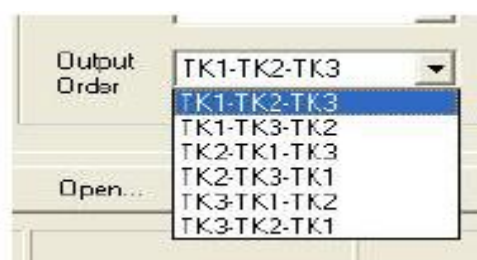
There 6 orders allow to be selected. Please select one to fit your application needs.

● **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
Below steps guide you how to install the Utility program

● Insert the setup CD

● Run the **80066804-006_Magswipe_Configuration_Software_V2_1_A** 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 **MagSwipe** folder
- Click **MagSwipe Configuration Utility** to launch the program.
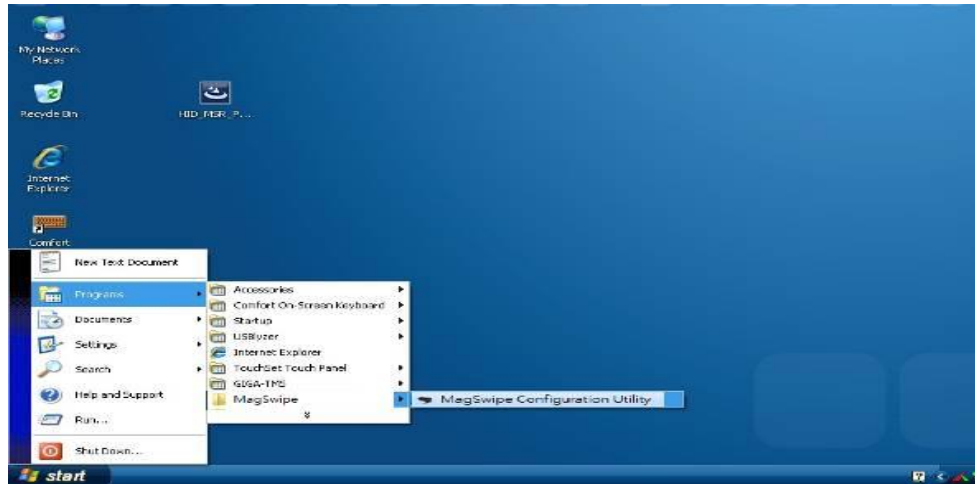
- **Configuration**

- **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.
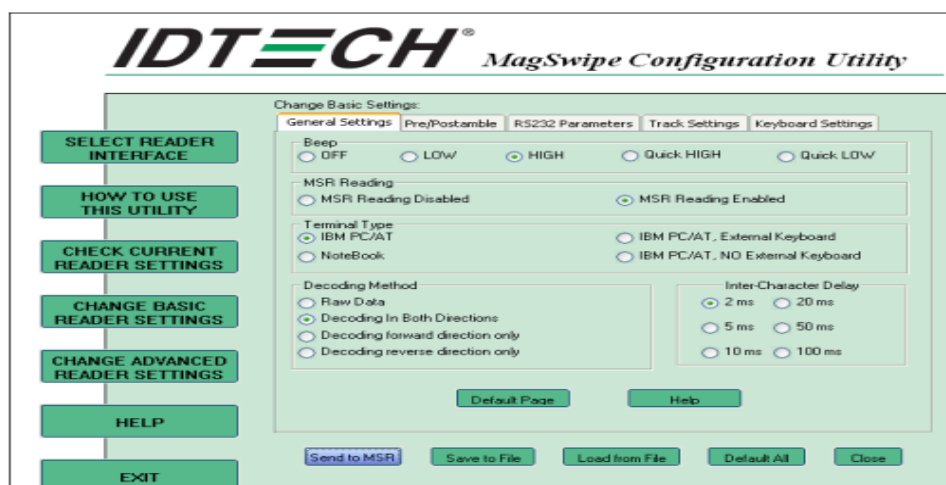
● **Button Definitions**

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.
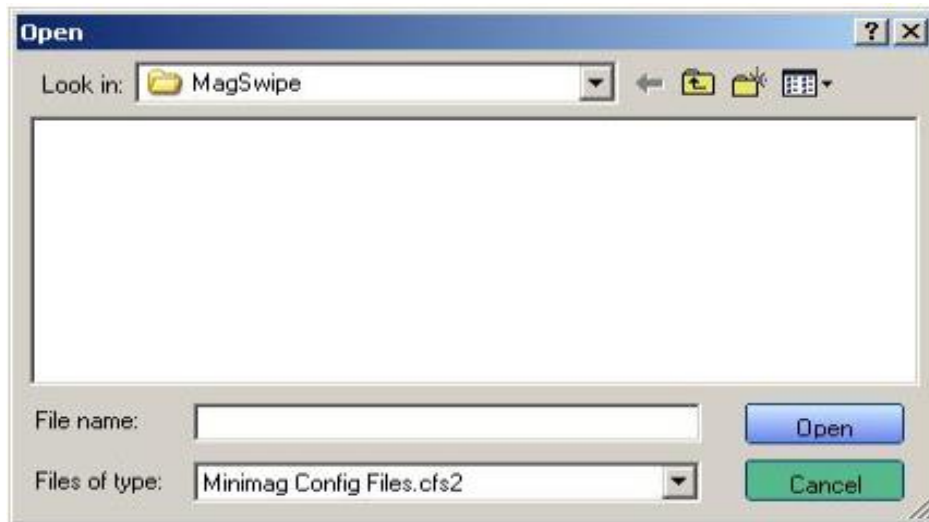
Save To File

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.
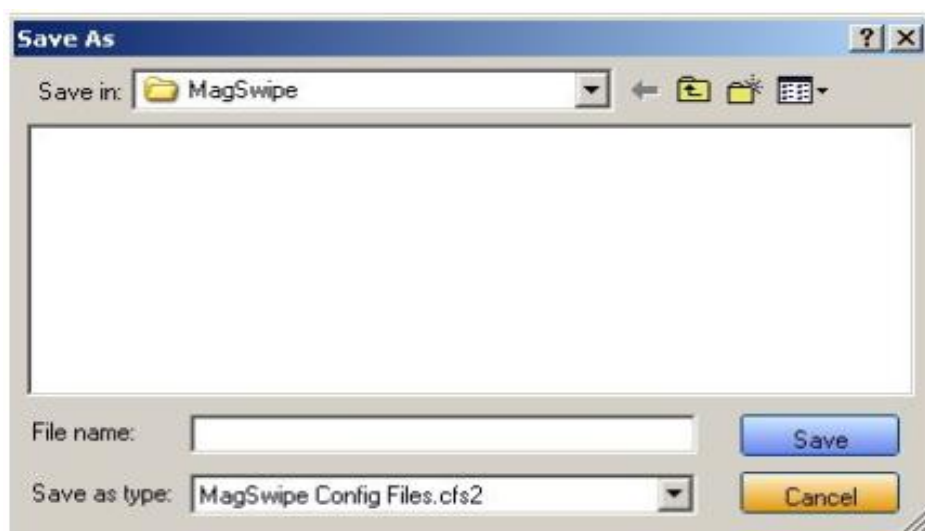
Default All

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:

a.   Quick High
b.   Quick Low
c.   High
d.   Low
e.   The default is High beep.

- **Terminal Type**

a.   NoteBook
b.   IBM-PC/AT
c.   IBM-PC/AT, External keyboard
d.   IBM-PC/AT, No External keyboard
e.   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**

1. **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 Premable.

2. 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 charecters 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 Settings**
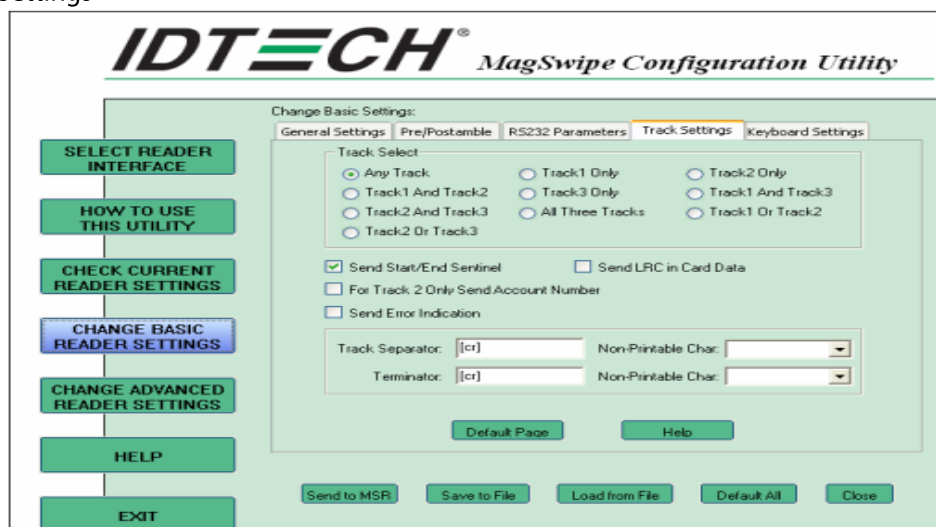
● **Track Selection**

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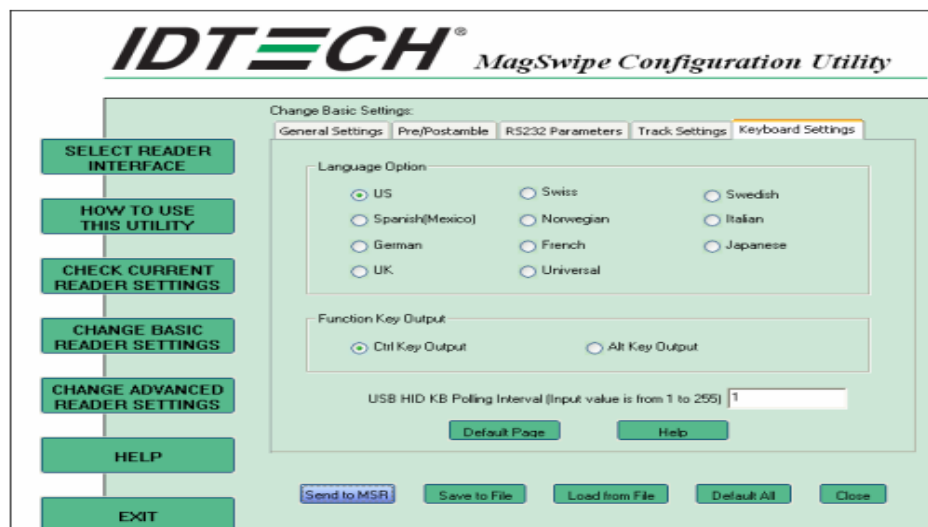
There are keybroad settings information on a magnetic stripe. MiniMag II will support following foreign language keyboard and function key output for PS/2 and USB HID Keyboard Interface.

● 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 keyped 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:
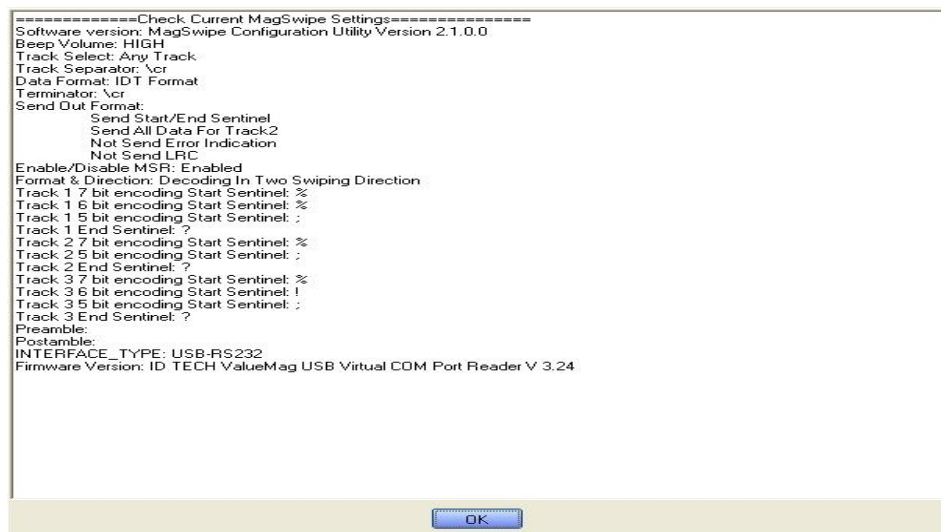
6.3. Fingerprint Reader

1. Check Fingerprint reader be detected by "**Device manager**"
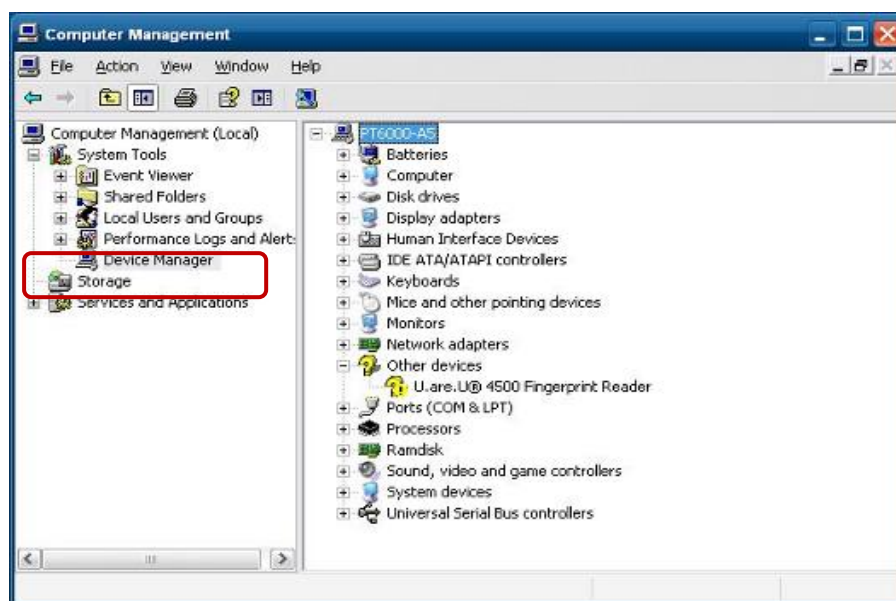
2. Select SDK folder.

3. Run Setup.exe.

4. Click "**Next**".

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

6. Click "**Next**".
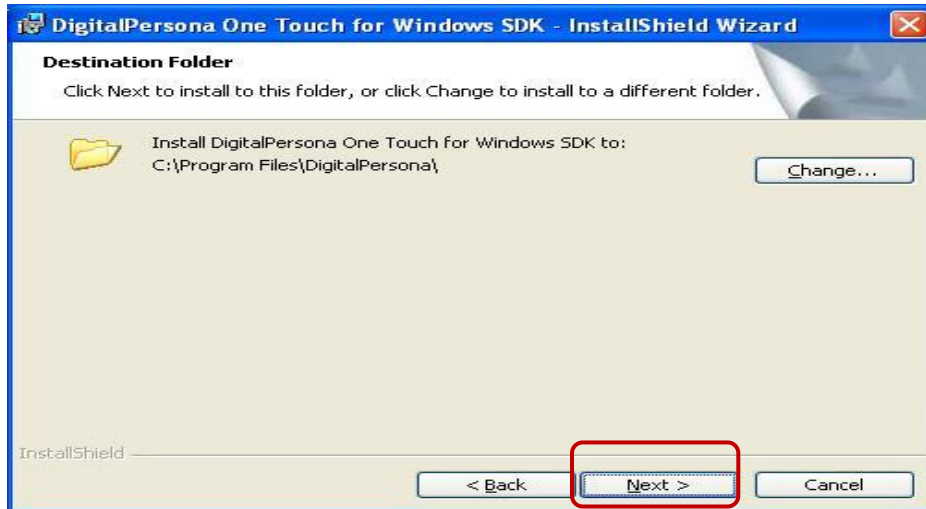
7. Click "**Next**".
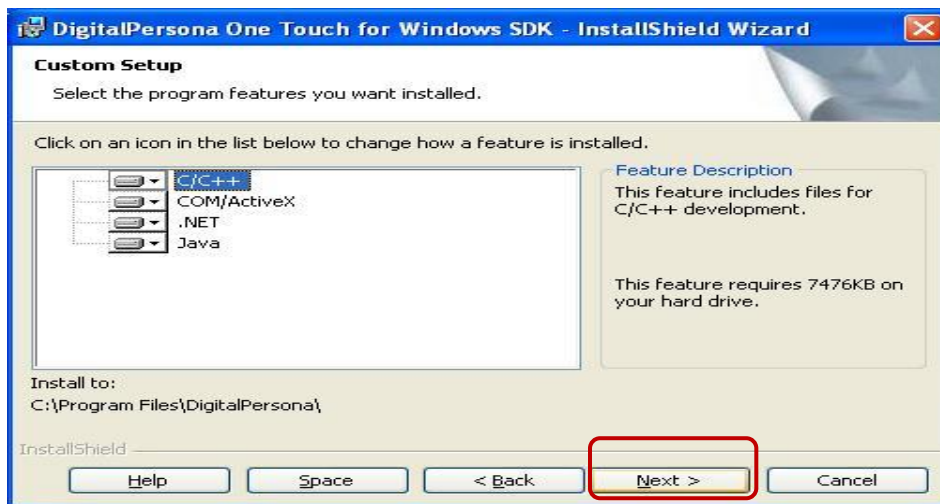
8. Click "**Install**".

9. Click "**Finish**".

10. Restart systems.

11. Check Fingerprint reader in Device Manager.
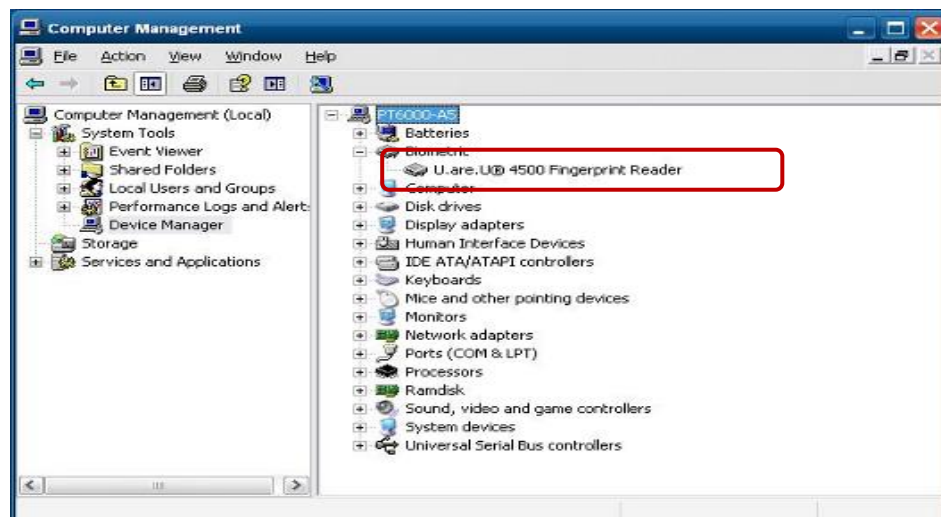
12. Launch Fingerprint reader from start menu

13. Select "**COM-ActiveX**"
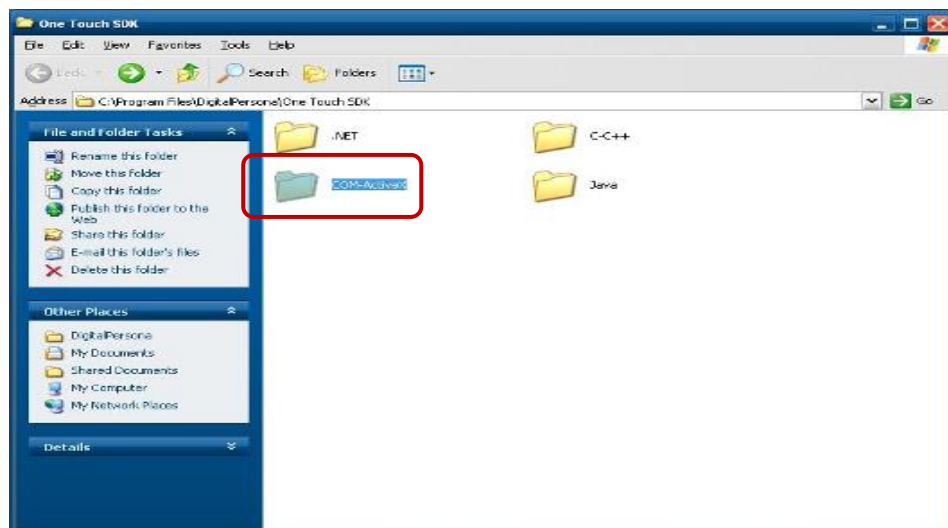
14. Select "**Samples**"
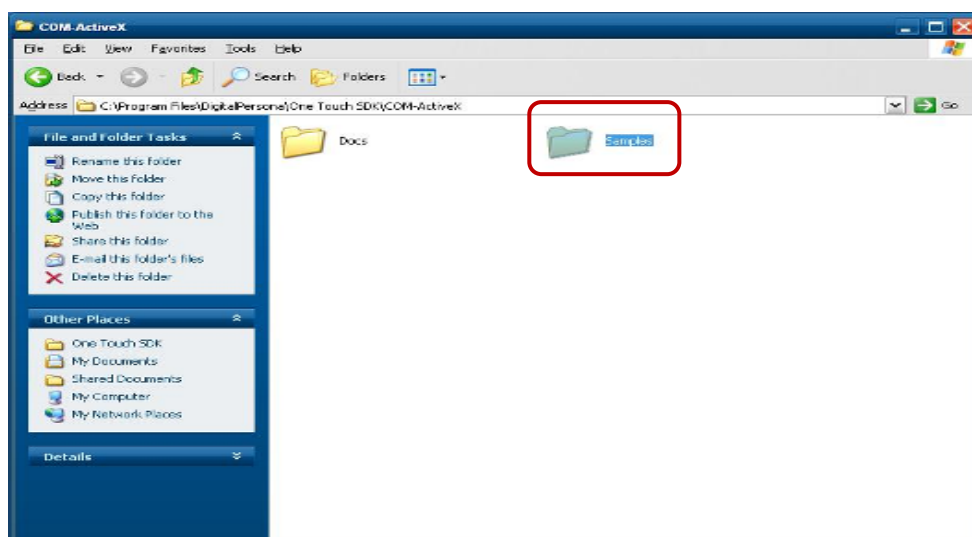
15. Select "**VB6**"
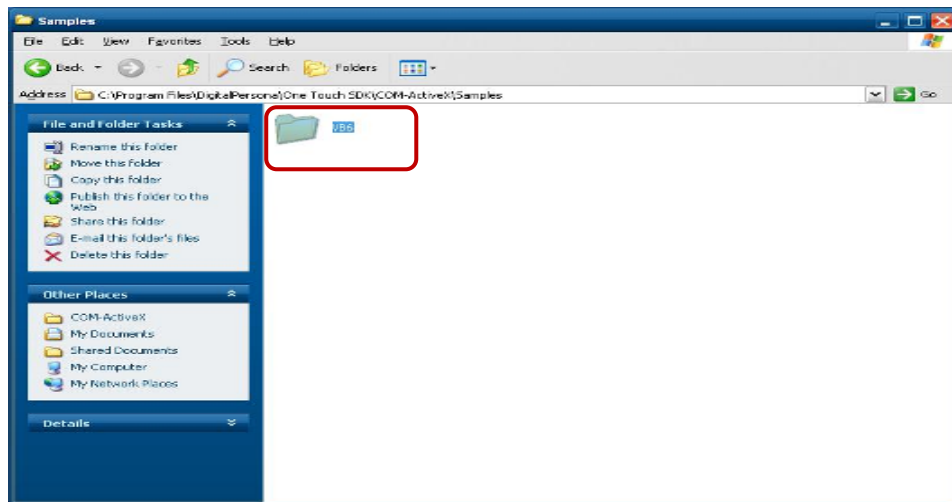
16.   Select "**Enrollment Sample**".
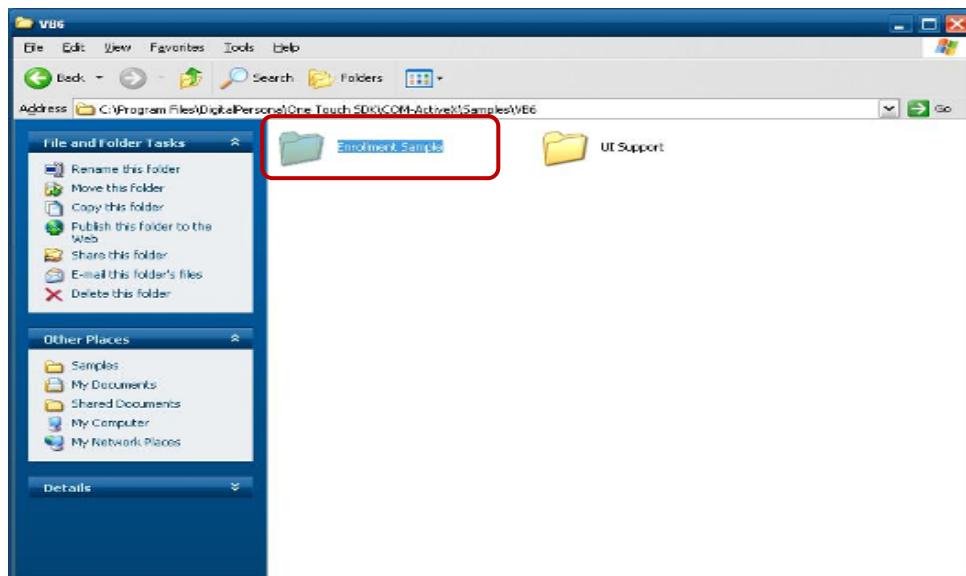
17.   Enroll the fingerprint by the "**Enrollment**"
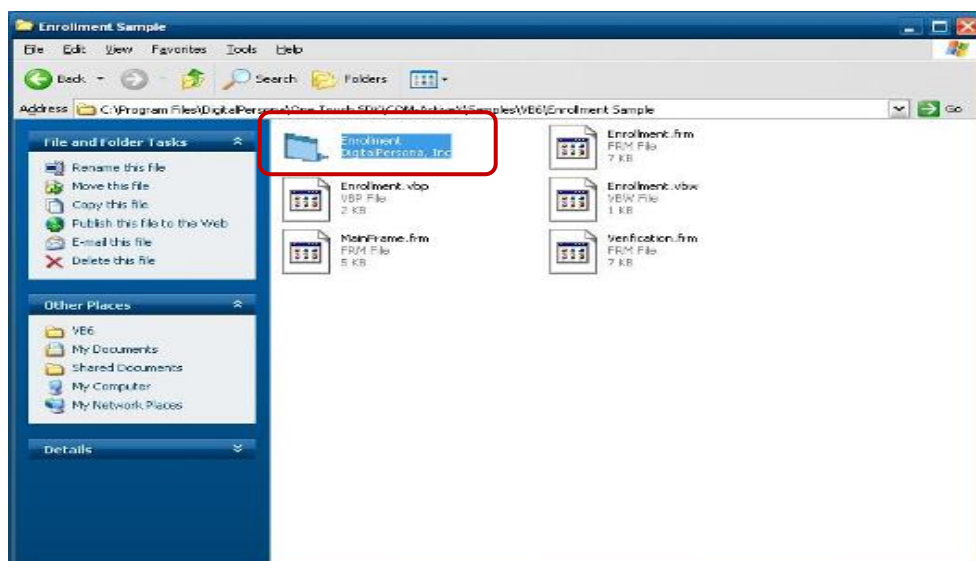
18. Select "**Fingerprint Enrollment**"
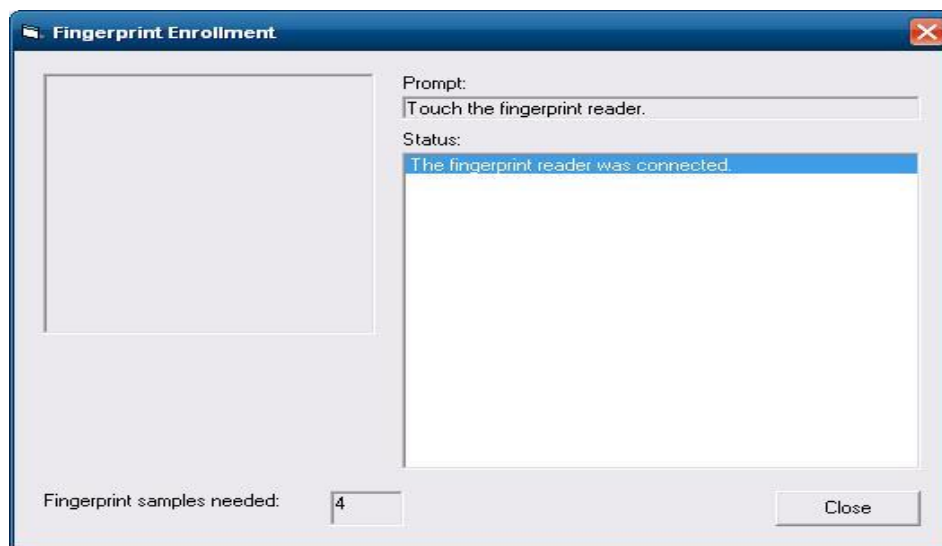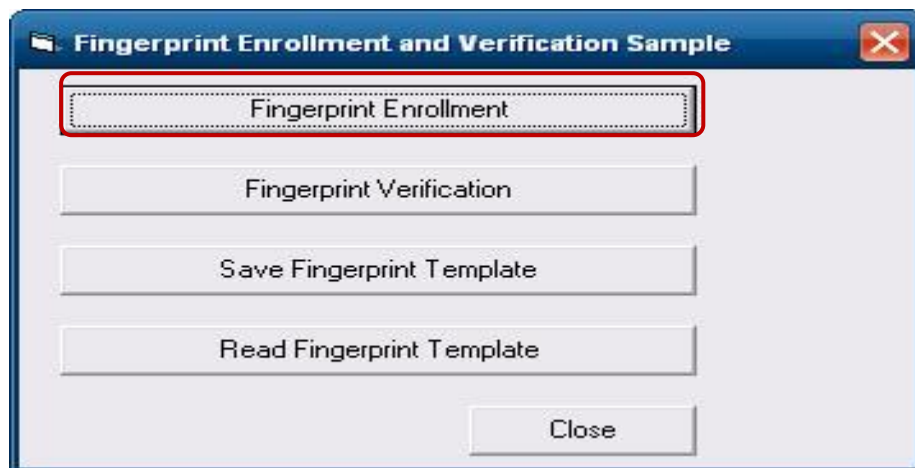
19. Put your finger on fingerprint reader and follow the direction to enroller your fingerprint, it need scan your fingerprint **4 times**
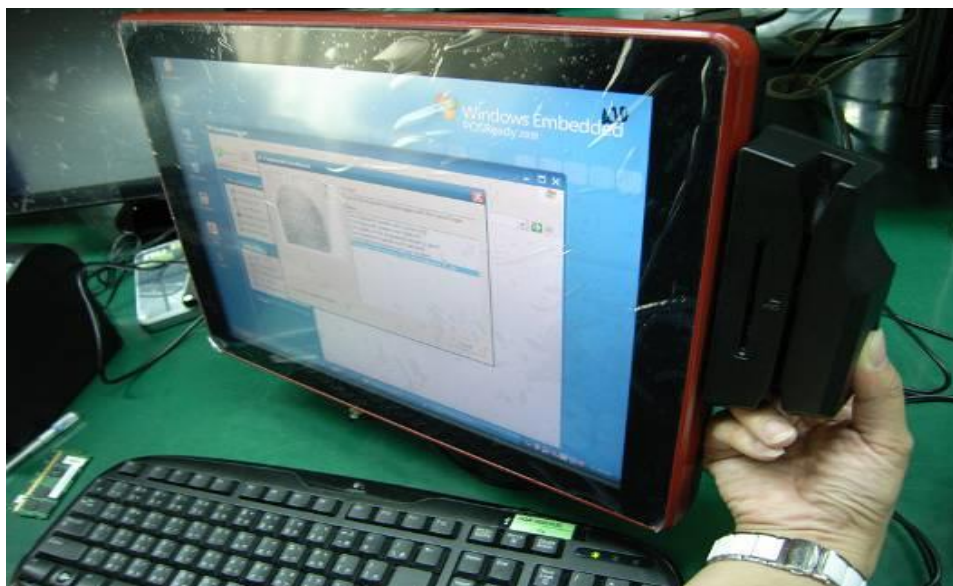
20. After enroller finish it will popup a dialog box
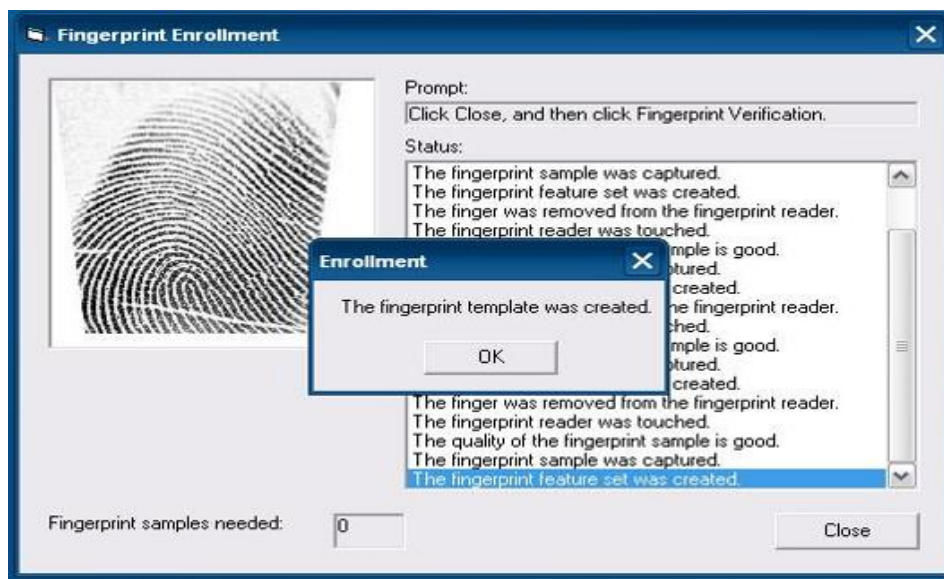
6.4. RFID

6.4.1.　Install (Operating System: Microsoft Windows POS Ready 2009)

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.)
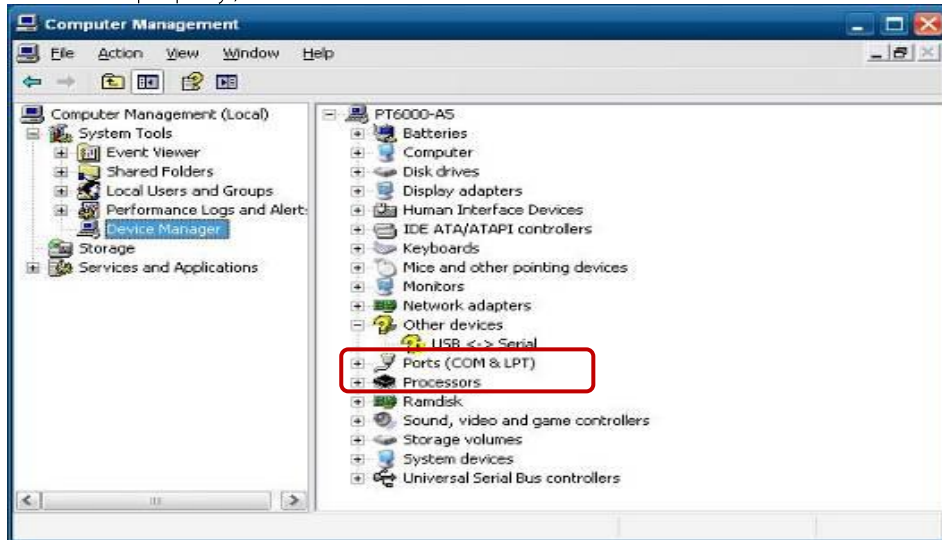
2.　Install RFID driver file name：XP2KxVista.exe

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

3.　After clicking"Next", A pop up console window appears as below.
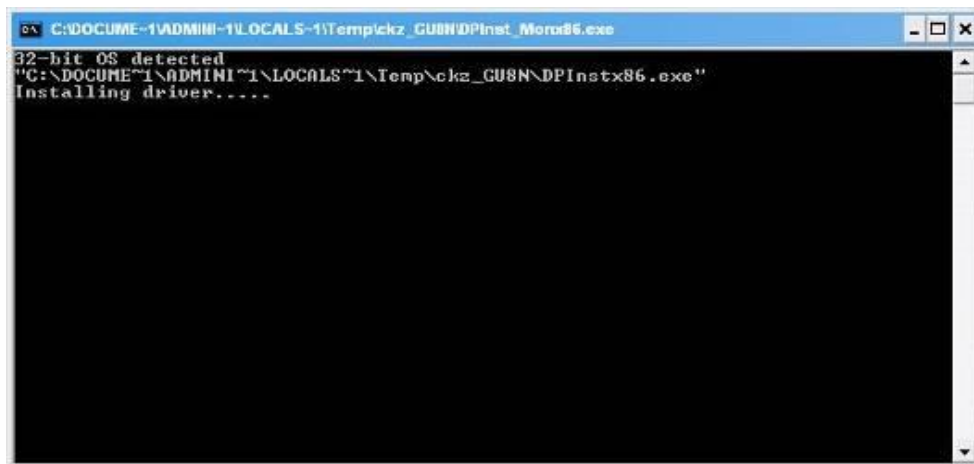
4. Check the Device Manager to verify the status of RFID reader.
    Computer Management -> Device Manager -> Ports (COM & LPT)
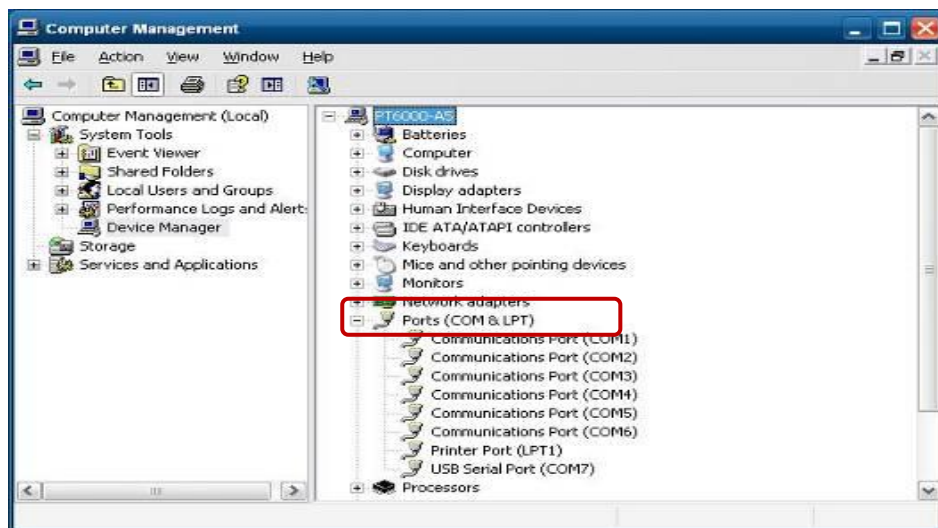
5. Install RFID utility

MifareDemoSetup_PSW00020.exe

3-1 Path:\MF320\MifareDemoSetup_PSW00020.exe

6.   Install Shield Wizard will be activated.

7.   Click "Next".
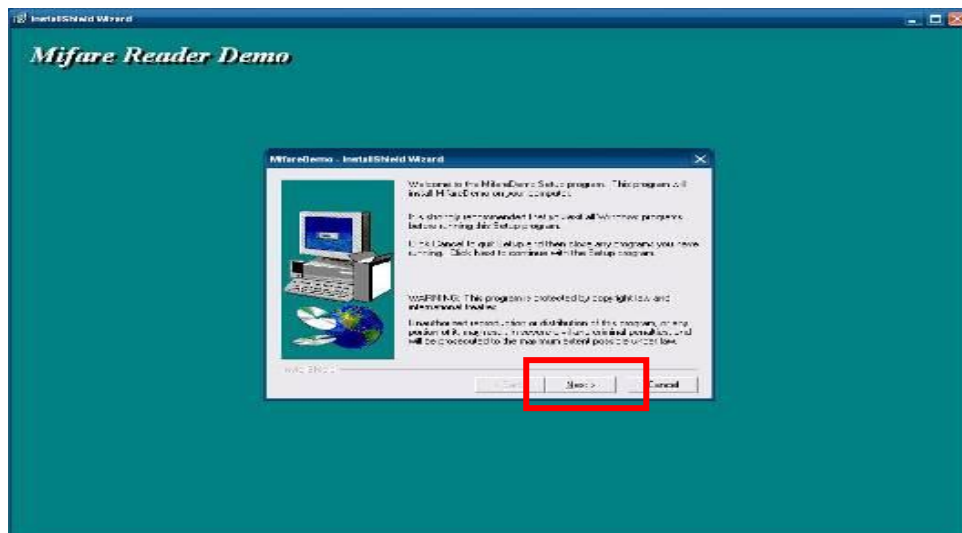
8.   Click "Next".
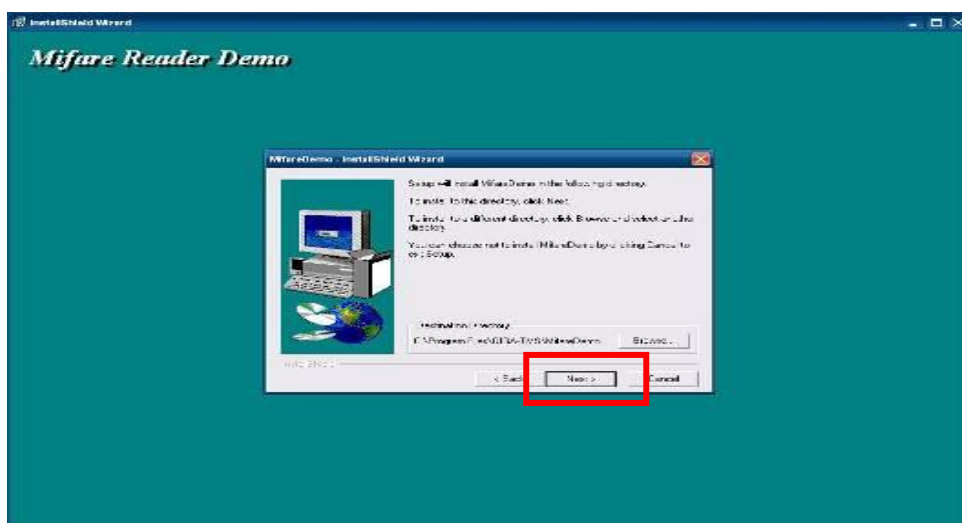
9. Click "Giga-TMS" & "Next".
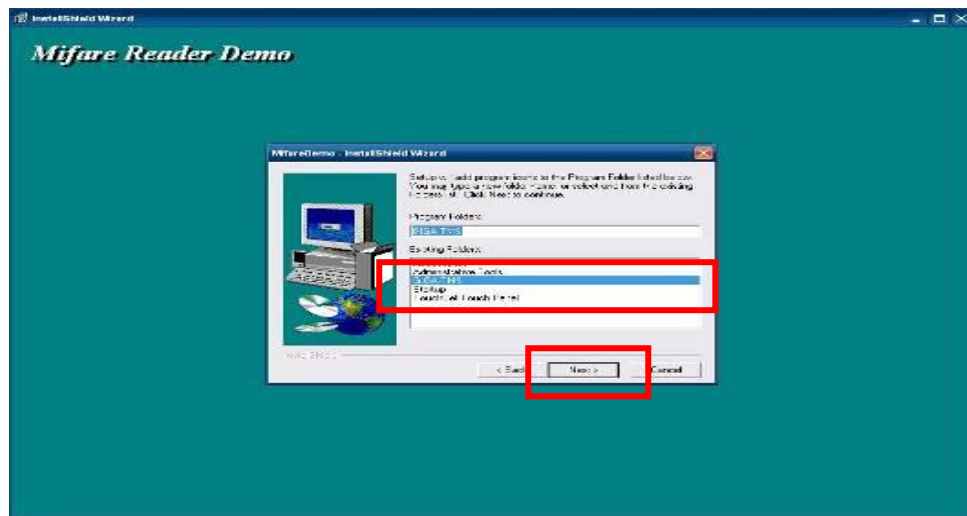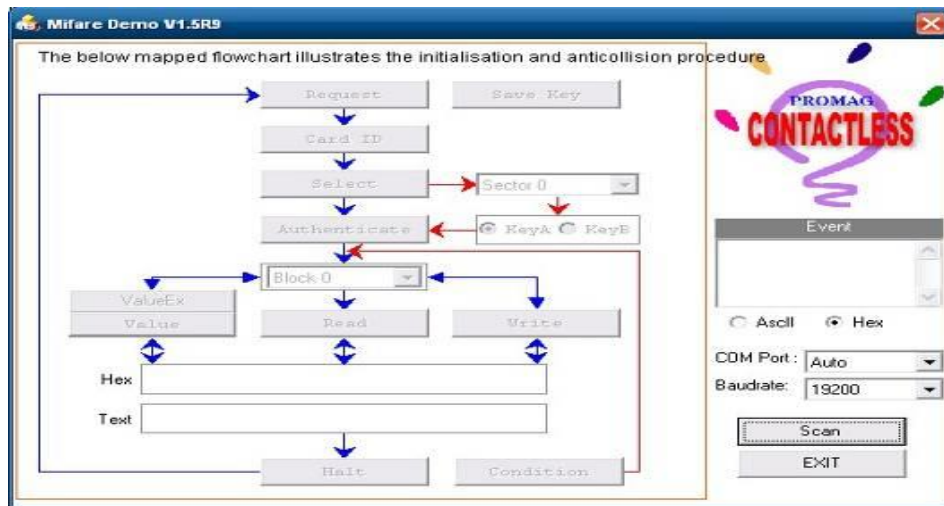

10. Click "Next".
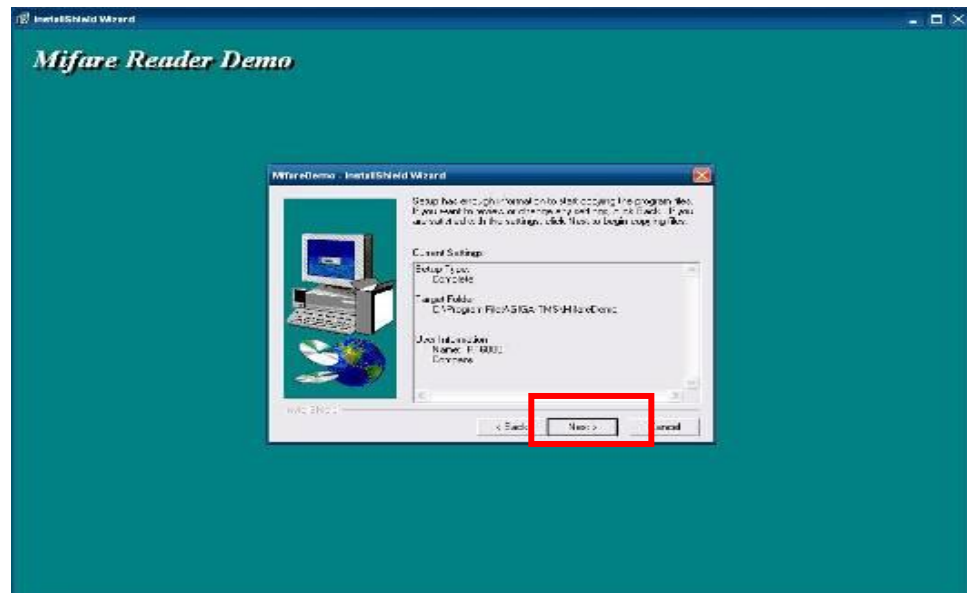

11. Click "Finish"
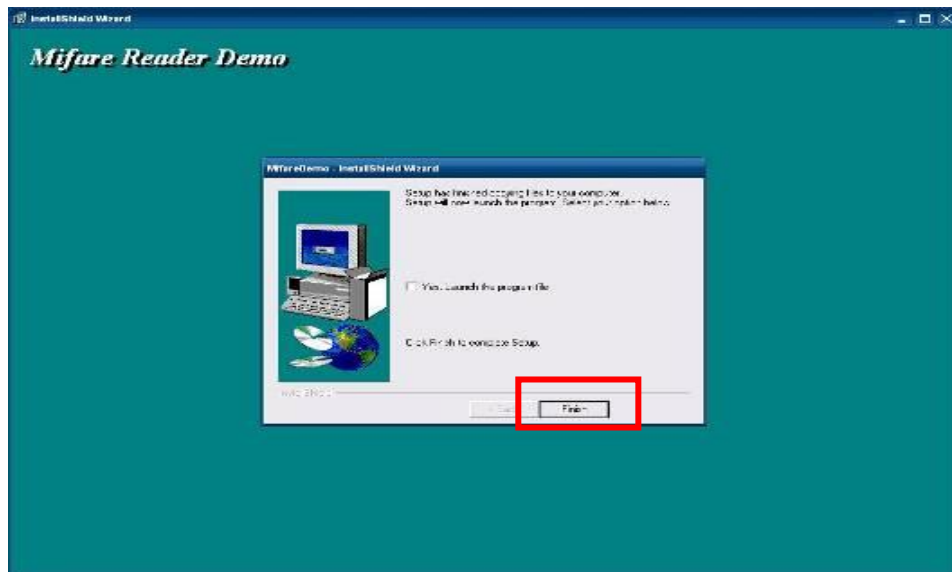
6.4.2. Run RFID demo program.

1. Start -> All Programs -> GIGA-TMS -> Mifare Demo
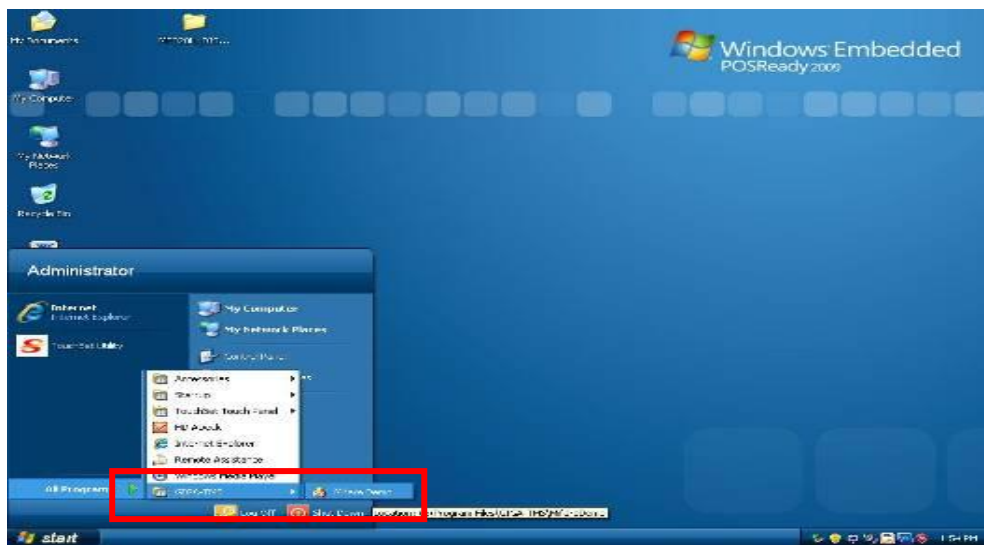
2. Run "Auto Scan" Demo AP will detect the RFID reader automatically. Or select the RFID COM port

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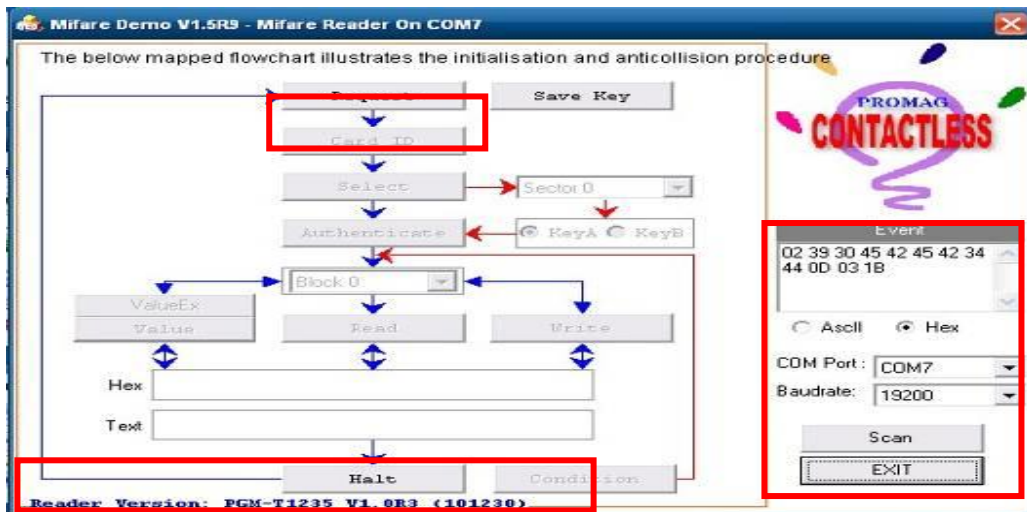
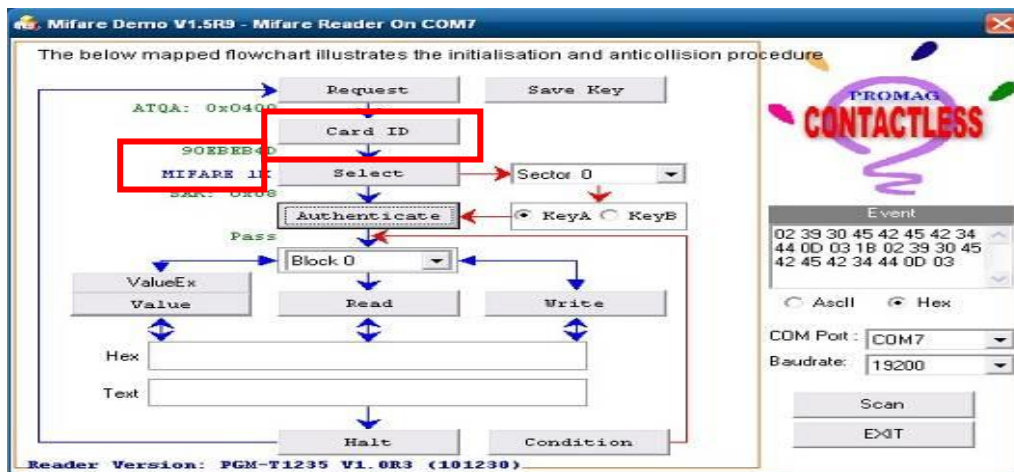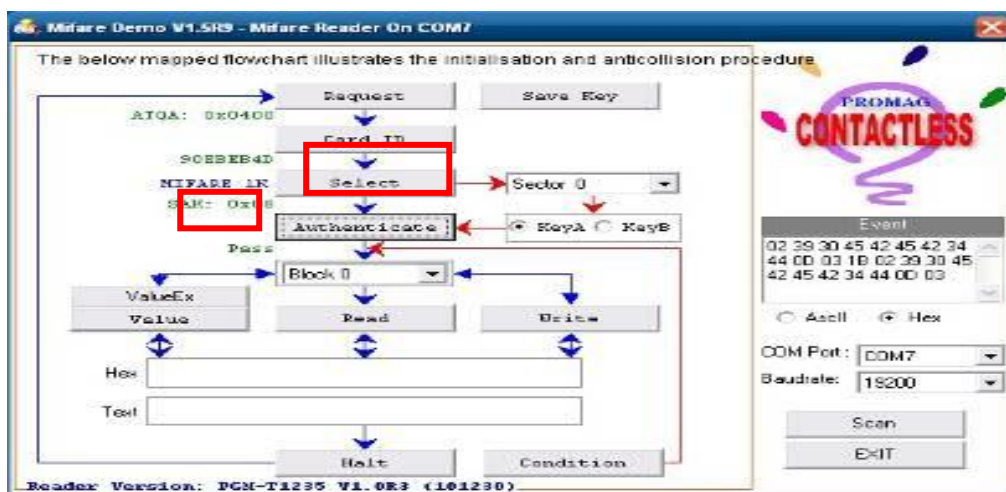- Place the RFID card on the RFID reader.
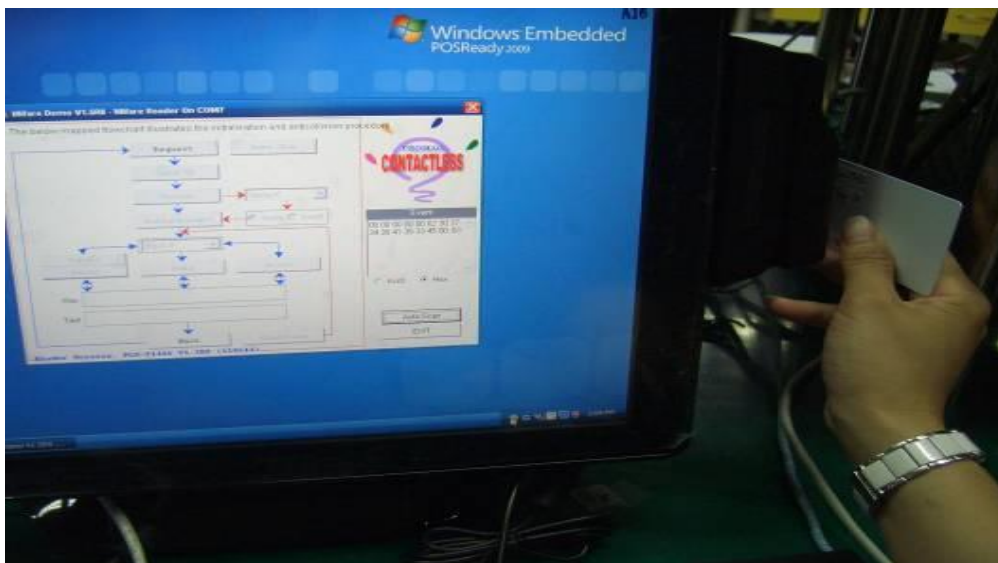
4. Card type will be recognized when you click "Request".   (Your Mifare card should be placed on the RFID reader area.)
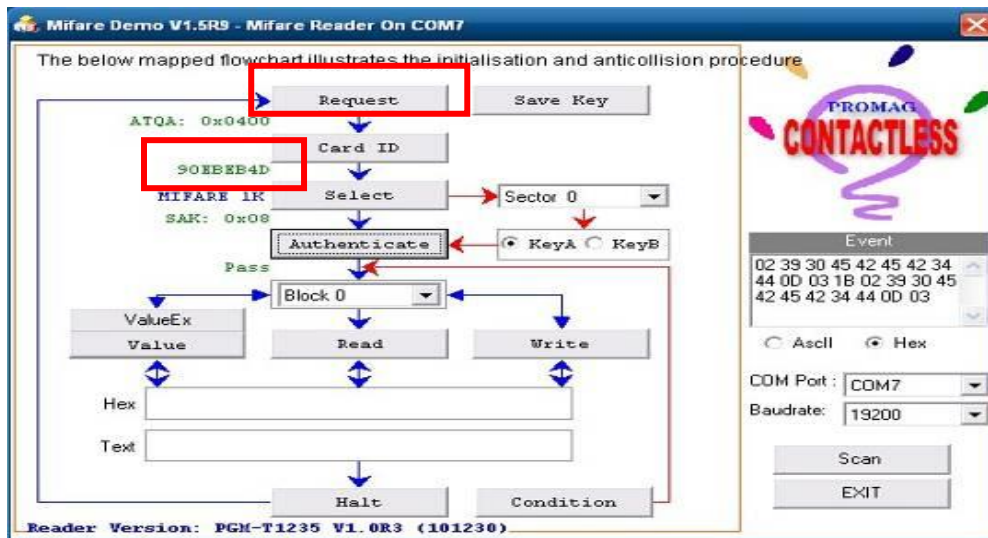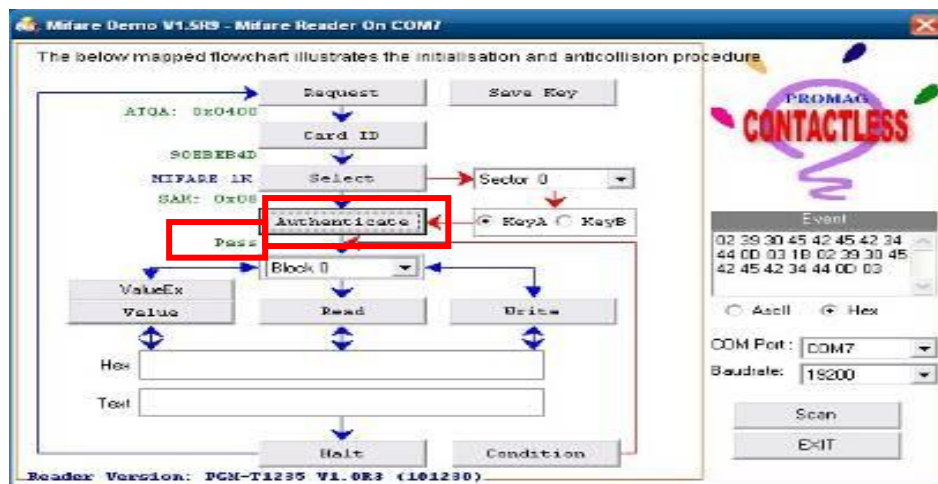

5. Card ID will be recognized when you click "Card ID".

6. SAK will be read when you click "Select".

7. The result will show when you click "Authenticate".

6.5. Internal VFD

		Specification
General	Display Method	Vacuum Fluorescent Display(blue-Green)
	Number of Characters	40 (20 Columns X 2 Lines)
	Brightness	500 ~ 1000 cd/m2
	Character Font	5X7 Doc Matrix
	Character Type	95 Alphanumeric, 32 International Characters
	Character Size	6.75(H) X 3.75(W)mm
	Doc Size (X x Y)	0.55 x 0.75 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) x 170(W) x 50(D) mm
	Pole Dimension	Per Support Length: 130 mm
	Base Dimension	33(H) x 159.8(W) x 100(D) mm
	Viewing Angle	Max. 90º
	Horizontal Rotation	Max. 355°
	Weight	Approx. 980 Grams
Commands Mode	LD220, EPSON, AEDEX, UTC/S, UTC/P, ADM788, DSP800, CD5220, EMAX, LOGIC CONTROL, Ultimate	
Language Support	US English, Int'l 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	
Interface	RS-232(Serial)	
Connection	Baud Rate	Direct Connection 9600 or 19,200 bps

Reliability	MTBF	30,000 Hours
Power	Consumption	5 VDC
Safety	EMC Standards Safety Standards	FCC, CE

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

<div align="center">in 1 MSR   Bottom Case</div>

6.6.1. 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.

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 HIDMSR-20 Utility folder
2. Click MagStripe Card Reader Configuration Utility to launch the program.
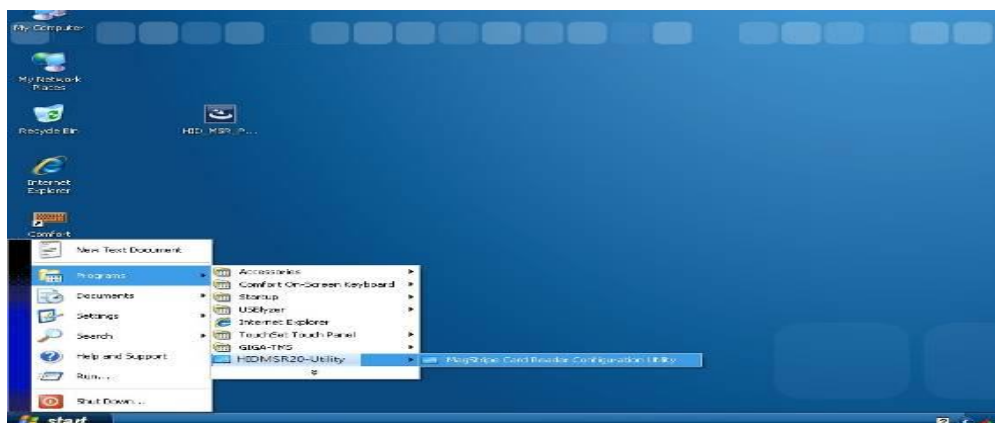
The utility program will detect the connected reader. If detected, all the input text boxes will be enabled. If the reader has not been connected to PC yet, please connect the reader and then click **Refresh** to get connected.

- **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.

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

a. All
b. CRC.ID
c. ID, FC
d. ID
e. 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.
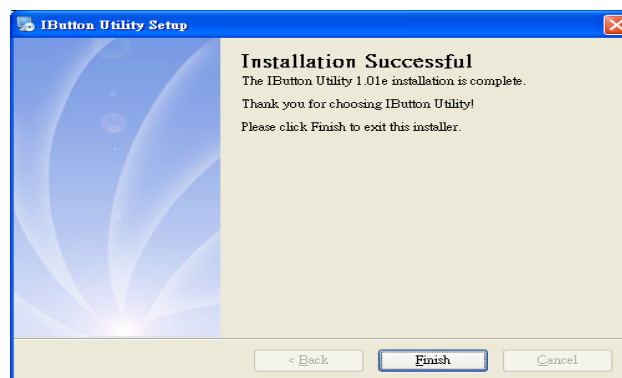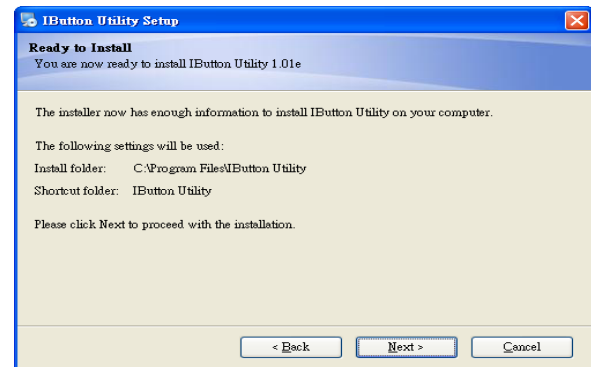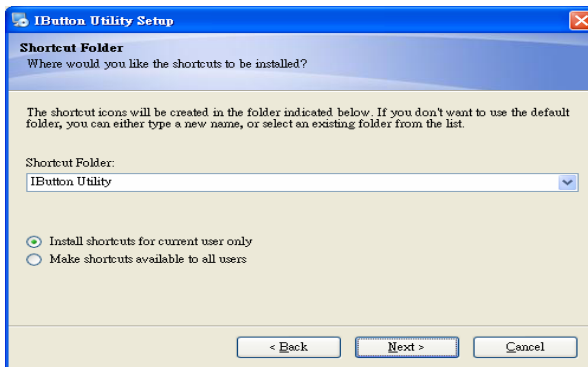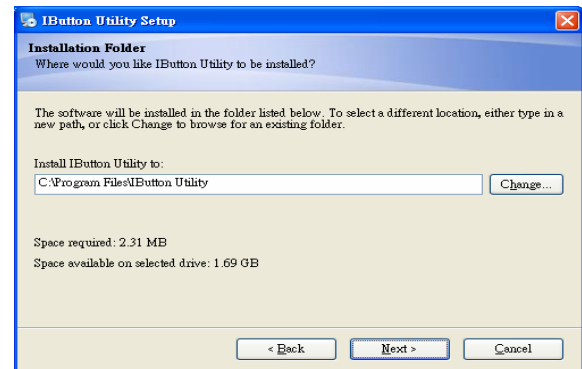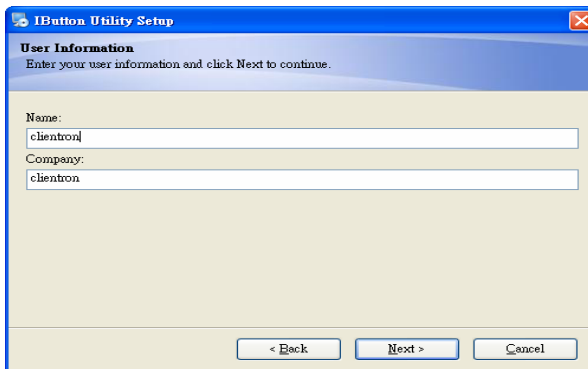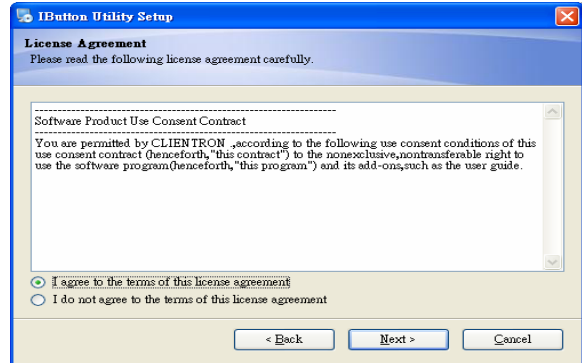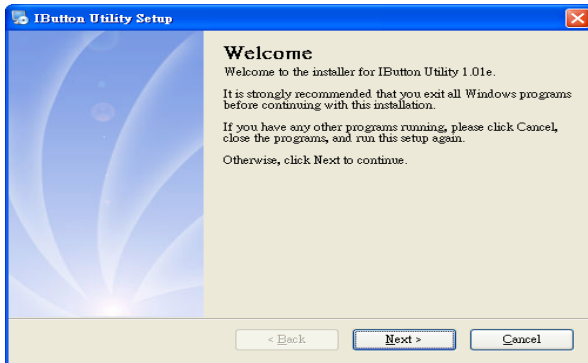
2.1.2. i-Button Reader positioned at bottom case

- **Installation**

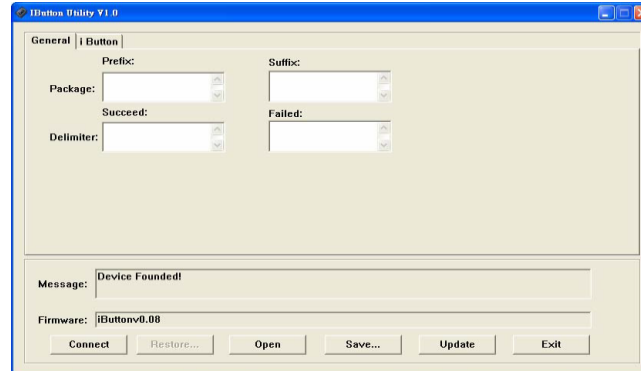Below steps guide you how to install the Utility program.

1. Insert the setup CD
2. Run the **ZKTeco IButton Utility.exe** setup file that is located in the Software folder of CD
3. 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.
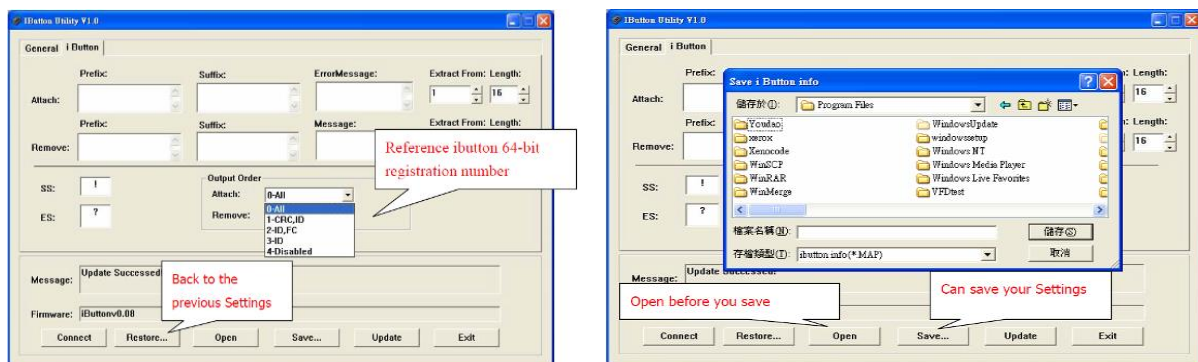
For the settings, there are:

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

● 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 formate:

● 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:

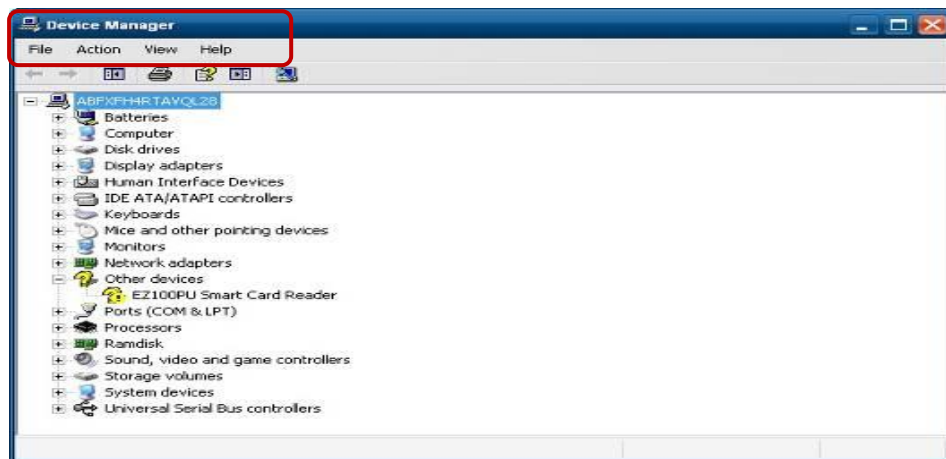● 8-Bit CRC + 48-Bit ID + 8-Bit FC
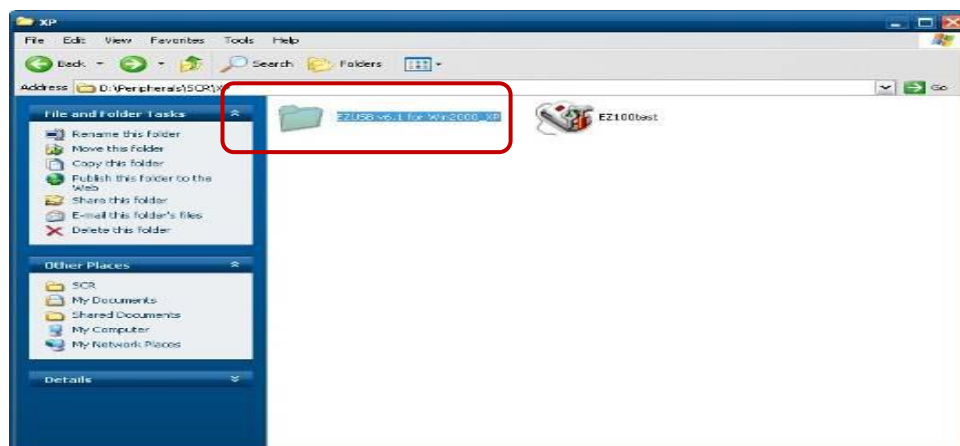
DEMO SETUP&OUTPUT
OUTPUT DATA :
a!ab00000003bdfa01?
b!ab00000003bdfa01?

6.7. Installation and Testing of Smart Card Reader
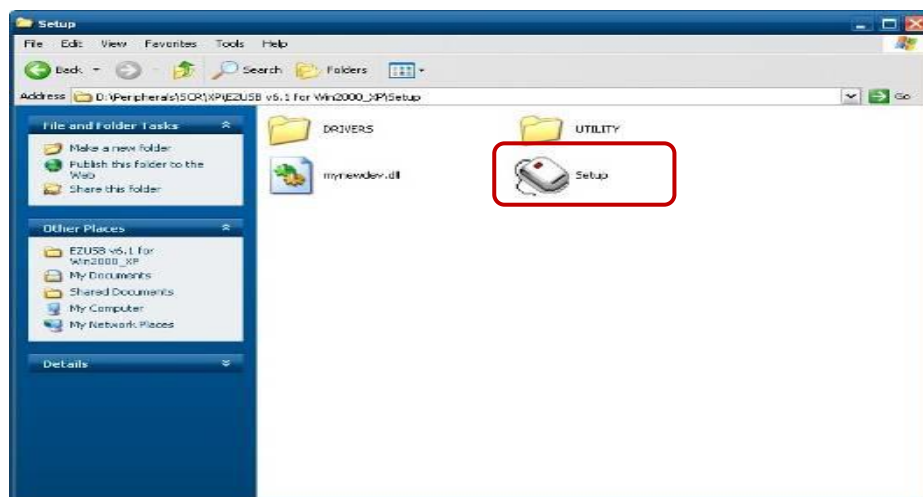
1. Check smart card reader be detected by "Device manager".
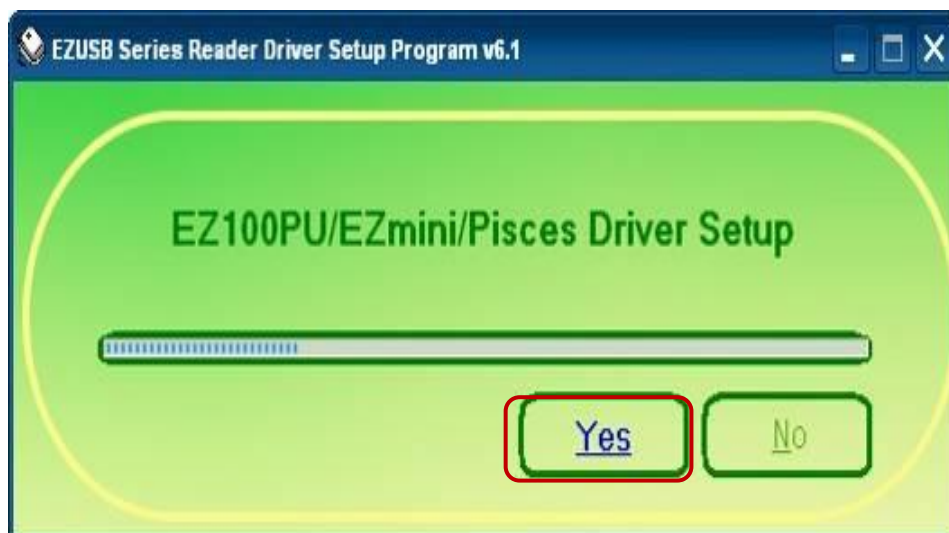

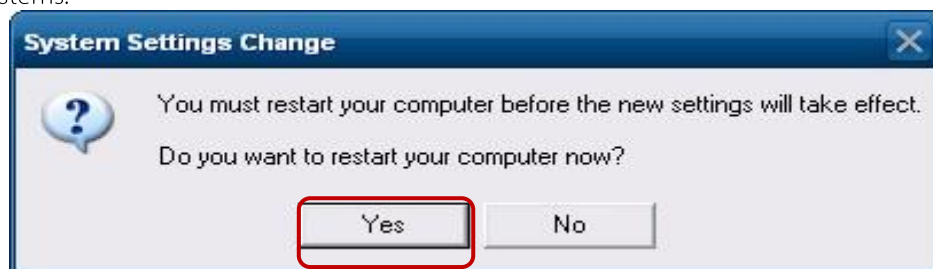2. Install the SCR driver.

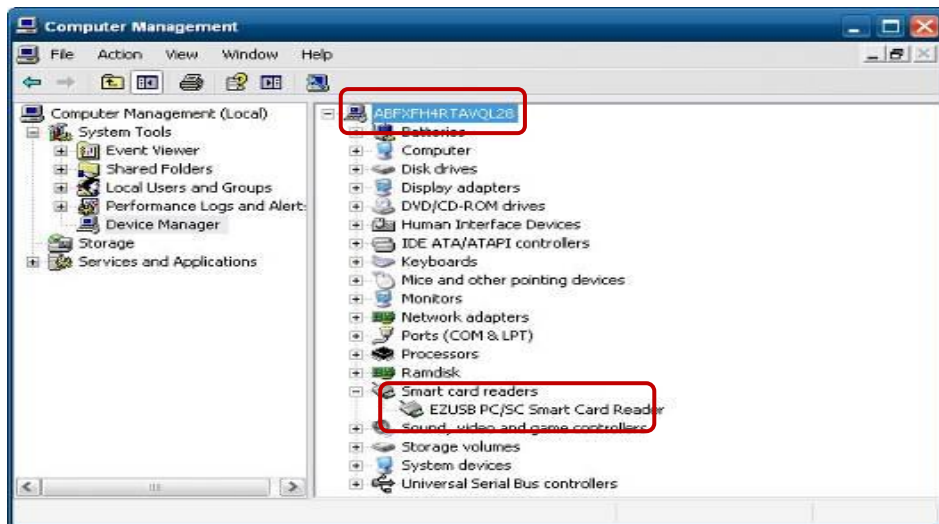3. Run Setup.exe.

4. Click "Yes".
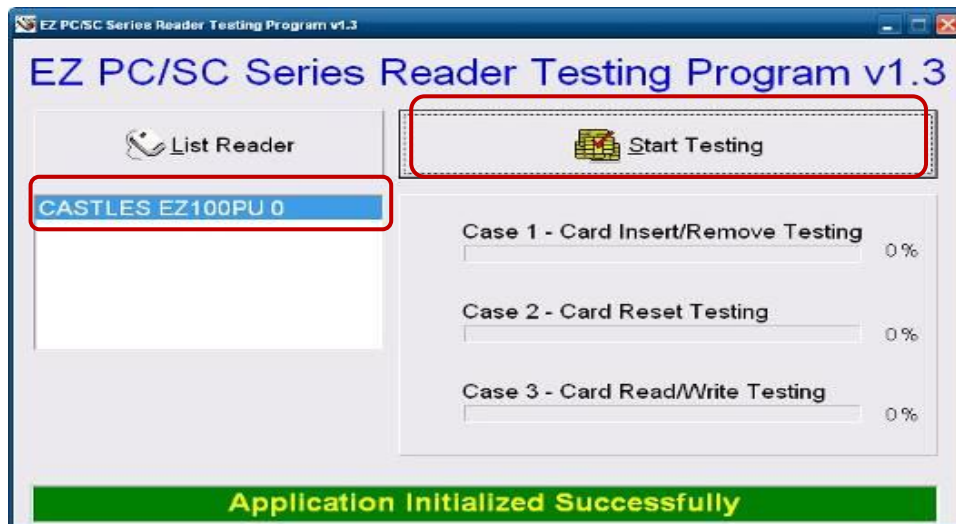

5. Restart systems.

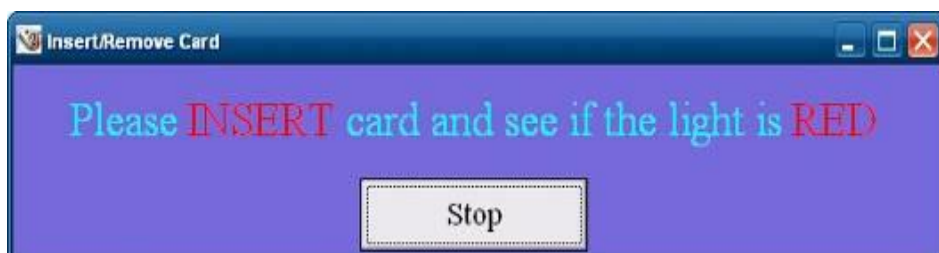
6. Check SCR reader in Device Manager.

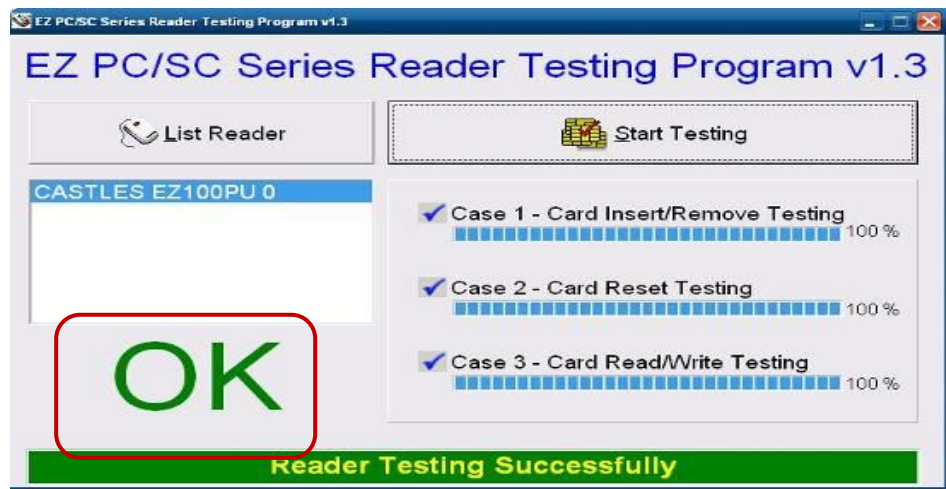7. Run the testing program – EZ100test.

8. Confirm that SCR can be detected by the testing program, then run the 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. Wi-Fi

1. Install the WiFi driver.
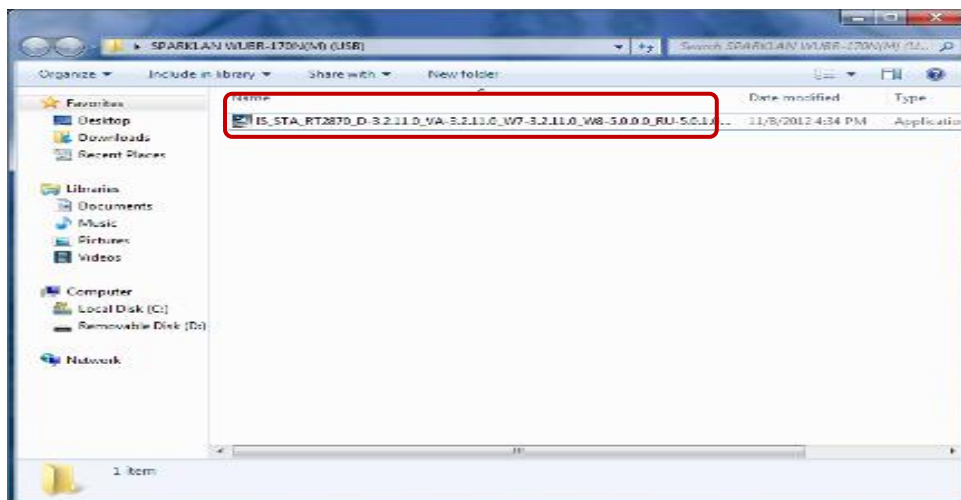
2. Select "**I accept the terms of the license agreement**" and click "**Next**"

3. Select "**Install driver and Ralink WLAN Utilit**y" and click "**Next**"

4. Click "**Install**"
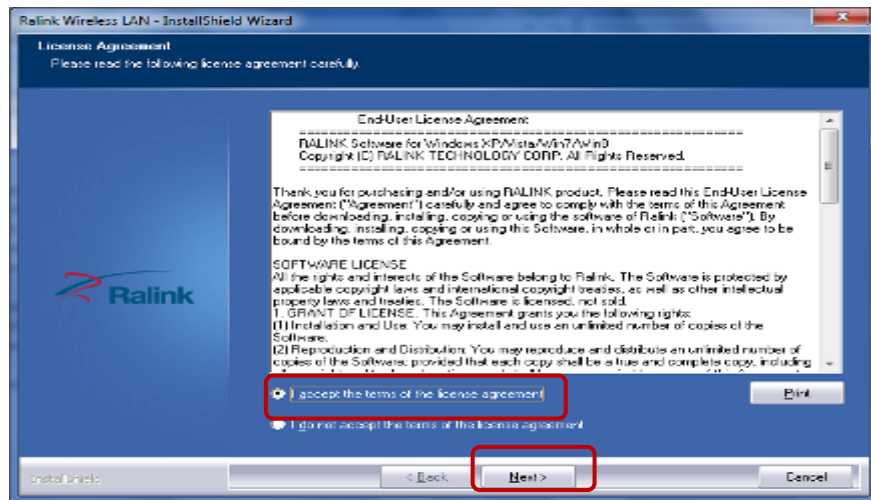

5. Starting install

6. Click "**Finish**"
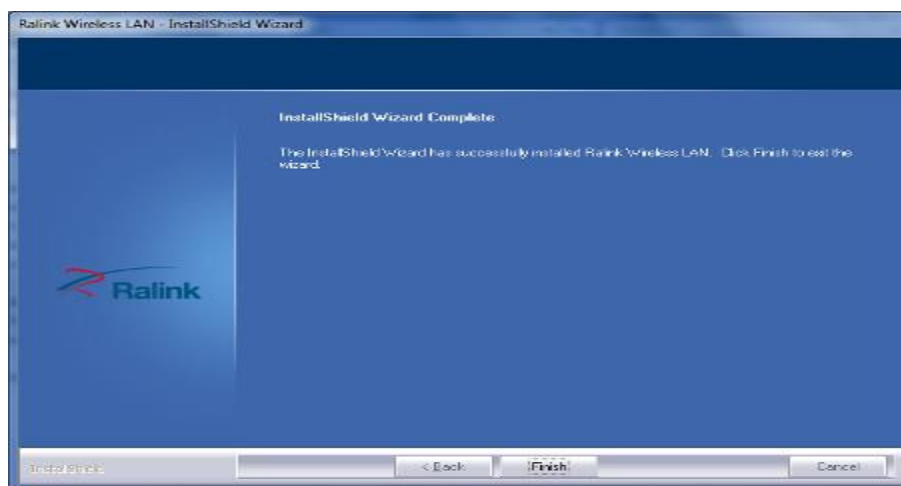
7. Install the WiFi driver.
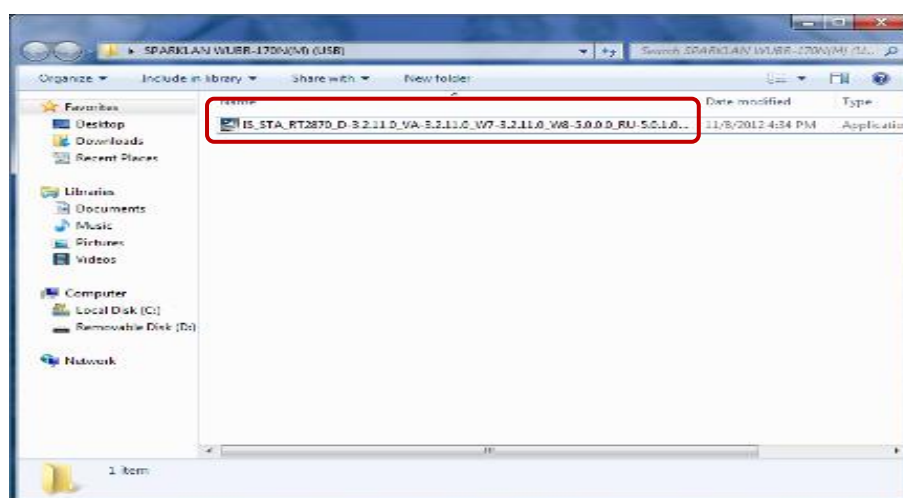
8. Select "**I accept the terms of the license agreement**" and click "**Next**"
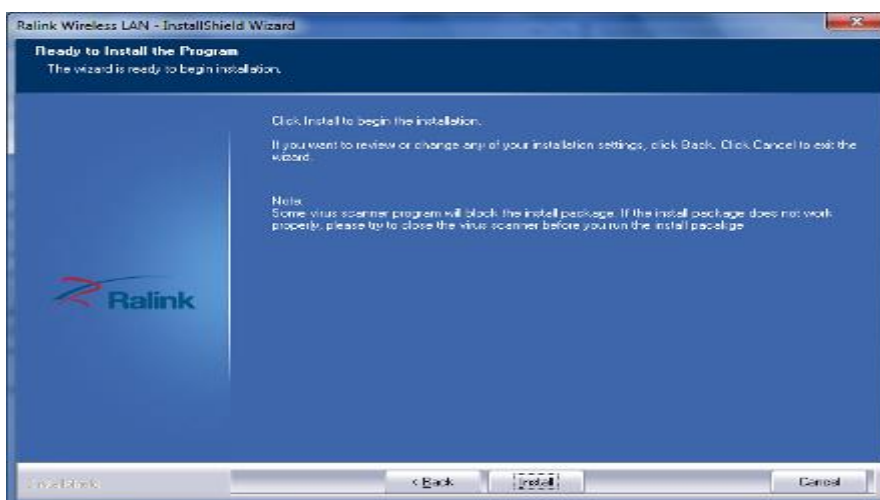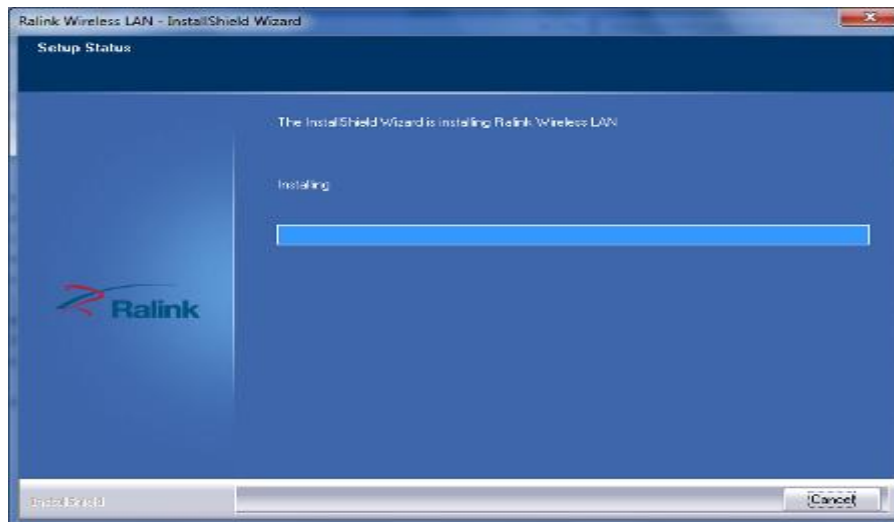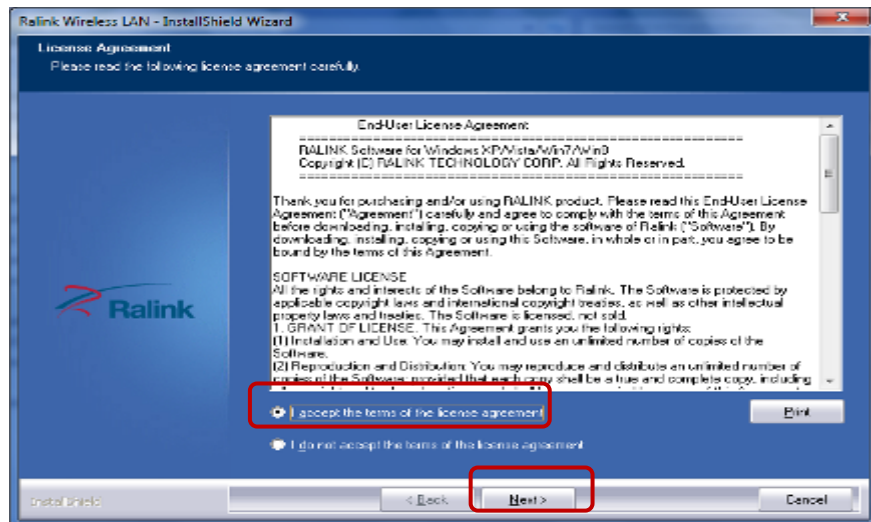
9. Select "**Install driver and Ralink WLAN Utility**" and click "**Next**"
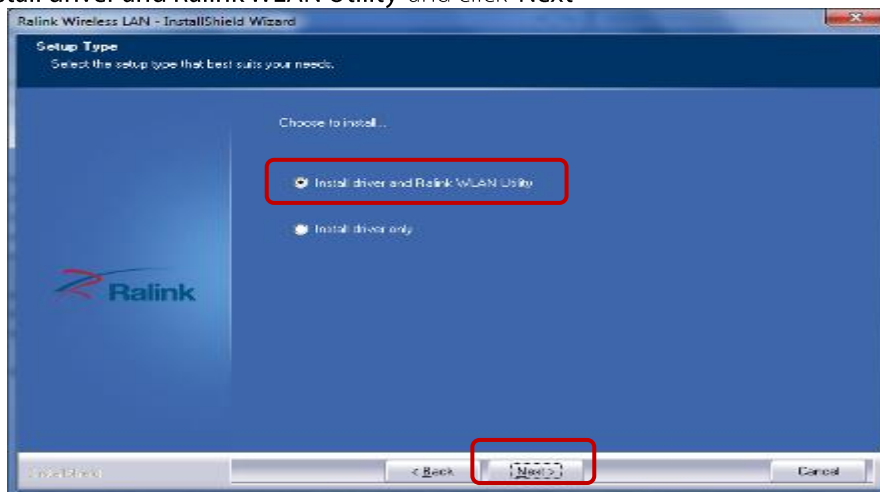
10. Click "**Install**"
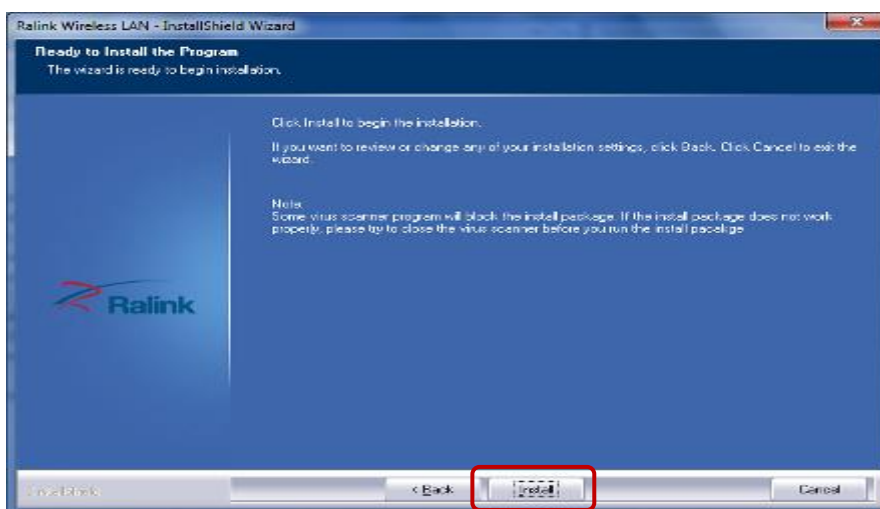
11. Starting install
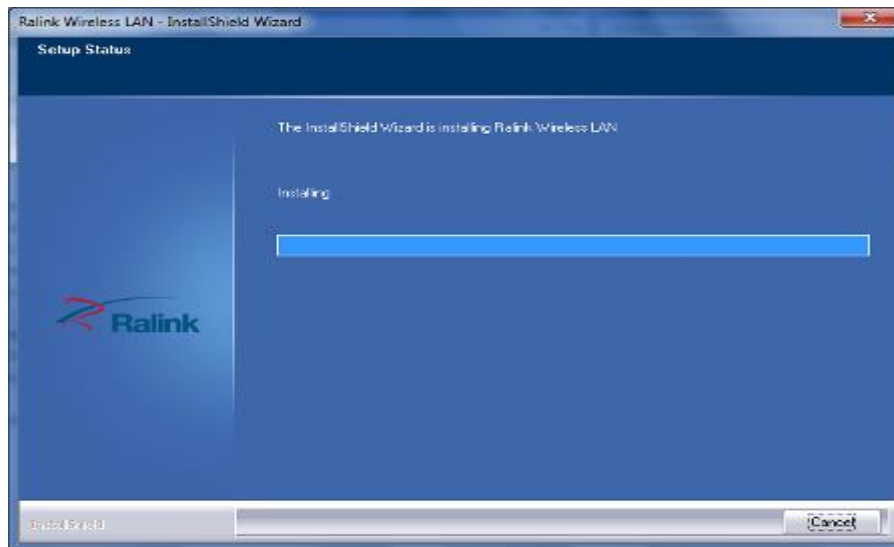
12. Click "**Finish**"
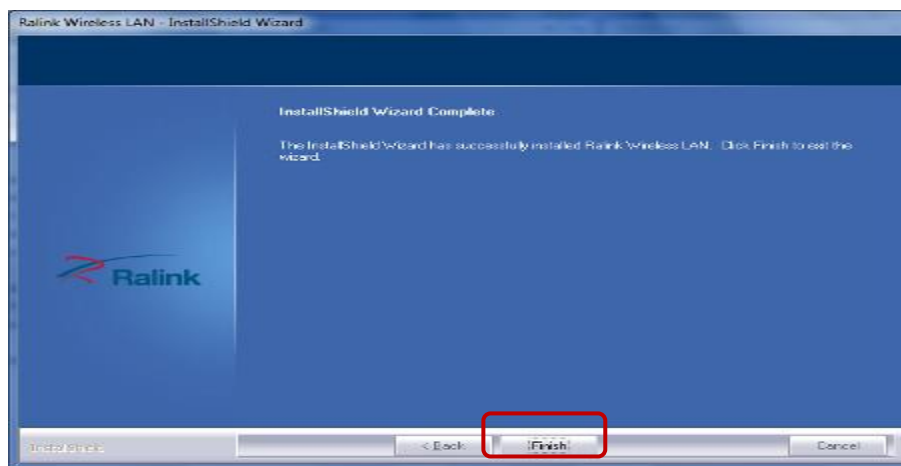
6.9. Pole type VFD VD1220

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.
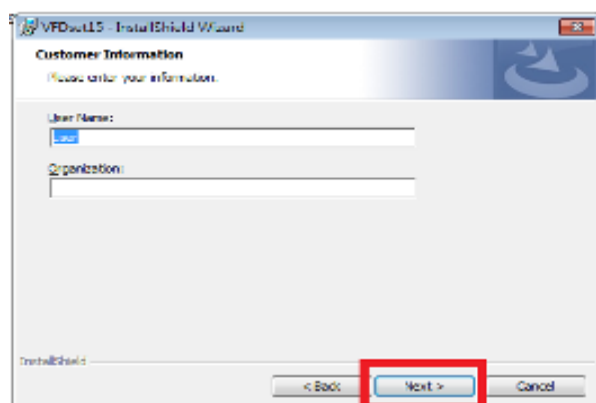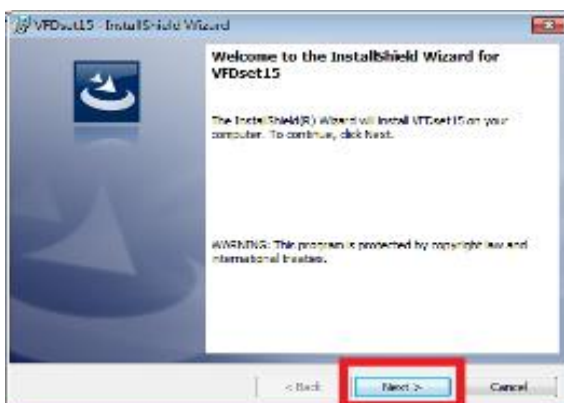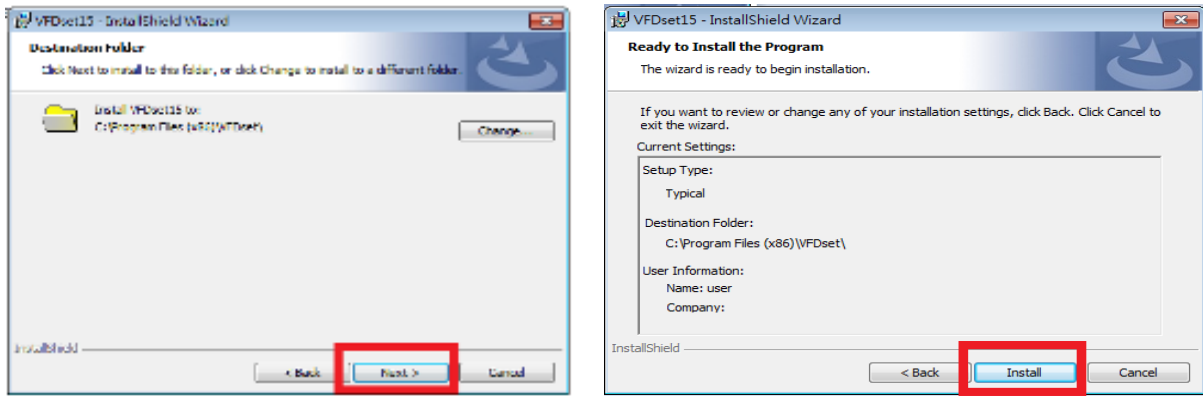
3. To execute "VFDset.exe" for setting up communication between software and VFD module.
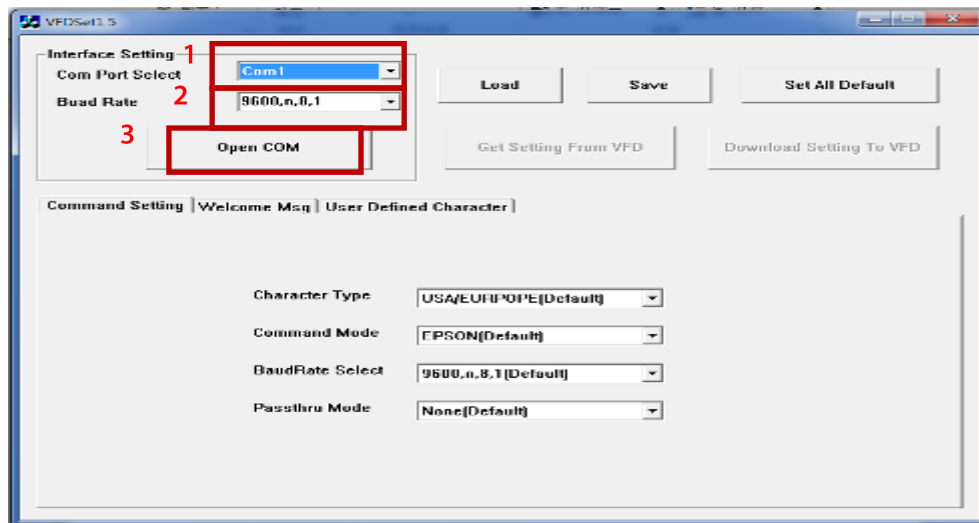
Please then follow the steps as shown in the above figure, the baud rate will show on states page of VFD module (Note: You may check it when power on VFD module), then click "Open COM" button.

4. "Get Setting from VFD" button to get all the settings from ZKTeco and it'll refresh the "VFDset.exe" software.

5. Select "Character Type"/ "Command Mode"/ "Baud Rate Select"/ "passthru Mode".
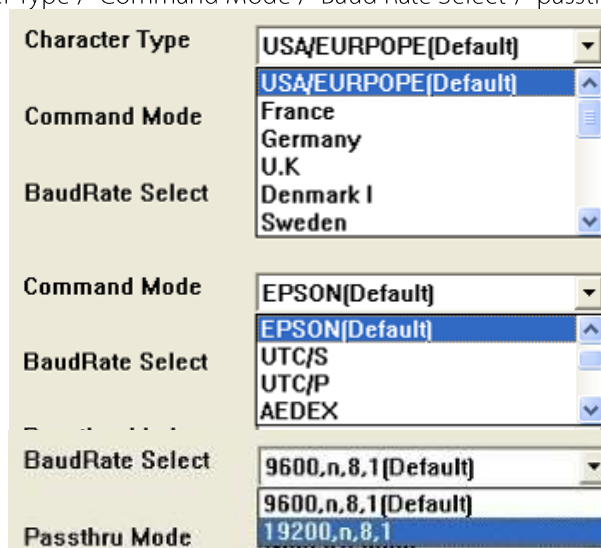
6. Click "Set All Default" button To show default setting, the Default table is

Character Type   : USA

Command Type   : EPSON/EURPOPE

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 to0xFFh，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

Download O.K ! Please restart !

确定
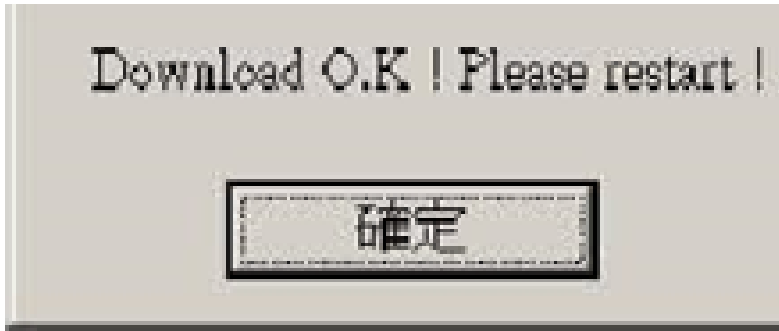
9. Click "**Save**" button

To save user's setting in file; for example, below picture to save file name as "GOODLUCK" file set for Welcome Message.
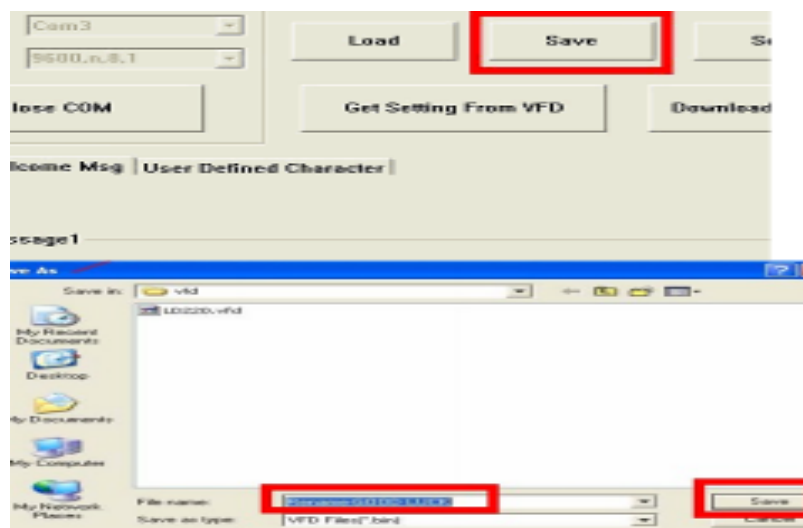
10. Click "**Load**" button

After saving, you must restart the utility here. Then load your setting rename-GOODLUCK.vfd.
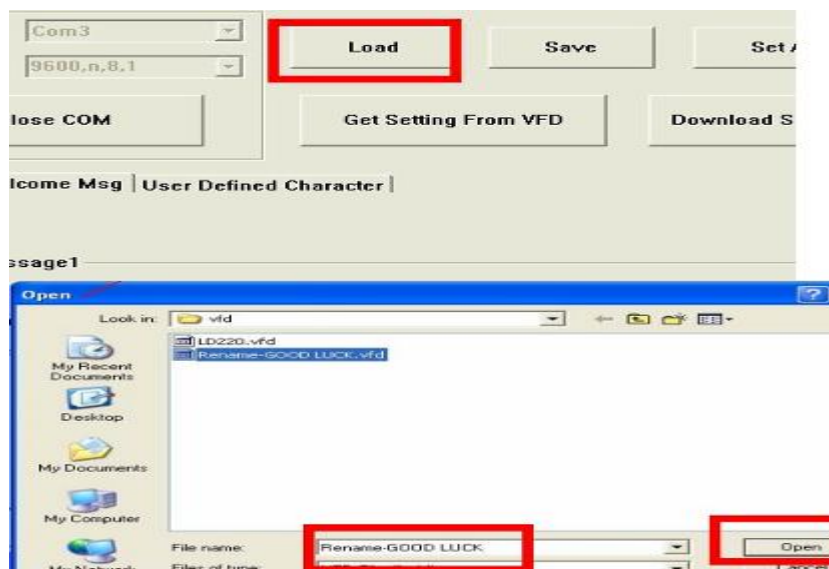
7. BIOS/Utility setup

Press <ESC> key to enter BIOS SETUP UTILITY when system boot up.

1.   Please press ESC key tenderly and slowly.
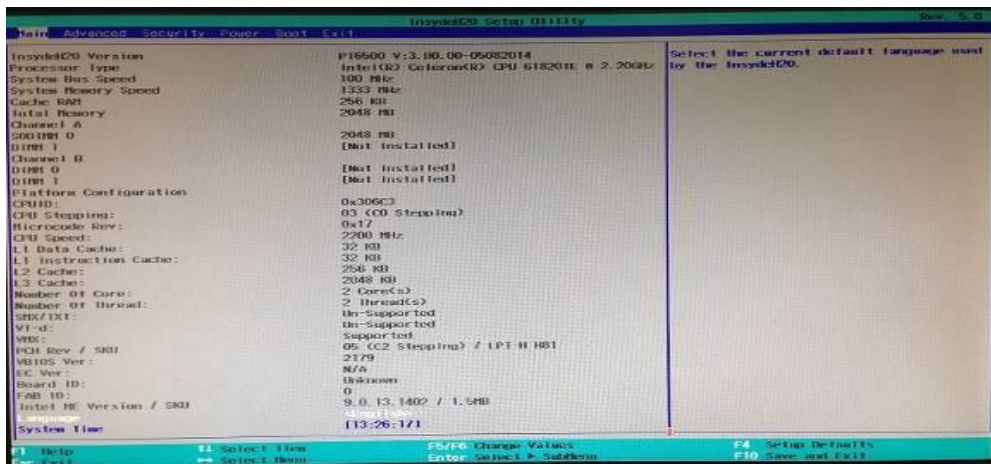
2.   Press <F9> to view the system information
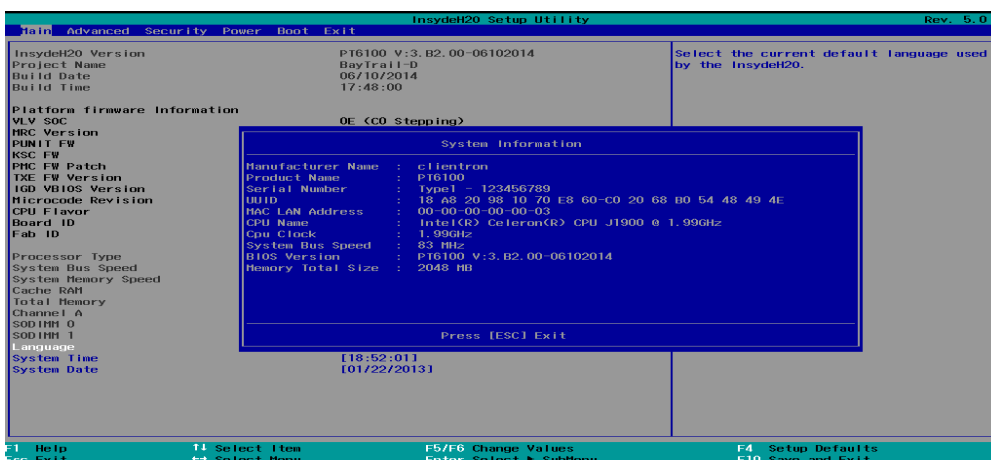
●   **Date and Time**
The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

●   **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:

```
        Main  Advanced  Security  Power  Boot  Exit

        ▶Boot Configuration                                    Configures Boot Settings.
        ▶USB Configuration
        ▶Audio Configuration
        ▶Video Configuration
        ▶SATA Configuration









        F1  Help            ↑↓ Select Item        F5/F6 Change Values        F4   Setup Defaults
        Esc Exit            ↔  Select Menu        Enter Select ▶ SubMenu     F10  Save and Exit
```
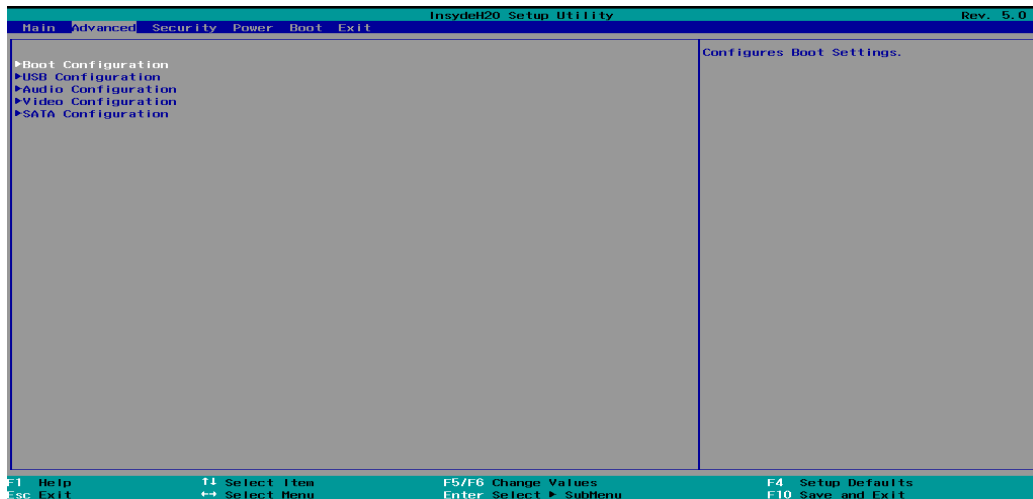
● **Configuration**

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

```
                              InsydeH20 Setup Utility                                     Rev. 5.0
        Advanced

        Boot Configuration                                     Selects Power-on state for Numlock

        Numlock                          <ON>










        F1  Help            ↑↓ Select Item        F5/F6 Change Values        F4   Setup Defaults
        Esc Exit            ↔  Select Menu        Enter Select ▶ SubMenu     F10  Save and Exit
```
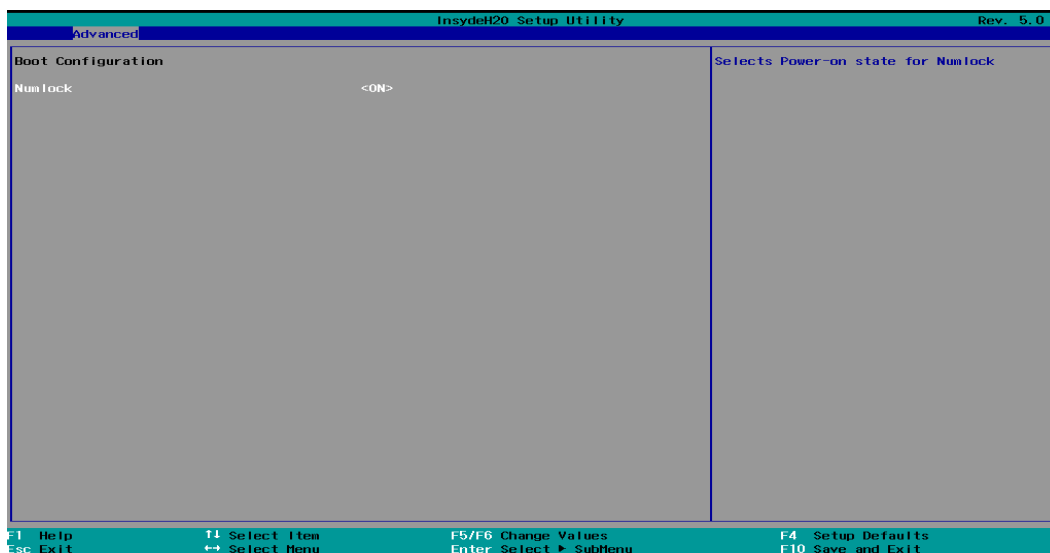
● **Audio Configuration**

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

Advanced

Audio Configuration   Control Detection of the Azalia device.

Audio Controller   <Enabled>   Disabled = Audio will be unconditionally
                                                                   disabled

                                                                   Enabled = Audio will be unconditionally
                                                                   Enabled

F1 Help   ↑↓ Select Item   F5/F6 Change Values   F4 Setup Defaults
Esc Exit   ↔ Select Menu   Enter Select ▶ SubMenu   F10 Save and Exit
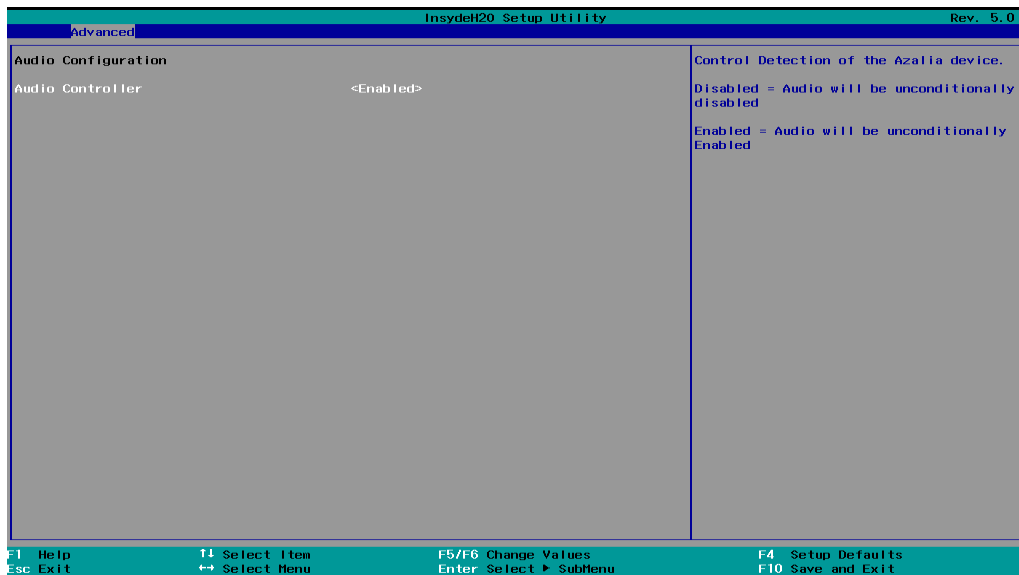
● **Video Configuration**

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

Advanced

Video Configuration   Select DVMT5.0 Pre-Allocated(Fixed)
                                                                   Graphics Memory size used by the Internal
IGD - DVMT Pre-Allocated   <128M>   Graphics Device.

F1 Help   ↑↓ Select Item   F5/F6 Change Values   F4 Setup Defaults
Esc Exit   ↔ Select Menu   Enter Select ▶ SubMenu   F10 Save and Exit
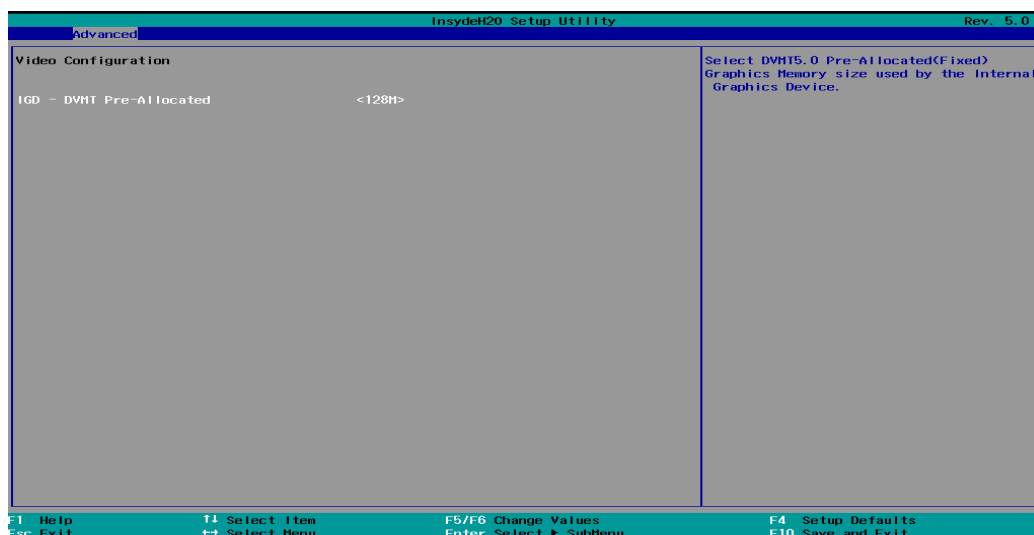
● **SATA Configuration**

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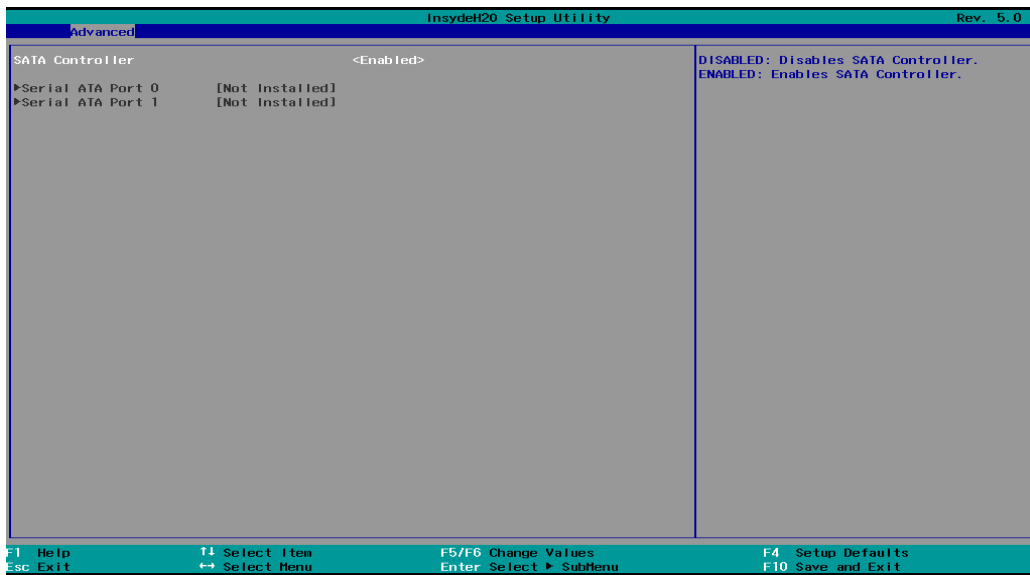
7.2. Security

Use the Security menu to install or change the password
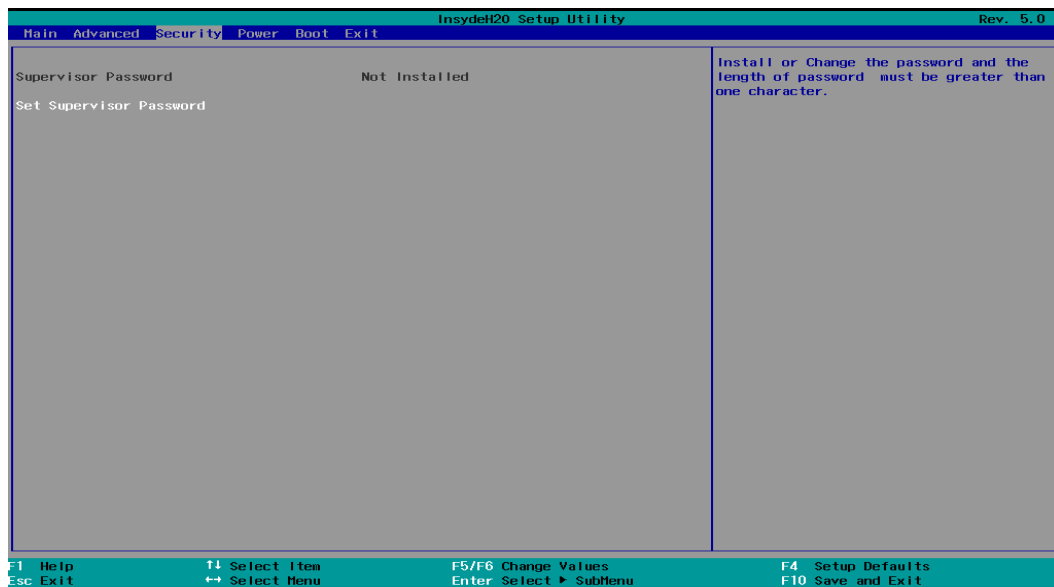
7.3. Power

Use the Power menu to install or change the password
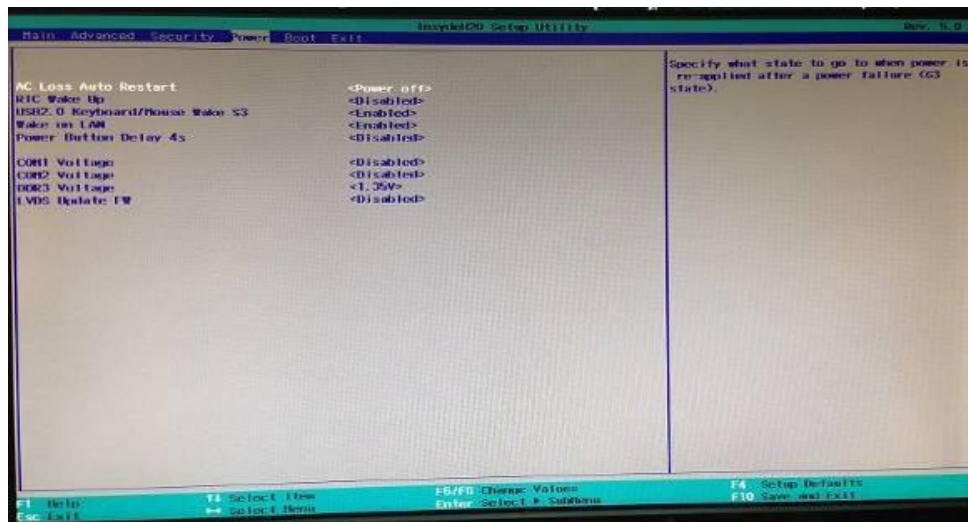
- **AC Loss Auto Restart**: Enable or disable system power on automatically after AC power restored
- **RTC Wake Up:** When enabled, System will wake on the hr;;min;;sec specified
- **Wake on LAN:** Enable or disable system wake by onboard LAN chip
- **Power button delay 4s:** This item allows you to 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.
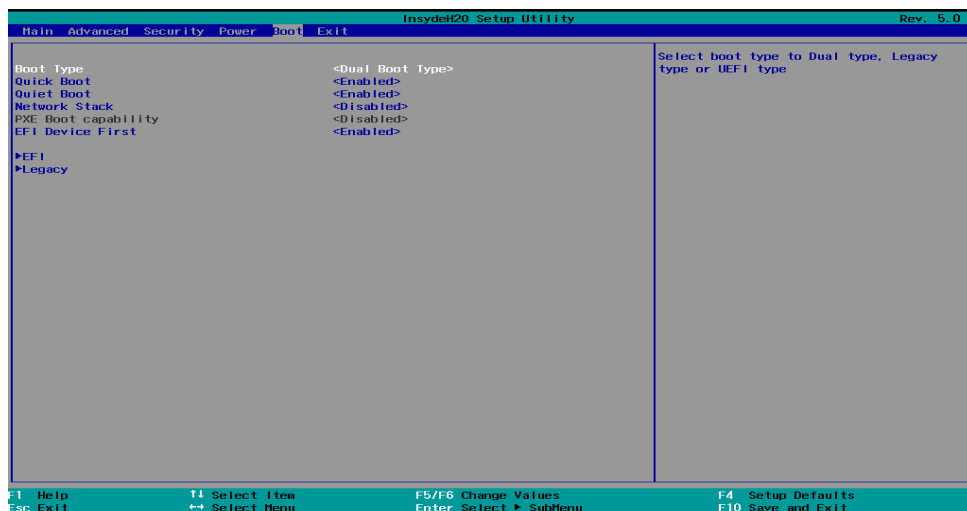
7.5. Exit

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

```
                              InsydeH20 Setup Utility                        Rev. 5.0
  Main  Advanced  Security  Power  Boot  Exit

Exit Saving Changes                                    Exit system setup and save your changes.
Save Change Without Exit
Exit Discarding Changes
Load Optimal Defaults
Load Custom Defaults
Save Custom Defaults
Discard Changes














F1  Help          ↑↓ Select Item      F5/F6 Change Values        F4   Setup Defaults
Esc Exit          ↔  Select Menu      Enter Select ▶ SubMenu     F10  Save and Exit
```

8. CD 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 labeled 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.

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